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**FINANCIAL MANAGEMENT OF LOCAL AUTHORITIES:
ON–WAR AND AFTER–WAR PERSPECTIVE**

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Insurance,
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ABSTRACT

This thesis investigates the financial management practices of local authorities in Ukraine during the ongoing war that started after a full-scale invasion in February 2022. The study was conducted through a qualitative case study approach, with data collected from analysis of official documents and reports, interviews, and observation of relevant activities. Using the complexity theory as a lens, the study considers the financial system as a complex adaptive system. It identifies the challenges associated with budgeting, spending, and managing funds during an armed conflict. The study highlights the importance of understanding the complexity of the financial system and the various factors that influence it, including the impact of the war on the country's economy, the need for flexibility and adaptability in financial management, and the importance of securing financial resources to support the restoration process. The findings reveal that local authorities faced significant challenges in managing their finances during the war, including limited financial resources, reduced revenues, increased expenses, and difficulties accessing external funding. Despite these challenges, local authorities adopted various strategies to cope with the situation, including prioritizing spending, seeking alternative funding sources, and implementing cost-saving measures. However, the study also identified several limitations, including the small sample size and the need for more generalizability of the findings to other contexts. Nevertheless, the study contributes to the understanding of financial management practices in a conflict-affected context and provides valuable insights for policymakers and practitioners working in similar contexts.

Keywords: financial management, local authorities, Ukraine, Russian invasion, post-war recovery, war, budgeting, public finance, conflict-affected areas.

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Glory to Ukraine!

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LIST OF ACRONYMS

EU – European Union

FTC – formed territorial communities

GDP – gross domestic product

IFI – International financial institutions

IMF – International Monetary Fund

MDB – Multilateral development banks

NBU – National Bank of Ukraine

OECD – Organisation for Economic Co-operation and Development

OHCHR – The Office of the United Nations High Commissioner for Human Rights

PPP – public-private partnerships

PWR – post-war reconstruction

RDNA – Rapid Damage and Recovery Needs Assessment

UN – United Nations

UNHCR – United Nations High Commissioner for Refugees

US – United States

USA – United States of America

USAID – United States Agency for International Development

USD – the United State Dollar

I. INTRODUCTION

Harrison (2022) and Akbulut-Yuksel (2022) state that military conflicts can cause significant economic and human capital losses. The extent of the impact depends on various circumstances, including the area occupied by enemy forces, the intensity of bombings, and the destruction of human capital and physical infrastructure. The duration of war activities can compound these losses and may have long-term effects. The societal consequences of war can be devastating and long-lasting, affecting various aspects of society, including economic, social, political, and cultural.

Rebuilding societies after wars is an intricate process that involves addressing not only physical destruction but also issues related to social and economic recovery, as well as peacebuilding. This complexity is further compounded by the lack of institutions and the fragile social conditions that often arise after a conflict (Kreimer, Eriksson et al., 1998; Barakat, 2010). Barakat (2010) defines post-conflict or after-war reconstruction as a range of interrelated activities designed to reactivate economic and social development while simultaneously creating a peaceful environment to prevent violent relapse. Conflict reconstruction is a multifaceted process that involves the restoration of law and orders alongside efforts to improve governance, rehabilitation and development, justice and reconciliation. It is a complex and holistic process that addresses the various social, economic, and political issues that arise after conflicts. The process of reconstructing after a conflict usually includes economic aspects, such as providing aid to those in need, repairing damaged infrastructure and facilities, restoring social services, creating conditions for the private sector to grow, and implementing necessary reforms for long-term economic stability and growth. The efficiency of post-conflict reconstruction depends significantly not only on political, institutional, and sociological actions but on the quality of implemented economic policies (Makdisi, Soto, 2023).

While there have been several academic studies on the local financial management for after-war recovery (Angstrom, 2001; Sesay, 2009; Annan, 1998; Barakat, 2005), the literature on the financial management of local governments during the war is relatively sparse. This gap in the literature is particularly significant given the critical role that local governments play in providing essential services and infrastructure during wartime, as well as the unique financial challenges they face. Therefore, there is a call for deeper research on the financial management of local governments during wartime, particularly in contexts where local governments may have limited resources and capacity to cope with the financial burden of war. As such, this study aims to contribute to the understanding of local financial management during wartime

by exploring the financial strategies and practices adopted by local governments, as well as the impact of war on local financial management and its implications for post-war reconstruction and development.

The violent Russian invasion of Ukraine on 24 February 2022 caused the most significant conflict in Europe since World War II, triggering deep humanitarian, economic, social, and geopolitical crises affecting millions of people (Grossi & Vakulenko, 2022). In Ukraine, the ongoing conflict has caused significant damage to the country's infrastructure, displaced millions of people, and led to a loss of human life. The war has also impacted the country's economy, with the government facing challenges in financing the restoration process. The current damage to Ukraine from the invasion of the Russian Federation is extensive and covers various areas of the country's life.

According to United Nations (UN) estimate, as of 2 May 2023, more than 8,709 people have died due to the war in Ukraine, but the actual figure is much higher (OHCHR, 2023). Infrastructural losses in Ukraine are also vast and frightening – several critical infrastructure objects (heating networks, power plants, water supply channels, etc.) were damaged or destroyed, as well as villages and cities, medical, educational, and social institutions, enterprises, residential buildings in cities like Mariupol, Kharkiv, Chernihiv, Irpin, Bucha, Borodyanka, etc. This led to significantly deteriorating the population's quality of life and difficulties in providing the necessary services.

The war has had a vital impact on social processes in Ukraine. It has caused an increase in the number of refugees and internally displaced people, a deterioration in health care, and a low standard of living for many people. About 8 million people left Ukraine for neighboring countries and the whole world and about 6 million more were forced to move within the country; 17.6 million require humanitarian assistance (UNHCR, 2023).

The war led to a significant reduction in Ukraine's economic capabilities, causing a decrease in production and exports, a deterioration of the investment climate, a devaluation of the national currency, and inflation. According to National Bank of Ukraine (NBU) calculations, due to the ongoing war and energy terror, the drop in GDP in the 4th quarter of 2022 reached 35% annually (National Bank of Ukraine, 2023a). The Russian invasion of Ukraine led to a massive disruption of economic activity chains and infrastructure destruction; the current damage estimate is ~ 600 billion dollars. Moreover, this number continues to grow (European Commission, 2022). In addition to the urgent need to fund enduring, costly, and large-scale military operations daily, Ukraine also needs enormous resources every month to

keep the economy functioning during the war and to help to recover after it – the International Monetary Fund (2022a) (IMF) estimate for the best-case scenario in 2023 is 3\$ billion USD monthly. However, with the constant massive missile attacks, the number is increasing to 5\$ billion USD.

In the conditions of the current scale of destruction, it is difficult to focus and determine which of the directions of recovery is more or less *critical*. Prioritizing recovery is a challenge the state must respond to in the short term at the local level. In parallel with this, state regulatory bodies must carry out work on finding financing for such restoration and its further management. The responsibility of state bodies here is to ensure that the restoration process is coordinated and effective. Otherwise, the resources available for restoration could be misused or wasted, leading to delays in the restoration process or even exacerbating the damage caused by the disaster. Various financial mechanisms can be applied to address the challenges of restoring Ukraine's infrastructure and economy, for example:

- public-private partnerships (PPPs), where the government partners with private-sector investors to finance and manage infrastructure projects;
- the use of credit programs from multilateral development banks (MDBs) and international financial institutions (IFIs) to finance the restoration process.
- New financial instruments like green bonds could be issued to finance environmentally sustainable infrastructure projects (Ukraine Reform Conference, 2022).

Furthermore, the state regulatory bodies have access to a range of financial resources that can be used to support the restoration process. These resources include state budgets, international aid, and loans from international financial institutions. By securing these resources and managing their use, the state regulatory bodies can help ensure that the restoration process at the local level is adequately financed and that the affected communities receive the support they need.

Even after receiving such assistance from international partners, it is necessary to understand what to spend on clearance. Currently, Ukraine is suffering from losses in many sectors of the economy, many of which are interdependent, and the connections between them are essential for recovery for the survival of the country as a whole – Russian aggression led to the destruction of critical infrastructure facilities, including key ones for several industries, large-scale flows of refugees, particularly abroad, etc. Success in the after-war recovery of Ukraine's economy, in particular with the help of other countries, can be achieved with the

active participation of the state within the framework of the application of the project approach. It makes it possible to ensure the effective implementation of innovative projects with active state stimulation and the creation of framework conditions, as well as to meet the needs of external investors.

Therefore, in my further work, I need to investigate how local authorities provide financial management during and after the war, so the research questions are as follows:

RQ1: What is the economic scale of losses of Ukraine during the year of the war and the amount of financing needed to overcome the immediate crisis and to carry out recovery after the war?

RQ2: How do local authorities conduct financial management during wartime and manage to govern under systemic complexities occurring unpredictably?

The ongoing war between Ukraine and Russia that began in 2014 has posed a unique challenge to the financial management of local authorities in Ukraine. Not only do local governments need to address the immediate needs of the conflict (on-war perspective), such as military and police operations (in the territories where combat events take place directly), repair of infrastructure damage, provision of aid, maintain basic services in general, but they must also consider the long-term recovery and development of their regions (after-war perspective). This duality of the problem has placed significant strain on the financial management of local authorities.

Local authorities in Ukraine faced significant challenges in adapting their budgets to the realities of the ongoing armed conflict with Russia while still maintaining budget planning in 2022 and will continue to cope with them as the war stays active. One method to address this challenge is to set priorities and budgets based on the most critical needs and adjust them in response to changing circumstances.

The war has created a complex and dynamic environment for local governments, in which they must balance a range of competing needs and priorities. Complexity theory can provide insights into the challenges local authorities face in Ukraine. Complexity theory suggests that such systems are difficult to predict and control and that small changes can have large and unpredictable effects (Holland, 1995). In the context of local governance in Ukraine, this means that the financial management of local governments is likely to remain an ongoing struggle as long as the conflict continues and its effects endure. The ability of local authorities

to adapt to changing circumstances and respond to their communities' demands will be critical to their success. Complexity theory also suggests that solutions to complex problems are often found through experimentation and learning rather than through top-down planning and control (Holland, 1995). This suggests that local authorities in Ukraine may benefit from adopting a more flexible and adaptive approach to financial management, one that is responsive to the needs and demands of their communities.

By using a document analysis method through systematic review and analyses of reports, policy documents, budgets, and guidelines, together with conducting interviews with representatives of public authorities, as well as highly qualified experts and scientists in the field of public finance, it was gained a wider understanding of the context of the local financial management and the impact of war on it.

Overall, even under such harsh conditions, Ukraine, striving to overcome crisis phenomena through post-war reconstruction, has a unique chance not only to compensate for the existing losses from the war but also to rethink, redesign and modernize buildings and boost the growth of economic and the quality of life of the population. In addition, by developing recovery plans based on the principles of synergy with EU rules and standards (both at the regulatory and infrastructural levels), Ukraine has a chance to accelerate the synchronization of various sectors of the state's functioning with European norms. It will stimulate the course of integration into the EU. The long-term nature of reconstruction makes it possible to build new facilities of better quality, using advanced and ecological technologies (the principle of Build Back Better), which in turn will lead to an improvement of the investment climate, strengthening of competition, transparency, and integrity between sectors, promoting digitalization and increasing research, developments, and innovations.

II. THEORETICAL PART

The literature review was conducted to get a more transparent and precise understanding of a research problem and possible ways of adapting it to the case of on-war times and after-war recovery.

2.1. Overview of financial management of local authorities

Financial management of local authorities refers to the processes and strategies that local governments use to manage their financial resources effectively. Effective financial management is crucial for local authorities to provide essential services to their communities, maintain financial sustainability, and ensure transparency and accountability. This includes:

- **Budgeting:** Local authorities must prepare and manage their budgets to ensure that they have sufficient funds to provide essential services to their communities. Budgets should be based on realistic revenue projections and prioritize spending on essential services.
- **Funds accumulation:** Local authorities accumulate revenue from various sources, including property taxes, fees and charges, grants, and transfers from higher levels of the budget. Effective accumulation requires a balance between attracting sufficient sources to fund services and avoiding excessive taxation.
- **Expenditure management:** Local authorities must manage their expenditures effectively to ensure they stay within budget and provide value for money. This includes managing operating costs, capital expenditures, and debt management.
- **Accounting:** Local authorities must maintain accurate financial records and use accounting principles to ensure transparency and accountability. They must also comply with financial reporting requirements and audit regulations.
- **Financial reporting:** Local authorities must provide regular financial reports to stakeholders, including elected officials, community members, and higher levels of government. These reports should accurately depict the authority's financial position and performance.
- **Risk management:** Local authorities must manage financial risks, including those related to funds accumulation, expenditure management, and debt management. They must also prepare for contingencies and manage the financial impacts of external shocks, such as natural disasters or economic downturns (Menifield, 2020).

Financial management refers to the process of managing financial resources to achieve management objectives. It encompasses all functions related to accumulating funds and utilizing financial resources to achieve local government goals. Financial management draws on various fields, such as accounting, economics, law, and behavioral science, to aid management in financial planning and control (Akinsulire, 2002). Effective financial management involves planning and controlling an authority's financial resources, which are essential to an authority's success (Pandey, 2005). It involves managing sources of funds and utilizing them in different areas of the authorities to conduct basic services. Proper planning and execution are essential for financial management to be beneficial, and it is a system where a faulty unit can impact the whole structure (Hassan, 2011). In local government, financial management includes activities such as fund accumulation, fund allocation, resource administration, and treasury management.

According to Jones and Pendlebury (2010), local financial management involves raising funds, allocating funds to meet the objectives and statutory responsibilities of local authorities, and controlling and accountability for using these funds. Smith et al. (2023) state that financial management in public service organizations means that the choice of strategy will depend on the specific circumstances and goals of each government.

Overall, these definitions suggest that the financial management of local authorities involves the efficient and effective allocation and management of financial resources to achieve the authority's goals and objectives. This involves planning, organizing, directing, and controlling financial resources transparently and accountable to promote good governance and service delivery.

2.2. Local financial management during the crisis

The investigation of local financial management during times of war may be narrow, but it can be viewed within the broader context of crisis management and can benefit from the insights gained from the extensive literature on this topic.

Crisis is a term that is frequently used in both academic and practical contexts, yet its meaning can be quite ambiguous. In general, crisis refers to a situation of uncertainty and instability that poses a significant threat to an organization's viability or the well-being of a community or society. This can take many forms, including natural disasters, economic downturns, political upheavals, and armed conflicts. Effective crisis management is critical for mitigating the impact of such events and ensuring that organizations and communities can survive and recover. Financial management plays a key role in crisis management, as it

effectively allocates and manages financial resources during times of uncertainty and instability.

There is a clear vision from the UN on what the disaster is – an event that critically disturbs the functioning of society (United Nations, 2009). From the perspective of the causes of any disaster, there lies a huge diversity of reasons, but generally, they are divided into two groups – the one caused by nature or by humans. In this context, conflicts and wars are considered complex emergencies that can lead to extensive loss of life, displacement, human rights abuses, and food insecurity (Zibulewsky, 2001).

There has been comparatively little investigation into how local governments managed their finances during the war. However, the literature review on local financial management can be conducted in the context of various crises, including natural disasters, economic downturns, and pandemics. By examining the strategies used by local governments to manage their finances during these times, it can be gained a better understanding of how to effectively manage local finances in times of war.

During times of crisis, local financial management becomes critical for ensuring the stability of local economies. One common approach to financial management during a crisis is implementing austerity measures, such as reducing government spending and increasing taxes. Many local governments have used this approach during economic downturns, such as in Greece during the Eurozone crisis (Vasilopoulou et al., 2014). However, austerity measures have also been criticized for their negative impact on social welfare and economic growth (Blyth, 2013).

Another strategy is implementing fiscal stimulus measures, such as increasing public spending to stimulate economic growth. The United States used this approach during the 2008 financial crisis with the passage of the American Recovery and Reinvestment Act (Council of Economic Advisers, 2009).

A third approach is to implement structural reforms, such as improving tax collection systems and reducing corruption. This approach has been used by many developing countries, such as Indonesia, during the Asian financial crisis (Chatib Basri & Rahardja, 2010). However, implementing structural reforms can be challenging, as they often require significant political will and institutional capacity.

Overall, effective local financial management during crises is critical for ensuring the stability of local economies. Strategies used during crises include austerity measures, fiscal stimulus, and structural reforms, each with its own strengths and limitations.

2.3. Local financial management after a crisis

Angstrom (2001) claims that when conflict meets full-scale and intense violence, it becomes a war, leading to deep social and economic crises. The ruined infrastructure is usually used to anticipate the severity of war. As a result, development is declining because of the low production capacity; the damaged objects do not receive investments, and most of the time, the war is ongoing, and the societies are getting weaker. Due to this, it is crucially necessary to not only rebuild the destroyed infrastructure but to re-launch economic growth in the area.

The concept of "post-war reconstruction" (PWR) became especially relevant after the Second World War but received new attention on the global stage in the 1990s. Thus, PWR refers to the reformation or physical change of socio-economic, political, or security institutions after the end of hostilities (Sesay, 2009). The need for such reconstruction arises when the government or governing regime can no longer provide services or perform statutory functions, and the institutional capacity to perform them has been lost (Sesay, 2009).

As the tension in international security grew against the background of violent conflicts in various parts of the world, in order to preserve the most important thing – human life, it was necessary to develop a plan of measures to prevent such cases. The result of this was developed, "The Agenda for Peace," approved by the UN in 1992. The document provided three main elements of peacebuilding: preventive diplomacy, protection of human rights, peacemaking, and peacekeeping (United Nations, 1992). The last was later expanded to disarmament, destruction of weapons, and strengthening and reform of government institutions.

Over time, it turned out that peacebuilding, which aimed to identify and support structures that would strengthen peace to prevent repeated conflict, has a short-term nature. Such conclusions were drawn from a review of the countries of Sub-Saharan Africa region, where it was difficult to stop new manifestations of conflicts. In response to this, "The Supplement to An Agenda for Peace" was developed with new comprehensive concepts regarding peacekeeping measures. Thus, the main direction of action was focused on development – rebuilding the physical infrastructure, restarting the economy, and promoting proper state governance (United Nations, 1995).

Later, the same opinion was developed in the report of Annan (1998), where attention is also focused on political (building democracy) and economic (promoting the development and involvement of the private sector, reforming public finances, etc.) reconstruction.

The foundations laid back in the 1990s were further reflected in the views of scientists. Over time, PWR went beyond just physical reconstruction to include the installation of a "new

social contract" that is specifically tied to the circumstances and causes of the dispute (Junne & Verkoren, 2005). Barakat (2005) developed seven principles of sustainable recovery, namely:

- A shared and explicit vision of how to recover from war, at least for the next few years, if not for the long term.
- Early and widespread participation of all parties involved in the development of a national vision for recovery;
- The restoration of a safe environment and legality
- Reconciliation, the restoration of trust, and the re-establishment of a justice system;
- Equity in the distribution of the benefits of reconstruction and peace and the relative importance of different groups, sectors, and regions;
- Reconstruction and development, including physical, economic and social aspects, utilizes a variety of interrelated strategies at different levels (national, regional and local).
- Evaluating and enhancing the abilities to recover from conflict.

The literature on post–conflict reconstruction focuses overwhelmingly on security and political issues. Most studies deal with economic matters only tangentially or superficially, despite the severe economic impact of wars (Del Castillo, 2008). No one denies that war–affected countries need external aid and financing for reconstruction. But the economic dimensions of post–conflict peacebuilding deserve more rigorous, in–depth study. Reconstruction efforts should focus on politics and security and reviving the economy by rebuilding infrastructure, attracting foreign investment, and restoring trade. Only by addressing war's economic impact can societies achieve lasting peace and stability.

Although conflicts differ in duration and intensity, they typically have devastating consequences regarding human, social, and physical resources. Their effects can include:

- The decline in human development and security indicators like life expectancy, infant mortality, and access to healthcare and education.
- Destruction of infrastructure such as transport, communications, water, energy, and housing.
- Internal displacement and emigration of skilled workers cause brain drain.
- Increase in people needing social assistance, such as the disabled, elderly,

children, internally displaced people, and war veterans.

- The fall in economy, below pre-war levels.
- Large fiscal deficits from high military spending and little tax revenue during the war.
- Inflation from financing war by printing money.
- Withdrawal of foreign investment assets from the country.
- Increase in unpaid debts accumulated during the war.
- Disruption of foreign trade (World Bank, 1998).

In short, while recognizing that every post-conflict situation is unique, the literature on economic reconstruction largely agrees on the necessity to tailor reconstruction policies to the specific needs of each country: the factors influencing the outbreak of conflict and its resolution include the cessation of hostilities across the entire territory, the initial economic conditions and level of development of the country, the extent of international political support for the settlement, and the level of donor interest in the country (Del Castillo, 2008). Beyond this common assertion, analyses differ in the approach taken and the level of endorsement of donor policies. Some studies follow an econometric approach and seek to draw policy recommendations from comparative case studies, often endorsing the framework of donor policies. Others adopt a more critical perspective, influenced by social science traditions rather than economics. However, criticism of donor practices does not necessarily reflect radically different approaches to economic reconstruction. The relative lack of theoretical work on the topic and the fact that much valuable criticism comes from rather conventional approaches suggest that the debate on economic reconstruction is still underdeveloped.

The literature emphasizes the need to address the immediate humanitarian needs of the population and restore basic services. This includes repairing infrastructure, providing humanitarian aid, and rebuilding the health and education sectors (World Bank, 1999). Particular attention is also paid to the economic reintegration of vulnerable groups into society, such as people displaced internally or who have exited the military, and women who take charge of the household (Del Castillo, 2008; Kreimer et al., 1998).

Post-conflict economic reconstruction is critical for establishing lasting peace. A key task is reducing the risk factors that led to conflict in the first place. Some experts suggest reducing inequalities between groups, like regional, ethnic, class, or religious differences. Targeted programs to promote broad development may help (Addison et al., 2001; Humphreys, 2003; Stewart, 2009). Others recommend decreasing dependence on natural resources if the

conflict is overcontrolling them (Bigombe, 2000). Reconstruction should not recreate the pre-war situation that enabled conflict (Luckham, 2004; Addison et al., 2001). Instead, it should dismantle the structures that benefited from and prolonged the war. Some studies look at how foreign aid impacts post-conflict reconstruction. Thus, some argue that aid can strongly stimulate growth after the war. However, donors are often inefficient. Aid typically spikes right after peace starts, before the country can handle it. Then aid declines after 3 years, just as the country can better use it. Aid should gradually increase from years 4 to 7 and return to normal after 10 years. This allows countries to absorb aid effectively and use it to recover from conflict (Collier & Hoeffler, 2004; Elbadawi et al., 2008).

Moreover, analysts recommend resolving the debt arrears of these countries through policies that determine the most efficient timing and method for creditors (Alvarez-Plata and Brück, 2008; Del Castillo, 2008; Addison et al., 2001). However, some caution that donors must be aware of the danger of aid dependence in recipient countries (Murshed, 2010). Thus, they should ensure that aid does not hinder the development of domestic resource mobilization.

The implementation of economic reforms is crucial for the reconstruction of countries emerging from war. Although war-torn countries typically require major structural adjustments, the international community should carefully adopt relevant policies to avoid fueling social unrest and renewed conflict. Since 40–50% of post-conflict countries relapse into violence within a decade, in order to prevent this, efforts towards peace consolidation should be prioritized over development. War-affected countries may sometimes need to adopt sub-optimal economic policies (e.g., maintaining unprofitable businesses) for political and security reasons (e.g., preserving jobs) (Del Castillo, 2008). Some claim that urgent priority should be given to small-scale reforms like reducing inflation and designating monetary policy (Lewarne & Snelbecker, 2004). Developing the private sector is also key, as it drives growth and job creation. War-torn countries must attract foreign direct investment by establishing frameworks for business registration, private property protection, and bankruptcy (Lewarne & Snelbecker, 2004; Kusago, 2005). The World Bank (1999) also stresses rebuilding agriculture, which provides livelihoods for rural populations and jobs for ex-combatants.

Another important issue is that the recipient country's authorities should primarily be responsible for post-conflict reconstruction. It is clear that they are in the best position to set the most urgent priorities and coordinate the relevant policies (De Soto & del Castillo, 1994). However, this is not always possible in cases of weak or failed states where international transitional administrations are understandably put in place to conduct basic governing duties.

Interim administrations have the legitimacy and competence to make key economic decisions. And foreign investors wisely recognize that markets where local authorities are in control will provide stability needed for investment (Del Castillo, 2008). As a result, international governments are rightly concerned with the needs and requests of local communities and provide direct resources to local organizations in order to promote a sense of responsibility for the reconstruction process (Chesterman, 2004).

While post-conflict economic reconstruction typically takes 10 years or more, the availability of foreign aid depends on the interests of donor countries and how much attention the recipient country receives in the media (Chesterman, 2004). Donors themselves do not need a plan to end their aid commitments if they no longer wish to fulfill their promises. Generally speaking, completing the rebuilding process and freeing up economic policies from the political and security issues that come after a conflict represents, at a conceptual level, the transition from reconstruction to normal development work.

Many critics argue that donor-driven post-conflict reconstruction programs often suffer from serious shortcomings and inconsistencies. First, donors impose a one-size-fits-all approach focused on democratization, good governance, and economic liberalization without considering the particular needs of war-torn countries or allowing recipient governments any say in policymaking (Guttal, 2005). Donors and IFIs adopt a "business as usual" mentality, failing to understand the unique challenges of post-conflict settings (Del Castillo, 2008; Paris, 1997). Donors assume their policies will necessarily lead to better outcomes than non-intervention, reflecting a "nirvana fallacy" (Coyne, 2006). Some critics say today's peacebuilding efforts resemble the "civilizing mission" that drove European colonialism (Paris, 2002). Reconstruction aid may represent an opportunity for dominant powers (like the US in the case of Iraq) to advance their interests rather than benefiting war-torn countries (Jacoby, 2007). Some also criticize a "relief and reconstruction complex" of donors, corporations, and NGOs that have emerged that absorbs huge sums while often failing to meet critical needs; in the end, what much aid may never reach recipient countries or be distributed by their governments (Bello, 2006). Finally, donors provide insufficient, delayed, or recycled funds and prioritize the military over socioeconomic needs (Bhatia, 2005).

Overall, the literature suggests that the aftermath of war can leave local authorities in a state of disarray, with damaged infrastructure, depleted resources, and fractured communities. Effective financial management is crucial in helping these authorities to recover, rebuild, and promote stability and growth. In the context of post-war recovery, financial management can

help to restore essential public services, promote economic development, and foster social stability as long it complies with the requirements of long-term planning, revenue generation, cost reduction, stakeholder engagement, transparency, and accountability. Local authorities adopting these strategies are better positioned to weather a crisis's financial challenges and maintain essential services for their communities.

2.4. Financial management of local authorities and crisis: lessons from history

Local financial management during post-conflict recovery has been a critical issue for many countries throughout history. Here are some historical perspectives on financial management during post-conflict recovery.

The history of financial management during post-conflict recovery dates to the aftermath of World War II when the Bretton Woods Conference was held to establish a new international monetary system. The conference resulted in the establishment of the IMF and the World Bank – key players in providing financial assistance to countries devastated by the war. The IMF and World Bank continued providing financial aid to countries affected by conflict and other crises in the following decades.

The Marshall Plan, also known as the European Recovery Program, was a massive American aid program that provided financial and technical assistance to Western Europe after World War II. The program was named after US Secretary of State George Marshall, who proposed it in a speech in 1947. The goal of the Marshall Plan was to promote economic recovery and stability in Europe, which had been devastated by the war. To achieve this goal, the program provided over \$13 billion in aid to 16 European countries between 1948 and 1952. The aid was used to finance infrastructure projects, rebuild industry, and support social welfare programs. In addition to the financial assistance provided by the Marshall Plan, the program also emphasized the importance of effective financial management in promoting economic recovery and stability. Technical assistance was provided to local authorities to help them manage their finances and develop sound financial management practices. This included training in budgeting, accounting, and financial reporting, as well as support for the development of financial institutions and regulatory frameworks. The activities undertaken under the Marshall Plan helped to promote economic growth and stability in Europe, laying the foundation for the post-war economic boom known as the "economic miracle." The program demonstrated the importance of effective financial management in promoting recovery and development and provided a model for future aid programs (OECD, 2008).

Overall, the Marshall Plan was a landmark effort in the history of financial management, highlighting the critical role that sound financial practices play in promoting economic stability and recovery. The program serves as a testament to the importance of investing in effective financial management, particularly in times of crisis and uncertainty.

The conflicts in the Balkans during the 1990s, including the wars in Bosnia and Herzegovina, Croatia, and Kosovo, presented significant challenges for local authorities in managing their finances. The destruction of infrastructure, displacement of populations, and economic disruption made it difficult for local authorities to collect revenues, manage expenditures, and maintain financial stability.

Despite these challenges, local authorities in the Balkans took several steps to manage their finances during and after the conflicts. One important activity was the establishment of emergency funds to support social welfare programs and infrastructure repair. In Bosnia and Herzegovina, for example, the entity governments established the Reconstruction and Development Fund, which was financed by international aid and used to support reconstruction and development projects. Another important activity was restoring basic financial systems, such as tax collection and financial reporting. In Kosovo, for example, the United Nations Mission in Kosovo played a significant role in implementing a new tax system and implementing financial reporting requirements. This helped improve local authorities' accountability and transparency and rebuild public trust in the financial system. International aid organizations also played an important role in supporting local financial management in the Balkans by providing technical assistance and financial support to help local authorities manage their finances. This included support for establishing emergency funds, restoring basic financial systems, and developing financial management capacity (Abazi, 2004).

The conflicts in the Balkans highlighted the importance of effective financial management in times of crisis and uncertainty. While the challenges faced by local authorities were significant, the establishment of emergency funds and the restoration of basic financial systems helped to support social welfare programs and infrastructure repair, while international aid organizations provided crucial technical assistance and financial support.

Overall, historical perspectives on financial management during post-conflict recovery suggest that effective financial management is critical for promoting economic recovery and stability. Financial management reforms, including sound fiscal policies, public financial management systems, debt management, and tax administration, are essential for achieving these goals. However, implementation challenges, including corruption and political

instability, can pose significant obstacles to successful post–conflict financial management.

2.5. Insights from complexity theory

Given the complexity of the research topic, it combines several concepts – warfare, recovery, reconstruction, governance, public sector, financing, and therefore creates some challenges. It will also be difficult to assemble the puzzle from different directions into a consistent analysis. Based on the diversity and complexity of systems, the thesis is considered from the point of view of the complexity theory.

The Newtonian framework, which is based on the theory of linearity of systems, made a significant, fundamental contribution to the development of science, as it is the basis for understanding the physical and mathematical processes of the functioning of the world. But during the 20th century, along with the relentless and rapid development of technologies, the concepts of the approach to science also developed in parallel – the general theory of relativity appeared, and then the theory of chaos, which proved that some assumptions of the theory of linear systems were wrong. Thus, it was impossible to explain most socio–political, ecological, or economic systems with linear interdependencies because, by their nature, they are non–linear or too complex for linear ones. As part of this, Complexity theory arises, which is used for modeling and analyzing complex systems within a variety of domains (Turner & Baker, 2019). This theory allows you to go beyond the perception of a world in which all elements are clearly defined and linearly connected to each other because this is far from the case. Compared to the Newtonian paradigm, this theory is relatively new. However, it spans a wide range of disciplines in the social, physical, and biological sciences and explains how we see the world and lives in it (Schneider & Somers, 2006). This approach also makes it possible to investigate and explain how organizations can acquire resilience, adaptability, and innovation (Uhl–Bien et al., 2007).

Complexity theory is the study of complex systems and how they behave. A complex system consists of many interacting parts that together exhibit unpredictable behaviors that emerge from the interactions between the individual components (Waldrop, 1992). These emergent behaviors cannot be understood by only examining the parts that make up the system (Anderson, 1972). Complexity theory has been applied in many fields to help understand how collective behaviors arise in systems like the economy (Arthur, 1999), the brain (Sporns, 2016), ecosystems (Levin, 1998), and more.

Complex systems tend to have properties like self-organization, emergence, sensitive dependence on initial conditions, feedback loops, and phase transitions (Mitchell, 2009). Self-

organization stands for the capacity of a system to spontaneously arrange its components into an organized pattern without external control (Camazine etc, 2001). Emergence is the appearance of complex patterns arising from simpler components' interactions (Holland, 2000). Sensitive dependence on initial conditions, which could also be named the "butterfly effect," means that small differences in the initial state of a system can lead to vastly different outcomes (Lorenz, 1993). Feedback loops refer to a system's cycles of information or causality (Sterman, 2000). And phase transitions are abrupt changes in the behavior of a system due to a small shift in conditions (Kauffman, 1993).

Understanding complexity theory requires an interdisciplinary perspective, incorporating ideas from fields like physics, biology, the social sciences, and computer science. Key concepts in complexity theory include fractals (Mandelbrot, 1982), chaos theory (Gleick, 1988), self-organized criticality (Bak et al., 1987), cellular automata (Wolfram, 2019), genetic algorithms (Holland, 1975), and artificial life (Langton, 1989). By studying complexity theory, we can gain insights into the fundamental principles that underlie the dynamics of complex systems of all kinds. Overall, complexity theory suggests that the collective behaviors of complex systems emerge from the interactions between individual agents and that these complex collective behaviors are not easily predictable from the properties of the components alone (Waldrop, 1992).

Complexity theory provides a useful framework for understanding local financial management during on-war time. Some key concepts and how they apply to the financial management of local authorities are represented (see Fig. 2.1).

Sensitive dependence on initial conditions: Small events can have large, unpredictable effects due to sensitivity to initial conditions (Lorenz, 1993). This suggests that local financial managers must be highly adaptable to changing circumstances during war, as the situation on the ground can change quickly in unpredictable ways. They need to adjust budgets and plans in response to unforeseen events (i.e., full-scale invasion). Frequent monitoring of conditions and contingency planning will be important.

Feedback loops: There are many feedback loops at play, including feedback between the economic situation, government policy, and the progress of the war (Sterman, 2000). These feedback loops can lead to unintended consequences, so financial managers must try to account for secondary effects and adapt as needed. They must monitor how policies and events can reverberate through the system. Since the subjects and objects of financial management of local authorities are closely related to other links of the financial system of Ukraine, the feedback

loops influence each of them quickly and strongly.

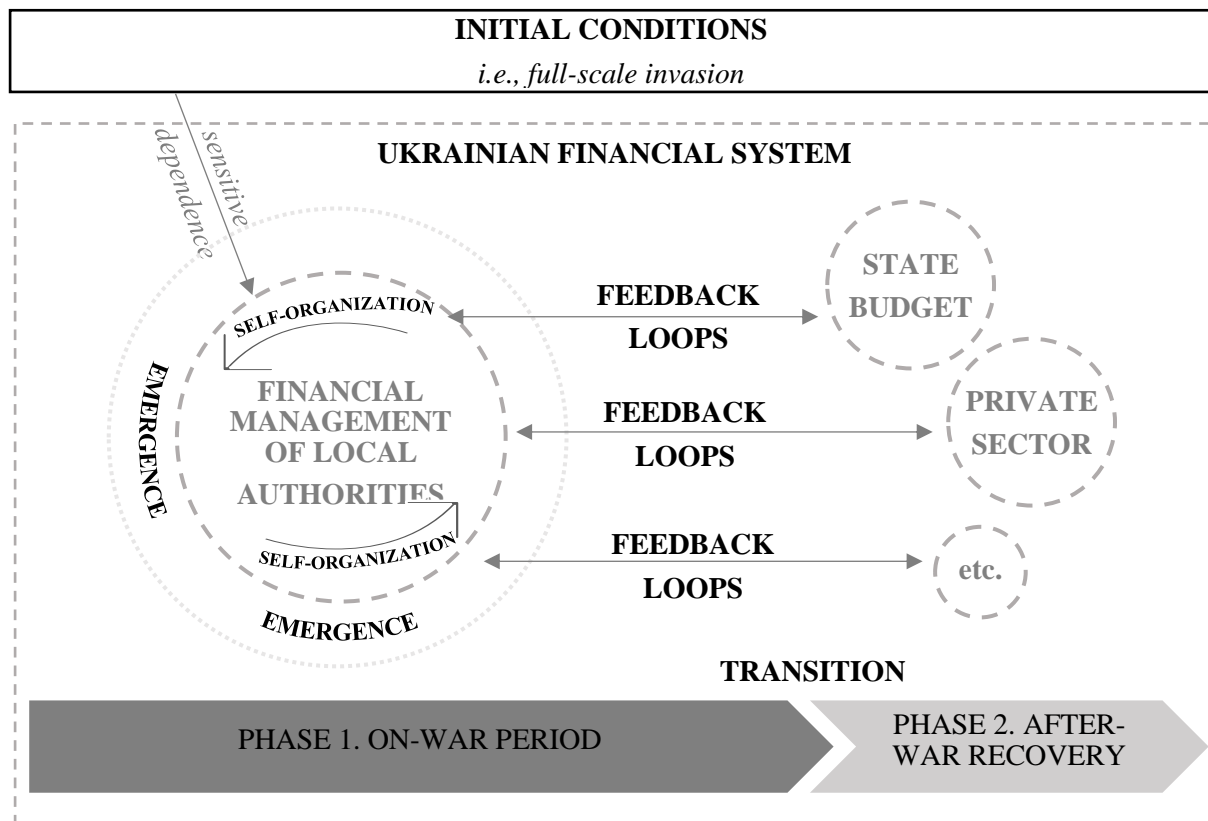


Figure 2.1. The complexity theory applied in the context of local financial management in war conditions

Developed by the author

Self-organization: The economic system may reorganize itself in response to the massive disruption of war (Camazine et al., 2001). This could include the emergence of black markets, changes in trade patterns, and the reorganization of industries to support the war effort. Financial managers need to be aware of these self-organizing dynamics and, in some cases, harness them to support the overall war strategy. But some self-organizing changes may also be undesirable, so monitoring is important. In times of war, local authorities may lose contact with higher authorities and therefore take over part of the authority, thereby creating new ties within the organization itself.

Emergence: The collective results of individual interactions can be hard to predict and lead to emergent phenomena (Holland, 2000). The economic impacts of war will emerge from the collective actions of individuals, firms, and governments in complex ways. While financial managers can't control emergence, they need to monitor for emergent economic issues like inflation, shortages, or market instability and respond to them as quickly as possible. During the war, financial managers of local authorities are looking for new ways of financing and are

also faced with the need to provide new expenses (for reconstruction, defense, humanitarian aid, etc.)

Phase transitions: The economic system can undergo rapid changes and reconfigurations in response to the extreme pressures of war (Kauffman, 1993). This could include shifts to a war economy, the collapse of certain industries, or the emergence of new economic sectors. Financial managers must be prepared for the possibility of rapid economic phase transitions during the war and adapt policies and plans accordingly. Frequent forecasting and the ability to adjust quickly will be necessary.

In summary, from a complexity theory perspective, local financial management during war needs to be highly flexible, adaptive, and aware of unpredictable dynamics, feedback, and emergent phenomena in the economic system. Quickly adjusting to changing circumstances and frequent monitoring is crucial for effective management. Local public sector managers need to embrace complexity and uncertainty, not seek rigid control. Financial managers can successfully navigate the economic turbulence of war by adapting to complexity.

III. METHODOLOGY

This chapter outlines and describes the research design adopted for this study on the financial management of local authorities. The research design provides the overall structure and strategy for conducting the research. It includes the research philosophy, research design, and data collection strategy. The research design outlined in this chapter will enable a comprehensive analysis of financial management in local authorities to achieve the aim and objectives set out for this study. The case studies will provide rich insights into the practices, processes, and key issues, which will inform recommendations for improvement.

3.1. Research philosophy

The research philosophy for this study is interpretivism (Smith, 2004; Walsham, 2006). This philosophy is most suited for this study as it aims to understand the complex social phenomena related to financial management in local authorities. An interpretive approach will help get a sense of the perceptions and experiences of key stakeholders involved (Bryman & Bell, 2003).

A research philosophy refers to the underlying beliefs and assumptions about the nature of knowledge and how it can be gained (Bryman & Bell, 2003). The interpretivism philosophy adopted in this study assumes that social reality and phenomena are complex and subjective, constructed based on the interpretations and experiences of individuals (Smith, 2004; Walsham, 2006). This philosophy is well suited for a qualitative case study approach aiming to gain insights into the perceptions and practices of key stakeholders involved, in the case of this Master Thesis, in financial management.

An interpretive philosophy emphasizes the importance of context and the socially constructed nature of reality. It seeks to gain a comprehensive understanding of the practices, processes, and issues involved in financial management based on the views of stakeholders such as finance managers, committee members, and auditors. Their insights and interpretations will inform recommendations for improving financial management in local authorities. In contrast, a positivist philosophy assumes that social reality is objective and independent of individuals' perceptions. It aims to develop universal laws and causal explanations similar to the natural sciences (Bryman & Bell, 2003). A positivist approach using quantitative methods may be more suitable for testing theories or hypotheses related to financial management. However, the complex social phenomena and interactions involved require an interpretive approach focused on understanding the experiences and perspectives of key actors.

In summary, the interpretivism philosophy adopted for this study is most appropriate

for the aim of gaining rich insights into the perceptions and experiences of key stakeholders involved in financial management practices within local authorities. It will guide the use of qualitative methods (for example, interviews, documentation reviews, and observations) to understand the complex social phenomena related to financial management in context. The findings will provide an in-depth understanding of practices, processes, and issues to inform recommendations for improvement.

3.2. Research design

A research design is the specific methods and procedures employed to collect, measure, and analyse data in a scientific investigation. The design of the research outlines the procedures necessary for obtaining the information necessary to structure or solve research problems (Creswell, 2014). It's the overall strategy for answering the research question and encompasses considerations like what data is necessary, how it's collected and analyzed, and what tools are necessary to conduct the study.

The research design depends on the nature of the research problem or issue being addressed (Yin, 2014), the researcher's philosophical assumptions (Crotty, 1998), and the resources available (Creswell, 2014). There are several types of research designs, including experimental, non-experimental, quantitative, qualitative research designs (Creswell, 2014), and mixed method designs (Johnson, 2007). The research design should be solved to fit the needs of the particular study (Creswell, 2014), and the researcher should choose a design that is logical and feasible for the topic and available resources (Yin, 2014). The design should address the study's validity, reliability (Yin, 2014), and ethical considerations (Creswell, 2014).

3.3. Data collection

The data collection methods for this study included interviews (Creswell & Poth, 2018), documentation review (Bowen, 2009), and observations (Saunders et al., 2015). Content analysis (Hsieh & Shannon, 2005) was used to analyze the data by identifying key themes and patterns. Triangulation of data from multiple sources (Denzin, 2018) enhances the credibility and validity of the findings.

First of all, it was conducted interviews with researchers in the field of public sector economy to obtain an extensive understanding of the challenges faced by local authorities in Ukraine during the war with Russia. These interviews provided valuable insights into the complexities of local financial management during wartime and helped to identify potential solutions to the challenges faced by local governments, that helped to proceed to the interviews of practical expertise.

A qualitative research approach using case studies (Yin, 2018) was adopted to gain an in-depth understanding of the financial management practices of selected local authorities. The case studies that can be applied to any kind of research can be divided into two groups – retro perspective (aims to study long-term events where the crisis point has passed, and therefore the occurred period of time can be studied) and comparative (allow to determine an in-deep understanding of the reasons for divergence of various stakeholders of the same plane) (Vakulenko, 2020).

As hostilities in Ukraine continue, infrastructure and the economy are destroyed daily, and local authorities are challenged to provide basic services and deal with the uncertainty of the day after tomorrow; retrospective analysis is impossible. Two local government bodies in Ukraine were chosen for the comparative analysis - Dmytrivska agglomeration, Kyiv region, and the Department of Land Resources of the Mykolaiv City Council. In both cases, the territory under the control of local authorities was physically occupied by Russian troops, which caused unspeakably heavy human, natural and resource losses. To this day, the territory of Mykolaiv continues to be shelled by the invaders, and the air threat is typical for both locations on a daily basis. The Dmytrivska community unites 14 settlements near Kyiv with a total population of 1,500 inhabitants. The population of Mykolaiv is about 470,000 people. The representatives of the relevant bodies were public sector specialists with extensive experience and high qualifications. Interviews were preceded by personal conversations with representatives for a deeper understanding of the specifics of the activities of local authorities. The interview itself directly lasted about two hours, with notes of answers for further analysis. A detailed case study protocol (Yin, 2018) was developed to guide data collection across 2 cases selected for this study. The protocol ensures consistency in data collection procedures, including semi-structured interviews, documentation review, observations, and the comparability of findings across cases.

The protocol specifies the following aspects of data collection for each case:

- Selection of participants: The key personnel involved in financial management, such as finance managers, budget managers, and committee members, was identified and invited to participate in interviews. Relevant documents such as financial policies, budgets, annual reports, and committee minutes were selected for review.
- Interview guidelines: An interview guide (see Appendix 1) was developed with a list of open-ended questions and probes to elicit in-depth insights into

financial management practices. The questions covered aspects such as budgeting, financial reporting, risk management, performance monitoring, and decision-making.

- Documentation review guidelines: A documentation review guide specify the types of documents to analyze and the information to extract from them related to financial management policies, processes, and issues.
- Data recording: A consistent approach was used to record data from interviews, documentation reviews, and observations, including written notes, audio recordings, and verbatim transcription.
- Data analysis: A thematic analysis was conducted using the coding and theme development guidelines for each case. Cross–case analysis was used to then identify key patterns across the 2 cases.

The case study protocol enhanced the reliability of the study by ensuring a systematic and consistent approach to data collection and analysis across multiple cases. It helped to address threats to the validity and generalizability of findings from the qualitative case study approach adopted for this research.

Document analysis involves a systematic review and analysis of written documents, such as reports, policy documents, and financial statements, to identify key themes, trends, and issues related to the topic of study. By analyzing the official reports of the city councils, international organizations such as the OECD, the World Bank, IMF, and the UN, as well as financial statements and policy documents from local and national governments, it was gained an insight into the wider context of the war and its impact on local financial management.

3.4. Data analysis techniques

The data analysis strategy for the Master Thesis depends on the research questions, research approach, and data collection methods used. A qualitative approach was recommended in this case, and thematic analysis was suggested as the data analysis technique. Thematic analysis is a useful technique for identifying patterns and themes in qualitative data.

Thematic analysis is a six-step process that includes becoming familiar with the data, generating initial codes, identifying themes, reviewing themes, defining and labeling themes, and producing a report (Braun & Clarke, 2006). The data collected through interviews, observations, and document analysis were transcribed and coded. The codes were then categorized and analyzed to identify the emerging key themes and patterns. The themes that emerged from the data were related to the key concepts and principles of the Complexity

theory, such as sensitive dependence on initial conditions emergence, phase transition, feedback loops, self-organization and emergence. The thematic analysis helped to identify patterns and themes that illustrate complexity concepts and provide a deeper understanding of their application in the research context.

A key advantage of thematic analysis is its flexibility, as it can be used to a range of data sources and research questions (Braun & Clarke, 2006). It also allows for a rich and nuanced understanding of the data, which is particularly important for complex topics such as financial management. In addition to thematic analysis, other data analysis techniques could be used to complement the analysis, such as content analysis or discourse analysis. The process of selecting data analysis techniques was dependent on the questions being asked and the data collected.

In conclusion, the data analysis strategy should be carefully considered to ensure the collection of relevant and accurate data. Thematic analysis is a suitable technique for identifying patterns and themes in qualitative data, and it allows for a rich and nuanced understanding of the data.

3.5. Ethics and quality of the research

Ethics in research design refers to the principles that guide researchers' conduct throughout the research process. These principles ensure that research is conducted ethically, respecting the dignity and rights of research participants (American Psychological Association, 2017). The key ethical principles that guide research design include:

- **Informed consent:** This principle requires that research participants are fully informed about the research study, including its purpose, potential risks, benefits, and their rights as participants. Participants must provide their consent voluntarily and with a full understanding of the study's purpose and procedures.
- **Confidentiality and privacy:** Researchers must ensure that the research participants' personal information is kept confidential and that their privacy is protected throughout the research process.
- **Minimization of harm:** Researchers must take steps to minimize any potential harm resulting from participating in the research study.
- **Fairness and justice:** Researchers must ensure that research participants are treated fairly and that their rights are protected regardless of their gender, race, ethnicity, or other personal characteristics.

Quality in research design refers to the extent to which a research study is valid, reliable, and generalizable. Validity is the degree to which the investigation is accurate in its measurement of what it intends to measure. Reliability is the consistency and predictability of the research's findings. Generalizability is the degree to which the study's conclusions can be applied to a larger population (Neuman, 2016).

To ensure the quality of research design, researchers must take steps to:

- Secure the validity and reliability of the study's measures, including selecting appropriate research instruments and using standardized procedures.
- Make sure that the study's participants accurately reflect the population being studied.
- Use appropriate statistical techniques to analyze the data and draw conclusions.
- Consider the limitations of the study and acknowledge them in the research report.

Ethics and quality are essential components of research design. Researchers must ensure that their research is conducted in an ethical manner that respects the dignity and rights of research participants. They must also ensure that their research is high quality and produces valid, reliable, and generalizable results. By prioritizing ethics and quality in research design, researchers can ensure that their research contributes to advancing knowledge while respecting the rights and dignity of all participants (Trochim & Donnelly, 2007).

IV. RESEARCH CONTEXT

Financial management of local authorities is a process of planning, organization, control, and monitoring of financial resources of local government within activities that aim to meet the needs of citizens at the local level, where the budget is one of the most important tools.

4.1. The place of local finances in the budget system of Ukraine

The state's financial system largely depends on local finances, as the latter guarantees the financing of expenses for providing social, cultural, and communal services for the country's population. In the system of local finances, the leading place belongs to local budgets. These budgets were formed together with the emergence of the institution of local self-government and are characteristic of both federal and unitary states. The structure and content of local budgets are influenced not only by the state system but also by national characteristics and local government organization. Ukraine, as a state that joined the European Charter of Local Government in 1996, has a developed institution of local government, which also indicates the choice of a course for conducting the process of decentralization of financial relations (Lyutyy et al., 2017).

The Constitution of Ukraine occupies a formative and central place in the regulatory and legal plane of establishing the principles of the functioning of local finances, which guarantees the right of a territorial community – residents of a village or a voluntary association of residents of several villages, towns, and cities into a rural community – “to independently resolve issues of local importance within the limits of the Constitution and laws of Ukraine” (Verkhovna Rada of Ukraine, 1996, Article 140). The document also provides for the principles of functioning of the budget system, the powers of state authorities, state administration, and local government concerning the organization and legal support of the formation and use of local budget funds. The regulatory and legal basis of local finances is several legislative acts and documents provided by the Budget Code of Ukraine, including directly the Budget Code of Ukraine, the Tax Code of Ukraine, the State Budget of Ukraine, etc.

According to the legislative framework, the main purpose of local finances is to provide financial support for the activities of local government, to fulfill the needs of the population of territorial communities, and to create an incentive mechanism for the rational use of material and financial resources and the search for additional sources of income (Zhikhor et al., 2015).

Local representatives and executive authorities manage local finances through their financial units. There are two types of local financial bodies in Ukraine – financial bodies of

local government and local financial bodies of executive power. Financial departments of executive committees and other local governments belong to the financial bodies of local governments. These departments function in cities with the status of oblast subordination and the districts of these cities. The authority of local government in the area of the budget, the formation of extra-budgetary, currency, and special purpose funds, the management of the finances of communal enterprises, and the establishment of local taxes and fees are regulated by the central government (Zhikhov et al., 2015).

Legislation in the field of local government determines the principles of its functioning: people's rule, legality, transparency, collegiality, a combination of local and state interests, electability, and legal, organizational, material and financial independence.

The subjects of local finance management are the territorial community (“inhabitants who permanently live within the boundaries of a village, settlement, or city, which are independent administrative-territorial units or a voluntary association of residents of several villages with a single administrative center” (Verkhovna Rada of Ukraine, 1997, Article 1) and local government (village, settlement, city councils, their executive bodies, and heads), representing the common interests of the respective territorial communities of villages, towns, cities. Within the scope of their activities, the above-mentioned entities are obliged to conduct their activities around financial resources in a fund and non-fund forms – objects of local finance. Therefore, managing local finances is basically the formation, use, and disposal of funds from local budgets (Zhikhov et al., 2015).

According to the legislation, the local budget is a plan for forming and using financial resources to secure the tasks and functions performed by the authorities of the Autonomous Republic of Crimea (the territory temporarily occupied by the Russian Federation) and local government during the budget period. The place of local budgets in the budget system of Ukraine is shown in Fig. 4.1. Local budgets in Ukraine include the budget of the Autonomous Republic of Crimea, regional and district budgets, as well as local government budgets, which include the budgets of territorial communities of villages, their associations, settlements, cities (including districts in cities), budgets of formed territorial communities (FTC) (Verkhovna Rada of Ukraine, 2010).

From a financial point of view, the local budget has two characteristics: 1) a legal act that legitimizes the right of executive bodies to use monetary resources by the relevant funds and 2) the estimate of revenues and expenses of the local authority and the economic category, which provides for granting it the status of a valid economic attribute of any separate territorial

unit. Thus, the local budget is the main tool within the framework of any state regional policy that ensures the socio–economic development of the population (Lyuty et al., 2017).

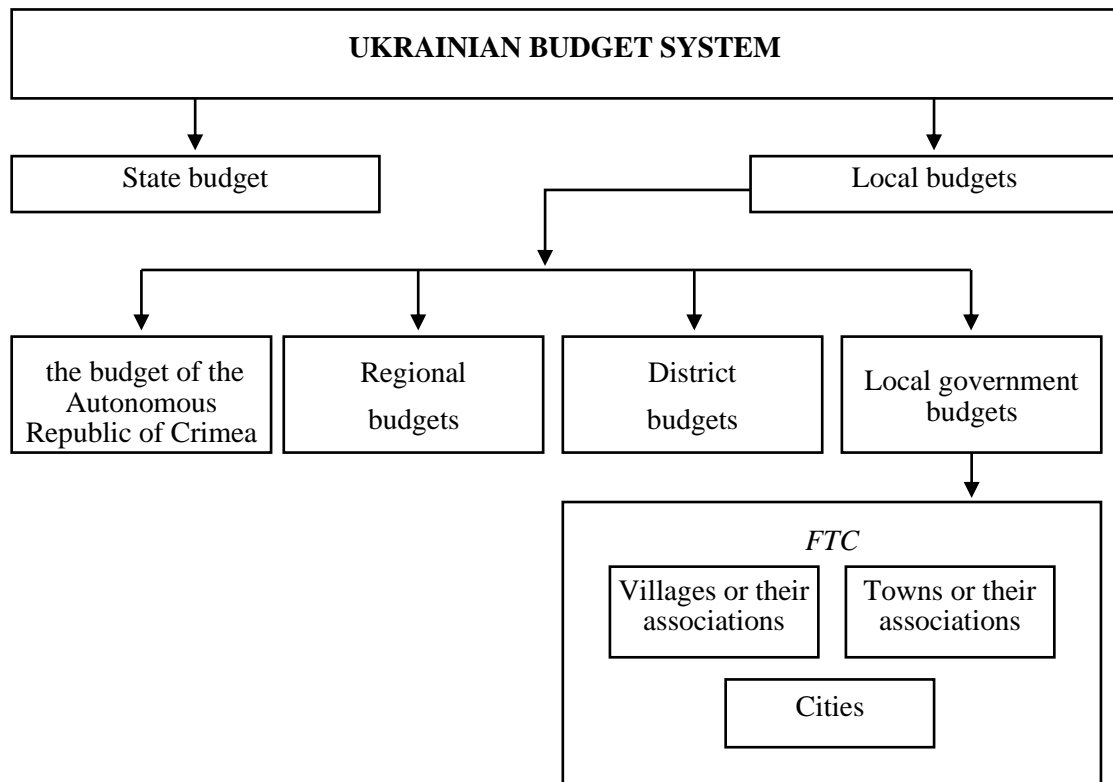


Figure 4.1. The place of local budgets in the budget system of Ukraine.

Developed by the author based on Verkhovna Rada of Ukraine (2010)

Local budgets can consist of general and special funds, which are divided according to needs. The general fund is formed at the expense of tax revenues and other incomes that are not included in the special fund and is formed to ensure the performance of the general functions of local government (education, medicine, social protection, defense, etc.). The special fund is formed at the expense of special revenues, which in turn are already intended to finance certain specific goals. In addition, by decision of the local council, a reserve fund can be created in the budget, the funds from which are not fixed for the administrator and can be directed to the execution of measures to withdraw the consequences of emergencies or other unforeseen measures that are not of a permanent nature and could not be foreseen at the time of drafting budget draft (Lyuty et al., 2017).

Local budgets are also divided into current (administrative) and development (investment) budgets. The current budget is used to fulfill own and delegated powers; that is, the funds are directed to the financing of institutions and establishments of industrial and social infrastructure, which are maintained at the expense of budget allocations, as well as to the financing of activities for the social protection of the population. Funds from the development

budget are directed to implementing socio–economic development programs of the relevant territory, related to implementing investment and innovation activities. Differentiation of the local budget according to this principle determines the regulation of the financing of expenses in the case of a budget with a deficit of financial resources; therefore the expenses of the current budget that ensure current activities will be financed as a priority (Lyutyy et al., 2017).

4.2. Revenues of local level budgets

Revenues of local budgets play an important role in budget regulation at the level of local authorities and are a key factor in regional development. Strengthening the revenue base of local government and increasing the interest of local authorities in increasing their own revenue base, forecasting local budget revenues, and using modern econometric methods are critically important in the context of the European integration of Ukraine and increasing the independence of regions.

Various economic, social, and political factors influence the formation of the revenue base of the local budget. Economic and political factors have the greatest impact on the income base, as they are related to macroeconomic processes, among which the main ones are the volume of Gross domestic product (GDP), inflation, unemployment, tax and budget policy, as well as investments for the development of the economy. Political factors are related to the state's defense capability, law and order, management, and strengthening of power. The peculiarities of the reproduction of the labor force and the state's population, in general, determine social factors affecting the formation and implementation of the budget. These include socio–cultural measures, social protection, wage levels, the size of the consumer basket, and the need for social assistance (Zhikhov et al., 2015). There are several approaches to the classification of budget revenues. So, the sources of income are:

- tax revenues (national and local taxes, fees established by the laws of Ukraine on taxation);
- non–tax revenues (payments, income from property owned by local authorities, and from the economic activity of communally owned enterprises attracted by local authorities on the loan capital market);
- income from capital transactions;
- transfers from the central government and higher territorial-level authorities (funds that are transferred free of charge and irrevocably from one budget to another) (Verkhovna Rada of Ukraine, 2010).

The relationship between different types of local budget revenues and budget funds is shown in Figure 4.2.

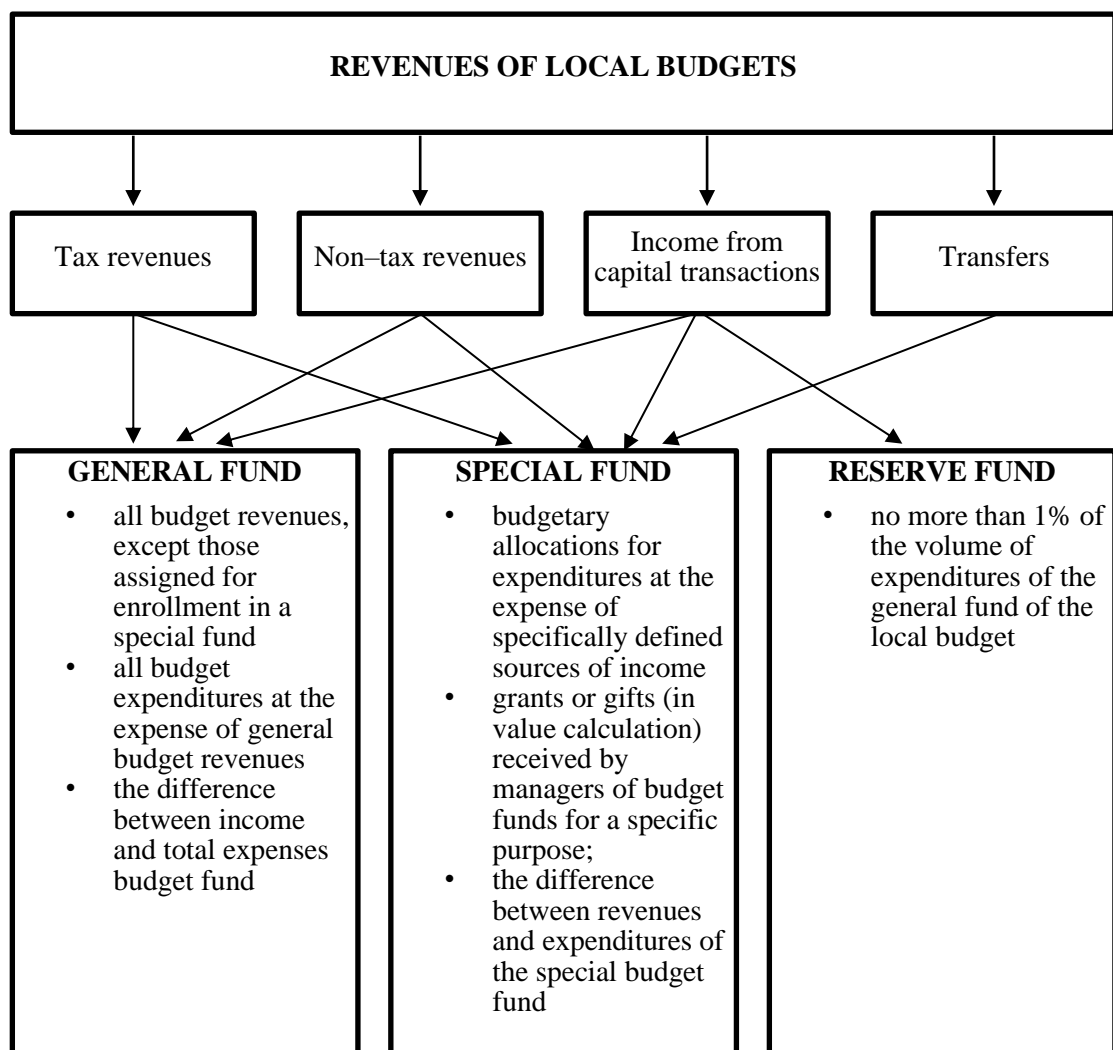


Figure 4.2. Components of the revenue part of local budgets in Ukraine

Developed by the author based on Verkhovna Rada of Ukraine 2010; Zhikhov et al., 2015).

The independence of the budgets of local authorities is ensured by the availability of revenues and the methods based on which they are formed. So, according to the economic essence, revenues are:

- fixed – following the current legislation, they belong to the state budget revenues and, for the purpose of balancing local budgets, are fixed in whole or in part (in %) to lower-level budgets indefinitely or on a long-term basis, their inclusion does not require a decision of the authorities of the Supreme Council (for example national taxes, fees and revenues that form the revenue part of local budgets);

- own funds – funds that fully belong to local budgets and are credited to them in a firmly fixed amount, without entering the higher–level budgets, and are not considered when determining the volume of inter–budgetary transfers. Such revenues include local taxes and fees, revenues from utility companies, revenues from property owned by local authorities;
- interbudgetary transfers (Zhikhov et al., 2015).

Depending on the powers entrusted to local authorities, revenues are divided into two groups:

- revenues that are considered when regulating the volume of interbudgetary transfers and are directed to the financing of delegated powers (defined by law and/or transferred by relevant decisions of district or regional councils)
- revenues that are not taken into account when determining the amount of interbudgetary transfers that finance the local government’s own powers assigned to them in accordance with the law (Zhikhov et al., 2015).

A non–exhaustive list of revenues is given in Fig. 4.3.

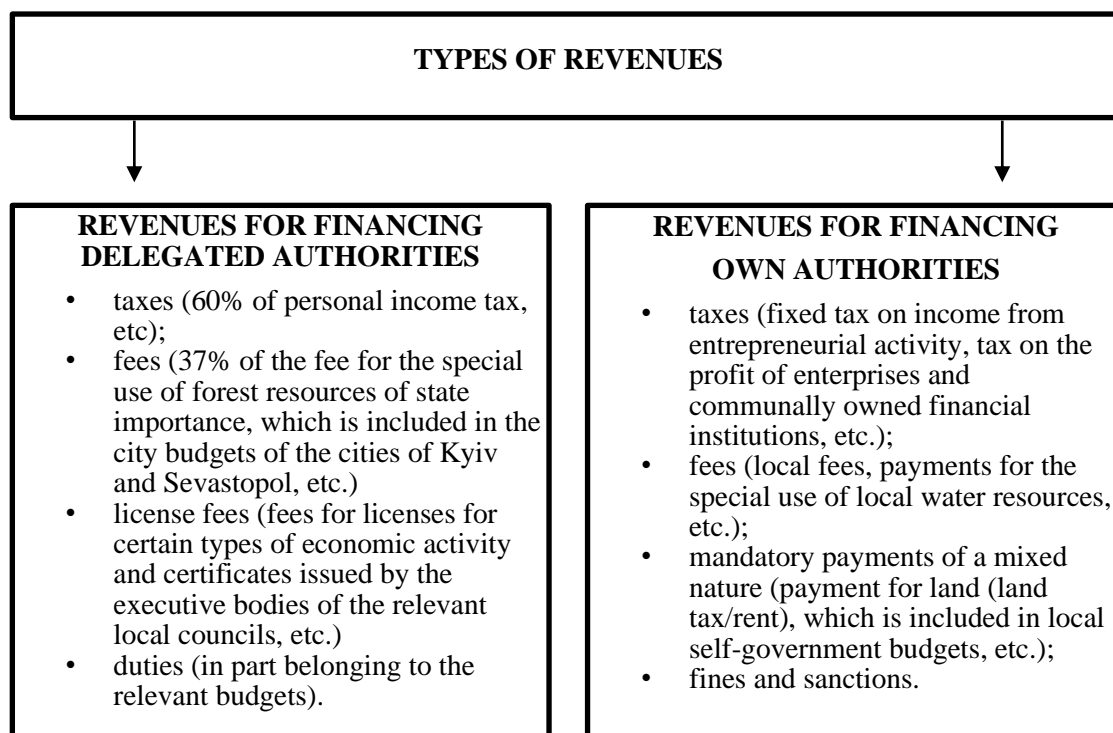


Figure 4.3. Distribution of income depending on the powers assigned to local authorities
 Developed by the author based on Verkhovna Rada of Ukraine (2010) and Zhikhov et al. (2015).

4.3. Expenditures of local level budgets

Local expenditures are an important tool for managing budget funds and reflect the extent of complementing the needs of the population in a specific administrative–territorial unit; they reflect the importance of local budgets in the functioning of the local economy, the guidance of social and cultural objects, the implementation of investment policy, the implementation of social protection of the population, environmental protection. The expenditure part of local budgets reflects the development of the administrative–territorial unit and determines the direction of use of the resources accumulated in its budget.

Following Article 64 of the Law of Ukraine "On Local Government in Ukraine" the following procedure for spending local budgets is carried out. Expenditures carried out by local government for the needs of territorial communities, their size and target direction are determined by relevant decisions on the local budget; expenditures related to the district and oblast councils' implementation of measures to ensure the common interests of territorial communities – relevant decisions on the district and oblast budgets (Verkhovna Rada of Ukraine, 2010). Rural, settlement, city, and district cities (if they are created) councils and their executive bodies independently dispose of the funds of the relevant local budgets and determine the direction of their use. Local state administrations implement district and regional budgets within the scope and scope approved by the relevant councils.

Local budget expenditures are formed in accordance with the demarcation of expenditures between budgets, determined by the Budget Code of Ukraine, to fulfill the powers of the local government. Local budget expenditures are made from the general and special funds of the local budget by the requirements of the Budget Code of Ukraine and the Law on the State Budget of Ukraine. As part of the expenditures of the special fund of the local budget, the development budget expenditures are allocated. Funds from the development budget are directed to the implementation of socio–economic development programs of the relevant territory, related to the implementation of investment activities, the implementation of other measures related to expanded reproduction, and the repayment of local debt (Lyutyy et al., 2017).

Delimitation of types of expenditures between local budgets is carried out based on the principle of subsidiarity, considering the completeness of the provision of public services and bringing them closer to the direct consumer. According to these criteria, types of expenditures are divided into the following groups:

- the first group – are expenditures for the functioning of budgetary institutions

and the implementation of measures that ensure the necessary priority provision of public services and which are located closest to consumers. Expenditures are made from local government budgets;

- the second group – are expenditures for the functioning of budgetary institutions and the implementation of measures that ensure the provision of basic public services for all citizens of Ukraine. Expenditures are made from local government budgets, as well as district budgets;
- the third group – are expenditures for the functioning of budgetary institutions and the implementation of measures that provide public services for certain categories of citizens or the implementation of programs for which there is a need in all regions of Ukraine. Expenditures are made from the budget of the Autonomous Republic of Crimea and regional budgets (Lyutyy et al., 2017).

The Budget Code of Ukraine provides a fairly meaningful classification of local budget expenditures:

- functional – according to the functions, the implementation of which is related to budget expenditures;
- program – according to budget programs. It is used in the case of the application of the program-target method in the budget process. It is formed by the local financial body based on the proposals submitted by the chief managers of budget funds during the drafting of budget requests. The distribution of local budget expenditures is determined according to budget programs in the local budget decision and can be specified during the execution of the local budget;
- departmental – on the basis of the chief administrator of budget funds. Based on the departmental classification of budget expenditures, the Treasury of Ukraine compiles and maintains a single register of managers of budget funds and recipients of budget funds. The main managers of budget funds determine the network of managers of budget funds of a lower level and recipients of budget funds, considering the requirements for the formation of a single register of managers of budget funds and recipients of budget funds and the data of such a register;
- economic – according to the economic characteristics of operations. Expenditures are divided into current (ensure the current functioning of local

government, maintenance of budgetary institutions (paying employees of budgetary institutions, accruing to the wage fund, purchasing materials, travel expenditures, paying for communal services and energy carriers, etc.), and capital (related to the expanded reproduction and are addressing to financing investment and innovation activities – implementation of structural economic reforms in the country, purchase of equipment and long-term items, capital construction, capital repair, creation of stocks and reserves, acquisition of land and intangible assets) (Verkhovna Rada of Ukraine, 2010).

In addition, by Art. 82 of the Budget Code of Ukraine distinguishes the following types of expenditure:

- expenditures for ensuring the constitutional order, state integrity, and sovereignty, independent judiciary, as well as other expenditures stipulated by this Code, which cannot be transferred to the Autonomous Republic of Crimea and local government;
- expenditures that are determined by the functions of the state and can be transferred to the Autonomous Republic of Crimea and local government for the purpose of ensuring their most effective implementation based on the principle of subsidiarity;
- expenditures for the implementation of the rights and obligations of the Autonomous Republic of Crimea and local government, which are of a local nature and defined by the laws of Ukraine (Verkhovna Rada of Ukraine, 2010).

V. EMPIRICAL FINDINGS

5.1. The overview of the current losses caused by the war

The Ukrainian government, in coalition with the World Bank Group and the European Commission, as part of development cooperation, developed the Rapid Damage and Recovery Needs Assessment (RDNA) methodology, the purpose of which is to estimate and measure in monetary terms the volume of war damage for the period from 24 February to On 1 June, 2022, the population, human development, infrastructure, business, production, and the economy as a whole (World Bank et al., 2022). Given the ongoing nature of the war, its consequences for the population and the impact on the economy will only increase, and therefore the operational restoration of the damage must begin in those territories where it is physically possible and makes economic sense.

According to the RDNA methodology, for February–June 2022, the damage caused to the investigated sectors is shown in Fig. 5.1. Direct losses from total or partial damage to physical assets amount to 97 billion USD. The most affected is the housing sector (Donetsk, Luhansk, Kharkiv, Kyiv, Chernihiv, and Zaporizhia regions); the preliminary estimate of damage is 39 billion USD. The transport sector also suffered significant losses – damage to thousands of kilometers of highways, automobiles, regional and rural roads, millions of square meters of national, railway bridges, railway, sea, and air routes reached 30 billion USD (World Bank et al., 2022). Since military ground battles are still ongoing in several regions (Kharkiv, Donetsk, Luhansk, Mykolaiv, and Kherson regions), and air attacks during this period throughout the territory of Ukraine have only increased both in terms of frequency and scale, it can be assumed that between July 2022 and February 2023, the amount of damage was at least doubled.

Determining losses by sector of the economy makes it possible to assess changes in economic flows that led to unearned benefits due to the war. So, for example, it takes into account how interruptions in the work of critical infrastructure facilities affect the functioning of the material production sphere and the service sphere; an assessment of the consequences associated with population migration is carried out; the amount of territories that cannot be used is determined, and the losses from the contamination of the territories and in connection with their mining are estimated. As of June 2022, Ukraine's total estimated cost of losses reached 252 billion USD. Only due to the mining of territories and the threat of explosive objects Ukraine lost 73 billion USD (see Fig. 5.1).

In the process of post-war reconstruction, it is radically important to have a future–

oriented approach to reconstruction – in addition to the direct restoration of assets to their pre-war physical state, it is necessary to develop measures for reconstruction based on the principle of "build back better" and with an orientation to European standards within the framework of European integration. So, for example, in order to meet the requirements for improving energy efficiency, it is necessary to modernize production and introduce sustainable development standards. The ultimate goal of planning should be constructing an innovative economy that will ensure further macroeconomic, financial, and social security for the population. The total cost of restoration works is estimated at 349 billion USD, among which the largest specific weight is the financing of the reconstruction of the transport system (74 billion USD), the cleaning of the country's territory (73 billion USD), and the restoration of the housing stock (69 billion USD) (see Fig. 5.1).

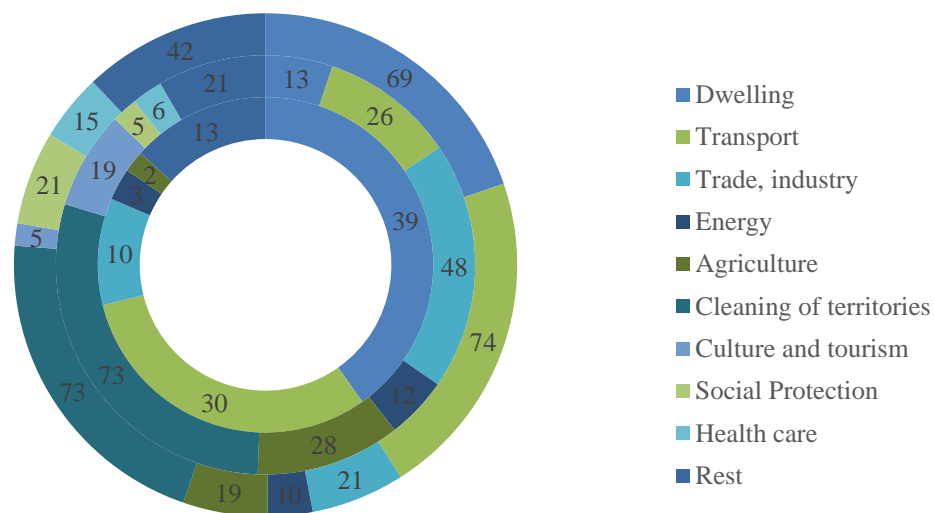


Figure 5.1. Monetary amounts of damage (inner circle), losses (middle circle), and needs (outer circle) by sector as of 1 June, 2022, billion USD (World Bank et al., 2022)

Developed by the author based on (World Bank et al., 2022)

Even under such difficult conditions, Ukraine, in its desire to overcome crisis phenomena through post-war reconstruction, has a unique chance not only to compensate for existing losses from the war but also to rethink, redesign and modernize buildings and systems of economic growth and the quality of life of the population. In addition, by developing recovery plans based on the principles of synergy with EU rules and standards (both at the regulatory and infrastructural levels), Ukraine has a chance to accelerate the synchronization of various sectors of the state's functioning with European norms and will stimulate the path of integration into the EU. The long-term nature of the reconstruction makes it possible to better build new facilities using advanced and ecological technologies (Build Back Better), which, in

turn, will lead to an improvement in the investment climate, increased competition, transparency, and integrity between sectors of the economy, promotion of digitalization and increased research, development, and innovation.

In July 2022, the Ukrainian government developed and presented a preliminary plan for the recovery of Ukraine, which can be characterized as a comprehensive and detailed document that defines the main directions for the recovery of the economy destroyed after the war, clearly separates each direction and a set of initiatives for it, and also contains accompanying measures, including legislative changes. The main principles of the implementation of the plan:

- the prompt start of the implementation of measures that will ensure the efficiency, stability, and flexibility of the functioning of the economy even under the conditions of a military threat, thereby speeding up victory in it. Because of the ongoing war, it is difficult to talk about the clarity of the transition from restoration to modernization, so it is necessary to gradually increase the risk level of projects;
- integration into the EU by implementing changes at the institutional and regulatory levels;
- reconstruction according to the principle "better than it was" (Build back better), including taking into account the approaches of the EU regarding the "Green" economy and Digital transformation;
- increasing well-being, the ultimate beneficiary of which is the Ukrainian people, i.e., ensuring a fair distribution of wealth;
- attracting private investment and stimulating the development of small and medium enterprises (Ukraine Reform Conference, 2022).

The simultaneity of the recovery processes, the scale of the destruction, and the amount of damage require the recovery plan for Ukraine's economy to be purposeful and flexible. Ensuring a stable base for income restoration, poverty reduction, GDP growth, and the general well-being of the population can be outlined in the following priorities for supporting inclusive reconstruction in the future (Fig. 5.2) (World Bank, 2022):

- supporting the functioning of the economy in a state of war and guaranteeing the safety of the population's life. At this stage, the spheres of influence support macro-financial management and government activities; protection of the population in serious socio-economic upheavals; restoration of critical

infrastructure services, and preservation of production and economic potential as much as possible.

- prompt and coordinated implementation of measures to withdraw from the on-war time policy, stimulate the restoration of infrastructure, and return the population to the territory where it is possible and safe. After the cessation of hostilities in certain territories and/or the establishment of a victorious peace in the borders of sovereign Ukraine, the government will face the problem of quickly overcoming the negative consequences of the war, and therefore it will be necessary to work in the following directions: fighting inflation and establishing macro-financial stability; creation of conditions that will allow private business to return to normal functioning, including through access to credit; strengthening of fiduciary processes for managing large inflows of resources to ensure their optimal use; restoration of the provision of public, communal and social services to citizens, including in the education, health care, housing, and communal services and social protection sectors; restoration of critical infrastructure and planning of repairs, restoration, and rebuilding of physical infrastructure.
- development and implementation of a strategy for sustainable reconstruction and modernization of destroyed or damaged critical infrastructure and legal, economic, and social institutions. The effectiveness of this phase will depend on whether Ukraine will be able to build a socially responsible, productive, and inclusive society in the medium term, which will correspond to the status of a member state of the European Union. To realize this goal, it is necessary to work in the following directions: support of macro-financial stability by carrying out fundamental reforms of the public finance system and the financial sector; stimulating the development of a dynamic, foreign market-oriented, technologically equipped private sector; restoration of state provision of social services to ensure protection among the most vulnerable and building a sustainable infrastructure to support the new economic model in a way that is financially, environmentally and socially responsible.

Since the war is still ongoing, and it is difficult to predict when the active phase of hostilities will end and full-scale reconstruction can begin, significant resources are needed not only in the future but also now to prevent irreparable damage to Ukraine. Available budget

resources are largely limited – the budget has experienced a large drop in revenues, pre–formed emergency reserves are insufficient, and tax and non–tax revenues are decreasing – all this only stimulates an increase in the budget deficit. Therefore, finding sources of its financing is urgent and necessary for a solution in the shortest possible time. Considering the state of war, Ukraine can consider the following sources of funding for current and future expenses: financial assistance (external and internal), public and private assistance, confiscation of Russian assets, etc.

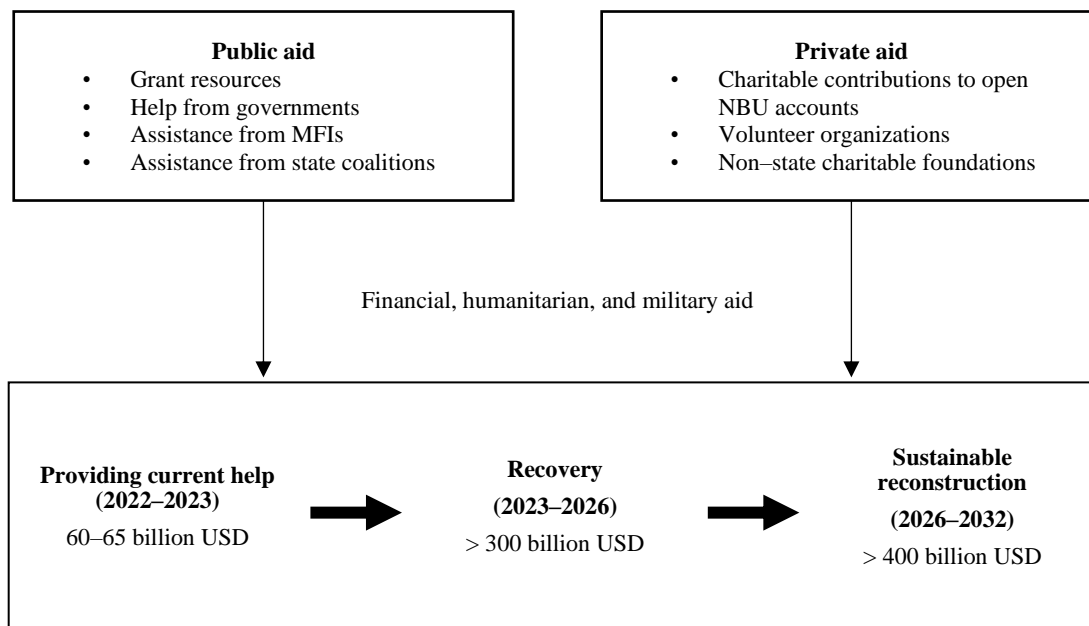


Figure 5.2. A step–by–step chronology of Ukraine's recovery from the war and the amount of its financing

Developed by the author based on (World Bank, 2022; Ukraine Reform Conference, 2022)

5.2. Types and volumes of aid to Ukraine

From the first hours of the war, leaders of developed countries and representatives of international financial organizations expressed concern, support, unity, and solidarity with the Ukrainian people in response to the brutal and unprovoked Russian aggression, condemning it and developing measures to suppress it. In his evening address on 24 February, the President of Ukraine called on the international community to respond effectively and take effective measures.

Thus, international aid to Ukraine during a full–scale military invasion provides military, humanitarian, and financial aid. Military support includes all types of weapons and military equipment, as well as items directly transferred to the Ukrainian military (such as

bottled water, gasoline, or food). Humanitarian aid is provided to the civilian population, mainly food, medicine, clothing, and other essential items. Financial support includes grants, loans, and credit guarantees provided to the government of Ukraine, currency swap lines, etc.

Throughout the entire invasion, a team of experts from the Kiel Institute for the World Economy created the Ukraine Support Tracker, which catalogs and quantifies the monetary and non-monetary assistance to Ukraine as part of the Russian-Ukrainian conflict. The institute's research tracks the support of 40 governments, including all of the G7 and European Union members, as well as institutions within the EU (i.e., including 41 donors) (Kiel Institute of the World Economy, 2022). The investigation doesn't account for private donations or non-governmental organizations' assistance due to a lack of systematic data.

In the latest version of the study, the aid includes the period from 24 January (before the start of a full-scale invasion, governments were preparing Ukraine for a possible invasion at that time based on the conclusions of intelligence agencies) to 15 January 2023. During this time, a total of 156.9 billion euros of financial (50.7%), military (41.6%), and humanitarian (7.7%) aid was provided to Ukraine. In absolute terms, the largest donor to Ukraine is the United States of America (the Anglo-Saxon group of countries, see Fig. 5.3), which since the beginning of Russian aggression, has provided aid in the amount of almost 73.2 billion euros, including military aid in the amount equivalent to 44.3 billion euros.

During the analyzed period, the White House announced packages of armed aid 4 times for more than 1 billion dollars. The top donors of Ukraine are followed by the Commission and the Council of the EU, which jointly provided Ukraine with aid in the amount of almost 29.9 billion euros, of which 28.3 billion euros were provided as part of financial assistance, primarily to ensure the macro-financial stability of the country. The previous version of the data dated the collected aid for the period from 24 January to 31 November 2022. Fig. 5.3 shows a comparative analysis of received financial, military, and humanitarian aid for two periods – from 15 January 2022 to 30 November 2022 and from 15 January 2022 to 15 January 2023. The growth rates in financial and humanitarian assistance have slowed down and are at the level of 0.33% and 0.24%, respectively; however, in one and a half months, the volumes of military aid have increased significantly by 5.63%. This growth is explained by the active diplomatic policy of the Office of the President, the Ministry of Foreign Affairs, the participation of Ukraine in international events, and the direct visits of the President of Ukraine to the USA and European countries, which stimulated partner states to provide more military equipment (World Bank, 2022).

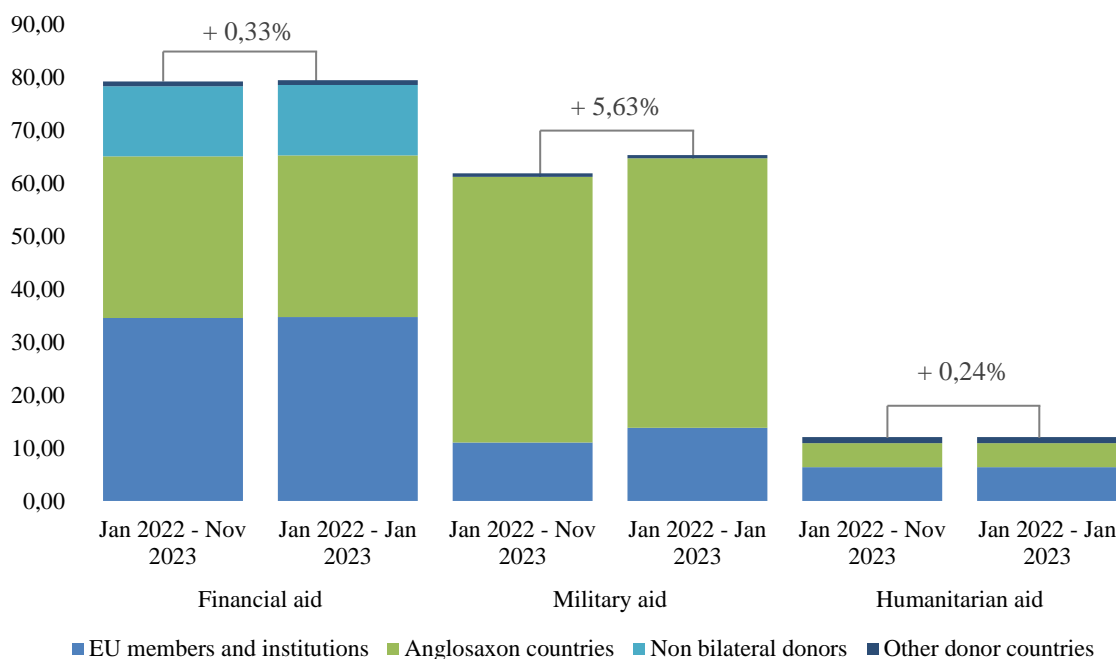


Figure 5.3. Amounts of aid to Ukraine from January to November 2022, January 2022 to January 2023 by donors, billion euros

Developed by the author based on (Kiel Institute of the World Economy, 2022).

With the passage of military operations on the territory of Ukraine, problems and destruction only increase, and therefore the question of financing the restoration of the damage has become urgent. The government calls on investors, international partners, public organizations, businesses, and citizens to become part of the recovery of Ukraine and contribute to the revival of economic stability. The reaction and position of the NBU as the central body of state administration was prompt and clear – on the morning of 24 February, the then Chairman of the NBU, Kyrylo Shevchenko, announced the opening of a special account to collect funds to support the Ukrainian Armed Forces in the implementation of martial law in Ukraine as a result of the Russian military's armed invasion and threat to the country's territorial integrity, independence and sovereignty. The account is multi-currency – it is possible to transfer funds to it both to international donors (in US dollars, euros, British pounds, Swiss francs, Australian dollars, Canadian dollars, renminbi yuan, yen) and Ukrainian (hryvnias) (National Bank of Ukraine, 2022). Since the beginning of the war, as of the end of January 2023, assistance in the amount of UAH 23 billion has been accumulated in the accounts of the NBU (National Bank of Ukraine, 2023b).

In early March 2022, in response to the humanitarian crisis, the NBU opened a multi-currency special account for the beneficiary represented by the Ministry of Social Policy. The

Ministry of Social Policy is a specially authorized central body of the executive power to provide humanitarian aid and is guided in its work by the Law of Ukraine "On Humanitarian Aid." Accumulated funds in the NBU account are used to cover the needs of those citizens most affected by Russian aggression, namely:

- meeting the food needs and arrangement of accommodation for refugees and citizens who left their place of residence in connection with hostilities;
- providing them with clothes and shoes, providing medicines and medical preparations;
- providing the population with essential goods,
- provision of one-time monetary assistance, and satisfaction of other primary needs of human life (Ministry of Social Policy, 2022).

As of 7 February, 2023, the NBU operates a number of accounts, funds from which will be transformed in the future to create recovery funds to meet special urgent needs: support of the Ukrainian army (recipient of funds – NBU), small and medium-sized businesses (Ministry of Economy), restoration and transformation of the economy (Ministry of Economy), servicing and repayment of public debt (Ministry of Finance), restoration of property and destroyed infrastructure (Ministry of Infrastructure), humanitarian aid (Ministry of Social Policy) (Cabinet of Ministers of Ukraine, 2022).

For a more efficient and prompt response to challenges, the government and public activists developed a single global platform for collecting such funds – UNITED24, which the President of Ukraine Volodymyr Zelenskyi announced in May 2022. The platform contributes to the distribution of funds directly to relevant ministries responsible for various areas of recovery of Ukraine. The project organizers effectively cooperate with businesses and governments of other countries – for example, the platform works in the United States of America (USA) through a fund at the Embassy of Ukraine in the USA. The platform is gaining great popularity among international donors, and most donations come from the USA, France, Canada, Germany and Great Britain. During the first week of platform operation, 26 million dollars were received. USA donated. Since the platform is of a public nature, it is especially important to have a transparent nature of its activities; therefore, during its development, daily public reports on the funds collected and weekly reports on expenses were foreseen. Every quarter, the platform undergoes an external independent audit. As of 7 February 2023, almost 285 million USD has been collected using the platform. The platform accumulates funds in NBU accounts, for three different recipients, depending on the financing directions:

- Defense and demining (administrator – Ministry of Defense) – receipts to the account for the period from 5 May 2022 to 7 February 2023 amount to 233.4 million USD. During this time, the acquisition of equipment (helmets, body armor, underwear, headgear, shoes, jackets, etc.) and weapons (machines for demining, night vision devices and thermal imagers, rotorcraft, quadcopters, pyrotechnic machines, anti-drone systems, etc.) of the military for a total amount of more than 186 million USD;
- Medical assistance (administrator – Ministry of Health). As of 7 February 2023, the account collected 37.4 million dollars. USA, of which there were almost 30 million USD to support the health system of the country (armored evacuation vehicles, specialized sanitary transport, ventilators, anesthesia machines, X-ray units, generators, exercise machines for rehabilitation, etc.);
- Reconstruction of Ukraine (administrator – Ministry of Infrastructure). Direct work on restoring important infrastructure facilities will begin soon, but as of 7 February 2023, the account accumulated 14.2 million USD (UNITED24, 2023).

In addition, such a source as non–state funds and public organizations, charitable funds, and volunteer groups, which effectively attract money to provide humanitarian aid to Ukrainians and military aid to the Armed Forces of Ukraine, is no less important in terms of the amount of funding. Thus, as of November 2022, one of the largest charitable funds, "Return Alive," has collected 5.3 billion UAH, Serhiy Prytula's fund – 3.2 billion UAH, and KSE Foundation – 1.5 billion UAH (Forbes UA, 2022). Although a single register of volunteer organizations is maintained in Ukraine, due to their scale and dispersion, it is impossible to calculate the total amount of aid received in this way since the real number of benefactors is much larger.

5.3. Conducting financial management under complexity conditions: Ukrainian local authorities' case

The ongoing armed conflict between Ukraine and Russia that began in 2014 has posed significant challenges to the financial management of local authorities in Ukraine (OHCHR, 2022). As the war continues into its ninth year, local governments have struggled with budget deficits, reduced tax revenues, increased spending on security and humanitarian needs, and corruption risks (OECD, 2022). The challenges of budgeting, spending, and managing funds during a prolonged armed conflict have been enormous and complex for local authorities in Ukraine (USAID, 2023). The financial management of local governments will likely remain

an ongoing struggle as long as the conflict continues and its effects endure.

As part of the writing of the master's thesis, two interviews were conducted with representatives of the next local authorities – Dmytrivska FTC, Kyiv region (#1), and the Department of Land Resources of the Mykolaiv City Council (#2).

Local budgets have faced major shortfalls due to declining tax collections from businesses and individuals amid the economic difficulties of the war (World Bank, 2020). Local revenues, which comprise the majority of municipal budget funding, have declined sharply as businesses have struggled, unemployment has risen, and people's purchasing power has decreased (International Monetary Fund, 2022b). At the same time, local authorities have had to allocate more funds to military and police forces, support displaced persons and refugees, repair infrastructure damage, and provide aid and pensions to families of soldiers killed in action. These increased expenditures have strained already tight budgets and left many local governments with budget deficits, which proves the *sensitive dependence on initial conditions*, where small changes in the initial conditions (i.e., the occurrence of war) can have a significant impact on the budget. Moreover, this dynamic relationship between variables is characteristic of *feedback loops*, where the output of a system becomes the input for the same or related system, creating a continuous cycle of feedback (changes in revenues have unintended consequences on other aspects, for example, expenditure or debt management). Based on the responses of the interviewed representatives, it can be observed that the budget of the local-level government has undergone changes since the onset of the war. The main sources of revenue have not shifted significantly in terms of structure but in their volumes. Thus, for #1, the main sources of income in 2022 remained tax revenues, with the personal income tax reaching 65.72% share of the revenues of the general fund and the single tax (enterprise income tax) - 10.29%, but *“the volume was reduced due to the outflow of the population and the partial destruction of enterprises - the main taxpayers of the pre-war period.”* It is also noted for #1 that the budget has been fulfilling its obligations, with an implementation rate of 95.81% on a general fund and 20.48% on a special fund.

The options available to local governments to finance these deficits are limited and unsatisfactory, so it makes them search for additional funding sources and cooperate with different actors to manage the performance of financial management – and that serves as an example of the *emergence* of local authorities. Local authorities have had to cut costs by reducing staff, limiting non-essential services, and delaying investment projects. However, budget austerity measures have made it difficult to maintain even basic services and improve

living conditions in their regions. Despite these challenges, local governments have been able to secure some financing from external sources. For example, donor funds have been provided to support communities in conflict-affected areas, although these funds have been particularly vulnerable to corruption due to limited oversight and control. Regarding the cooperation between the government on the local level and international organizations, it was noted that such cooperation is not practiced for #1. For #2, such practice is relatable, but as long as the representative was from the Department, they did not have the authority to conduct such cooperation directly, so they used communication with the Mykolaiv City Council. The search for additional sources of funding is carried out also through interbudgetary transfers, as for #1, *"basic needs are covered by own revenues and state subsidies."* Another way of financing urgent needs in Ukraine during on-war time is the funds of the special fund of local budgets, which became possible after the adoption of a corresponding decision to change the legislation in this aspect in July 2022. Thus, the local government was given the right to:

- transfer funds from the special fund of the local budget to the general fund of the local budget;
- to carry out new local borrowings and provide local guarantees, even if in the process of making payments for the repayment and service of the local debt, the payment schedule is violated, fines are charged, and overdue debts arise;
- carry out expenses not assigned to the relevant local budgets and expenses for the maintenance of budgetary institutions at the same time from different budgets and other powers;
- to carry out new local borrowings and provide local guarantees, even if in the process of making payments for the repayment and service of the local debt, the payment schedule is violated, fines are charged, and overdue debts arise (Decentralization, 2022).

But as in the case of #1 and #2, this method of finding additional funding sources was not adopted.

However, budget austerity has made it difficult to maintain even basic services and improve living conditions in their regions. Local governments remain in a precarious financial position with many uncertainties ahead regarding the course and end of hostilities. Thus for #1, it was recorded that *"The main areas of expenditure are to ensure the activities of the council; ensuring the functioning of institutions providing housing and communal services; provision of both preschool and general secondary education. If we pay attention to expenses according*

to the economic classification, then these are wages and accruals for them (approximately 50% of expenses) and payment of services (except utilities) (15% of expenses). During on-war time, expenditures are paid on a priority basis. Expenditure items of the general fund were expanding with the articles for the organization of territorial defense units activities and measures for preventing and eliminating the consequences of a natural disaster". The situation is even worse for #2. Before the full-scale invasion, the main areas of expenditure were items of expenses for management and administration, measures related to economic activity, and measures with land use. When asked about how the structure of expenses changed in 2022, it was stated that "*the Administration was removed from office. No expenses were incurred except for the salaries of employees who were taken out on leave to perform their duties. Funds for wages were in savings and at the end of the year were transferred to the budget, together with funds for obtaining management and from other economic programs*". But by doing this, local authorities exemplify autonomy and improvisation, which are characteristic of **self-organizing** systems.

The challenge of choosing priorities during a prolonged armed conflict is a complex and ongoing issue for local governments in Ukraine. With limited resources and competing needs, these governments must make difficult choices about allocating their funds to balance the books while also supporting security, humanitarian, social, and development needs. One of the priorities of the territorial community is the optimization of financial management. This has been achieved by consolidating the financial management of schools and pre-school education institutions under one body in the case of #1. Infrastructure restoration is also a critical priority for #1 and #2. These actions demonstrate a certain degree of strategic thinking and adaptation, which are characteristic of systems undergoing **phase transitions**.

There are also concerns about corruption emerging or increasing within local governments as they handle large amounts of funds mobilized for the war effort. The lack of transparency and accountability mechanisms has allowed for the misuse of resources and abuse of power at the local level. Donor funds provided to support communities in conflict-affected areas have been particularly vulnerable to corruption due to limited oversight and control. As noted from the responses of representative of #2, "*All tenders for the purchase of any services, goods and works are processed through the PROZORO system.*" PROZORRO is a public procurement system that was introduced in Ukraine in 2015. It aims to increase transparency and competition in government procurement by allowing businesses to participate in tenders electronically and providing real-time data on government procurement activities. This system

has helped to reduce corruption and increase efficiency in government procurement, making it an important tool for improving the transparency of the Ukrainian budget system (Kelman & Yukins, 2022).

One of the key challenges for local-level government has also been maintaining communication and cooperation with higher levels of government. As the conflict has progressed, the need for coordination and cooperation between different levels of government has become increasingly important, particularly in terms of ensuring that financial resources are allocated effectively and efficiently. To address these challenges, the Organisation for Economic Co-operation and Development (OECD) (2022) has recommended that Ukraine improve the strategic planning and coordination of public administration reform across all levels of government. This would involve establishing clear lines of communication and cooperation between the local, regional, and state levels of government, as well as improving the transparency and accountability mechanisms in local governance. Both representatives state that communication and coordination between the territorial community and regional/state authorities have been fruitful. Targeted subventions and special programs have been utilized to aid in the reconstruction of medical facilities and houses in the case of #1.

Overall, the responses from the interviewed representatives of the local level government indicate that financial management during and after the war is complex and challenging and is not a linear process but a complex and dynamic system influenced by various interconnected factors related to the complexity theory. However, the communities have been able to manage their finances well, and the implementation rate of the budget has been high. The communities have also shown resilience and resourcefulness in identifying additional sources of funding and addressing areas that require financial support. The prioritization of infrastructure restoration and the optimization of financial management are commendable efforts to ensure the community's long-term financial stability. Local governments have had to make difficult choices to ensure financial sustainability during the war, but their options remain limited and unsatisfactory. There are no easy fixes to budget shortfalls and increased costs, only hard decisions that often come down to reducing services, cutting jobs, or delaying investments—all of which negatively impact communities. The financial challenges of funding a prolonged conflict will likely shape local governance and policymaking in Ukraine for years to come.

VI. DISCUSSION AND ANALYSIS

6.1. The complexity theory insights to local financial management under conditions of war

The findings reveal some interesting insights into the challenges and strategies of financial management in the context of war. Overall, it is clear that the ongoing conflict has had a significant impact on the sources and structure of budgets, as well as on the directions and structure of expenses at both investigated communities. However, different localities have faced these challenges in different ways, depending on their specific contexts and resources.

The complexity theory suggests that systems are composed of many interconnected parts that interact with each other and that the system's behavior as a whole cannot always be predicted by looking at the individual parts. When applied to financial management of local authorities, this theory suggests that the financial system is a complex adaptive system, where minor alterations to one part of the system can have significant and unpredictable consequences on the entire system.

Sensitive dependence on initial conditions. This means that small changes in a system's initial conditions can lead to very different outcomes. The impact of the war and the subsequent reconstruction efforts have led to significant changes in the initial conditions of the financial system, which has resulted in significant changes in the sources and structure of the budget, as well as changes in the direction and structure of expenditures. The local government's budget is heavily influenced by external factors, such as the destruction of enterprises due to the war or the size of the minimum wage. These initial conditions significantly impact the budget revenue and expenditure structure. For example, the size of the minimum wage affects the revenues of the Personal Income Tax Office, which is a significant contributor to the general fund, as, for example, #1.

Feedback loops. In the case of financial management of local authorities, changes in budget sources and expenditures can result in feedback loops that either amplify or dampen the effects of those changes, which can lead to unintended consequences. For example, the size of the budget deficit affects the use of grants to close the gap, which in turn affects the size of the deficit. Within case #2, the funding for the implementation of land management measures was reduced, which led to a decline in the quality of land management, which could further decrease budget revenues.

Self-organization. It refers to the ability of a system to adapt and reorganize itself in response to changes in its environment. Self-organization is reflected in the community's ability to find new funding sources and adjust its expenditures in response to changing circumstances.

The interviewee of #1 mentioned that the community's financial management powers were consolidated into a single body, indicating a form of self-organization. This could be interpreted as an attempt to simplify and optimize the management structure to increase efficiency and effectiveness in budget management. The Department of Land Resources of the Mykolaiv City Council is also an example of self-organization in the local government. It is responsible for implementing the policy of the city council in the field of reforming land relations, rational use and protection of land, and coordinating the activities of local land management bodies.

Emergence. It refers to the appearance of new behaviors or patterns that arise from the interactions of the parts of a complex system. In the case of financial management of local authorities, it is reflected in the appearance of new sources of funding (like UNITED24) and new directions for expenditures that arise from the complex interactions between different actors in the financial system, which is relatable for both cases.

Phase transitions. They refer to sudden and dramatic changes in the behavior of a complex system that occurs when a critical threshold is reached. The interviewee from #1 mentioned that the restoration of infrastructure and repair of roads are the directions for which additional assistance can and should be received. This could be interpreted as a phase transition from a focus on meeting basic needs to a focus on rebuilding and improving infrastructure as the war comes to an end. This transition could require a shift in budget priorities and allocation of resources. Additionally, the need for additional funding to reconstruct and improve the city after the war represents a phase transition in the budgeting process that both local authorities need to be aware of already.

In conclusion, the financial management of local authorities in Ukraine can be seen through the lens of the complexity theory, which suggests that the system is a complex adaptive system that is sensitive to initial conditions, is characterized by feedback loops, can self-organize, exhibits emergence, and may undergo phase transitions. Understanding these concepts can help local authorities to better manage their finances in a rapidly changing environment.

6.2. Potential actions of local authorities

Local authorities face various challenges regarding financial management during on-war time: uncertainty, limited resources, security concerns, and infrastructure damages. To address these challenges, local authorities can explore a range of potential actions that could help manage their financial management process during an ongoing war.

One possible action is for local authorities to create a contingency plan that outlines the steps they would take in the event of a crisis, such as a war. This plan should include strategies for maintaining financial stability, identifying alternative sources of revenue, and prioritizing expenses. By having a contingency plan in place, local authorities can ensure that they are prepared for any unforeseen events that may impact their finances, reflecting *self-organization* ability.

Transparency and accountability are critical components of effective financial management, particularly during times of crisis. Local authorities should ensure that their financial records are accurate and up-to-date and that they are transparent about how funds are being spent. Increasing these components align with the principle of *emergence*, which will lead to the emergence of trust and cooperation among the local authority and the community.

While it is essential to focus on short-term financial management during a crisis, local authorities should also develop a long-term financial management strategy. This can help to ensure that the community is well prepared for future crises and that financial stability is maintained over the long term. By implementing a long-term financial management strategy, local authorities can create *feedback loops* that enable them to learn from past experiences and adjust their financial management approach accordingly.

Local authorities should explore external funding and support opportunities, such as grants from international organizations or donations from private individuals or businesses, that can help local authorities to transition the phase of a crisis state to a more stable financial position and help local authorities build resilience and adaptability to changing conditions (*sensitive dependence on initial conditions*).

Effective communication and coordination between different departments within the local authority are also essential during times of crisis. Clear communication channels can help to ensure that everyone is on the same page and that financial decisions are made in a coordinated and collaborative manner.

VII. CONCLUSION

7.1. Summary of the study's main findings

The ongoing conflict between Ukraine and Russia has significantly impacted the country's economy, causing a significant reduction in economic capabilities, production, and exports, as well as a deterioration of the investment climate, a fall in the value of the national currency, and inflation. As a result, Ukraine needs significant resources to keep its economy functioning during the war and to recover after it.

This thesis used a qualitative approach to understand the financial management practices of local authorities in Ukraine during the ongoing armed conflict between Ukraine and Russia. The study found that the financial management of local authorities is a complex adaptive system that is sensitive to initial conditions, characterized by feedback loops, can self-organize, exhibits emergence, and may undergo phase transitions. The study's findings have significant implications for policy and practice. Understanding these concepts can help local authorities to better manage their finances in a rapidly changing environment.

A qualitative approach was employed using a multiple case study design with two local authorities as cases, and semi-structured interviews, observations, and document analysis were used as data collection methods.

It identified a number of challenges that local authorities faced in managing their finances during the war, including budget deficits, reduced tax revenues, increased spending on security and humanitarian needs, and corruption risks.

In conclusion, the study has shed light on the financial management practices of local authorities during the ongoing armed conflict between Ukraine and Russia. I hope that findings and recommendations will be useful for local authorities, policymakers, and researchers, in their efforts to better understand and manage the financial challenges of the conflict.

7.2. Limitations of the study

While this study provides valuable insights into the financial management practices of local authorities in Ukraine during a time of war, several limitations must be considered in order to properly interpret and apply the findings:

- Small sample size, as only two local authorities were included in the case study. This may limit the generalizability of the findings to other local authorities in Ukraine.
- Limited access to data, as well as military actions, are still going on, so it is difficult to get access to data. This may limit the ability to draw conclusions

based on a comprehensive and representative dataset, which could impact the overall validity of the findings.

- External validity, the study's findings are specific to the context of financial management of local authorities in Ukraine during the war and may not be generalizable to other contexts or time periods. As the military conflict has only deepened at the time of writing the Master Thesis, in parallel to the identified challenges and problems, Ukraine also must ensure the fulfillment of an urgent and acute need for the state's defense. The size of the necessary aid in weapons, ammunition, and equipment is enormous and requires a quick and effective response.
- Subjectivity and bias: The researcher's biases and subjectivity may impact their interpretation of the data and conclusions. The researcher should be transparent about their methods and potential biases to ensure the credibility and reliability of their finding.

7.3. Future research directions

There are several potential future research directions in the field of financial management of local authorities in Ukraine during the war.

One potential direction for future research is to explore the effectiveness of different financial mechanisms for supporting the restoration process in Ukraine. For example, a comparative analysis of the use of public-private partnerships, multilateral development banks and international financial institutions, and new financial instruments such as green bonds and social impact bonds could be conducted to determine which mechanisms are most effective in different contexts.

Another potential direction for research could be a more in-depth analysis of the role of international organizations and donors in supporting local authorities in Ukraine during the war. This could include an examination of the effectiveness of various types of assistance, such as technical support, financial aid, and capacity-building initiatives. Research could focus on the potential for new technologies and approaches to financial management, such as blockchain, to improve financial transparency and accountability in local authorities in Ukraine during and after the conflict.

Also, investigating the role of state regulatory bodies in managing the restoration process and securing financial resources can be considered a direction for future research. This could involve exploring the challenges and opportunities associated with coordinating financial

management across different levels of government, as well as the impact of political factors on the allocation and use of financial resources.

Finally, future research could examine the long-term impact of the ongoing conflict on the financial management practices of local authorities in Ukraine and the country's overall economic development. This could involve exploring the potential for sustainable development, the challenges associated with rebuilding infrastructure, and the role of financial management in supporting economic growth and development in the post-conflict period.

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APPENDIX 1

Interview Guide: Financial Management of Local Body Authorities in Ukraine During War

Introduction

Thank you for agreeing to participate in this interview. This interview is part of a master thesis project that aims to understand the condition of financial management of local body authorities in Ukraine during the war. The purpose of this interview is to gather your perspectives and insights on the topic. Please note that all information provided will be kept confidential and will only be used for academic purposes.

Financial condition and how does it had changed

1. What are the main sources, and what is the structure of the budget of your territorial community during the war?
2. How did the sources of budget revenues and their structure change compared to pre-war times?
3. What are the main directions and structure of expenditures of your territorial community?
4. How have the directions of expenditures and their structure changed compared to pre-war times?

Ways of financing the deficit

5. What sources cover the budget deficit? How has the size of the deficit changed compared to the pre-war period?
6. Who are the main donors of the budget of the territorial community during the war? Do you cooperate with international organizations? If so, in what way
7. How is the search for additional sources of funding carried out, and what are the main difficulties faced by your territorial community?
8. What expenses does your local community need additional financial support for?

Challenges and Strategies

9. What are the main priorities of your territorial community regarding the improvement of budget and financial management during and after the end of the war?
10. How is cooperation between the territorial community and the

regional / state authorities implemented during the war? What are the problems in communication and coordination?

11. How is the transparency of distribution and spending of accumulated funds ensured?

Conclusion

Thank you for taking the time to participate in this interview. Your insights and perspectives are greatly appreciated. If you have anything to say more, please feel free to do it.