CHAPTER 1

# Performance-based funding formula in Ukrainian higher education: policy implementation and lessons learned

*Kateryna Suprun, Jussi Kivistö*

## Abstract

The chapter provides a historical overview of the preceding incremental budgeting tradition in the Ukrainian higher education system and takes a stock of the conceptualisation and implementation arrangements of the new PBF formula. More specifically, the new PBF formula is analysed through the lens of the implementation studies in order to provide insights on the policy setting associated with the use of PBF. The paper concludes by reflecting on the emergent practical insights regarding public accountability in the Ukrainian higher education system, such as the HEIs' distorted incentive structure, the challenge of the PBF formula design as a 'zero-sum game', as the impact of policy entrepreneurship, political salience, and calculated inaction on policy implementation.

## Keywords

Performance-based funding, Funding formula, Ukraine, Higher education policy, Public universities, Policy cycle.

## 1 Introduction

Performance-based funding (PBF) constitutes a central topic of higher education research in many countries. Hence, it is surprising that PBF has not been analysed from the perspective of its characteristics as a policy, or its manifestation in the different stages of the policy cycle, with few exceptions (OECD, 2020). The majority of existing studies discuss the PBF

rationales and premises (Canton et al., 2001; Ziegele, 2013), its dynamics and the indicators used (de Boer et al., 2015) and more lately, its impacts on performance (European Commission, 2023; Hillman et al., 2014; Kivistö & Kohtamäki, 2016), thereby missing the important insights that can be derived from analysing the policy cycle stages.

Limited use of the implementation perspective in higher education studies has proven to be a recurring matter (Gornitzka et al., 2005), despite some recent research on the topic (de Boer et al., 2012; Reale & Seeber, 2013; Sin & Veiga, 2016; Westerheijden et al., 2014). Research on higher education funding has acknowledged significance of the policy implementation analysis for the PBF formula and performance agreements (de Boer & Jongbloed, 2015), institutional funding allocation (Clayers-Kulik & Estermann, 2015), and the national system capacity (European Commission, 2023).

Furthermore, while the policy implementation analysis has been applied to higher education studies (e.g. Kogan, 2005; Teichler, 2003), the added value of this research is to cover the research gap (Peters & Pierre, 2007) on different elements of policy design and implementation challenges.

The chapter takes a stock of the conceptualisation and implementation arrangements of the PBF formula in Ukraine from the policy implementation perspective. This focus allows to unveil the dynamic nature of the PBF policy and grasp the complexities underlying achievement of the policy goals and re-design. The analysis is based on theoretical perspectives derived from the implementation theory (Cerych & Sabatier, 1986; Pressman & Wildavsky, 1984) for analysing PBF in the policy setting pertinent to its design and the political environment.

## 2 Public funding of Ukrainian HEIs: historic overview and a need for change

The Ukrainian higher education system has long been characterised by a high level of state governance (Suprun & Furiv, 2018). An attempt to develop academic and managerial self-governance coincided with adopting a new Law of Ukraine 'On Higher Education' in 2014. Despite improvements for academic autonomy in Ukraine since then, other dimensions of institutional self-governance have remained underdeveloped, largely due to a lack of accountability measures and low management capacity (Gresham & Ambasz, 2019). This holds particularly

true for financial autonomy of HEIs, that has not been properly addressed in national legislation or institutional practices.

HEIs' public funding is based on the regulatory framework established during the late 1990s – early 2000s. Rooted in their legal status of state budget institutions, public universities cannot flexibly dispose of their property, use revenues, establish endowments or paygrades. This has considerably restricted their organizational flexibility and willingness to engage in external cooperation and led to growing dependencies on public funding (Finikov & Sharov, 2014). The latter development is particularly disturbing as Ukrainian higher education remains to be chronically underfunded (Gresham & Ambasz, 2019; Kahanec et al., 2022). During 2015–2023, the inflation rate and the annual increase in higher education expenditures of the Ministry of Education and Science of Ukraine (MOES)[1] remained largely disproportionate. Except for 2017 and 2019–2021, when the MOES disbursements outpaced the increases in prices, the disparity in favour of inflation reached 25.1 percentage points in 2015 and returned to alarming 25.6 percentage points in 2022. The tendency in years 2022–2023 can be attributed by the full-scale Russian military invasion to Ukraine that necessitated re-purposing public funding towards military expenses.

FIGURE 1
Increase in higher education expenditures vs. inflation rate[2]
THE STATE BUDGETS OF UKRAINE IN YEARS 2015-2023, AUTHORS' CALCULATIONS

Allocation of public funding to HEIs has long followed the historical line-item budgeting model. As per the Resolution of the Cabinet of Ministers of Ukraine #1134 (2002)[3], public HEIs ration the number of academic staff relative to the students' numbers. The permitted staff and students' numbers were determined via a set of coefficients across fields of study, levels of education, and modes of study. Hence, the number of students was de facto the only decisive factor in HEIs' public funding allocations. This has eventually exacerbated the incentive system as HEIs learned to perceive sustaining high numbers of students as the key objective of their performance.

Public funding of HEIs has exhibited a number of structural challenges, including lack of the institutionalised notion of quality as value for money, and insufficient transparency of allocations (Gresham & Ambasz, 2019; Kahanec et al., 2022). The procurement model of state-subsidised study places failed to ensure transparency and efficiency of public funding and encouraged disparities between HEIs and the labour market, as it incentivized HEIs to maximise their enrolment-based revenue (Estermann et al., 2015; Stadnyi, 2016).

Utilizing PBF, as a solution to these issues, has been discussed in the Ukrainian higher education community since the early 2010s. The CEDOS study has suggested the pioneer PBF model grounded in HEIs' teaching-related activities (Stadnyi, 2016). It has argued that the strengths of the advanced PBF model should include a focus on 'calculability, clarity and attainability', attempted mitigation of information asymmetry and inefficiencies by avoiding information provision by HEIs, and a balance between input and output indicators.

Also Degtyarova et al. (2018) put forward a proposal on the revised state procurement model, based on the need to depart from line-item budgeting towards block grants and/or performance-oriented systems, devise a sound cost model of institutional performance, and enable HEIs' financial autonomy. While contributing to the PBF policy advocacy and facilitating 'esprit de corps' (Boyt et al., 2005, as cited in Knill et al., 2023), the study failed to clearly distinguish among funding streams and types of public funding. Despite the articulated output-orientation, it purported the slightly amended approach to funding study places, instead of services.

Overall, the identified studies on higher education funding in Ukraine have taken a stock of public funding allocations models and their implementation deficiencies and attempted to provide insights into alternative public funding arrangements. Yet, they have remained

descriptive, missing to explain the crucial elements of the policy change, and thereby failing to provide sufficient analytical depth.

## 4 Analytical framework: policy implementation

Public policy research has had a tradition of being focused on policy design and evaluation, while policy implementation was neglected (Hjern, 1982). The term 'implementation theory' was first used by Pressman and Wildavsky (1973) as the 'missing link' between policy intentions and realisation. While implementation studies have allegedly reached 'a relatively mature stage of development' (O'Toole, 2000), their progress in the recent decades was incremental, particularly in theoretical diversity, conceptual clarification, and comparative multivariable research designs (Saetren, 2014; Winter, 2006).

Several initial observations and anecdotal evidence (e.g., stakeholder meetings, expert claims, media) suggest that the PBF formula implementation in Ukraine has undergone overcoming conflicting interests, establishing credible comparable data systems, and securing political leadership for a change; hence, the interest to apply the multiple streams framework and the punctuated equilibrium framework. As argued by Harman (1987), the multiple streams framework allows to accurately describe the window of opportunity permitting policy entrepreneurs to unite the problem, the policy, and the politics stream. The punctuated equilibrium framework permits depicting a major policy change happening against a long-lasting incremental variation. Given the PBF policy implementation context, both perspectives hold high analytical capacity for the case. The long-awaited availability of the policy window and the presence of policy entrepreneurs who became accountable for the policy change became a distinctive feature of the PBF launch, as argued later. Further, the PBF formula came to be realised as a radical departure from public funding traditions rooted in inertia.

The conflict and bargaining implementation model by Elmore (1978), and the non-decision-making model by Bachrach and Baratz (1970) are relevant given the policy environment shaping the PBF policy formulation and implementation. Bargaining between ministries and HEIs has long determined allocation of public funding in Ukraine (Kahanec et al., 2022; Stadnyi, 2016). This consensus-building tool paved its way toward the PBF policy, since the PBF consultations resulted in 'adaptation of policy goals' (Hill & Hupe, 2003). The non-decision-making concept holds value as it

explains the capacity of policy makers to defer the PBF policy. As identified in the ATHENA project, the MOES argued against adjusting HEIs' public funding modalities due to 'a lack of quality monitoring system (output) criteria and problems with data collection' (Estermann et al., 2015, p. 30). Given sufficient availability of institutional data, these comments prove the non-decision-making preference and the calculated inaction (McConnell & 'T Hart, 2019) of the MOES in favour of 'existing allocation of benefits and privilege' (Parsons, 1995).

FIGURE 2
Analytical framework for the PBF policy analysis
AUTHORS' OWN DIAGRAM.

The suggested analytical framework for analysing the PBF policy implementation is depicted in Figure 2. We draw particular attention to the policy cycle stages of policy formulation and implementation, while agenda setting, policy legitimation and evaluation fall beyond the scope of this chapter.

## 5 PBF policy window: formulating the model and implementing it

This section provides a close look at the formulation and implementation arrangements of the PBF formula in Ukraine through a mixed methods research design relying on qualitative content analysis of the secondary sources of documental evidence, and quantitative analysis of the MOES official financial data. The case description is guided by the PBF recommendations of the European Commission (2023), OECD (2020), ET2020 Working Group on Higher Education (2019), EUA (2015), and CHEPS (2015).

### 5.1 *Policy formation*

The first draft of the PBF formula by-law[4] dates to November 2018. It suggested distributing HEIs' public funding across four pillars: basic funding for sustainability (pillar 1), funding related to institutional scales of activity (i.e., number of students) (pillar 2), performance-based funding (pillar 3), and reserve funding for possible contingencies (pillar 4). The draft PBF tool also offered a good balance between input- and output-oriented criteria: state-subsidised students' numbers, scores of HEIs' applicants, HEIs' size, performance in international rankings, research activities, and graduates' employment.

The central lines of HEIs' and policy entrepreneurs' feedback on the PBF policy, as presented in the public consultation report[5], held true also for the subsequent rounds of eliciting public opinion on the PBF reform.

Apart from criticism on introducing a disruptive change to the inert policy area and HEIs' bargaining for 'higher scores' on the index lists, the choice of indicators received the most attention. The PBF formula indexes for levels of higher education, modes of study, and fields of study have also remained in focus of policymakers and public HEIs – as their 'effective bargaining arena' (Pressman, 1975, as cited in Elmore, 1979).

In mid-2019 the PBF reform gained a pace and transitioned to be a major policy agora. The key factor in this process was a change in the national politics that enabled a policy entrepreneur – Yegor Stadnyi[6] - to permeate the sector, become the new institutionalized power (i.e., an executive entrepreneur), and defeat the non-decision makers. During the first public event, the new MOES political team[7]announced the upcoming change in public funding policies. The policy window and political accountability allowed for the PBF policy to become politically

salient and enabled repurposing the MOES administrative capacities towards its launch and implementation.

The PBF formula reconceptualisation was largely based on the extensive dialogue between the government and HEIs, guided by the following principles:

– to devise fair and achievable incentives for HEIs to deliver results;
– to utilise valid, transparent, and credible data sources for indicators; and
– to establish 'safe' basic funding and 'supporting' indexes for a smooth policy transition.

The central principles of the PBF policy became reflected in the policy proposal on reforming public HEIs funding and governance. It offered a detailed set of structural measures for improving system and institutional level capacity, efficiency, and effectiveness (Table 1).

TABLE 1 MOES policy proposal on reforming public HEIs funding and governance

| Policy action | Objective |
|---|---|
| Funding | |
| Introduce a PBF formula for public funding allocation. | Equal and well-known 'rules of the game' for all HEIs with financial incentives for capable and effective HEIs to grow stronger. |
| Set a minimum threshold (indicative cost value) for tuition-fee charged by HEIs that receive public funding. | Mitigate redistribution of public funding to cover cost of study for self-paying students whose tuition fees, set by HEIs, are lower than the state financing per student. |
| Enact a set of legal changes for providing financial autonomy for public HEIs. | Enable public HEIs be flexible and accountable in their attracting and use of financial resources. |
| Governance | |
| Introduce performance agreements based on key performance indicators with rectors of public HEIs. | Institutionalise result-based management practices for higher education leadership for better results and sensible accountability. |
| Establish supervisory boards at HEIs. | Set up effective accountability of public HEIs and their better alignment with regional development and labour market needs. |

Source: Ministry of Education and Science of Ukraine (2019)

The MOES presented the policy proposal[8] on the same day that the PBF policy was adopted by the Resolution of the Cabinet of Ministers of Ukraine #1146[9], - 24 December 2019. To establish equal and transparent 'rules of the game' and to allow stronger HEIs receive more public funding became the explicit choices that shaped the PBF formula in the upcoming years (Suprun, 2020).

### 5.2 *Policy implementation*

The PBF formula was introduced at HEIs during the early 2020s to enhance efficiency gains in the sector and achieve transparency of funding allocation. It was implemented during 2020–2021 but got abruptly suspended in early 2022 following the full-scale Russian military invasion to Ukraine.

The enacted PBF formula included three pillars:

*Pillar 1. Basic funding*. This pillar served the 'safety net' purpose to safeguard HEIs with a certain share of their previous year's public funding. This share, known as a stability coefficient, was annually determined by the MOES, and varied within 0,8-0,85. Given the decisive impact of the state-subsidised students numbers on HEIs' public funding allocations in previous years, it also accounted for basic funding in the PBF model.

*Pillar 2. Performance-based funding.* This pillar aimed at steering HEIs' performance orientation towards the MOES-defined criteria. During the two years of the PBF policy implementation, the criteria remained unchanged, with only minor modifications to their coefficients (cf. Annexes 1 and 2)[10]:

TABLE 2 PBF formula indicators for Ukrainian HEIs

| Input indicators | Output indicators |
|---|---|
| Number of state-subsidised students | Research activity |
| Scale of activity | International recognition |
| Regional support | Graduate employment |

Source: Ministry of Education and Science of Ukraine (2019)

The choice of performance indicators was based on clarity, availability, and comprehensiveness of institutional data. The pillar 2 successfully balanced politically oriented input indicators for incentivising university mergers with quality-oriented output indicators for promotion of institutional competitiveness.

*Pillar 3. Reserve funding.* This pillar funded supplemental allocations for underperforming HEIs whose overall public funding would otherwise be lower than the minimum acceptable threshold. It also provided 'emergency' funding for unforeseen unpredictable expenditures incurred by HEIs.

FIGURE 3
Structure of MOES public expenditures for HEIs distributed via the PBF formula[11]
AUTHORS' CALCULATIONS AND ANALYSIS OF MOES PUBLIC FINANCIAL REPORTS AND DECREES

During 2020–2022, the pillar 2 funds allocated through the PBF formula amounted to 12–24% (Figure 3). While providing competitive incentives, the modest share of performance funding safeguarded HEIs from 'financial shocks and counter effects' (ET2020 Working Group on Higher Education, 2019). Some variations in the stability coefficient for basic funding reflected MOES' sensible political accountability in stabilising and diversifying the HEIs' public funding structure.

Despite these successes, several points of criticism should be raised on the PBF policy implementation arrangements.

First, the Resolution of the Cabinet of Ministers of Ukraine #1146 called for presenting the PBF allocations within 15 working days since the start of the budget year, to allow for their sound planning and efficient disbursement. The MOES adhered to this obligation only in 2020, when published the required information on 24 January 2020, while in 2021 and

2022 these dates were 13 August and 11 February respectively. This considerable lag, coupled with the formula re-design until mid-July in 2021, marked a political shift for the PBF policy.

Second, while the excessive reliance on students' numbers was a central criticism of the old funding model, the PBF policy did not fully parted ways with it. Next to using this indicator for basic funding, the PBF formula also utilised it for several other indicators of the performance-based pillar – as an input indicator, and the base for calculating the HEIs' scale of activity. This increased its share in the overall allocation and led to the 'double jeopardy' problem with the highly correlated indicators (OECD, 2020). The diagram below highlights the effect of preserving the state-subsidised students' numbers as a key feature of public funding allocations across multiple pillars of the PBF formula (Figure 4).

FIGURE 4
Average share of the weighted state-subsidised number of students in PBF allocations for the MOES' HEIs[12]
AUTHORS' CALCULATIONS AND ANALYSIS OF MOES PUBLIC FINANCIAL REPORTS AND DECREES

The number of state-subsidised students ceased to be the only input variable for public funding disbursements, yet it still accounted for 78–86% of the overall PBF allocations for the MOES' HEIs. The highest average share of state-subsidised students in PBF allocations was in 2021, when the students' numbers were the lowest. This, together with the MOES challenge to timely present public funding allocations, raised the question of the PBF policy longevity and sustainability one year before its suspension.

Third, besides disbursing the reserve funding, a share of HEIs' supplemental allocations was also repurposed from 'overperforming' HEIs. The minimum and maximum thresholds for these redistributions during 2020–2022 varied within 85–95% and 120–130% respectively. In this way, HEIs whose increase in funding would otherwise be higher conceded their 'excessive' funding in favour of underperforming institutions. Thereby, the PBF model utilised the Pareto model of optimal distribution to prevent system-disruptive changes and re-purpose public funding across particularly high- and low-performing HEIs. However, the model was deployed under the circumstances of HEIs' chronic underfunding. Hence, this approach exemplified a 'zero-sum game', when the constantly deficient public funding was sliced rather than new funds were made available (Clayers-Kulik & Estermann, 2015).

The Figure 5 highlights the overall structure of the MOES public expenditures for HEIs after introducing the PBF formula. At least 95% of the funding was allocated via the PBF formula, and only 5% remained uncommitted for other expenditures, i.e., subsidies for underaged students, state maintenance of cadets, property lease for temporarily relocated public HEIs etc.

FIGURE 5
Structure of the overall MOES public expenditures for HEIs[13]
AUTHORS' CALCULATIONS AND ANALYSIS OF MOES PUBLIC FINANCIAL REPORTS AND DECREES

The HEIs experienced various dynamics following the PBF policy launch, as detailed in Figure 6. In the first year of the PBF policy implementation, the shares of 'winners' who secured more public financing, and 'losers' falling behind the historic funding and the annual inflation rate remained

balanced (41% and 37% HEIs respectively). Many 'winning' HEIs had been chronically underfunded, despite their high state-subsidised students' numbers. Therefore, when evaluated against the same criteria they enjoyed a sudden rise in funding volumes. On the contrary, 'losing' HEIs have scored low on the performance scale or were cut short in public funding as they were overfinanced in the years preceding the PBF policy launch. Specifically, they used to receive more historic funding than justified by their state-subsidised students' numbers, thus exhibiting the case of successful bargaining with the MOES.

In 2021, the subdued stability coefficient and the redistribution thresholds purported the ratio between 'winners' and 'losers' to fluctuate from 1:1 to 7:1, thus levelling out prior efforts to incentivise performance. This is aligned with the allegations of the then Minister of Education and Science of Ukraine Serhiy Shkarlet against the 'unfair PBF funding allocations' endorsed by the MOES in 2020[14] and the undertaken commitment 'to achieve justice' in higher education funding by involving selected HEIs' rectors for the PBF model evaluation. While co-designing public funding tools with stakeholders is claimed to support their implementation effectiveness and create a sense of trust, this case illustrates poor mitigation of the information asymmetry by the MOES and the losing HEIs' attempt to adapt the PBF policy in their own interests.

FIGURE 6
Dynamics of public funding allocation across Ukrainian HEIs
AUTHORS' CALCULATIONS AND ANALYSIS OF MOES PUBLIC FINANCIAL REPORTS AND DECREES

The PBF projected allocations for 2022 marked a return to their more competitive ratio of 3:2, due to relocating the 2021 'winners' to the

'survivors'– those receiving more public funding than before but remaining below the annual inflation rate. These projections remained uncommitted as in March 2022 the PBF policy was suspended until the end of 2022, and later 2023. The Russian war in Ukraine has impacted fiscal and institutional capacity of the higher education sector, causing HEIs' forced displacement, infrastructure damage, and challenges to learning continuity (Education Cluster et al., 2022; World Bank et al., 2023). While the PBF policy suspension as justified by the emergency renders institutional performance comparisons impossible, returning to historic funding raises doubts about the competitiveness of the post-crisis higher education sector in Ukraine, particularly with the growing budget deficit.

## 6 Discussion and critical reflection: a long way forward

This section reflects on the PBF policy formulation and implementation in the Ukrainian higher education sector in light of the good PBF practices (CHEPS, EUA, OECD, European Commission), and the policy implementation.

*Regular stakeholder engagement* proved to become vital in co-designing the PBF policy, challenging the mobilization of bias, and earning HEIs' confidence. Engaging the national higher education sector and the civil society to review the draft PBF formula and being receptive of their criticism enabled some 'institutional buy-in' for the previously contested policy. The first iteration of the PBF-based funding allocations has, however, triggered polarisation of stakeholder perceptions, particularly among low-performing institutions who sought to substantiate their arguments for reviewing the PBF model.

*Addressing institutional diversity* was primarily realised in the PBF model via differentiation of indicators' weight across levels, modes of study, fields of study, and HEIs' regions – as based on the MOES' policy goals and the HEIs' negotiating power. The implemented PBF policy had taken a stock of institutional profiles, enabling additional support coefficients for art, sport, and teacher-training HEIs. The PBF model has also provided assistance to the HEIs temporarily relocated from the Autonomous Republic of Crimea, Donetsk, and Lugansk regions after the Russia's military invasion to these territories in 2014. While capturing the higher education sector diversity well, the PBF design left room for few cases of preferential treatment. These included postponing the PBF implementation in few MOES-led HEIs and HEIs subordinated to other

ministries, securing higher salaries for selected national universities from reserve funding, and financing consumables for HEIs training students at air and sea vessels.

*Designing sound, reliable, and well-balanced choice of indicators* was accomplished due to efficient operationalisation of the policy goals, scrutiny, and rigor with defining the indicators, and careful considerations for validity and reliability of the data sources. Still, the policy makers decided to address the issue raised by the higher education community with the graduate employment indicator that remains outside HEIs' control. The hidden duplication of the state-subsidised students' numbers, whose real impact on public funding allocations was higher than initially anticipated, appeared to be even a more significant challenge. This 'double jeopardy' disrupted the causal adequacy of the PBF policy by forging intervening links between the cause for introducing the PBF model and its end effect.

*Goal clarity* on the need to introduce the PBF model and its modalities varied across different MOES teams, as dependent on their commitment, accountability, and capacity to implement changes. Albeit available briefly, the policy window and the policy entrepreneur enabled the implementation process to be legally structured and institutionalised the agreement on the policy priorities – support strong HEIs and make public funding rules transparent. The MOES has also created a legally binding accountability condition to demand obedience from HEIs and safeguard data reliability by penalising false data provision by HEIs. The PBF policy implementation encountered certain volatility starting 2021, as the stability of its political support and the agreement on the PBF objectives deteriorated.

*Smooth transition* to the PBF funding became possible due to a combination of familiar and new incentive structures and indicators. As HEIs were active counterparts in co-designing the PBF model, they developed understanding on its aims and measures. Availability of the reserve fund to compensate for possible inaccuracies of the PBF model and incidents also contributed to the HEIs' trust. At the same time, the PBF formula model was moderately re-designed already during the second year of implementation. Noteworthy, these amendments came into force in July 2021, delaying institutional allocations to be published and disbursed. This led to an unjustified increase in the system's complexity, as HEIs had to operate under uncertainty of their funding situation.

*Targeting a good balance between performance-based and core funding* was instrumental in the swift launch and implementation of the PBF reform. Given the long-lasting dependency of Ukrainian HEIs on historic funding, providing a substantial share of basic funding became a matter of preventing 'large, immediate swings in the performance of HEIs' (European Commission, 2023). During the first year of the PBF policy implementation, core funding remained no less than 77% of the previous year, and no HEI was allocated less than 95% or more than 120% thereof. Thereby, the initial 'Matthew effect' was modest and allowed for a gradual paradigm shift.

The PBF formula proved to be a long-awaited public policy for the Ukrainian higher education system which ensured transparency of budget allocations and their effectiveness. Regretfully, it failed to become a funding instrument fit to advocate for increase in higher education funding. Instead, it purported the existing system-level imbalances by rewarding one group of HEIs at the cost of another. Further re-thinking of the PBF model should account for funding excellence, innovation, and institutional strategic profiling.

## 7 Conclusions

This chapter is the first-ever study into formulation and implementation of the PBF formula at Ukrainian HEIs in the early 2020s. It provides practical insights regarding the lessons learned during the first iterations of the PBF formula-based public funding allocation, alongside public accountability of the Ukrainian higher education system.

The PBF policy came a long way from being realised to enforced, amidst the institutional resistance to change, political volatility, and shrinking public budgets for higher education.

As benchmarked against the good PBF practices, the PBF formula succeeded in winning over a sizeable share of its stakeholders and safeguarded HEIs with a balance between stability and competition for resources. Foreseeing a transition period and reflecting institutional diversity also enhanced the PBF policy implementation. Still, tolerating institutional lobbying, purporting further excessive reliance on students' numbers, and framing the PBF policy as a 'zero-sum game' should be admitted as implementation flaws of the PBF policy. So was leaving HEIs in 'limbo' after the policy window got shattered by political salience in 2021, eventually contributing to the PBF policy suspension.

The policy implementation models and the policy cycle enabled delving into root causes and subtle considerations at different stages of the PBF policy formulation and implementation. Other useful insights were derived from the multiple streams and the punctuated equilibrium frameworks due to their focus on a rapid change. These were supplemented by the critical observations inferred from the non-decision-making model and the policy inaction phenomenon as implicit to understanding the implementation potential of the PBF allocation mechanism in a national setting.

As the war continues, the PBF might seem irrelevant for the foreseeable future. Contrary to this, Ukrainian HEIs could soon witness the return of competitive allocation of public funding. Following the two years of the PBF policy suspension, at the time of writing, the Ukrainian government has not extended its suspension for 2024, thus making the previous PBF regulation automatically reinstated. The return of PBF policy has been announced by the MOES, highlighting the need for its reformulation given the emergency challenges[15]. The upcoming redesign of the PBF tool might include modifying the regional support input indicator for the war-affected territories. The MOES also intends to change its approach for calculating basic funding, the research activity and international recognition output indicators. If successful, this should become a noteworthy case of policy learning and reformulation *during* an ongoing crisis.

The obtained findings enable a strong empirical baseline for further studies of the PBF policy in Ukrainian higher education, including stakeholders' delivery behaviour during implementation of the PBF formula at Ukrainian HEIs. Also investigating changes in HEIs' internal funding practices before, during and after the PBF formula implementation would be important. Finally, in view of the anticipated PBF policy return, the question of its viability for the in-crisis Ukrainian higher education sector remains crucial. Further discussion should invite a closer look into public responsibility for and of higher education in Ukraine in times of emergency, and conducive institutional conditions for the PBF policy learning and reformulation in times of crisis.

## Disclosure statement

The first author of the paper was involved in the process of the PBF implementation at Ukrainian HEIs as a civil servant at the Ministry of

Education and Science of Ukraine. For purposes of this paper, she acts as an independent researcher who aims for objective evaluation of the policy outcomes and declares no present conflict of interest.

This paper reflects only the authors' position. The conclusions and factual statements given in the paper do not reflect the position of state bodies, institutions, or organisations.

## Notes

1 Given that the majority (281 out of 350) of the public HEIs in Ukraine are subordinated to MOES (Gresham & Ambasz, 2019), we will focus our analysis on public funding of these HEIs.

2 Note: Higher education expenditures are calculated as the actual allocations of the general fund disbursed by the MOES (planned allocations for 2023).

3 Source: https://zakon.rada.gov.ua/laws/show/1134-2002-%D0%BF#Text

4 Source: https://mon.gov.ua/ua/news/mon-proponuye-do-gromadskogo-obgovorennya-proekt-postanovi-kabinetu-ministriv-ukrayini-pro-zatverdzhennya-formuli-rozpodilu-obsyagu-vidatkiv-zagalnogo-fondu-derzhavnogo-byudzhetu-mizh-zakladami-vishoyi-osviti

5 Source: https://mon.gov.ua/storage/app/media/gromadske-obgovorennya/2018/12/18/proekt-formuli15112018.docx

6 Yegor Stadnyi was a higher education policy analyst and later a director of the CEDOS think-tank in Kyiv during 2012-2019. In September 2019, he was appointed the Deputy Minister responsible for higher education in Ukraine.

7 Source: https://www.kmu.gov.ua/news/prioritetami-mon-stanut-doshkillya-prishvidshennya-nush-reforma-pto-pidtrimka-krashchih-u-vishchij-osviti-ta-nauci

8 Source: https://mon.gov.ua/ua/events/24-grudnya-ganna-novosad-prezentuye-koncepciyu-reformi-vishoyi-osviti-vona-startuye-vzhe-u-sichni-2020-roku

9 Source: https://zakon.rada.gov.ua/laws/show/1146-2019-%D0%BF

10 Source: https://doi.org/10.6084/m9.figshare.24764154.v1

11 Note: Structure of public expenditures allocated via the PBF formula across individual HEIs varies based on their indicators.

12 Note: Averages are calculated on the system level. Structure of PBF allocations allocated via the PBF formula across individual HEIs varies based on their indicators.

13 Note: The MOES public expenditures for HEIs are calculated as the actual allocations of the general fund (planned allocations for 2023) on the system level and do not

account for the merit-based scholarships that constitute another budget line. The structure of public expenditures allocations across individual HEIs varies based on their PBF formula indicators and the negotiated social expenditures and reserve funding (without supplemental allocations).

14 Source: https://life.pravda.com.ua/society/2020/10/22/242758/

12 Source: https://osvita.ua/vnz/90383/?fbclid=IwAR1m9jgbnV4ipcrG11u3l3vZd-OwDbTSMm8rrRLICfHRuc0tsvii_Q_6S1Y

## References

Canton, E., Venniker, R., Jongbloed, B., Koelman, J., Meer, P., & Vossensteyn, H. (2001). *Higher Education Reform: Getting the Incentives Right*. Enschede: CHEPS.

Cerych, L., & Sabatier, P. (1986). *Great expectations and mixed performance: The implementation of higher education reforms in Europe*. European Institute of Education and Social Policy.

Clayers-Kulik, A.-L., & Estermann, T. (2015). *DEFINE thematic report: Performance-based funding of universities in Europe.* European University Association.

de Boer, H. F., & Jongbloed, B. W. A. (2015). *Reflections on performance agreements in higher education: Practical considerations in delivering system-wide improvements*. Enschede: CHEPS.

de Boer, H., Jongbloed, B., Benneworth, P., Cremonini, L., Kolster, R., Kottman, A., Lemmens-Krug, K., & Vossensteyn, H. (2015). *Performance-based funding and performance agreements in fourteen higher education systems.* Enschede: CHEPS.

de Boer, H., Jongbloed, B., Enders, J., & File, J. (2012). *Progress in higher education reform across Europe Governance and Funding Reform Volume 2: Methodology, performance data, literature survey, national system analyses and case studies.* Brussels: European Commission.

Education Cluster, Government of Ukraine, UN Children's Fund, & World Bank. (2022). *Ukraine Higher Education Needs Assessment (25 June – 25 October 2022)*.

Elmore, R. F. (1979). Backward Mapping: Implementation Research and Policy Decisions. *Political Science Quarterly, 94*(4), 601–616.

Estermann, T., Pruvot, E. B., Clayers-Kulik, A.-L., & Mason, P. (2015). *ATHENA. University autonomy in Ukraine: Analysis & Roadmap.* European University Association.

ET2020 Working Group on Higher Education. (2019). *The power of funding in steering performance in higher education institutions. Policy Conclusions from the PLA in Zagreb*.

European Commission. (2023). *Final report of the study on the state and effectiveness of national funding systems of higher education to support the European universities initiative. Volume I.* Publications Office.

Finikov, T., & Sharov, O. (Eds.). (2014). *Monitoring the integration of Ukrainian higher education system into the European higher education and research area.* International Charity Foundation “International Foundation for Education Policy Research.”

Gornitzka, Å., Kyvik, S., & Stensaker, B. (2005). Implementation analysis in higher education. In Å. Gornitzka, M. Kogan, & A. Amaral (Eds.), *Reform and Change in Higher Education Analysing Policy Implementation.*

Gresham, J., & Ambasz, D. (2019). *Ukraine—Resume Flagship Report (Vol. 2): Review of the Education Sector in Ukraine: Moving toward Effectiveness, Equity and Efficiency (RESUME3) (English).* Washington, D.C.: World Bank Group.

Hill, M., & Hupe, P. (2003). The multi-layer problem in implementation research. *Public Management Review, 5*(4), 471–490.

Hillman, N. W., Tandberg, D. A., & Gross, J. P. K. (2014). Performance Funding in Higher Education: Do Financial Incentives Impact College Completions? *The Journal of Higher Education, 85*(6), Article 6.

Hjern, B. (1982). Implementation Research: The Link Gone Missing. *Journal of Public Policy*, *2*(3), 301–308.

Kahanec, M., Leu-Severynenko, S., Novosad, A., & Stadnyi, Y. (2022). Education reforms during and after the war. In Y. Gorodnichenko, I. Sologoub, & B. Weder di Mauro (Eds.), *Rebuilding Ukraine: Principles and policies. Paris Report 1* (pp. 323–360). Centre for Economic Policy Research.

Kivistö, J., & Kohtamäki, V. (2016). Does Performance-Based Funding Work? In R. M. O. Pritchard, A. Pausits, & J. Williams (Eds.), *Positioning Higher Education Institutions* (pp. 215–226). SensePublishers, Rotterdam.

Knill, C., Steinebach, Y., & Zink, D. (2023). How policy growth affects policy implementation: Bureaucratic overload and policy triage. *Journal of European Public Policy*, 1–28.

Kogan, M. (2005). The Implementation Game. In Å. Gornitzka, M. Kogan, & A. Amaral (Eds.), *Reform and Change in Higher Education* (Vol. 8, pp. 57–65). Springer Netherlands.

McConnell, A., & 'T Hart, P. (2019). Inaction and public policy: Understanding why policymakers 'do nothing.' *Policy Sciences*, *52*(4), 645–661.

OECD. (2020). *Resourcing Higher Education: Challenges, Choices and Consequences.*

O'Toole, L. J. (2000). Research on Policy Implementation: Assessment and Prospects. *Journal of Public Administration Research and Theory, 10*(2), 263–288.

Parsons, W. (1995). *Public Policy, an introduction to the theory and practice of policy analysis.* Edward Elgar Publishing Ltd.

Peters, B., & Pierre, J. (2007). *Handbook of Public Administration: Concise Paperback Edition.* SAGE Publications Ltd.

Pressman, J. L., & Wildavsky, A. B. (1984). *Implementation: How great expectations in Washington are dashed in Oakland: or, why it's amazing that federal programs work at all, this being a saga of the Economic Development Administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hopes* (3rd ed.). University of California Press.

Reale, E., & Seeber, M. (2013). Instruments as empirical evidence for the analysis of Higher Education policies. *Higher Education, 65*(1), 135–151.

Saetren, H. (2014). Implementing the third generation research paradigm in policy implementation research: An empirical assessment. *Public Policy and Administration*, *29*(2), 84–105.

Sin, C., & Veiga, A. (2016). *European policy implementation and higher education: Analyzing the Bologna process*. Palgrave Macmillan.

Stadnyi, Y. (2016). Conceptual model of performance-oriented public funding of HEIs. *CEDOS*.

Suprun, K. (2020). Ukraine says goodbye to a Soviet era funding formula. University World. *University World News*.

Suprun, K., & Furiv, U. (2018). *Governance equalizer: Ukrainian case study*. 3rd Central European Higher Education Cooperation (CEHEC) Conference Proceedings. Corvinus Universy of Budapest Digital Press.

Teichler, U. (2003). The future of higher education and the future of higher education research. *Tertiary Education and Management*, *9*(3), 171–185.

Westerheijden, D. F., Stensaker, B., Rosa, M. J., & Corbett, A. (2014). Next Generations, Catwalks, Random Walks and Arms Races: Conceptualising the development of quality assurance schemes: Next Generations, Catwalks, Random Walks and Arms Races. *European Journal of Education*, *49*(3), 421–434.

Winter, S. (2006). Implementation. In *Peters BG and Pierre J (eds). Handbook of Public Policy.* (pp. 151–166). London: Sage.

World Bank, Government of Ukraine, European Union, & United Nations. (2023). *Ukraine Rapid Damage and Needs Assessment: February 2022—February 2023*. Washington, D.C.: World Bank Group.

Ziegele, F. (2013). European Trends in Performance-Oriented Funding. In Bergan, S., Egron-Polak, E., Kohler, J. & Purser, L. (Eds.): Leadership and Governance in Higher

Education—Handbook for Decision-makers and Administrators. *Berlin: Raabe, 1*, Article 1.