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Decentralization and Communities Amalgamations: Increasing the Urban and Rural Divide?

Ukrainian ATCs during RF full-scale invasion

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EXECUTIVE SUMMARY

Since February 24, Ukraine has faced an unprecedented shock — a full-scale RF invasion. As a result of the war, the country faced many challenges – large-scale physical destruction and shelling, occupation, migration, logistical disruptions, humanitarian crises, business shutdowns, and many of these challenges affected the local communities (hromadas).

The decentralization reform, which has been ongoing since 2014, was designed primarily to increase the autonomy and self-sufficiency of local territorial communities by providing extensive administrative and fiscal autonomy. In the previous section of our study, we focused on the revenue efforts of amalgamated communities – how efficient utilization of the available resources can increase the revenues hromadas receive. It showed that prior to the invasion hromadas had a substantial space to increase budget revenues – inflows from collecting taxes and different fees on average could be increased by a quarter. This could be streamed into providing better public services and goods inside local communities, or used to substitute subsidies from the national government, increasing the financial autonomy of ATCs. In this part of the study, we analyzed (i) what problems the amalgamated territorial communities (ATCs) faced during the first months of the RF full-scale invasion, (ii) how significant the impact of the war on their situation was, (iii) how resilient communities managed to remain during such an exogenous shock, and also (iv) what the local authorities did to avoid or minimize the consequences of war. We assessed the resilience of communities and strategies for overcoming the crisis by local authorities with the help of a survey of the heads of ATCs. We collected data on 474 local communities, which corresponds to a third of all hromadas, the territories of which were not occupied before February 24.

According to our survey sample, every 7th community has gone through active hostilities on its territory, and every 10th ATC was occupied by RF troops or is still under occupation. The war forced millions of people to leave their homes. Territories in the most dangerous regions experienced a significant population outflow. Among the surveyed communities located in the war zone, 60% noted a decrease in the population. At the same time, communities outside the zone of active hostilities accepted a significant number of internally displaced individuals. More than 1.3 million people arrived in amalgamated communities from our sample. On average, these ATCs hosted internally displaced persons equal to 13% of the total population.

Due to physical danger, as well as the closure of some official registers for security reasons, almost 40% of all surveyed communities were forced to stop providing public administrative services to citizens. However, most of them have already managed to resume their provision. In addition, two-thirds of the communities that suffered, for example, interruptions in waste disposal services (which can be directly facilitated by local authorities), managed to solve this problem.

The drop in business activity caused by the war, mass displacement of the population, logistical disruptions, and the government's anti-crisis measures to ease the tax pressure have had a significant impact on the budgets of local communities. The budget revenues of many of the communities fell both relative to expected indicators and relative to last year's inflows. Even after two months of the war, when the advance of Russian troops had slowed significantly, 56% of communities outside the combat zone and 85% of communities in war zones reported lower incomes compared to the expected ones. Typically, communities noted a drop in revenues from personal income tax, excise taxes, and land tax. In annual terms, total revenues also decreased – by an average of 7.6% YoY (year-over-year) for communities in the war zones for the period of March-May 2022.

In order to maintain financial stability, half of the communities from our sample resorted to cutting budget expenditures. The most frequently cut categories of expenses are expenses on education, housing and communal services, and general administrative expenditures. The communities also decided to reduce capital expenditures for construction and modernization, as well as the payment of wages to public employees. It is also worth mentioning that every 5th community, which cuts expenditures, cuts the salary expenditures and not expenditures for capital projects, which somewhat violates the generally accepted principles of primarily preserving the incomes of employees.

Communities in war zones need humanitarian support due to the significant complexity of supplies and logistics, and in areas where hostilities have not taken place, this need arises due to a large number of incoming internally displaced persons. Volunteers, international and Ukrainian humanitarian organizations, as well as municipalities from other countries, helped the hromadas with these needs. For example, aid from humanitarian organizations was received by half of the communities outside the zone of active hostilities. However, 40% of the ATCs in the war zone did not receive such support, whereas 12% of them managed to attract the support of local communities of other countries, indicating the importance of horizontal connections at the level of local government.

We examined the relationship between the resilience of local authorities in overcoming the crisis and the quality of public governance in peacetime. As a measure for the quality of public governance in a peacetime we used estimates of hromadas' own revenues efforts which represents the share of own revenues that the community receives relative to the maximum amount it could potentially obtain given its characteristics.

The estimation results showed that the drop in revenues became an exogenous shock, which was not affected by the budgetary efficiency during peacetime. However, we found statistical evidence that communities that used to generate income more efficiently were more likely to ensure the functioning of administrative services during the war. In addition, more efficient communities prior to the RF invasion were less likely to cut budget expenditures or ask other authorities for financial aid because they likely had more balanced and autonomous budgets.

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ACTED – Agency for Technical Cooperation and Development.

ATC – Amalgamated territorial community.

FAO – Food and Agriculture Organization.

GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit.

IOM – International Organization for Migration.

MSF – Médecins Sans Frontières.

NRC – The Norwegian Refugee Council.

PIN – People in Need

R2P – Right to Protection.

UN – The United Nations.

UNDP – United Nations Development Programme.

UNHCR – The United Nations High Commissioner for Refugees.

UNICEF – The United Nations International Children's Emergency Fund.

SFA – Stochastic frontier analysis.

WFP – Wood Food Programme.

INTRODUCTION

A full-scale military RF's invasion of Ukraine resulted in one of the biggest humanitarian crises on the European continent in the last decades, with more than 7 million internally displaced people (IOM, 2022[1]), and one-third of the Ukrainian territory was either occupied or being an active war zone at the peak of the invasion. After defeating the Russian army in the northern parts of the country, the liberated communities face the immense challenges of bringing back essential services, organizing food and other humanitarian deliveries, and creating safe day-to-day life for the community members. The hromadas located outside the war zones must cope with the influx of internally displaced people, increased workload on their infrastructure and build up efficient communications with the numerous volunteer organizations. Regardless of the community's location, many of them faced logistic shortages, a decrease in business activities, unprecedented migration, and a consequent decrease in budget revenues.

Investigating the effects of war on the amalgamated territorial communities (ATCs), we focus on four major points of interest in this research. The first one is the effect of war on the local budgets. A substantial decrease in business activities and halted businesses around the country are expected to negatively affect local tax revenues. The second research area is the coping strategies of the amalgamated communities as a reaction to the rapidly changing environment – what magnitude of budget deficit local communities are able to tolerate and what kind of expenses they decide to cut in this crisis. And the third point of interest is the resilience of the local governments. How well have local governments been able to maintain (or restart) the day-to-day functioning of their communities and adapt to the new environment and new needs of their communities? In this context, we define resilience as the capacity of local authorities to adjust and perform well during the war despite external shocks and threats. As the fourth point of interest, we also use the results from the previous section of our research study to see whether the performance of the local communities and their governments (measured by the budget's own revenue effort) during the pre-invasion times was associated with their coping strategies and resilience during the war.

1. BASIC INFORMATION ON ATCs IN THE SURVEY AND WAR IMPACTS

1.1 SAMPLE DESCRIPTION

The online survey of heads of the Ukrainian ATCs was conducted in June-August 2022. The original questionnaire sent to the respondents is available in Annex 1. The total number of responses is 474 (33% out of all 1,469 communities). The initial number of responses included duplicates – some hromadas simultaneously submitted multiple identical answers, and some sent an additional response (in most cases, a month after the first response was sent). In every case of duplicate survey responses, the latest response available is taken for analysis. The sample contains responses from 148 urban ATCs, including hromadas with large cities (regional centers) inside, like Cherkasy, Chernihiv, Chernivtsi, Kamianske, Khmelnytskyi, Kryvyi Rih, Mykolaiiv, Odesa, Odesa, Zaporizhzhia, and 326 rural communities.

Most of the answers were collected from Central and Western Ukraine (

Table **1.1**). The regions with the most observations are Dnipropetrovsk oblast (53 ATCs or 11.2% of all responses), Kyiv oblast (30 ATCs, 6.3%), and Poltava oblast (29 ATCs, 6.1%). We have little information from the regions that are by August 2022 have been almost entirely under the RF occupation – Luhansk oblast (3 ATCs, 0.6% of total observations) and Kherson oblast (1 ATC, 0.2%).

[1] The International Organization for Migration (IOM), The UN. The Ukraine Internal Displacement Report. August 2022. https://displacement.iom.int/reports/ukraine-internal-displacement-report-general-population-survey-round-8-17-23-august-2022

Table 1.1 Regional distribution of responses collected

Region	ATCs	Share
Dnipropetrovsk oblast	53	11.2%
Kyiv oblast	30	6.3%
Poltava oblast	29	6.1%
Zhytomyr oblast	27	5.7%
Ivano-Frankivsk oblast	26	5.5%
Chernihiv oblast	26	5.5%
Vinnytsia oblast	25	5.3%
Lviv oblast	25	5.3%
Odesa oblast	25	5.3%
Volyn oblast	20	4.2%
Zakarpattia oblast	19	4.0%
Rivne oblast	19	4.0%
Ternopil oblast	19	4.0%
Sumy oblast	17	3.6%
Kirovohrad oblast	16	3.4%
Mykolaiv oblast	16	3.4%
Donetsk oblast	15	3.2%
Khmelnytskyi oblast	15	3.2%
Zaporizhzhia oblast	14	3.0%
Kharkiv oblast	13	2.7%
Cherkasy oblast	12	2.5%
Chernivtsi oblast	9	1.9%
Luhansk oblast	3	0.6%
Kherson oblast	1	0.2%

Hromadas representation within oblasts in the resulting sample varies from 20% to 40%. The highest share is in Dnipropetrovsk oblast (62% ATCs responded), and the lowest in Kherson oblast, where only 2% of all ATCs in the oblast filled the questionnaire (Table 1.2).

Table 1.2 Survey regional coverage

Region	Total number of ATCs	ATCs in the Survey	Survey Coverage
Dnipropetrovsk oblast	86	53	62%
Poltava oblast	60	29	48%
Chernihiv oblast	57	26	46%
Kyiv oblast	69	30	43%
Ivano-Frankivsk oblast	62	26	42%
Zhytomyr oblast	66	27	41%
Vinnytsia oblast	63	25	40%
Volyn oblast	54	20	37%
Lviv oblast	72	25	35%
Ternopil oblast	55	19	35%
Sumy oblast	51	17	33%
Kirovohrad oblast	49	16	33%

Table 1.3 Survey regional coverage (cont.)

Region	Total number of ATCs	ATCs in the Survey	Survey Coverage
Donetsk oblast	46	15	33%
Mykolaiv oblast	52	16	31%
Zakarpattia oblast	64	19	30%
Rivne oblast	64	19	30%
Odesa oblast	91	25	27%
Khmelnytskyi oblast	60	15	25%
Kharkiv oblast	56	13	23%
Zaporizhzhia oblast	67	14	21%
Cherkasy oblast	66	12	18%
Chernivtsi oblast	52	9	17%
Luhansk oblast	26	3	12%
Kherson oblast	49	1	2%
Total	**1,469**	**474**	**33%**

The 65 ATCs that filled the questionnaire (4% of a total number of hromadas and 14% of communities that sent responses) were located in the areas where hostilities either took place in February-March (36 ATCs, mostly the Kyiv oblast, the Sumy oblast, and the Chernihiv oblast), or where active hostilities were still taking place at the moment or response (29 ATCs, 6% of communities that sent responses). Still, in 86% of communities in our sample, active hostilities did not take place (Table 1.4).

Table 1.4 Distribution of hostilities in ATCs

Did hostilities take place in your ATC?	ATCs	Share
No	409	86%
Yes, during February-March	36	8%
Yes, hostilities are still taking place	29	6%

A more detailed regional distribution of hostilities based on the collected sample is shown in Table 1.5. There are only 12 regions located outside of active war zones with a total of 239 ATCs, surveyed. Thus, more than a half of Ukrainian regions were directly affected by the active hostilities.

Table 1.5 Regional distribution of hostilities

Region	Did hostilities take place in your ATC?	Frequency	Share within region
Vinnytsia oblast	No	25	100%
Volyn oblast	No	19	95%
	Yes, during February-March	1	5%
Dnipropetrovsk oblast	No	52	98%
	Yes, hostilities are still taking place	1	2%
Donetsk oblast	No	9	60%
	Yes, hostilities are still taking place	6	40%
Zhytomyr oblast	No	24	89%
	Yes, during February-March	3	11%
Zakarpattia oblast	No	19	100%
Zaporizhzhia oblast	No	8	57%
	Yes, during February-March	2	14%
	Yes, hostilities are still taking place	4	29%
Ivano-Frankivsk oblast	No	26	100%
Kyiv oblast	No	21	70%
	Yes, during February-March	9	30%

Table 1.6 Regional distribution of hostilities (cont.)

Region	Did hostilities take place in your ATC?	Frequency	Share within region
Kirovohrad oblast	No	16	100%
Luhansk oblast	No	1	33%
	Yes, hostilities are still taking place	2	67%
Lviv oblast	No	25	100%
Mykolaiv oblast	No	11	69%
	Yes, during February-March	2	13%
	Yes, hostilities are still taking place	3	19%
Odesa oblast	No	25	100%
Poltava oblast	No	29	100%
Rivne oblast	No	19	100%
Sumy oblast	No	6	35%
	Yes, during February-March	5	29%
	Yes, hostilities are still taking place	6	35%
Ternopil oblast	No	19	100%
Kharkiv oblast	No	7	54%
	Yes, during February-March	1	8%
	Yes, hostilities are still taking place	5	38%
Kherson oblast	Yes, hostilities are still taking place	1	100%
Khmelnytskyi oblast	No	15	100%
Cherkasy oblast	No	12	100%
Chernivtsi oblast	No	9	100%
Chernihiv oblast	No	12	46%
	Yes, during February-March	13	50%
	Yes, hostilities are still taking place	1	4%

There are 10% of ATCs in our sample that either had been occupied by the RF but liberated by the Ukrainian forces or were still temporarily occupied at the moment of filling the questionnaire. Many communities in the active war zones had to come through the occupation by the Russian forces. Out of 65 communities in the active war zones, 46 (71%) were under the occupation and then liberated by the Ukrainian forces or were under the occupation at the moment of response (Table 1.7).

Table 1.7 Occupation status of ATCs

Was your ATC occupied?	ATCs	Share
No	428	90%
Yes, ATC was occupied, but then liberated	33	7%
Yes, ATC is still occupied	13	3%

Most of the hromadas from our sample that suffered from the occupation are located in the Chernihiv oblast (33% of all occupied ATCs in the sample) (Table 1.8). These ATCs, however, as well as hromadas in the Kyiv oblast and Sumy oblast, were liberated in late March.

Table 1.8 Occupied ATCs by regions

Oblast	ATCs	% of all occupied	% of all responses in the region
Chernihiv oblast	15	33%	58%
Kyiv oblast	6	13%	20%
Sumy oblast	6	13%	35%
Zaporizhzhia oblast	6	13%	43%
Mykolaiv oblast	3	7%	19%

Table 1.9 Occupied ATCs by regions (cont.)

Oblast	ATCs	% of all occupied	% of all responses in the region
Donetsk oblast	3	7%	20%
Luhansk oblast	3	7%	100%
Zhytomyr oblast	1	2%	4%
Zaporizhzhia oblast	1	2%	7%
Kherson oblast	1	2%	100%
Kharkiv oblast	1	2%	8%

The average duration of occupation among ATCs was 36 days for hromadas that were liberated by the Ukrainian forces and 107 days for communities that had not yet been liberated by the moment of response.

1.2 WAR IMPACTS ON INTERNAL MIGRATION

The RF's full-scale invasion forced millions of Ukrainians to find shelter abroad or in other regions of the country. According to UNHCR[2], since February 24th, 7.28 Ukrainian refugees from Ukraine have been recorded across Europe, while another 7 million became internally displaced (IOM, 2022[3]). The predominance of communities located out of the zone of active hostilities in our sample affected distribution on responses about the population change estimated by their heads. More than half of ATCs (58%) responded that their population size has increased since the RF invasion, while only 24% of surveyed ATCs said it had decreased (Table 1.10).

Table 1.10 Population change in ATCs since the war started

How has the population changed in the ATC after the war?	ATCs	Share
Increased slightly	173	36%
Increased significantly	105	22%
Decreased slightly	70	15%
Decreased significantly	42	9%
Did not change	23	5%
Hard to say	61	13%

Active battles and occupation substantially affect the responses of the ATCs regarding the population size change since the start of the RF invasion (Table 1.11).

Table 1.11 Population change among ATCs depending on the security status of the ATC

How has the population changed in your ATC after the war?	Relatively Secure ATCs, %	ATCs suffered from hostilities, %	ATCs suffered from occupation, %
Increased slightly	39%	18%*	15%*
Increased significantly	25%	3%*	4%*
Decreased slightly	14%	22%*	20%*
Decreased significantly	4%	38%*	35%*
Did not change	5%	2%*	4%*
Hard to say	12%	17%*	22%*

[2] UNCHR, The UN. Ukraine Refugee situation. Operational data portal. https://data.unhcr.org/en/situations/ukraine
[3] The International Organization for Migration (IOM), The UN. The Ukraine Internal Displacement Report. August 2022. https://displacement.iom.int/reports/ukraine-internal-displacement-report-general-population-survey-round-8-17-23-august-2022

***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated, or were still occupied by the moment of response. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs at a 95% confidence level.*

In ATCs located outside the war zones, communities mostly report an increase in the size of the population (64% of the group noted population growth). In contrast, the hromadas where hostilities took place and occupied communities more frequently reported a population size fall (60% for ATCs in active war zones, and 55% of occupied communities reported a decrease in the population). Also, hostilities and occupation increase the government's uncertainty on the population change as we note a higher share of responses "Hard to say" for hromadas which suffered from the active battles or were under occupation.

The total number of internally displaced persons (IDPs) that ATCs hosted (estimated by the communities) was 1.468 million individuals (11% of the total population of ATCs from our sample). More than two-thirds of hromadas report that they hosted IDPs that account for less than 10% of the total population (Table 1.12). 98% of ATCs claim IDPs were hosted on their territory, while 30% of ATCs have a substantial inflow of IDPs (more than 11% of the total population).

Table 1.12 Refugees inflow relatively to the population

How many refugees did come to your ATC relatively to the population?	ATCs	Share
<5% of total population	145	31%
5-10% of total population	177	37%
11-20% of total population	99	21%
>20% of total population	45	9%
Did not come, the population decreased	8	2%

Most of the IDPs in our sample were hosted by the communities in Dnipropetrovsk oblast (175.9 thousand people), Zaporizhzhia oblast (161.7 thousand people), and Kyiv oblast (132.3 thousand people) (Table 1.13). These figures may be affected by both responses from the larger, than average, urban territorial communities with regional centers inside, and the general regional distribution of responses, where most of the observations came from the Dnipropetrovsk and Kyiv oblasts.

Table 1.13 Refugees inflow by region

Region	Total refugees	As share of total refugees number
Dnipropetrovsk oblast	175,857	12%
Zaporizhzhia oblast	161,731	11%
Kyiv oblast	132,260	9%
Ivano-Frankivsk oblast	103,680	7%
Khmelnytskyi oblast	90,762	6%
Kharkiv oblast	83,947	6%
Odesa oblast	78,759	5%
Chernivtsi oblast	73,970	5%
Poltava oblast	70,203	5%
Lviv oblast	62,180	4%
Zhytomyr oblast	56,909	4%
Zakarpattia oblast	56,342	4%
Cherkasy oblast	55,595	4%
Vinnytsia oblast	49,693	3%

Table 1.14 Refugees inflow by region (cont.)

Region	Total refugees	As share of total refugees number
Chernihiv oblast	45,410	3%
Mykolaiv oblast	43,496	3%
Donetsk oblast	34,635	2%
Ternopil oblast	26,756	2%
Volyn oblast	18,859	1%
Kirovohrad oblast	18,740	1%
Sumy oblast	14,084	1%
Rivne oblast	13,350	1%
Luhansk oblast	1,000	0%
Kherson oblast	0	0%

1.3 PRIMARY HEALTHCARE SERVICES PROVISION DURING THE WAR

As many people left their homes, the provision of public services was also affected, particularly such vital sectors as healthcare. 15% of ATCs reported a decrease in the number of physicians, although 77% claimed that the number of physicians has not changed since the full-scale invasion (Table 1.15).

Table 1.15 Change in the number of physicians in the ATCs since the war has started

Change in the number of physicians	ATCs	Share
Number of physicians did not change	364	77%
Number of physicians decreased	71	15%
Number of physicians increased	25	5%
Hard to say	14	3%

However, in the regions in the active war zones and close to them the situation is more dramatic. Luhansk oblast, Kherson oblast, Zaporizhzhia oblast, Kharkiv oblast, and Mykolaiv oblast have the highest share of ATCs with physicians' outflow (Table 1.16). Moreover, while in relatively secure regions, only 11% of surveyed ATCs reported the physicians' outflow – in the regions where hostilities took place, this share is 43%, almost fourfold higher, compared to relatively secure regions (the difference is statistically significant at a 99% confidence level, p-value is close to 0). It leads to a dangerous situation since in the territories with potentially higher demand for medical services – the capacity for such services is decreasing and might be limited and insufficient to meet the needs of the population.

Table 1.16 ATCs that reported physicians outflow by region

Region	ATCs	Share within region
Luhansk oblast	3	100%
Kherson oblast	1	100%
Donetsk oblast	11	73%
Zaporizhzhia oblast	7	50%
Kharkiv oblast	6	46%
Mykolaiv oblast	5	31%
Rivne oblast	5	26%
Zhytomyr oblast	6	22%

Table 1.17 ATCs that reported physicians outflow by region (cont.)

Region	ATCs	Share within region
Volyn oblast	4	20%
Kyiv oblast	6	20%
Vinnytsia oblast	3	12%
Sumy oblast	2	12%
Dnipropetrovsk oblast	5	9%
Odesa oblast	2	8%
Chernihiv oblast	2	8%
Zakarpattia oblast	1	5%
Ternopil oblast	1	5%
Poltava oblast	1	3%

2. ATCs' BUDGETS

The Budget revenues are a key pillar for the local communities to continue providing public goods and services. Thus, to stay resilient during wartime, it is necessary for hromadas to maintain an adequate level of financial inflows.

After the first full month of the war, only 31% reported that their revenues did not decrease (compared to the planned amount). Meanwhile, 40% percent reported a revenue fall of more than 10%, and every fifth hromada estimated a decrease in the budget revenues by more than 30% compared to planned revenues (Table 2.18).

Table 2.18 Self-estimated budget revenues change by month

By how much did revenues fall compared to planned indicators?	In March, % of the sample	In April, % of the sample	In May, % of the sample
Fell by 0-9%	18%	22%	22%
Fell by 10-29%	29%	29%	21%
Fell by 30-49%	11%	11%	10%
Fell by 50-69%	8%	5%	6%
Fell by >70%	2%	1%	1%
Did not fall	31%	30%	39%
Hard to say	1%	1%	1%

The overall situation did not sustain substantial change in April, although it showed signs of improvement in May, – 39% (+7 p.p since March) of surveyed hromadas reported that their actual revenues were not lower than the expected ones. This change is statistically significant at a 95% confidence interval.

Assessment of the budget revenues decline differs for territories in the active war zone compared to the regions RF forces have not invaded. In March, the share of ATCs that assess budget revenues as close to the planned indicators is twice lower for communities that suffered from hostilities (17%) and three times lower for communities that were occupied by the RF (11%) compared to ATCs located in relatively secure areas (33%) (See Table 2.2). Overall, for the first three wartime months, at least 46% of ATCs claimed that they were expecting to run short of the targeted revenues by at least 30% (Table 2.19, Table 2.20, Table 2.21).

Table 2.19 Revenue change in March, by groups of ATCs

By how much did revenues fall compared to planned indicators?	Relatively Secure ATCs, %	ATCs suffered from hostilities, %	ATCs suffered from occupation, %
Fell by 0-9%	20%	5%*	4%*
Fell by 10-29%	30%	23%	26%
Fell by 30-49%	9%	22%*	17%
Fell by 50-69%	5%	23%*	30%*
Fell by >70%	1%	9%*	11%*
Did not fall	33%	17%*	11%*
Hard to say	1%	2%	0%

***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated, or were still occupied by the moment of response. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs at a 95% confidence level.*

Table 2.20 Revenue change in April, by groups of ATCs

By how much did revenues fall compared to planned indicators?	Relatively Secure ATCs, %	ATCs suffered from hostilities, %	ATCs suffered from occupation, %
Fell by 0-9%	24%	11%*	11%
Fell by 10-29%	30%	26%	17%
Fell by 30-49%	8%	32%*	41%*
Fell by 50-69%	4%	17%*	20%*
Fell by >70%	1%	5%*	7%*
Did not fall	33%	9%*	4%*
Hard to say	1%	0%	0%

***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated, or were still occupied by the moment of response. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs at a 95% confidence level*

Table 2.21 Revenue change in May, by groups of ATCs

By how much did revenues fall compared to planned indicators?	Relatively Secure ATCs, %	ATCs suffered from hostilities, %	ATCs suffered from occupation, %
Fell by 0-9%	23%	12%	13%
Fell by 10-29%	21%	26%	17%
Fell by 30-49%	8%	23%*	30%*
Fell by 50-69%	3%	20%*	22%*
Fell by >70%	1%	3%	4%
Did not fall	43%	15%*	13%*
Hard to say	1%	0%	0%

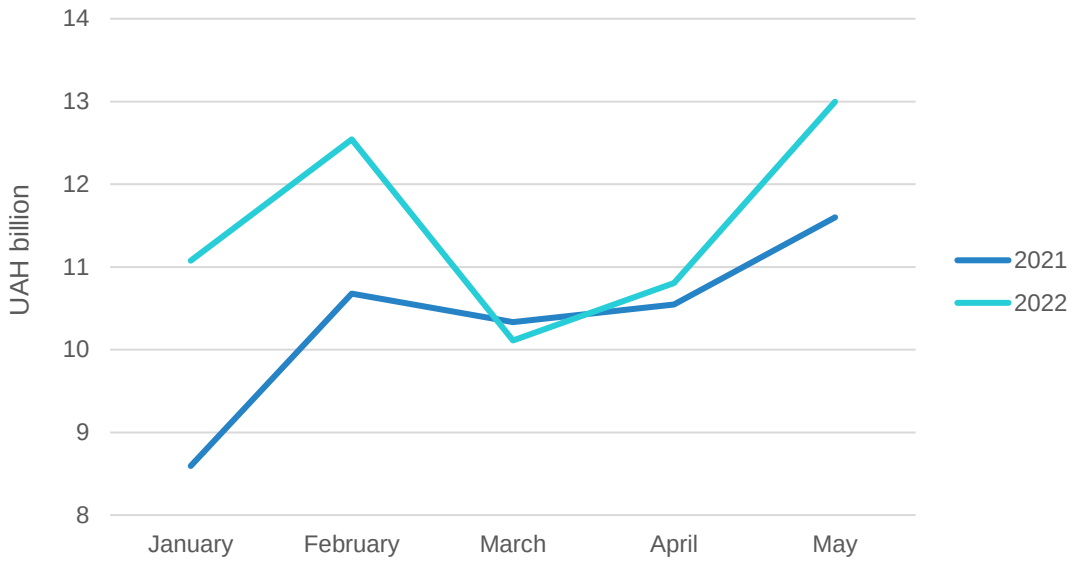
***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated, or were still occupied by the moment of response. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs.*

Using the Open Budget web portal (Ministry of Finance of Ukraine), we collected actual budget revenues data for the Ukrainian ATCs that responded to the survey. At the moment of designing the study and questionnaire for the survey – there was no official information on the budget revenues, and given the increased scrutiny in publicizing the data during wartime – the closure of many official registries and data sources, there was high uncertainty whether there would be a possibility to find the budget-related data needed for the analysis. However, these indicators would be still different:

unfortunately, using ex-post data we could only assess MoM (month-over-month), YoY change in revenues rather than check an actual undercollection level and the ability of local authorities to accurately describe the financial situation.

Based on the official *ex-post* data on the local budgets' revenues, we conclude that the full-scale military invasion of RF negatively affected the local budgets. Prior to the invasion, total budget revenues of hromadas from the survey sample showed good dynamics – in January-February 2022 total budget revenues increased 22.6% in annual terms. After February 24th the trend was broken – total budget revenues growth slowed down to only 4.4% YoY in March-May 2022 (Figure 2.1). Moreover, total revenues in March 2022 were 2.2% down from the respective period in 2021. Given an increased inflationary pressure (in May 2022 inflation reached 18% in annual terms, NBU[4]), the local budgets system faced a challenge of maintaining the provision of public goods and services using limited resources.

Figure 2.1 Budget revenues of ATCs in the sample



Source: own representation based on OpenBudget data (Ministry of Finance of Ukraine)

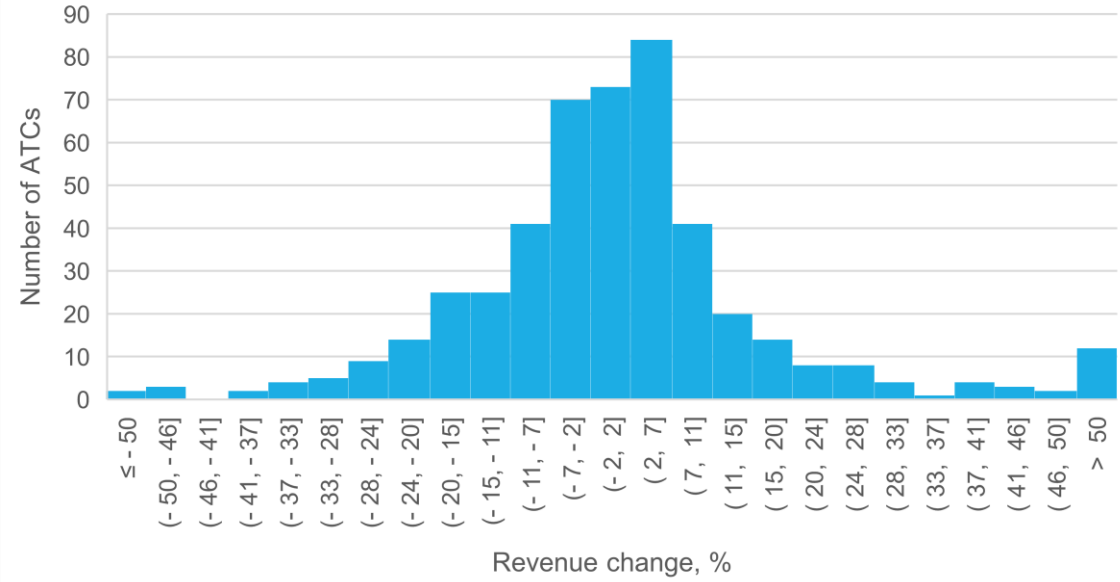
As one would expect – the budget revenues in areas that suffered from hostilities on average decreased by 7.6% YoY (the median is -9.8%), while the budget revenues in relatively secure areas on average increased by 4.5% YoY (the median is 1.3%). This difference is statistically significant at a 95% confidence level (p-value is 0.026). Furthermore, only 22% out of ATCs from the survey sample in the active war zones managed to generate more revenues during the first three month of war (in annual terms). Hostilities was a key factor in revenue fall: 56% of ATCs in the sample where hostilities did not take place increased their revenues in annual terms (the difference from the whole sample is statistically significant at a 95% confidence level) (

Figure **2.2**, Figure 2.3). In total, only every tenth community managed to increase budget revenues during March-May by an amount that exceeds annual inflation as of the end of May (18%). That is, financial costs are evident not only in the context of a decrease in income relatively to planned indicators, but also relatively to last year's indicators.

Moreover, rural hromadas' budget revenues were more affected than urban ones in the active war zones (statistically significant difference at 90% level, p-value=0.075). Average YoY revenue change in March-May 2022 for rural communities where hostilities occurred is -12%, and -1.8% for urban ATCs. On the other hand, there's no statistical difference between urban and rural hromadas where no active battles took place.

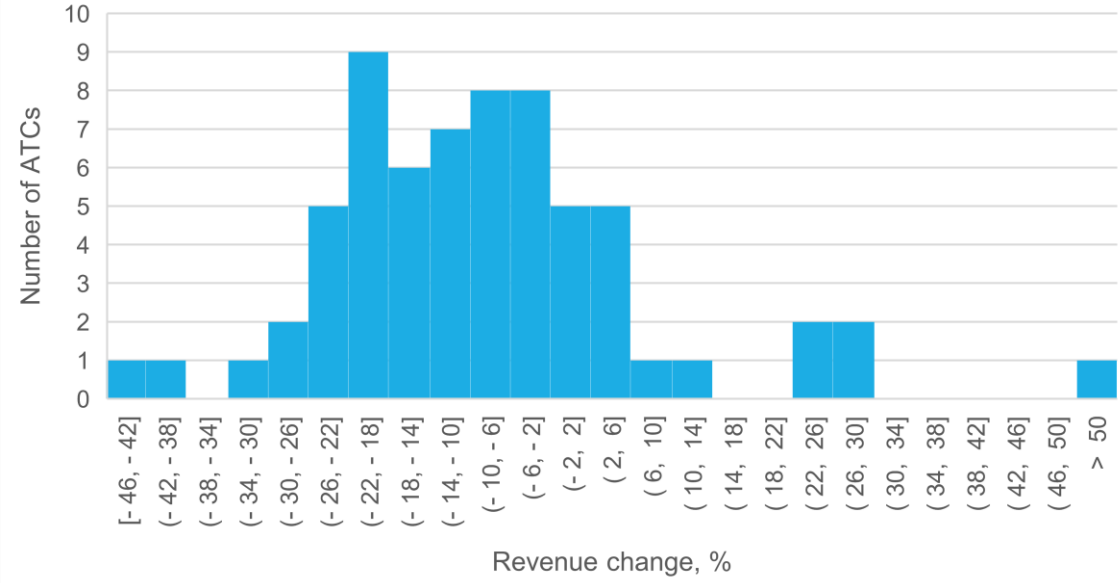
[4] National Bank of Ukraine. Inflation report. May 2022. https://bank.gov.ua/admin_uploads/article/CPI_2022-05.pdf?v=4

Figure 2.2 March-June YoY revenue change, all ATCs in the sample



Source: own representation based on OpenBudget data (Ministry of Finance of Ukraine)

Figure 2.3 March-June revenue change, ATCs where hostilities took place



Source: own representation based on OpenBudget data (Ministry of Finance of Ukraine)

ATCs reported that the sources of revenue that fell the most were personal income tax (34% of all responses) and excise taxes (32%) (Table 2.22). Additionally, hromadas often specified the land tax (in the "Other" option) as another source of revenue that fell considerably. The decrease in the personal income tax collection is associated with a decrease in the business activity in Ukraine during the first months of the war. According to the Gradus survey[5], in March, only 17% of companies planned to pay at least the same wages as in the pre-war period (25% in April).

[5] Gradus Research Company. Diagnosis of the state of Ukrainian business during the full-scale war between Russia and Ukraine. April 2022. https://gradus.app/documents/210/Ukrainian_Business_inWar_2Wave_Report_Gradus_KSE_22042022.pdf

Table 2.22 Sources of revenue that fell the most since the invasion, among ATCs who reported revenue decrease

Source of budget revenue	ATCs	Share
Personal income tax	148	34%
Excise taxes	138	32%
Individual entrepreneur tax	57	13%
Other	56	13%
Transfers from other budgets	16	4%
Hard to say	22	5%

Hromadas in the active war zones more frequently mention personal income tax as the source of revenue that declined the most. The tax was mentioned among 47% of ATCs where hostilities took place and among 50% of occupied communities – up from 32% of responses among hromadas outside active battles (Table 2.23). Excise taxes are also a frequently mentioned source of revenue to have fallen. Zero-rate for gas excise tax and decreased consumption due to income fall and migration impacted excise taxes collection. Communities rarely mentioned the fall in transfers from other budgets (subsidies from the national, regional governments, grants from international organizations – 4% of ATCs), which constituted 35% of total revenues in 2021. This means that revenues that hromadas had to receive externally in forms of subsidies mostly remained unchanged. If such financial inflows would have been cut, it would have created an additional pressure on local budgets, forcing local authorities either to urgently search alternative financing or curtail more budget programs.

Table 2.23 Sources of revenue that fell most since the invasion, among ATCs who reported revenue decrease

Sources of revenues that fell most	Relatively Secure ATCs, %	ATCs suffered from hostilities, %	ATCs suffered from occupation, %
Excise taxes	33%	22%	26%
Personal income tax	32%	47%*	50%*
Individual entrepreneur tax	12%	9%	4%
Other	12%	19%	13%
Transfers from other budgets	4%	2%	2%
Hard to say	6%	2%	4%

***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated, or were still occupied by the moment of response. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs.*

Unexpected revenue fall or undercollection may result in expanded budget deficits for local communities. In the survey, ATCs were asked to assess their current budget deficit. Almost half of the hromadas reported a moderate budget deficit – 0-5%. However, 79 ATCs (16% of ATCs in the sample) reported a high deficit rate – more than 21% (Table 2.24).

Table 2.24 Budget deficit as share of total budget, ATCs' self estimate

Budget deficit, as share of total budget	ATCs	Share
0-5%	228	48%
6-10%	95	20%
11-20%	72	15%
21-30%	34	7%
>30%	45	9%

Communities in the active war zone assess current budget deficits as much larger than ATCs in relatively secure areas: 35% of ATCs where hostilities took place and 46% of occupied ATCs claim their deficit to be over 30%. In comparison, only 5% of ATCs in relatively secure territories report such a range for estimated budget deficits (Table 2.25). The differences in deficit distribution have a pattern similar to the revenue fall. A budget deficit of 0-5% is reported by only 15% of occupied hromadas – more than three times lower if compared to the territories with no active hostilities.

Table 2.25 Budget deficit as share of total budget by groups of ATCs

Budget deficit, as share of total budget	Relatively Secure ATCs, %	ATCs suffered from hostilities, %	ATCs suffered from occupation, %
0-5%	52%	23%*	15%*
6-10%	22%	11%	13%
11-20%	15%	17%	13%
21-30%	6%	14%*	13%
>30%	5%	35%*	46%*

***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated, or were still occupied by the moment of response. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs.*

3. FINANCIAL COPING STRATEGIES

Due to decreased and uncertain financial inflows, hromadas might reconsider planned expenditures and whether they could finance them now and in the upcoming months. The survey showed that 51% of ATCs decided to cut their budget expenditures during wartime (Table 3.26). However, 30-39% (depending on the month) of the surveyed ATCs did not experience revenue undercollection, implying that some local authorities decided to cut their expenses in advance, mitigating the risks of future potential revenue decline.

Table 3.26 ATCs distribution by budget expenditures cut

Were budget expenditures cut?	ATCs	Share
No	233	49%
Yes	241	51%

Mean expenditures cut aligns with the reported budget deficits among all deficit categories (Table 3.27). Those ATCs that cut their budget expenditures did it by 17.7% on average. ATCs with 0-5% and 6-10% budget deficit on average cut their expenditures by more than the deficit value (13% and 14% respectively). For all other groups, the magnitude of the expenditures cuts corresponds to the reported budget deficits.

Table 3.27 ATCs' mean expenditures cut depending on budget deficit

Budget deficit, as share of total budget	Mean expenditures cut
0-5%	13%
6-10%	14%
11-20%	18%
21-30%	23%
>30%	32%

The share of hromadas that decided not to cut their budget is lower for those that reported greater budget deficit, although this share is not negligible across all groups. 31% of ATCs with a budget deficit that exceeds 30% and 26% of ATCs

with a 21-30% budget deficit have not cut their expenditures at all (Table 3.28). On the other hand, out of 228 ATCs with a relatively low budget deficit (0-5%), 82 (36%) have cut their expenditures, representing hromadas that have already cut spending by reducing the deficit to low levels, or those communities that have done so in advance due to uncertainty about future revenues, ensuring the financial stability.

Table 3.28 Distribution of budget expenditures cut depending on the reported budget deficit

Budget deficit, as share of total budget	Were the expenditures cut during the war?	ATCs	Share
0-5%	No	146	64%
	Yes	82	36%
6-10%	No	38	40%
	Yes	57	60%
11-20%	No	26	36%
	Yes	46	64%
21-30%	No	9	26%
	Yes	25	74%
>30%	No	14	31%
	Yes	31	69%

The most frequently mentioned sectors, expenditures on which were cut the most, are education (26% of all responses), housing and utilities (17%), and administrative expenses (13%) (Table 3.29). On the other hand, almost no hromadas cut security-related expenditures, which is natural during wartime.

Table 3.29 Expenditures cut by sectors (multiple answers could be chosen)

Sectors	Frequency	Share
Education	171	26%
Housing and utilities	113	17%
General administrative functions	89	13%
Culture	72	11%
Economic activity	64	10%
Social expenditures	45	7%
Environment	34	5%
Other	34	5%
Healthcare	25	4%
Public order, security and judiciary	13	2%

Hromadas could also cut different types of expenditures – either current expenditures (labor costs, utilities, etc.) or capital expenditures, which could be at least partially postponed to the post-war recovery period in order to ensure the financing of the urgent needs. However, cuts in salary expenditures were mentioned even a bit more frequently than cuts in capital expenditures (183 vs. 181 mentions) (Table 3.30). Still, 39% of ATC did cut capital expenditures. Also, 52 ATCs (22% out of ATCs that cut expenditures) have curtailed labor costs but not capital expenditures.

Table 3.30 Expenditures cut by type (multiple answers could be chosen)

Type	Frequency	Share
Wages	183	39%
Capital expenditures	181	39%
Utilities	39	8%
Other	30	6%
Social payments	23	5%
Subsidies to local entities	13	3%

As an additional reaction to considerable budget deficits due to the under-collected revenues and uncertain future fiscal inflows, local authorities could ask either the regional government (rayon-level or oblast-level) or the national government for additional funding during wartime. According to our survey, only 20% of ATCs asked for financial aid, and only half of those who asked for assistance received such (Table 3.31). Only 3% of ATCs received financial aid from other Ukrainian authorities (national, regional governments) without actually asking for it.

Table 3.31 Distribution of ATCs by asking Ukrainian authorities for financial aid and receiving it

Did you ask other UA authorities for financial aid?	ATCs	Share
Did not ask officially, and did not receive assistance	364	77%
Asked officially, and received assistance	48	10%
Asked officially, but did not receive assistance	47	10%
did not ask officially, but received assistance	15	3%

Out of 45 ATC with the highest budget deficits of more than 30%, 60% have not asked the Ukrainian authorities for financial support, while 16% have not cut expenditures and have not asked for help (Table 3.32). On the other hand, 22% have both cut their expenditures and asked Ukrainian authorities for help.

Table 3.32 Expanded distribution of ATCs depending on budget deficit, expenditures cut, and asking Ukrainian authorities for financial aid

Budget deficit	Were expenditures cut?	Did you ask UA authorities for financial aid?	ATCs	Share within budget deficit group
0-5%	No	Asked officially, but did not receive	4	2%
	No	Asked officially, and received	16	7%
	No	did not ask officially, and did not receive	122	54%
	No	did not ask officially, but received	4	2%
	Yes	Asked officially, but did not receive	7	3%
	Yes	Asked officially, and received	7	3%
	Yes	did not ask officially, and did not receive	68	30%
	Yes	did not ask officially, but received	0	0%
6-10%	No	Asked officially, but did not receive	4	4%
	No	Asked officially, and received	3	3%
	No	did not ask officially, and did not receive	28	29%
	No	did not ask officially, but received	3	3%
	Yes	Asked officially, but did not receive	7	7%
	Yes	Asked officially, and received	7	7%
	Yes	did not ask officially, and did not receive	40	42%
	Yes	did not ask officially, but received	3	3%

Table 3.33 Expanded distribution of ATCs depending on budget deficit, expenditures cut, and asking Ukrainian authorities for financial aid (cont.)

Budget deficit	Were expenditures cut?	Did you ask UA authorities for financial aid?	ATCs	Share within budget deficit group
11-20%	No	Asked officially, but did not receive	3	4%
	No	Asked officially, and received	2	3%
	No	did not ask officially, and did not receive	21	29%
	No	did not ask officially, but received	0	0%
	Yes	Asked officially, but did not receive	3	4%
	Yes	Asked officially, and received	8	11%
	Yes	did not ask officially, and did not receive	33	46%
	Yes	did not ask officially, but received	2	3%
21-30%	No	Asked officially, but did not receive	2	6%
	No	Asked officially, and received	0	0%
	No	did not ask officially, and did not receive	7	21%
	No	did not ask officially, but received	0	0%
	Yes	Asked officially, but did not receive	4	12%
	Yes	Asked officially, and received	2	6%
	Yes	did not ask officially, and did not receive	18	53%
	Yes	did not ask officially, but received	1	3%
>30%	No	Asked officially, but did not receive	4	9%
	No	Asked officially, and received	2	4%
	No	did not ask officially, and did not receive	7	16%
	No	did not ask officially, but received	1	2%
	Yes	Asked officially, but did not receive	9	20%
	Yes	Asked officially, and received	1	2%
	Yes	did not ask officially, and did not receive	20	44%
	Yes	did not ask officially, but received	1	2%

***Note**: Groups of communities that did not apply selected measures to optimize the budget crisis and have a significant budget deficit are marked in red*

4. RESILIENCE OF UKRAINIAN LOCAL COMMUNITIES DURING THE RF'S FULL-SCALE INVASION

Previous sections provide a general review of issues that Ukrainian local communities face during the RF's full-scale invasion with an emphasis on fiscal aspects. Financial, logistical, migration, and administrative problems became a challenge both for hromadas that were in the epicenter of hostilities, including those under the occupation of RF troops and for ATCs that were outside the zone of active hostilities.

4.1 PROVISION OF PUBLIC SERVICES

Each ATC has at least one Administrative Service Center that provides a number of public services for the population – registration of place of residence, registration and issuance of passport, registration of property ownership, registration of a legal entity, provision of information from the State Land Cadastre, etc. These services are vital for regular operations of the community and business activity. The RF's invasion made the provision of public services impossible in many territories. In 186 ATCs (39% of all ATCs in the survey) from the survey sample, the provision of public administrative services was stopped due to the invasion, while the share is higher (with the difference being statistically significant at 95% confidence level) for territories that were under the occupation (Table 4.34).

Table 4.34 Share of ATCs that stopped providing public administrative services

ATCs that stopped providing public administrative services		
Relatively Secure ATCs, %	**ATCs suffered from hostilities, %**	**ATCs suffered from occupation, %**
34% (138 ATCs)	69% (25 ATCs)	79% (23 ATCs)*

***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated, or were still occupied by the moment of response. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs.*

Out of 186 ATCs which stopped providing administrative services, 138 (74%) have resumed their provision, while 37 (20%) have not managed to do so at the moment of filling the questionnaire (Table 4.35). The resumption of normal operations and provision of public services remains impossible for hromadas still occupied by the RF forces.

Table 4.35 Share of ATCs that resumed providing public administrative services, among ATCs where the provision of the services was stopped

ATCs resumed providing public administrative services		
Relatively Secure ATCs, %	**ATCs suffered from hostilities, %**	**ATCs suffered from occupation, %**
78% (108 ATCs)	63%* (30 ATCs)	92% (23 ATCs)

***Note**: **Relatively Secure ATCs** – ATCs outside active war zones; **ATCs suffered from hostilities (including those which were occupied)** – ATCs that had hostilities on its territories; **ATCs suffered from occupation** – ATCs that had been occupied and then liberated. "*" – there is a statistically significant difference between the target group and Relatively Secure ATCs.*

In ATCs where the provision of administrative services was stopped, it took on average 55 days to resume the provision (the median days to the resumption of providing public services is 45 days).

Problems with the waste management is another example of war-related disruptions to public services that local authorities have had to deal with. Communities conduct public tenders for waste removal services, local authorities interact with contractors in case of problems, that is, they might ensure the continuity and quality of the provision of such services. Waste management problems had been present or were still present at the moment of submitting the questionnaire in 94 ATCs (20% of all ATCs in the survey). The problem was also common among hromadas outside active war zones (59 ATCs or 14% of ATCs outside areas of active hostilities). 67% of local communities having faced waste removal services problems managed to solve them.

4.2 VOLUNTEERING AND HUMANITARIAN CENTERS

Volunteering became an integral part of the resistance of Ukraine during the war, providing, first of all, military support for the Armed Forces and Territorial Defense, as well as humanitarian aid for communities with a significant number of displaced persons and in hromadas affected by active hostilities. The total number of active volunteers in the ATCs in the sample – 15,531. The mean number of volunteers – 33, the median – 6.

The largest number of volunteers that actively help in ATCs was reported in Kyiv oblast (2,612 volunteers, 17% of all volunteers reported), Chernivtsi oblast (2,097 volunteers, 14% of all volunteers reported), and Khmelnytskyi oblast (1,635 volunteers, 11% of all volunteers reported) (See Table 4.3). The median number of volunteers in ATC within a region is in Zakarpattia oblast (15 volunteers per ATC), Chernivtsi oblast (12), and Kyiv oblast (11).

Unfortunately, active battles make it much more complicated and dangerous for volunteers to help from inside the hromadas – almost 19% of ATCs in the active war zones (excluding those still occupied) reported no individuals actively engaged in volunteering inside the community.

Humanitarian centers are another resilience-related indicator during the war. The total number of reported humanitarian centers in the ATCs from the sample – is 1,038 centers. Most of the humanitarian centers are functioning in Dnipropetrovsk oblast (118 centers), Chernihiv oblast (97 centers), and Ivano-Frankivsk oblast (74 centers) (Table 4.36). Still, almost 6% of ATCs in the active hostilities areas (but not occupied) reported no volunteers or humanitarian centers inside the hromada.

Table 4.36 Volunteering and humanitarian aid in ATCs during the RF's full-scale invasion

Region	Active volunteers in ATCs	Median number of volunteers in ATC	Total number of humanitarian centers
Vinnytsia oblast	182	6	45
Volyn oblast	513	6.5	29
Dnipropetrovsk oblast	1,151	5	118
Donetsk oblast	206	10	33
Zhytomyr oblast	541	5	38
Zakarpattia oblast	511	15	65
Zaporizhzhia oblast	1,310	3.5	43
Ivano-Frankivsk oblast	513	8	74
Kyiv oblast	2,612	11	66
Kirovohrad oblast	89	3.5	24
Luhansk oblast	10	0	1
Lviv oblast	835	10	48
Mykolaiv oblast	723	5	28
Odesa oblast	822	7	41
Poltava oblast	211	3	50
Rivne oblast	244	5	40
Sumy oblast	170	1	22
Ternopil oblast	204	10	39
Kharkiv oblast	183	8	32
Kherson oblast	10	10	1
Khmelnytskyi oblast	1,635	10	44
Cherkasy oblast	426	4.5	30
Chernivtsi oblast	2,097	12	30
Chernihiv oblast	333	3,5	97

4.3 NON-GOVERNMENTAL INTERNATIONAL AID

International and Ukrainian non-governmental organizations also play an essential role in providing and coordinating humanitarian aid projects in Ukrainian ATCs during the war. United Nations International Children's Emergency Fund (UNICEF), World Food Programme (WFP), United Nations Development Programme (UNDP), Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ), and Food and Agriculture Organization (FAO) were the most frequently mentioned organizations that provided aid to the hromadas (Table 4.37).

Half of the local communities located outside active war zones reported that international organizations provided at least some help. In contrast, 40% of hromadas where active hostilities took place did not report any help from the organizations mentioned in Table 4.3. Although this question needs additional assessment, it seems that help from international organizations does not always reach the places where it is needed the most.

Table 4.37 Most frequently mentioned humanitarian organizations providing aid to ATCs

Organization	ATCs mentioned	Share of ATCs
United Nations International Children's Emergency Fund (**UNICEF**)	143	30.2%
World Food Programme (**WFP**)	80	16.9%
United Nations Development Programme (**UNDP**)	56	11.8%
Deutsche Gesellschaft für internationale Zusammenarbeit (**GIZ**)	55	11.6%
Food and Agriculture Organization (**FAO**)	48	10.1%
International Organization for Migration (**IOM**)	46	9.7%
Médecins Sans Frontières (**MSF**)	45	9.5%
The responsibility to protect (**R2P**)	37	7.8%
The United Nations High Commissioner for Refugees (**UNHCR**)	32	6.8%
People in Need (**PIN**)	21	4.4%
Agency for Technical Cooperation and Development (**ACTED**)	16	3.4%
The Norwegian Refugee Council (**NRC**)	13	2.7%
The United Nations (**UN**)	12	2.5%
Other	57	12.0%

ATCs could also cooperate with local communities from other countries, receiving humanitarian or other assistance during the war. 243 ATCs (51% of all ATCs in the survey) reported that foreign municipalities provided help to them. Hromadas in the active war zones (but not occupied at the moment of response) more frequently received support from foreign local communities, compared to the ATCs located in the relatively secure areas – 61% of hromadas that suffered from active hostilities received support from foreign local communities. 12% of these communities did not receive any support from international organizations, that is, external humanitarian aid was provided by virtue of horizontal connections between local communities.

Poland is the most frequently mentioned country (38%) from where the humanitarian aid came to ATCs. Other countries mentioned as active humanitarian supporters are Germany (19%), Italy (11%), and the USA (8%) (Table 4.38).

Table 4.38 Most frequently mentioned origins of aid from foreign municipalities

Country	ATCs	Share of all ATCs in the sample
Poland	181	38.2%
Germany	91	19.2%
Italy	50	10.5%
The USA	36	7.6%
Romania	34	7.2%
Ukraine	34	7.2%
France	33	7.0%
Czech Republic	33	7.0%
Spain	30	6.3%
Lithuania	26	5.5%
The UK	24	5.1%
Slovakia	16	3.4%
Hungary	16	3.4%
Latvia	15	3.2%
Netherlands	15	3.2%
Austria	13	2.7%
Canada	13	2.7%
Portugal	11	2.3%
Georgia	10	2.1%
Turkey	10	2.1%
Other	84	17.7%

359 ATCs (76% of all ATCs in the survey) indicated they had received any humanitarian cargo. The approximate total quantity of received cargos reported by the hromadas from our sample is 797 thousand tons. Meanwhile, 299 ATCs (63% of all ATCs in the survey) reported that their residents had sent humanitarian cargo, with a total quantity sent of almost 295 thousand tons. Also, 249 ATCs (52% of all ATCs in the survey) have both sent and received humanitarian cargo.

4.4 BUSINESS RELOCATION

Although a significant part of Ukrainian business was mainly paralyzed in the early months since the beginning of the invasion, some enterprises elected to relocate to safer regions. The West of the country became the leader in terms of the number of reallocated companies since the beginning of the RF's invasion – 67% of all reallocated enterprises, which were reported by the heads of communities, came to Western oblasts of Ukraine. The most common relocation destinations are Zakarpattia oblast (26% of all relocated firms), Khmelnytskyi oblast (14%), and Chernivtsi oblast (11%) (Table 4.39). Businesses also moved within regions where hostilities took place and to the neighboring regions: Donetsk oblast (9% of all relocated firms) and Dnipropetrovsk oblast (8%) actively reported accepting relocated businesses. However, only 84 ATCs (18% of all ATCs in the survey) claimed businesses reallocated to their territory during the war. In total, 447 firms have moved to these ATCs.

Table 4.39 Number of companies that reallocated to ATCs since the RF's full-scale invasion

Region	Firms	Share
Zakarpattia oblast	115	25.7%
Khmelnytskyi oblast	63	14.1%
Chernivtsi oblast	48	10.7%
Donetsk oblast	41	9.2%
Dnipropetrovsk oblast	35	7.8%
Ivano-Frankivsk oblast	30	6.7%
Lviv oblast	22	4.9%
Cherkasy oblast	15	3.4%
Poltava oblast	12	2.7%
Rivne oblast	12	2.7%
Ternopil oblast	10	2.2%
Vinnytsia oblast	8	1.8%
Zaporizhzhia oblast	6	1.3%
Odesa oblast	6	1.3%
Kyiv oblast	5	1.1%
Zhytomyr oblast	4	0.9%
Luhansk oblast	4	0.9%
Volyn oblast	3	0.7%
Kirovohrad oblast	2	0.4%
Mykolaiv oblast	2	0.4%
Sumy oblast	2	0.4%
Kharkiv oblast	1	0.2%
Chernihiv oblast	1	0.2%
Kherson oblast	0	0.0%

5. TESTING THE LINK BETWEEN OWN REVENUES EFFORTS AND ATCs' RESILIENCE DURING THE RF'S FULL-SCALE INVASION

In the first part of the study, using the Stochastic frontier analysis[6] (SFA) methodology, data on budget indicators, and socio-economic characteristics of communities, we estimated the own revenue efforts for the hromadas. These estimates show how effectively the community utilizes available resources to generate its own revenues. We measure the own revenue efforts as the budgetary efficiency – the ratio of how much revenue an ATC collects over to the maximum revenue it could collect by fully utilizing the available resources. We then also use the own revenue efforts as a proxy for assessing the quality of the local governance.

In this part of our analysis, we combine the revenues efforts estimates with our survey results to assess whether there is a link between the effectiveness of local self-governance in peacetime and the community's resilience during such a significant shock as a full-scale war.

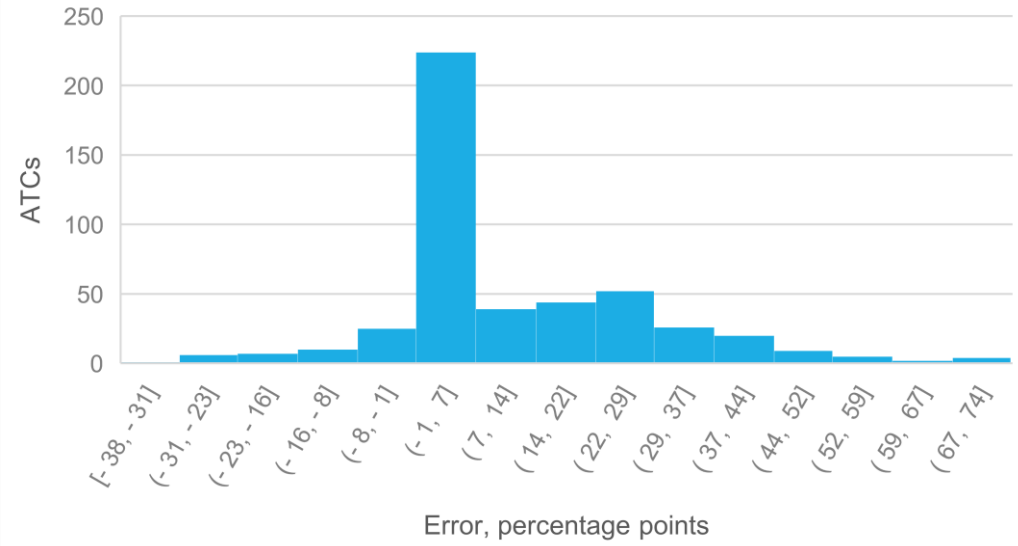
Among the ATCs of our survey that were in the active war zones, the average own revenues effort is 85.5%, while among communities located in relatively secure areas – 78.9%. This difference is statistically significant at a 99% confidence level.It indicates that communities that suffered from active hostilities had better governance before the invasion compared to the communities whose location turned out to be relatively secure. It complicates the analysis since, because of the spurious correlation between the quality of governance and the hostilities, we cannot clearly single out the effect of the quality of governance from the effect of hostilities on our key variables of interest.

Based on the survey results on the budget deficit estimates and the data from the OpenBudget web-portal, which contains factual financial information on the budget revenues and expenditures - we can estimate the difference in budget deficits. We estimated differences between the factual budget deficits versus the estimated by our respondents – heads of ATC budget deficit. For each hromada that participated in the survey, the differences were estimated for the period covered by the survey, March-May, 2022. We then examine the relationship between the budget deficit assessment error and key parameters of interest. Separately, it is worth noting that the assessment of community heads could often be based on the difference between revenues and planned expenditures, rather than the factual expenditures that were cut by many hromadas since the invasion. Local authorities have much fewer opportunities to finance the deficit compared to the instruments of the national government – external borrowing and grants, selling government bonds to the Central Bank, and thus respond to the growing deficit by cutting the expenditures. The first conclusion we can draw from our estimate of the budget deficit assessment error is that most communities significantly overestimated their budget deficit (Figure 5.14).

Another finding is the increased uncertainty caused by the active hostilities substantially affects the accuracy of the budget deficit predictions by the ATCs. Hromadas in active war zones tend to have greater errors. On average, hromadas' mean budget deficit assessment error is 12 percentage points (average of absolute values). On average, the mean budget deficit assessment error for hromadas located in the areas of active hostilities is 23 percentage points, while the assessment error for ATCs located in relatively secure areas averages only 11 percentage points. The difference is statistically significant at a 99% confidence level.

[6] Aigner, D., C.A.K. Lovell, and P. Schmidt (1977). 'Formulation and Estimation of Stochastic Frontier Production Function Models'. Journal of Econometrics 6:21

Figure 5.1 Mean budget deficit assessment error distribution



We also decided to explore factors behind the coping strategies and resilience of hromadas during the RF invasion. For this analysis, we use the actual budget indicators, responses of ATCs, and previously estimated own revenue efforts. Therefore, we constructed a set of econometric models, the results of which are presented in Table 5.40.

The results showed that revenue fall among territorial communities is an exogenous shock of the wartime. The revenue decrease does not depend on hromada's population, area, or whether it is a rural or urban ATC. Only hostilities dummy turned out to significantly affect the revenue change – the fall in the revenue would be greater in areas of active war, compared to the rest of the sample. On the contrary, greater budgetary efficiency doesn't imply a lower revenue fall, highlighting the exogeneity of the revenue fall.

We also found no links between the budget efforts and the quantity of humanitarian cargo received by hromadas, meaning that ATCs that generated revenues more efficiently didn't receive significantly more or less aid. Territorial communities within areas of hostilities, where people are more insecure due to the shelling and logistical disruptions, received more humanitarian aid.

Our regression of own revenues effort on budget deficit assessment error showed no statistically significant impact of past budget efficiencies on the ability to precisely assess the current level of budget deficit (Table 5.2). Hostilities factor is far more significant in the assessment accuracy – this could be explained by a greater complexity for the heads of hromadas to be well aware of the public finance situation in such cases.

However, we found some evidence that **larger budget efforts are associated with hromadas' better resilience and coping strategies. Pre-war better budget performance equates to a higher likelihood to cope with administrative service provision problems**. Moreover, ATCs with higher own revenue efforts were less likely to cut the budget expenditures or ask other authorities for financial aid. **If the community was generating enough revenues given its conditions and resources, it would be more financially resilient even during the war time.**

Table 5.40 OLS regressions of own revenues efforts impact on ATCs resilience and coping strategies during the RF's invasion

Variable	Dependent variables						
	March-May 2022 YoY own revenues change, %	Budget deficit assessment error, percentage points	Humanitarian cargoes received, tons	Administrative services provision, ("1" - if ATC did not stop provision or managed to resume it, "0" otherwise)	Waste removal services provision("1" - if ATC did not stop provision or managed to resume it, "0" otherwise)	Cutting budget expenditures ("1" - if ATC cut expenditures, "0" otherwise)	Asking for financial aid ("1" - if ATC asked for aid, "0" otherwise)
	Significance level, (effect direction: "+" – positive, increase in the independent variable leads to the increase in the dependent variable, "-" – negative, increase in the independent variable leads to the decrease in the dependent variable.)						
Own revenues effort				* (+)		* (-)	* (-)
Hostilities dummy	** (-)	*** (+)	*** (+)	*** (-)	*** (-)	* (+)	*** (+)
Urban dummy		* (-)		** (-)			
Population		** (+)		* (+)	* (+)		** (+)
Area							

Note**: "" – significance at a 99% confidence level, "**" – at a 95% confidence level, "*" – at a 90% confidence level.*

CONCLUSIONS

- Ukrainian local communities have faced significant fiscal, logistic, humanitarian, and administrative challenges since the RF full-scale invasion. Using a survey of the heads of ATCs, with responses of nearly third of all amalgamated territorial communities (ATCs), we assessed quantitatively these challenges, as well as the resilience of communities and strategies for overcoming the crisis by local authorities. These results were also tested for a link with pre-war local governance efficiency in public finance generation which was the objective of the first of the project.

- Most of hromadas had to cope with risk and problems that arise during internal migration processes, budget revenues fall, inability to provide public services, need in humanitarian aid. According to the survey sample, every 7th community has gone through active hostilities on its territory while every 10th ATC suffered from Russian occupation.

- According to our survey, 60% of hromadas located in the war zone reported population outflow. ATCs from the survey sample reported more than 1.3 million of internally displaced individuals incoming, which is approximately 13% of the total population of these territories.

- The full-scale war caused undercollection of budget revenues in 85% of ATCs in the combat zone and in more than half of hromadas without active hostilities. As a reaction to the shock, 51% of communities had to cut budget expenditures since the invasion, although it means a worse public services provision and/or stop of some construction and infrastructural projects.

- The stability of ATC in Ukraine during the RF's full-scale invasion is only partially linked to the hromadas' pre-invasion efficiency. The revenue fall, for example, is explained mostly by other factors, indicating the exogenous nature of the crisis. At the same time, we can see signs of the proliferation of the pre-invasion performance into war-time resilience. **Hromadas that exhibit higher efficiency in collecting revenues before the invasions need less time to resume the provision of their public services and elect not to cut their expenses.**

ANNEX 1. SURVEY FORM PROPOSED FOR THE HEADS OF ATCs

Section 1. General information

1. Specify the oblast of your ATC.

2. Specify the rayon of your ATC.

3. Specify the name of your ATC.

4. Were there active hostilities on the territory of your ATC?

a) Yes, hostilities are still taking place.
b) Yes, hostilities took place during February-March.
c) No.

5. Was your ATC under the RF occupation (partly or entirely)?

a) Yes, the ATC (or part of it) was under occupation.
b) Yes, the ATC (or part of it) is currently under occupation.
c) No.

6. If the community was or is currently under Russian occupation, indicate the approximate duration of the occupation (in days).

Section 2. Public finance.

7. By how much did the revenues of the community budget decrease in March 2022 compared to the planned for this month?

a) Did not decrease.
b) Decreased by 0-9%.
c) Decreased by 10-29%.
d) Decreased by 30-49%.
e) Decreased by 50-69%.
f) Decreased by >70%.
g) Hard to say.

8. By how much did the revenues of the community budget decrease in April 2022 compared to the planned for this month?

a) Did not decrease.
b) Decreased by 0-9%.
c) Decreased by 10-29%.
d) Decreased by 30-49%.
e) Decreased by 50-69%.
f) Decreased by >70%.

g) Hard to say.

9. By how much did the revenues of the community budget decrease in May 2022 compared to the planned for this month?

a) Did not decrease.
b) Decreased by 0-9%.
c) Decreased by 10-29%.
d) Decreased by 30-49%.
e) Decreased by 50-69%.
f) Decreased by >70%.
g) Hard to say.

10. Which revenues of the community budget experienced the biggest decrease after February 24?

a) Personal income tax.
b) Single entrepreneur tax.
c) Excise duties.
d) Subsidies from other Ukrainian budgets.
e) Revenues did not fall.
f) Other.
g) Hard to say.

11. What is the estimated deficit of the community's budget revenues during the war (relative to factual expenditures)?

a) Budget deficit is 0-5%.
b) Budget deficit is 6-10%.
c) Budget deficit is 11-20%.
d) Budget deficit is 21-30%.
e) Budget deficit is >30%.

12. Did your ATCs cut budget expenditures since the invasion?

a) Yes.
b) No.

13. If in q.12 “Yes” by how much did your ATC cut the expenditures in annual terms?

14. In which areas were you forced to cut expenditures? (multiple options could be chosen).

a) Expenditures were not cut.
b) General administrative.
c) Public order, security and judiciary.
d) Economic activity.
e) Environment protection
f) Housing and utilities

g) Healthcare
h) Culture
i) Education
j) Social protection
k) Other

15. Which type of expenditures was your ATC forced to cut? (multiple options could be chosen)

a) Expenditures were not cut.
b) Labor costs.
c) Utilities.
d) Social expenses.
e) Subsidies to communal entities.
f) Capital expenditures.
g) Other.

16. Has your community applied for and received financial aid from the state, regional or district levels?

a) Officially applied for, and received.
b) Officially applied for, but did not receive.
c) Did not officially applied for, and did not receive.
d) Did not officially applied for, but received.

Section 3. Resilience.

17. How did the population of the community change after February 24?

a) Increased significantly.
b) Increased slightly.
c) Did not change.
d) Decreased slightly.
e) Decreased significantly.
f) Hard to say.

18. Are there families in the community who lost their breadwinners due to military aggression?

a) Yes.
b) No.

19. If q18 "Yes" how many families lost their breadwinners?

20. How many internally displaced individuals arrived in your community? (including unregistered internally displaced individuals).

a) Did not arrive.
b) Up to 5% of the total population.
c) 5-10% of the total population.
d) 11-20% of the total population.

e) >20% of the total population.

21. How many internally displaced individuals do you think have arrived in your community? (including unregistered internally displaced persons). Enter the estimated number of IDPs.

22. Did the community stopped providing administrative services due to the military aggression?

a) Yes.

b) No.

23. Has the community resumed providing administrative services?

a) Yes.

b) No.

c) The provision was not stopped.

24. For how long did the community not provide any administrative service from the list of those provided until February 24?. Indicate the estimated number of days.

25. Have your community experienced interruptions with waste removal services?

a) Yes.

b) No.

c) Hard to say.

26. How has the number of primary care physicians providing services in your community changed?

d) The number of physicians increased.

e) The number of physicians did not change.

f) The number of physicians decreased.

g) Hard to say.

27. How many volunteers work regularly in your community?

28. How many humanitarian centers do you know there are in your community?

29. Indicate the international humanitarian missions/organizations that provide/have provided assistance to the community?

30. Did the community receive support from communities in other countries?

a) Yes.

b) No.

31. If q.29 “Yes”, please indicate the communities of which countries provided support.

32. Have members of your community received humanitarian aid cargo?

a) Yes.

b) No.

33. How many humanitarian cargo did your community receive? (approximately, in tons).

34. Have members of your community sent humanitarian aid cargo?

c) Yes.

d) No.

32. How many humanitarian cargo did your community send? (approximately, in tons).

33. How many businesses were relocated to your community after February 24th?

34. What new community development or revitalization projects did your community initiate after February 24?

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