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Modern Approaches to Reforms in the Economy: Performance Measurement Development in the Armed Forces of Ukraine

Vadym PAKHOLCHUK

Taras Shevchenko National University of Kyiv, Ukraine
ORCID: 0000-0002-9657-6148; Researcher ID: JPY-2292-2023
vadym_pakholchuk@knu.ua

Kira HORIACHEVA

Research Center, Military Institute of Taras Shevchenko National University of Kyiv, Ukraine
ORCID: 0000-0003-1503-4425; Researcher ID: HLX-2914-2023
horyachevakira@gmail.com

Yuliia TURCHENKO

Research Center, Military Institute of Taras Shevchenko National University of Kyiv, Ukraine
Department of Political Economy, King's College London, United Kingdom
ORCID: 0000-0003-3148-3351; Researcher ID: C-2504-2016
jturchenko@gmail.com

Oles KOVAL

Department of Financial Support of Troops
Military Institute of Taras Shevchenko National University of Kyiv, Ukraine
ORCID: 0000-0003-2696-7204; Researcher ID: JPY-2062-2023
oles.koval@knu.ua

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Abstract: *This paper reflects the empirical study of how the environment affects the performance measurement evaluation methodology in the organization, based on research of the Ukrainian Armed Forces experience. The problem is defined by the different needs of main stakeholders and management. This paper seeks the possibility to develop the role of stakeholders in performance measurement. In this research, several sources and methods were used to collect data. First, the interviews were conducted by the representatives of the research organization. Documents analysis and meetings also played a significant role in research. The paper emphasizes the influence of the environment, represented by the external actors and development vector, on the performance measurement building. Balancing between interests of stakeholders and levels of management helps to develop a performance system, which will be suitable to reflect the Armed Forces outputs and outcomes. Originality of the study of the Armed Forces of Ukraine is an extreme and interesting case because the institution is under high pressure during reforms and military conflict. But such cases facilitate the existing theory, depicting the problems and advantages of the management approaches. Future research in this area should pay more attention to the interaction between the external and internal actors in performance management methods building, especially in the defense sector.*

Keywords: performance measurement; armed forces; defense; outputs; outcomes.

JEL Classification: R10; H11; E01; F59; A12.

Introduction

In the current global landscape, marked by geopolitical tensions and ongoing military conflicts, nations are grappling with the imperative to reevaluate their economic priorities. The reverberations of these conflicts extend beyond the immediate security concerns, compelling countries to reassess their budgetary allocations, with a particular focus on defense spending. This research, centered on the performance measurement of the Armed Forces of Ukraine, assumes heightened significance amid these circumstances. The outcomes of this study are poised to offer valuable insights into the efficacy of defense expenditure in the face of external threats, shedding light on the intricate interplay between military reforms, economic stability, and national resilience. As countries worldwide navigate the complex terrain of economic reforms necessitated by military engagements, the findings presented here are poised to be of paramount interest to researchers and specialists in the field of economics, providing a nuanced understanding of the challenges and opportunities inherent in crafting effective budgetary strategies within the defense sector.

The decisions of the collegiate of the Ministry of Defense of Ukraine established the priority tasks for the Armed Forces of Ukraine, which are developing a national defense system and improving its effectiveness according to the NATO practices. This should lead to the designing of the new defense resources management system. But the army is stuck in the reforms for a long period, and their pace is slowing down and not reflect the necessary outputs from the money spending. And in this situation, the Ministry of Defense increase their projected budget request. In the eyes of the community, representatives of state authorities do not execute their plans and promises, as they have announced publicly, and the financial resources are not efficiently spent. For Ukraine, in case of the real external threat to sovereignty, territorial integrity, and independence, the development of a strong army is extremely important.

There is a strong dependency among defense spending and economic growth for some countries, especially if they take part in military conflicts or situated in unstable regions (Kusi 1994, 152). Ukraine could be also included in this category. But under the conditions of resources deficit and in the situation of economic recession, appears a question about defense spending effectiveness measurement. The problem of "Guns and Butter" (Yakovlev 2007) is inherent for all states, because in the case of resources distribution always exists alternatives for spending in social areas, which are extremely important during the pandemic.

The problem of organizations' performance measurement was intensively studied over the last decades both in the private and public sectors. It was established that organizations' performance measurement depends not only on the main stakeholders but also on the outside actors (Kaplan and Norton 1992, 71; Kaplan and Norton 1996, 75). Despite the wild popular ideas of westernization and private sector methodologies expanding, some researchers define that the public sector is progressive in performance measurement (Llewellyn 1996, 166). While on the other side some argue that we measure a lot of unnecessary things (Atkinson *et al.* 1997). This is the result of different stakeholders' needs and interoperability among them, which affects the development of multidimensional performance measurement system development (Fitzerald *et al.* 1991; Kaplan and Norton 1992, 71; Lynch and Cross 1991). We couldn't deny that in the public management system, it is becoming more and more popular to use private-sector patterns to solve existing public sector problems. This may be the result of the emergence and development of the theory of new public management and its popularization in the public authority in government bodies (Andrews and Van de Walle 2013, 762; Cohen 2016, 20).

In this study, the Armed Forces of Ukraine, which have existed for as long as the state, is an example of the development of performance measurement approaches and the application of new public management theory, under the pressure of in- and external powers. At this stage of reforms, the emphasis is increasingly shifting towards such definitions as management, performance, output, decentralization, efficiency and optimization, downsizing. These operations should help to increase the total performance of the ministry. However, there is a fundamental difference between the order and way of functioning of the public sector and private enterprises, and therefore some questions arise as to the appropriateness of using these methods (Barton 2004; Carling 2003) because the performance of the public sector is difficult to assess and measure through the usual business methods.

But the role and necessity of building a strong measurement system for business transactions and processes (Cyert and March 1992; Hedberg and Jönsson 1978, 47) cannot be denied, as well as its need for assessing the performance of budgetary expenditure classification programs. Measurements in quantitative terms allow us to assess the role of agents of the new public management system in these processes and to estimate their effectiveness because, with a qualitative approach, management compares plans with results. This is very important as it allows to create better transparency and improve measurement of processes (Almqvist 2004).

Bolton (2003) and Hood (1991) emphasized the introduction of new approaches to assessing program performance, as the emphasis has shifted significantly from resource accounting to performance accounting, which, of course, is one of the key elements in NPM. Recent years have influenced the role and place of performance measurement in the general system of public administration because now it is an integral structural unit of a more complex phenomenon that covers many dimensions (Skoog 2003, 487). It now combines tactical and strategic levels, a formal but not formal approach, financial and statistical indicators. The new methods are designed to provide answers to questions about the rationale for the existence of organizations and their contribution to the general welfare (Yahelska *et al.* 2021).

Such a multidimensional measurement system is a base for the development of a performance measurement system in organizations. In institutional theory, we are paid more attention to the question of the powers and pressure of the stakeholders, different groups (Pollitt 1986, 155). This helps to understand the process of building such a system and the influence of actors. DiMaggio and Powell (1983) determine two main institutional actors in contemporary society as state and different professions. Altered by the New Public Management theories, new topics for scientific discussion were developed. The combination not only of the resources management but also professional values stand on the cutting-edge of the research point of view (Abernethy and Stoelwinder 1990, 17; Broadbent *et al.* 1991, 1; Jones and Dewing 1997, 261; Llewellyn 1996, 166). The other widely discussed topic is the politician role in budgeting, and their influence on performance measurement (e.g., Covaleski and Dirsmith 1983, 323; Covaleski and Dirsmith 1986, 193; Jönsson 1982, 287; Wildavsky 1975). New trends, in theory, required the incorporation of purchases of public services (Brunsson 1994, 323; Powell 1991, 183). Also, according to Hood (1995) exists an important international difference in public sector model development.

The Ukrainian Armed Forces are undergoing significant transformation, with a focus on meeting NATO standards (Ordynovych 2020, 69). This includes the development of new financial supply methods to optimize resources (Bekishov 2021, 133) and the use of neural network and index forecasting to align development strategies with economic capabilities (Porokhnya and Ostapenko 2019). However, the effectiveness of these reforms is hindered by corruption, as seen in the need for improved internal audit processes (Sokolenko 2023, 49).

This paper presents the case of the Armed Forces of Ukraine as an example of fundamental reforms in the existing environment. This was the impetus for the search for new approaches to assessing results and setting targets for resource planning, considering the existing and necessary capabilities. However, there is still a problem of evaluating the efficiency and allocating resources, because there is a conflict between representatives of the professional class and financial managers, new stakeholders appear on the scene. This is especially noticeable for Ukraine under the conditions of a change in power after the elections and a change in the priorities of the new government (Almqvist and Hogberg 2003), which is an example of the inconsistency of reforms as a result of the absence of a pre-stock strategic vision of development.

The objective of the paper is to develop the existing theory domain of performance measurement (Lukka and Vinnari 2014, 1308), determine the role of performance measurement. We are going to inspect the impact of purchases of public services on the development of an effective measurement system in the public sector. As it was suggested earlier, there is a difference among different countries and cultures in the public sector. So, in this research will be provided action research of only one country, but some practical conclusions will advance existing theory. Moreover, a lot of recent studies were primarily concentrated particularly on healthcare and educational systems. While previous similar studies were conducted, we still have a lack of works in the defense sector.

In this research, the focus is on performance information. How it is affected by the actions and interests of different groups, what kind of information we accumulate in the defense sector for management needs.

The paper is structured as follows: in the second section, a brief literature overview is presented, outlining the accountability variations and discussing the performance measurement. In the third section, the methodological choice and the data are described. The fourth section represents the contextual background of the research, and the fifth is findings. Finally, the study closes with a concluding discussion and perspectives for future research.

1. Literature Review

The Ukrainian defense reform is expected to result in the establishment of effective, mobile defense forces equipped with modern weapon systems, military and special hardware able to guarantee national security and defense as well as provide an adequate and flexible response to military threats to the national security of

Ukraine sustainably using the available operational (combat) capabilities and resources of the nation (Ordynovych 2020, 69). We know that military reform is a necessary component of political and socio-economic reforms (Bekishov 2021, 133). One of the principal directions of such changes is development of performance measures.

Performance management is still a very difficult question for different sectors and a lot of papers examine it. Some efforts to estimate the multidimensional performance measurement was conducted by Lynch and Cross (1991), Kaplan and Norton (1992). Those methods were successfully implemented in the business environment. The next step was to research the implementation of such models in organizations (Kaplan and Norton 1992; Kaplan and Norton 1996). But only some of them were concentrated on practical issues.

A lot of studies discuss the effectiveness and of public sector organizations (e.g., Mayston 1985, 51; Midwinter 1994, 37). The other important point, in this case, is inputs, outputs, and outcomes in performance measurement (Van Peurse *et al.* 1995, 34). However, various performance dimensions are linked to different stakeholder interests. We are going to inspect this more thoroughly in this research. The successful implementation of multidimensional PMSs in public-sector services like defense is especially difficult.

This task has been affected by the fact that in recent years many public services have come under pressure to become more efficient and effective. To reduce their demands on taxpayers, while maintaining the volume and quality of services supplied to the public. This shifted the search for effectiveness in the public sector to private sector methods.

Jalali Aliabadi *et al.* (2019) discussed the “slack” problem of performance-based budgeting in public universities. According to their research, an important role in this problem plays performance measurement, which was also remarked by Van der Stede (2000) and Daumoser *et al.* (2018). But how to measure effectiveness in a situation, when as usual future expenses in the proposed budgets are overestimated to receive more budgeted resources from the ministry of finance (Niskanen 1971). The budgeting practices and their performance effect in the educational field were also analyzed (Agyemang and Broadbent 2015, 1018; Alach 2017, 102; Broadbent 2007, 193; Kallio *et al.* 2016, 685; Modell 2003, 333; Modell 2005, 537; Modell 2006, 219; Ter Bogt and Scapens 2012, 451), and their implementation of the business logic of actions through evaluation of performance consequences in the field. The other widely described and interesting sector from the point of performance in healthcare. Pizzini (2006) learned this question in US hospitals, while Kurunmäki and Miller (2006) examined the same problem in the UK, performance management methods and its accountability was developed in a lot of recent papers (Gebreiter and Ferry 2016, 719; Lachmann *et al.* 2016, 661; Veronesi *et al.* 2014, 35). A valuable summary of all actual recent studies in accounting and management fields was performed by Grossi *et al.* (2019).

It is extremely difficult to measure the performance of public sector organizations because of the growing hybridity and specificity. In public services there are interests of stakeholders and multiple dimensions of performance should imply a situation of complexity. The organization should build a balanced performance management system, reflecting all interests. For example, comparative analysis of Spain and Finland police performance measurements represents the influence of different logic in this case from various dimensions (Rautiainen *et al.* 2017, 165): there may be the financial and professional (operational and administrative) emphasis in measurement (Burns and Scapens 2000, 3; Burns and Vaivio 2001, 389; Kurunmäki 2004, 327; Lapsley 2009, 1; Lounsbury 2008, 349; Rautiainen and Jarvenpaa 2012, 164; Reay and Hinings 2009, 629).

Lynch and Cross (1991) and Kaplan Norton (1996) proposed an important idea for this research that performance indicators cascade according to the organizational hierarchy because each level has responsibility for different performance dimensions. This developed a specific instrument for management to explicitly analyze organizational activity.

Institutional theory defined performance, as institutional factors, which determine the different interests in the organization (Scott 1987, 493). Meyer and Zucker (1989) determine by several points:

- (a) Elites dominate an organization.
- (b) A high degree of professionalization exists.
- (c) The organization performs a technical function, outputs of which are measurable.

These ideas combine propositions from institutional theory (stakeholders and actors are involved) and make a significant emphasis on the role of performance measurement (what and how to measure, which leads to the idea of the right accountability).

The issue of performance budgeting and measurement in defense was considered from different perspectives: management and management accounting (Almqvist *et al.* 2011, 122), accounting (Catasus and Gronlund 2005), in terms of comparing costs and benefits and macrolevel (Kinsella 1990, 295), assessing the

implementation of specific defense programs (Hartley and Martin 1993, 195), and the micro-level for specific operations (Billyard and Donohue 2016, 794; Blanken and Lepore 2015, 516; Johansson 2019). All early studies were more concerned with outputs, while the latter focused more on outcomes. This is the transition in the public management theory to new approaches.

Billyard and Donohue (2016) define efficiency as the ratio of results to resources in military organizations but notes that only specific results are considered. However, we understand that the abundance of results and the specific indicators that are considered in the assessment have evolved. They proposed the practical side of the issue of assessing specific outputs and resources in terms of sigma accountability. Meanwhile, the outcomes are more and more difficult, because it is difficult to assess the world and the sufficient level of funding and the size of the armed forces for this.

Vasquez (2001) investigating the likelihood of wars and the achievement of peace established the defining factors of the existence of alliances and participation in blocs that guarantee collective defense, the dynamics of clashes with territorial and political issues, the development of weapons, and the army. At the same time, Wagner (1994) in his work proved that war is least likely if power is distributed equally, but only taking into account the distribution of political forces and prerequisites, as well as taking into account the interests of other states. One of the tensest periods in human history, characterized by competition between two opponents, is the Cold War (Allison and Zelikow 1999). However, it should be noted that the result of this confrontation was the development of such a phenomenon as proxy wars (Williams 2012, 61). This leads us to the conclusion that in order to assess the amount of "force required" it is necessary to clearly assess the potential threats. It should also be noted that in the skillful art of command and control, in order to increase the level of success in conducting defense or offensive operations, there are minimum standards for the balance of forces, which are determined by regulations and orders: personnel, weapons and military equipment, resources. In this way, we can rethink and more concretize peace outcomes for omega accountability.

$$Outcome = \frac{Peace}{Money} \xrightarrow{\text{convert}} \frac{Right\ power\ allocation\ (abilities)}{argmin(Money)}$$

The right power allocation in terms of finance means effective resource partition among defense sectors. It should be noted that the distribution of resources will be affected by participation in military blocs, provided that an effective system of collective defense falls asleep, it reduces the total defense spending of the state (Gonzalez and López, 2013). However, most modern conflicts take on the characteristics of hybrid and carry a very large destructive impact (Bluszcz and Valente 2022, 1). As Balcaen *et al.* (2022) point out, hybrid threats strongly shift the balance of power and force states to look at budget resource allocation. Right power allocation depends on the total amount of total resources distributed according to the threat's distribution from the potential state enemy and defense priorities. While minimizing the amount of funds is achieved through the application of innovative approaches to procurement, process optimization, savings, and the like.

As we could conclude from the mentioned above different approaches to measure effectiveness and efficiency were developed and adopted by the management. All of them try to balance the interest of the main stakeholders and professionals. The new power, which is extremely important in this process is the purchase of public services. They affect the transparency of the organization's accountability and, as a result, performance measurement, because the amount of the resources is limited it is important to control their spending. The main problem derives from the definition of defense and security. How to measure (account) such things, as a result, how to determine their performance.

In general, all discussed approaches could be divided into those related to budget planning and resource control, as well as those related to the assessment of results, development strategy. But the important thing is how we develop them, and who causes the primary influence on this process.

2. Methods and Design of the Study

In this research, the aim was to use various sources of information. In turn, to assess the impact of reforms, legislative acts over the past few years and their impact on the development of performance measurement were analyzed. Both national and internal ministerial acts were analyzed. We also took part in the meeting of the command level, either the further direction of the development of the structure of the Armed Forces, or the system of financial support and the state of accounting were discussed. Several interviews were conducted with managers of the financial departments of military units, who work in both civilian and military positions.

One of the authors of the paper was involved in the teaching of the course "Accounting in the Armed Forces". It has been given to the cadets of the Military Institute of the Taras Shevchenko Kyiv National University for over 10 years. It is laid out for future officers of financial and economic bodies, as well as for current officers in

different courses. Among the listeners, there are representatives of the Land Forces, Airborne assault forces, Air Forces, as well as Naval Forces and other formations. The course focuses on the role of the financial officer in local units as chief accountant, examines the issues of accounting, reporting, the role and responsibility of officials of different departments, their interaction. The issues are primarily focused on the tactical level but within the framework of the general strategy for the development of accounting in the state and the Ministry of Defense. During the teaching, there are many practical discussions, because the cadets annually go to practice (internship) in local units, and the officers on the courses already have their own experience in positions in the troops, so they are familiar with the system of financial support, accounting, and administrative work. These people are representatives of the financial managers of the third, lowest, level.

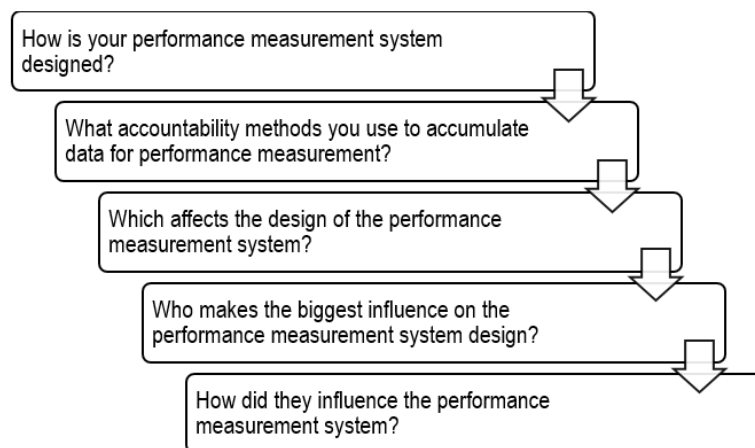
The next level is the financial and economic departments of the branches of the armed forces, operational and military commands, and territorial districts. They are composed of both civil and military personnel, however, the number of personnel in financial departments is small, and this depends on the implementation of the tasks. Several nearby local units are subordinate to these departments. Financial managers at this level have extensive professional experience in managing various departments and resources. They delve less into accounting processes in local units and focus more on management accounting. Their task is to collect low-level information and provide it to other users for making management decisions.

The Finance Department of the Ministry of Defense maintains records and summarizes information at the highest level. They are subordinate to the financial bodies of managers of funds of the second and certain third levels. At this level, attention is already being paid to the analysis of the activities of the branches of the Armed Forces and their state of health. Nobody focuses on individual local units, because they do not serve as the basis for accounting at such a high level. The advantage here is also given to management accounting. The units are composed primarily of officers and civilians, who may or may not have military experience, but many of them have at one time passed military service.

During the study, interviews were conducted with representatives of various levels of budget funds managers and branches of the Armed Forces in order to compare approaches to assessing the effectiveness of their activities and budget performance. Some interviews were organized remotely due to the distance of the units.

Conducting a documentary analysis append the whole picture with more objective answers to these issues. Fig. 1 depicts the logic of the interviewing process, moving from general to specific questions. To reflect the picture and collect necessary information the questions were structured to answer: who, why, what, and how. More than twenty interviews were organized with representatives of different command levels.

Figure 1. Typical interviews comprising from several questions.



At the command-level discussions, representatives of various controlled units described the internal environment of the units, as well as the possible risks that arise in the process of their functioning. Subsequently, the reflection of the results of this work was formalized in risk catalogs, regulations, and instructions, as well as other working documents of these units.

Attention was also paid to reports on the implementation of budget programs, which were published for 2012 - 2018 by the Armed Forces. The chosen period was selected by us as it reflects undistorted data, which in subsequent years were distorted by the COVID-19 pandemic, and from 2022 to the present by the state of war in Ukraine. An important document is the annual White Papers, which contain all areas of activity and determine

priorities for the coming years. It also researched numerous interviews of officials on the website of the Ministry of Defense, as well as in the official publications of the Armed Forces.

The greatest attention was paid to what was declared and implemented in the reform process and what attention was paid to budget performance. Of course, given the long period of reforms, there is no direct implementation of changes, they are introduced non-linearly. Moreover, it should be noted that this phenomenon is typical for different time intervals during which the study was carried out. Of course, one can appeal to the subjectivity of researchers and respondents, because they have been working in the field for a long time and are already accustomed to the peculiarities, but the data was provided for review to unauthorized persons. The Armed Forces in this study reflect the development and implementation of new approaches in management theory to solving problems of assessing results.

The next section presents context and key findings obtained after analyzing the interview and official documents, and from meeting with civil and military personnel in the defense sector.

3. Contextual Background of the Reform in the Armed Forces of Ukraine

The manning system of the Armed Forces of Ukraine is hybrid. It provides for the compulsory conscription of men and recruitment by contact of officers, sergeants, and soldiers. Civilian personnel mainly perform administrative functions. The development of civil defense and the training of reserve units play a significant role in the state's defense system. The service of women is not compulsory, as in some countries of the world, but if they wish, they can be accepted into military service on contract and perform duties in positions for which there are admissions for women. This approach, a combination of compulsory military service for men and the gradual recruitment of the Armed Forces on a professional basis, aims to mobilize significant forces quickly and effectively if necessary.

However, the normative number in recent years has been constantly changing and since 2001 more than 400 thousand people have been reduced until 2014. The increase in the number was facilitated by the temporary annexation of the territory of the state and the beginning of an anti-terrorist operation. This led to the growing importance of the role of the Armed Forces in society, as only one of the directions of government spending, but also as a guarantor of the territorial integrity and independence of Ukraine. Although after the end of the acute phase of the conflict and after the establishment of the regime of silence, the issue of optimization, redundancies are again beginning to rise in the offices of government officials.

As well as the number of personnel, the amount of funding for defense needs has seriously changed. Despite the officially approved volume of 3% of the state's GDP, it exceeded this figure only after 2014. Although it should be noted that in dollar terms, the volumes have increased, the percentage is still distributed between budget programs as follows: 70-80% of the maintenance of the Armed Forces, 10-15% of weapons, and 10-15% on reform.

Using the annual financial statements and White Papers of the Ukrainian Armed Forces, the table 1 below was constructed. It reflects the 2001-2013 trend towards a reduction and decrease in defense funding, as well as positive developments since 2014. As noted earlier, special attention should be emphasized on the fact that the goals and conditions for the functioning of public sector institutions depend on political forces, stability in the state, priority directions of its development, which are set by the main actors. They can change from election to election. However, in addition to the supreme commander in chief, the vision within the ministry is also extremely important. We understand that the results of reforms cannot be expected in the short term, and they can be felt only after a certain period of time with consistent and structural changes and in case of stability. With constant changes in the command-and-control apparatus, it is difficult to determine the main vectors of development of the Armed Forces and follow them for a long time.

Only after 2014, amid the existence of open-armed aggression, it was possible to determine the final direction of Euro-Atlantic integration, develop a strategy and achieve certain stability in the medium term. Now we are at the stage of adapting European norms and standards, developing new doctrines, laws, orders, and instructions that would help Ukraine in building interoperability among NATO countries in an existing co-defense system. Significant structural changes have taken place in the structure of the Armed Forces, in the delineation of powers in planning and managing resources and troops.

These reforms can be considered to be the result of manifestations of isomorphism (DiMaggio and Powell 1991), which are inherent in many organizations. For the Armed Forces of Ukraine in a situation of uncertainty, it acquires signs of mimetic and coercive changes. There are attempts by the state to copy the patterns of more progressive European partners, and to adopt NATO STANAG norms as necessary prerequisites for the integration. The pressure for these transformations that exists from the point of view of society no longer sees Ukraine as a constituent of the post-Soviet republics, but the country wants to be a full-fledged member of

European society. Biased by this fact, the army on the crest of these changes is a component important for maintaining the integrity of the state. And according to Oliver (1991), we could highlight the military response to reforms as compromise and acquiescence. There is a strong gap between the planned activities and the results.

Table 1. Reflect of the trends towards a reduction in defense funding

| Year | Share of GDP | Military expenditures in current USD \$m. | Personnel | | | Political Actors | | |
|--------------------------|--------------|---|-----------|----------|---------|-----------------------------|---|---|
| | | | Military | Civilian | Total | Political power (President) | Ministers of Defense | |
| Peace time | 2001 | 1.9% | 741.71 | 314,395 | 101,455 | 415,850 | Leonid Kuchma | Oleksandr Kuzmuk |
| | 2002 | 2.0% | 872.39 | 306,507 | 98,780 | 405,287 | | Volodymyr Shkidchenko |
| | 2003 | 2.1% | 1,104.81 | 295,490 | 94,525 | 390,015 | | Yevhen Marchuk |
| | 2004 | 2.0% | 1,322.22 | 265,535 | 89,485 | 355,020 | | Oleksandr Kuzmuk |
| | 2005 | 1.9% | 1,680.11 | 210,000 | 75,000 | 285,000 | Viktor Yushchenko | Anatoliy Hrytsenko |
| | 2006 | 1.9% | 2,085.90 | 180,000 | 65,000 | 245,000 | | Anatoliy Hrytsenko |
| | 2007 | 1.9% | 2,860.87 | 165,000 | 56,000 | 221,000 | | Anatoliy Hrytsenko |
| | 2008 | 1.8% | 3,360.26 | 152,000 | 48,000 | 200,000 | | Yuriy Yekhanurov |
| | 2009 | 1.9% | 2,320.41 | 149,000 | 51,000 | 200,000 | | Valeriy Ivaschenko |
| | 2010 | 1.9% | 2,587.45 | 150,000 | 50,000 | 200,000 | Viktor Yanukovych | Mykhailo Yezhel |
| | 2011 | 1.5% | 2,502.30 | 144,000 | 48,000 | 192,000 | | Mykhailo Yezhel |
| | 2012 | 1.6% | 2,835.91 | 139,000 | 45,000 | 184,000 | | Dmytro Salamatin |
| | 2013 | 1.6% | 2,895.00 | 120,900 | 44,600 | 165,500 | | Pavlo Lebedev |
| Anti-Terrorist Operation | 2014 | 2.2% | 2,997.18 | 204,000 | 46,000 | 250,000 | Oleksandr Turchynov Petro Poroshenko | Ihor Tenyukh, Mykhailo Koval, Valeriy Heletey |
| | 2015 | 3.3% | 2,959.58 | 204,000 | 46,000 | 250,000 | | Stepan Poltorak |
| | 2016 | 3.2% | 2,943.81 | 204,000 | 46,000 | 250,000 | | Stepan Poltorak |
| | 2017 | 2.9% | 3,246.79 | 204,000 | 46,000 | 250,000 | | Stepan Poltorak |
| | 2018 | 3.2% | 4,169.71 | 204,000 | 46,000 | 250,000 | | Stepan Poltorak |

Therefore, given the speed of changes, the state leadership understands that the prospect of Ukraine's potential entry into NATO is far away. However, Ukraine, first of all, relies solely on its forces to protect the borders. That is why the participation of personnel in peace and security operations abroad has been minimized. After all, the geopolitical situation around our borders becomes tense and unstable from almost all sides. The main priority goals for the Armed Forces at the moment in accordance with the strategic defense bulletin approved by the Presidential Decree are:

1. Development of the control system of the Ukrainian Armed Forces based on the principles and standards adopted by the NATO member states;
2. Improving the defense planning system, introducing transparent and efficient resource management in the Ministry of Defense and the Armed Forces using modern Euro-Atlantic approaches;
3. Acquisition of the potential of the Armed Forces for a guaranteed rebuff of armed aggression, defense of the state, and participation in the satisfaction of peace and international security;
4. Creation of a unified system of material and technical support and improvement of the medical support system of the Armed Forces in accordance with NATO standards,
5. Professionalization of the Armed Forces of Ukraine and the creation of the necessary military reserve of the Armed Forces of Ukraine;
6. Supporting the existing capabilities of the Armed Forces of Ukraine;
7. Development of weapons and military equipment.

According to the strategic goals, operational goals for the direction of the development of the Armed Forces related to resource management have been determined, which need to be resolved within a short period of time. Among them, the introduction of Euro-Atlantic approaches and principles to the construction of a defense planning system, the creation of an integrated risk management system, the introduction of planning the development of the defense forces' capabilities, the creation of an integrated procurement system in the Ministry of Defense of Ukraine, the improvement of the mechanism for the formation and implementation of the state defense order, the implementation of an infrastructure management system and its development, depriving the Ministry of Defense of Ukraine of functions unusual for it.

Therefore, the revision of approaches to assessing the results of budget execution closely correlates with the strategic and operational goals that have been identified for the Armed Forces. This is especially true for Ukraine as a state, takes part in armed conflicts, and is also constantly at the stage of reforming and developing the army. Since 2001, there have been many changes in the size of the Armed Forces, the state of funding, and a change in the direction of development and integration, which were due to the political component.

An analysis of the functioning of the Armed Forces and the context of their functioning allows us to conclude that it is political forces that have a significant impact on the vector of development. When the political regime changes, the representatives of power in management and command change. At the same time, only recently we came to the distribution of functions between the Ministry of Defense and the General Staff. That is, the distribution of responsibilities in the allocation of resources has risen to a higher level, and the issues of accounting and efficiency have reached a new level.

There is substantial evidence that defense spending decisions in democratic countries are influenced by citizen preferences (Eichenberg and Stoll 2003, 399). Findings also show that defense budgeting is representative: public support for defense spending is the most consistently significant influence on defense budgeting change in some countries.

Public attention to the transparency of processes in the army increased after the revolution of dignity and the outbreak of armed conflict. Civilian control by recipients of public sector services has become widespread. At the moment, many positions are being introduced, the functional responsibilities of which are related to public control over decision-making by management. And they have a significant impact because they represent the interests of the public, special attention is paid to the reforms of accounting and spending of financial resources. Therefore, the Armed Forces have become one of the leaders who have joined the transformation of defense procurement, because this has made it possible to optimize costs and save resources.

It should also be noted that pressure from international organizations has increased since 2014. This is due to the fact that the Armed Forces of Ukraine have chosen the vector of development in NATO. Thus, the Euro-Atlantic community makes demands on the standardization of all processes in the army. Most directorates and departments now include representatives from international organizations as consultants. As donors of international technical assistance and grant providers, they are interested in implementing accountability and performance measurement.

The next section will reflect findings regarding performance budgeting measurement and accountability.

4. Findings

The main basic elements of the strategic development vector of the Armed Forces are established in the strategic level documents. The issue of resource management in accordance with international standards and performance monitoring, capacity planning play an important role in this. So, by order of the Ministry of Defense of Ukraine dated December 29, 2020, No. 497 "On the implementation of the Decision of the Board of the Ministry of Defense of Ukraine" it is determined:

"[...] the acquisition of the operational (combat, special) capabilities of the defense forces necessary for a guaranteed repulse of armed aggression, state defense, maintenance of peace and international security [...]."

Isomorphism and imitations of NATO countries are now also of a normative nature since it contains a clear formulation in strategic documents:

"[...] building a defense management system based on the best practices of NATO member states, creating a modern defense resource management system [...]."

The Minister of Defense set the task of harmonizing regulatory documents and doctrines as a basis for further cooperation with NATO member states. We are also reforming the organizational structure in accordance with these principles.

"[...] harmonization of the hierarchy of doctrines of the Armed Forces of Ukraine and high-level doctrinal documents (in NATO terminology) with the principles and approaches of NATO and partner states [...]."

“[...] conducting a clarifying GAP analysis of the capabilities of the Armed Forces of Ukraine, which provides for a comparison of the desired and real results and determining the gaps between them, and the development of programs (projects), the acquisition (achievement) of the necessary operational (combat) capabilities [...]”

These changes are due to pressure from international regulatory bodies and advisers who seek to implement an effective system of accounting, monitoring, and performance evaluation. They already had a negative experience in implementing reforms in Afghanistan:

“[...] We have spent a lot of time and effort in reforming Afghanistan. Corruption at various levels has become a major obstacle to our reforms. The leadership of the state and the military has distorted and transformed all our efforts through the prism of corruption. We are forced to accept that we have failed, but we have drawn the appropriate conclusions. [...]”

As a result, international advisers increase the requirements for the organization of internal control and accounting in the Armed Forces. It also encourages the development of democratic civilian control over the military organization and law enforcement agencies of the state. Today in Ukraine there are certain achievements in the formation of democratic civil-military relations - the creation of a public forum for an open dialogue, increasing the level of transparency in defense planning and budgeting processes.

“[...] The system's resilience to change is predictable and expected, but we will continue to aggressively expand the practice of good democratic civilian governance in the defense sector, following the example of NATO member states. The prospect of membership in the Alliance forces us to abandon the military hierarchy of the model of a past era and is the key to the inevitability of our Euro-Atlantic transformation. [...]”

The key point in this transformation for civil control as representatives of purchases of public services was effective resources allocation. During the briefing, the Head of the Department of Military Policy, Strategic Planning and International Cooperation of the Ministry of Defense of Ukraine noted that:

“[...] Speaking about the efficiency of resource management, it is necessary, first of all, to talk about effective planning. Each allocated hryvnia should be used with maximum efficiency, which will allow for more rational use of resources for defense needs to develop the capabilities necessary to perform certain tasks. [...]”

Based on a specific strategy and vision for the further development of the Armed Forces, recommendations for defense planning based on capabilities were developed, which included a catalog that meets NATO standards. He determined that:

“[...] Capability-based defense planning involves functional analysis. Functions and tasks to be performed in anticipated (likely) future operations are transformed into capability requirements, on the basis of which their creation, maintenance, and development are planned. [...]”

Capability-based defense planning involves the creation, development, and maintenance of an optimal mix of required capabilities within available resources. Material resources are not always the determining factor in the development of abilities. Effective ways to build up capabilities can be improving the doctrines, increasing interoperability, structures of military command and control bodies and military units, the introduction of new forms and methods of conducting operations and hostilities, improving the system of selection, training, exercising, and motivation of personnel.

Unlike threat-based planning, capability-based defense planning is about focusing efforts not on creating new organizational structures to counterbalance the enemy's appropriate combat potential, but on developing the capabilities of troops (forces) to effectively perform certain tasks.

Representatives of top-level military command and control bodies believe that capacity-based planning and performance measurement are rather vague concepts, but with which the constant needs to operate in their activities when assessing the implementation of programs.

“[...] The activities of the Armed Forces are difficult to evaluate from the point of view of a specific result in the form of specific figures to describe combat readiness and its sufficiency. However, now we are moving alongside the assessment of capabilities, territorial integrity and ensuring inviolability [...]”

Outcomes become especially important in situations where financial resources have to be allocated between different ministries. But the need for the Armed Forces grows only when there is a real threat. In peacetime, a sense of security is possible even with a minimum number of troops, as the experience of many states shows, especially if they participate in military blocs to ensure collective security.

Financial managers of the intermediate level, located between the local units and the high level, note that they are more focused on the results of the work of subordinate units, on the balances of financial resources, and the directions of their use.

“[...] We ourselves develop forms for accounting and monitoring the implementation of parts of estimates. We are interested in the allocated financial resource and the procedure for its use, the result. I report to the commander, and he is interested in the state of the subunits' progress, their fulfillment of planned targets, and what effect this has on their readiness to perform tasks as intended [...]”

For the heads of financial bodies in the smallest structural units, special attention is paid to monitoring the resources received and monitoring the compliance of officials with the norms and requirements of governing documents.

“[...] Our financial and budgetary reporting is built around indicators, centered around control over the accounting of allocated resources. We do not report on the efficiency of spending funds. The main issue was and remains controllability and accountability, legality, minimization of risks in the process of spending funds. a cut of the functioning of accounting for us the results of audits [...]”

Managers of all levels do not operate with the concepts of theory and are not based on it when making their decisions. However, it should be noted that even without understanding the theoretical basis, many of their conclusions and actions strongly correlate with the concepts of PPM, NPM, and Institutional theory.

5. Discussion

It is difficult to underestimate the role of the Armed Forces for the state at this stage. On the one hand, they are designed to satisfy society's need for security, and on the other, they reflect changes in society towards European integration. Under pressure from society and international organizations, many systemic changes have been made, which consist of the implementation of NATO standards, as an imitation of the experience of more successful countries. The military understands that we are a country of the post-Soviet Union, where defense planning was carried out not in accordance with the available capabilities, but taking into account potential threats, which means it was not limited in resources. The conditions of a market economy set restrictions, and as for a post-Soviet country, we are forced to adapt to them. Effective assessment of capabilities and planning of resources, conducting joint forces operations, hybridization of approaches to accomplishing assigned tasks, development of new scenarios and approaches are designed to optimize these processes. That is why, given these new approaches, accounting and performance management issues play a decisive role as a prerequisite for assessing efficiency.

The answers of practitioners and the analysis of documents allow us to assume in the construction of a system of indicators used and needed at various levels of management (Table 2).

Table 2. System of indicators used at various levels of management

| Level of management | Elements of Performance Management system | | | |
|--------------------------|---|---------------------|-----------------------|-----------------------|
| | Inputs | Process and control | Outputs | Outcomes |
| I | + | + | + | + |
| II | + | + | + | |
| III | + | + | | |
| Public management theory | Progressive public administration | | New public management | Neo public management |

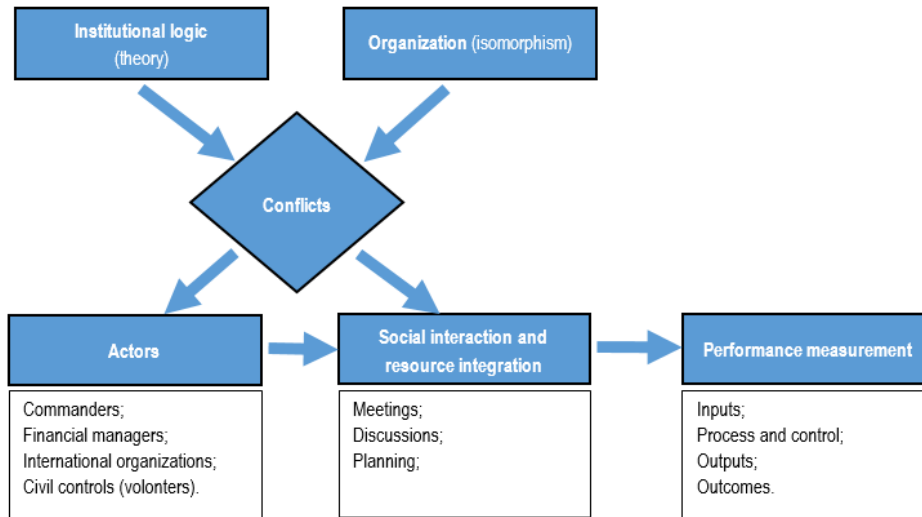
While local units are focused on controlling inputs and processes, which in fact is a reflection of the combination of lambda and theta accountability in PPM, the leaders of territorial groupings consider the issues of control over outputs as an element of sigma accountability in NPM. The most important, but least deterministic here is the measurement of outcomes from the point of omega accountability. This is a new wave of Neo public management.

The Armed Forces of Ukraine are changing, and despite the presence of gaps between some planned activities and actual results, we understand that the process of introducing completely different and new approaches to resource management and assessing the effectiveness of their use is underway. And this is evident in the increasing attention that is given to the values and principles of NATO, and the outcomes of the defense sector.

Experts note that it is external forces that have a significant impact on the formation of the domestic system of accounting policy and performance assessment: public organizations, civil control, international advisers and organizations (Figure 2). And although some efforts are also being made by representatives of the

command, they also agree that, in fact, in the process of introducing new multidimensional systems for assessing performance and accounting policies, they are faced with problems of corruption risks that stimulate deliberate imitation of changes and reforms, and also do not allow achieving the desired results.

Figure 2. External forces that have an impact on the formation of the domestic system of accounting policy and performance assessment



The main driving force that makes it possible to overcome these obstacles is precisely the external oversight by the subjects who are not involved in the system and have no interest or compromising ties with other actors. Therefore, reforms in accordance with NATO standards are so important for the Armed Forces of Ukraine. They include external observers from direct consumers of the defense sector, international observers. These are all steps towards building an effective control and accounting system.

Conclusion

The findings of this study relate to the combination of different theories for the case of the Armed Forces of Ukraine, as a reflection of their transformation in response to existing challenges.

First of all, we see that reform is a response to an internal need for change and imitation of more successful, efficient, and progressive armies.

Secondly, these changes are taking place under external pressure from society, as a response to the integration of the state into the Euro-Atlantic space and a new vector of development.

Under the pressure of these institutional changes, there is also a revision of efficiency indicators, a system for constructing an assessment of budget execution and their measurability. We see that despite the evolution of public management approaches, they should be considered only systematically, since different components of the theory are important at different levels of management and are also concentrated on various accountability objects.

This study shows a structural shift to the outcome values in performance and introduction of a new approach to its meaning as “peace outcome” definition. It was determined the role of accountability for performance measurement and the role of external actors in this process.

We determine the new power of actors for Armed Forces. While during the previous years we observed only indirect influence of society on the performance management system. Today, we have a lot of representatives on the command level. This civil control actively participates in the process of performance management and control development. This was a Ukrainian emerging phenomenon called volunteers, which developed into powerful public movement and force.

Further research can be directed not only at the qualitative but at the quantitative side of the problem. The researchers could dive deeply into the question of hybrid threats for defense management, their evaluation, and the reaction of the management. Probably it could develop the idea of interaction among command staff, financial managers, civil control representatives, and external organizations.

Credit Authorship Contribution Statement

Vadym Pakholchuk: Conceptualization, Methodology, Project administration, Writing – original draft.

Kira Horiacheva: Conceptualization, Investigation, Supervision, Writing – original draft.

Yuliia Turchenko: Investigation, Data curation, Validation, Writing – review and editing.

Oles Koval: Methodology, Project administration, Validation, Writing – review and editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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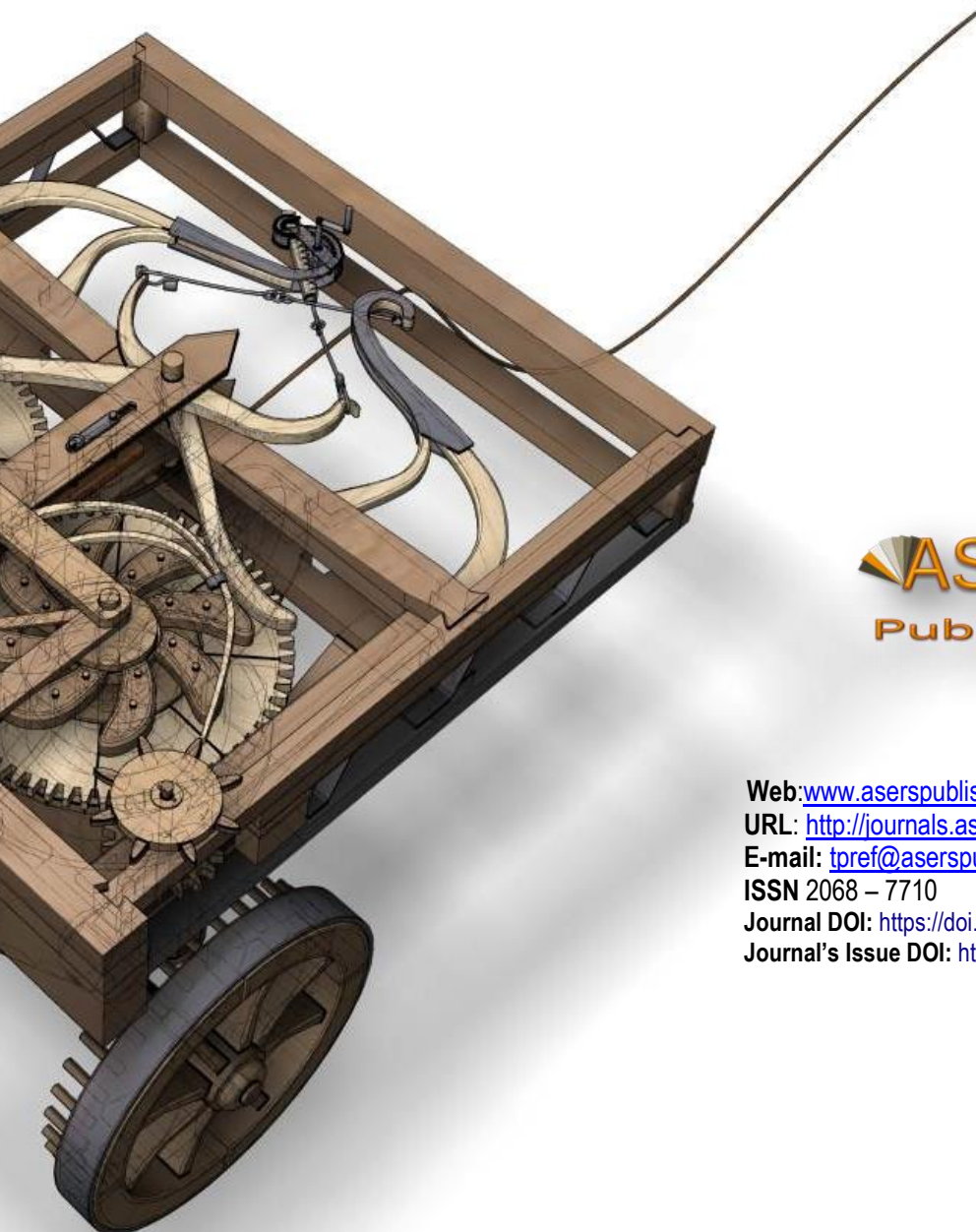
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