EMPLOYMENT, DISPLACEMENT, AND HOUSEHOLD CONSUMPTION IN WARTIME UKRAINE

by

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A thesis submitted in partial fulfillment of
the requirements for the degree of

MA in Economic Analysis.

Kyiv School of Economics

2026

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Abstract

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This thesis investigated the microeconomic mechanisms of household resilience and multidimensional deprivation in wartime Ukraine. Utilizing cross-sectional microdata from the 2023–2024 Household Socio-Economic Survey of Ukraine (HSESS), the empirical analysis isolated a final sample of 7,603 households to formally test the protective role of labor market attachment against severe economic shocks. The empirical strategy employed Ordinary Least Squares (OLS) regressions with regional fixed effects to estimate the conditional consumption premium of employment, alongside Probit models to identify non-linear threshold effects associated with binary survivalist strategies. The analysis identified three core structural mechanisms: the Employment Premium Buffer, which provided a robust consumption floor but exhibited diminishing marginal returns; the IDP Dependency Trap, wherein internal displacement structurally attenuated the protective returns to human capital; and the Child Deprivation Hierarchy, which revealed an ordered sacrifice of non-monetary welfare domains when the labor buffer failed. Ultimately, this research demonstrated that macroeconomic stabilization must be complemented by targeted micro-level labor interventions to prevent the irreversible erosion of human capital during conflict.

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ACKNOWLEDGMENTS

I would like to express my deepest gratitude to my thesis supervisor, Professor Olga Kupets, whose rigorous methodological demands, constructive criticism, and invaluable econometric insights significantly elevated the analytical quality of this research. I also extend my sincere appreciation to my friends from the Kyiv School of Economics. Finally, I am profoundly grateful to my family and co-workers from Brave1 Market for their unwavering support and patience throughout the duration of my graduate studies during these challenging times.

AI USE DECLARATION

Following institutional guidelines for academic integrity, the author acknowledges the use of Generative AI (ChatGPT and Google Gemini) as an auxiliary tool during the preparation of this thesis. Specifically, artificial intelligence was employed to assist with English-language copyediting, to optimize Python code for econometric estimations and data visualization, and to brainstorm structural frameworks for the narrative presentation of the empirical findings. The core research questions, econometric identification strategy, data processing, and analytical interpretations are exclusively the author's original work. All AI-assisted outputs were rigorously verified, heavily modified, and integrated by the author to ensure methodological accuracy. The tool was not used to conduct primary analysis, generate original literature reviews, or synthesize results. The author assumes full accountability for the authenticity, originality, and integrity of this thesis.

LIST OF ABBREVIATIONS

ES. Employment status

IDP. Internally Displaced Persons

LFS. Labor Force Survey

EBP. Employment Premium Buffer

LPM. Linear Probability Model

IDPDT. Internally Displaced Persons Dependency Trap

Chapter 1

INTRODUCTION

Modern war economy of Ukraine is a strange macroeconomic phenomenon that shows a simultaneous presence of 25-30 percent unemployment with significant labor shortages, coupled with a sharp increase in vulnerability such that 70 percent of children become materially deprived in comparison with only 18 percent before the war began (UNICEF 2024). While the economic impact of the war, represented by massive shrinkage of the GDP together with mass internal displacement according to Poharska (2023) and Kyiv School of Economics (2025), has already been extensively covered in academic papers, the aggregate view of the issue hides the actual mechanism of survival on the micro-level of individual families. In case when the formal economy of an upper-middle-income country is exposed to the conditions of total war, a household must quickly reallocate their labor and consumption in accordance with these new circumstances. The labor market engagement becomes nothing but a survival strategy for individuals.

However, exactly how this buffer system works in a kinetic environment and why such a system fails structurally for specific subsets of the population is the crucial black box that needs to be addressed. It is important to understand this microeconomic dynamic because only macroeconomic statistics can reveal no more than the deep inequality of the resilience structure, where some families have a stable income floor, while others experience severe deficiencies.

Existing academic research on microeconomics related to forced migration and conflict offered an advanced theory on consumption smoothing and negative coping strategies; however, most of the literature used historical cases from rural economies of the past or long-term conflict dynamics in developing countries.

Recent studies have examined the problems of unemployment among forcibly displaced people after the war in Bosnia (Kondylis 2010), but these studies fail to consider the reformation of an educated digital society under siege. Meanwhile, current macroeconomic approaches to the economic effects of conflict in Ukraine and the descriptive surveys of the same conflict do not offer microeconomic identification of the relationship between employment and welfare.

The consequences of such a lacuna in our empirical knowledge have serious implications in the realm of policymaking. Now when Ukraine makes the shift from emergency humanitarianism to post-war economic development policies, there is a need for a more nuanced type of evidence that explains how mechanisms work at the micro-level. Otherwise, there is a danger that any policies aimed at recovery will inadvertently lead to the creation of a permanent underclass due to lack of awareness about the mechanisms behind the labor penalty.

From this gap in the literature, three interrelated research hypothesizes follow. First, how large is the employment premium in terms of household consumption within a wartime economy, and does this protective relationship exhibit diminishing marginal returns as more household members enter the labor force? Second, does internal displacement structurally attenuate this consumption premium - and if so, how does the intersection of displacement and human capital shape household vulnerability? Third, when the labor buffer fails, in what order do households sacrifice different dimensions of children's wellbeing, and does the Child Deprivation Index reveal a predictable hierarchy of sacrifice that monetary measures might obscure?

This thesis constitutes the first microeconometric identification of the EPB in an active war economy in Europe. Employing data collected from the Household

Socioeconomic Survey of Ukraine (HSESS, 2023-2024), the current study estimates the impact on a carefully selected sample of 7,603 Ukrainian households. In terms of econometric techniques, OLS regressions together with regional fixed effects help capture price distortions, while Probit regressions enable measuring the survivalist binary coping strategies applied by households during wartime. Also, it represents the first evidence for the IDP Dependency Trap in Ukraine with the use of interaction terms in estimations, as well as the first empirical mapping of the Child Deprivation Hierarchy using a 0-13 CDI.

Chapter 2 reviews the literature pertaining to the theories of consumption smoothing, conflict displacement, and multidimensional deprivation. Chapter 3 explains the empirical framework, providing the rationale behind utilizing conditional OLS regression, non-linear Probit models, and additive CDI as a measure of multidimensional deprivation. Chapter 4 describes the HSESS data collection method during wartime conditions and introduces descriptive findings regarding the stratification of society in wartime conditions. Chapter 5 reports the formal results of the estimation process, showing the size of the buffer provided by employment and the exact amount of the displacement effect along with the precise hierarchical ordering of children's deprivation dimensions. Finally, Chapter 6 concludes by synthesizing the empirical findings and providing targeted policy recommendations for post-war labor market integration and social protection.

Chapter 2

LITERATURE REVIEW

The study of how households cope with extreme economic shocks can be traced to the theory of Permanent Income Hypothesis (PIH) and intertemporal optimization in the context of household income smoothing. According to life-cycle economics, rational and forward-looking individuals maximize their utility by balancing consumption levels during times of uncertain income by using borrowing and saving to protect themselves from economic shocks (Blundell, Pistaferri, & Preston, 2008). In the theory of complete markets, economic shocks should have been insured completely but empirical studies have proven otherwise and have shown that there exists only partial insurance whereby individuals self-insure against transient economic shocks through saving while remaining extremely sensitive to permanent income shocks (Blundell et al., 2008). The presumption of the absence of any friction in inter-temporal trade is invalid in cases where there is an extremely uncertain environment without capital markets, like the case for developing countries or conflict-prone areas. There is consensus in literature that when faced with liquidity constraints, households would be "wealthy hand-to-mouth" or constrained such that their consumption levels react excessively to income changes (Kaplan & Violante, 2014; Deaton, 1991). Households cannot use traditional buffer stock methods and are forced to ration consumption because of negative income surprises (Deaton, 1991).

In times when aggregate income of households is declining in the face of macroeconomic disturbances, there is a dramatic change in the pattern of household spending, which is best explained using Engel's Law. Following the Working-Leser framework, budget shares are modelled as linear functions of log total expenditure; Banks, Blundell & Lewbel (1997) extend this to a quadratic

specification to capture how luxury goods become necessities under budget constraints. This, in turn, implies that the food expenditure share becomes an excellent non-parametric measure of well-being and poverty, especially during severe economic disruptions in which monetary measures become unreliable due to high inflation rates (Houthakker, 1957). The non-parametric estimation of consumer expenditure suggests that although food shares follow a linear relation to the log of total expenditure, other products will need a quadratic extension for an accurate reflection of how luxury becomes necessity through budget constraints (Banks et al., 1997). In cases of wartime economic downturns, an increase in the value of the Engel coefficient reflects a situation in which individuals have run out of their financial buffers and are now experiencing severe hardship in terms of their basic needs. In essence, the constraints on intertemporal behavior and consumption imply that failure by the financial system to offer a cushion in the face of shocks forces households to depend solely on labor-market participation.

The lack of a proper consumption insurance and an efficient credit market implies that labor market attachment becomes the only available safety net for families facing adverse economic events. The econometric analysis of the impact of labor supply shows that labor makes sure that household consumption is stable and minimizes a substantial decrease in expenditures caused by sudden unemployment (Gruber, 1994; Blundell & MaCurdy, 1999). In fact, according to microeconomic studies within the scope of unemployment insurance, the consumption of the unemployed is drastically reduced without government transfers, which proves that labor is essential for economic survival (Gruber, 1994). But the protective power of formal employment is not without limits; its impact on the household experiences diminishing returns. As implied by models of labor supply for the multi-period case of the family, while the "added worker effect," wherein secondary workers join the work force to counteract the loss of

jobs experienced by the primary worker, plays an important role in survival, its effectiveness diminishes as overall demand falls and labor markets become saturated (Blundell & MaCurdy, 1999). During wartime, job destruction often pushes individuals into precarious, informal sectors, making overall labor market attachment the primary firewall against extreme poverty.

The effects of war on the economy create an urgent need for the adjustment of personal consumption, which is brought about by both historical and current pressures associated with resource allocation. As the nation's production is diverted towards military needs (the famous "guns-versus-butter"), the effects of resource allocation include strict restrictions on supply, distortions in prices, and stringent rationing of resources. Historical instances such as World War II have shown that economies under mobilization tend to have massive, centralized controls of prices, leading to "forced savings" because the consumer simply cannot afford any non-essential commodity. Nonetheless, the case with modern-day internal conflicts and asymmetrical warfare is different because of the shift in paradigm from forced saving to survivalist spending. For instance, prior to the outbreak of the civil war in Syria, the country suffered heavily due to droughts, which had a devastating effect on its agricultural capabilities and caused macroeconomic stress leading to the outbreak of civil unrest (World Bank, 2015). The war economy then went ahead to cause significant destruction of infrastructure and result in high rates of inflation, causing individuals to adopt negative coping measures such as liquidation of productive assets and taking their children out of school to be able to consume (World Bank, 2015).

Apart from being physically poor, living through the horrors of war changes behavioral economics and psychology, along with other social processes. There is substantial evidence from experiments conducted in post-war societies around the globe, including Sierra Leone, Uganda, and the Republic of Georgia, proving that direct experience of violence during war substantially boosts intra-communal

cooperation and pro-social conduct among individuals (Bauer et al., 2016). It seems that war-related trauma contributes to the emergence of parochial culture and risk-sharing arrangements, which replace dysfunctional governmental structures (Bauer et al., 2016). But even such a high degree of social solidarity cannot fully make up for the absolute loss of material and human capital. As seen in the case of Colombia, increased violence led to the displacement of millions who needed to take preventive and reactive actions, causing welfare losses which were very hard to recover and reduced the lifetime consumption paths (Ibáñez & Vélez, 2008). Thus, consumption adjustment during wartime does not only mean the shift towards bare subsistence; at the same time, there is a great dependence on locally established and therefore vulnerable safety mechanisms that are prone to disruption when people must relocate.

Internally displaced people (IDPs) increase the economic cost of war through creating a structural mechanism that denies individuals access to labor markets and social networks essential for survival. The existing microeconomic studies of forced displacement have shown that forced migrants differ from voluntary economic migrants because forced migrants migrate to minimize risk instead of maximizing expected utility, resulting in their entry into the host region totally bereft of location-specific resources, credentials, and informal networks (Ruiz & Vargas-Silva, 2013; Ibáñez & Vélez, 2008). This creates a serious "host region trap." Based on random utility models and using compensating variation, economic research calculates the cost of forced displacement for individuals in Colombia at a huge 37 percent reduction in the net present value of lifetime rural consumption, disproportionately affecting poor households (Ibáñez & Vélez, 2008). The two major factors behind this poverty trap are labor market exclusion and high housing costs in the host region.

Evidence from conflict-affected environments highlights the extent of labor market discrimination against displaced persons. Empirical studies in post-

conflict Bosnia and Herzegovina based on instrumental variables accounting for endogenous displacement find that displaced men and women have substantially higher chances of unemployment compared to stayers (Kondylis, 2010). According to the existing literature, displacement results in exclusion due to informality of the post-conflict labor market, where jobs are distributed according to well-functioning networks unavailable to the displaced individuals (Kondylis, 2010). Likewise, the significant flow of Syrian refugees to Turkey led to an identifiable labor supply shock in the informal economy because of the lack of formal working permits. This led to extremely reduced wages in the informal market sector as the native workers were crowded out. This is an example of how forced migration results in stiff competition at the bottom of the economic ladder (Del Carpio & Wagner, 2015). In addition, the costs of living in safer areas tend to be quite high, thus eroding any possible advantages that may arise from low-wage employment in the informal economy (Ruiz & Vargas-Silva, 2013). Although there are other cases in literature that show localized economic gains in favor of certain native populations, such as the case of refugees flowing into Tanzania, the displaced individuals end up in a structural situation of poverty (Maystadt & Verwimp, 2009).

Once the family's financial sources dry up and their employment cushions become irrelevant because of displacement, only through non-financial measures of multidimensional deprivation can one truly grasp the extent of poverty experienced by the families. It is important to note that while monetary measurements such as income poverty lines may sometimes misrepresent the level of hardship due to ignoring factors such as resource distribution within the household, depletion of tangible resources, and cushioning provided by common goods (Eurostat), techniques such as the EU-SILC material deprivation measure are vital because of using tangible variables – for instance, being unable to buy meat every other day, heat one's house, or replace old furniture – to measure

poverty (Eurostat). In this multifaceted approach, the problem of child poverty is very pronounced. With limited financial stability and the lack of savings, families experience negative budgets that cause them a lot of stress, causing them to skip out on vital costs that will have a direct impact on the child's future.

According to empirical evidence, economically distressed households follow a predictable pattern of deprivation hierarchy in coping with the economic shock. As observed from history through research into poverty, the poor households have the practice of giving up social luxuries that are unnecessary for physical sustenance even before reducing their core consumption level. This includes giving up items such as purchase of new clothes, hobbies, and leisure goods (Mack & Lansley, 1985). In current crisis situations, the same hierarchy implies that parents give up their children's "Leisure and Social" activities. As noted by humanitarian agencies, vulnerable families regularly adopt coping mechanisms that are irreversible and detrimental to their well-being, such as withdrawing children from schooling as a means of avoiding total collapse (World Bank, 2015). Child's removal from social activities indicates the onset of a household labor shock in advance, before any nutritional issues arise. These non-monetary costs clearly indicate serious gaps in the economic theories used to date and make a compelling case for the necessity of conducting microeconomic econometric analysis in conflict zones.

There is already a very strong foundation of economic theory in terms of consumption smoothing across time periods, the implications of forced movement for behavior and structure, and the intricacies of informal employment structures. Yet, there remains a significant gap in the literature with respect to the relationship between employment conditions, spatial relocation, and household deprivation hierarchies in the context of a comprehensive war that is ongoing and symmetric in nature. Although some microeconomic research has been conducted into labor market recovery after conflict in places such as

Bosnia (Kondylis, 2010), or in the case of guerrilla wars and displacement in countries such as Colombia (Ibáñez & Vélez, 2008), there exists no actual empirical data on this issue from an advanced European country at war. Consumption smoothing theories and assessments of informality have failed to consider the calibration of their frameworks in regions of active conflict where extreme "guns versus butter" debates exist alongside extremely high internal dislocation and labor shortages amidst very high local unemployment rates.

The current research specifically bridges this knowledge gap and this analysis carefully examines three previously unexplored mechanisms: the non-linear employment premium buffer, the geographically specific IDP dependency trap, and the child deprivation hierarchy. By integrating the disparate literature related to labor buffers, displacement penalties, and multi-dimensional poverty, this study contributes to the field of conflict economics by providing novel, micro-level evidence on how households adapt to symmetric, large-scale warfare in a modern European context.

Chapter 3

METHODOLOGY

The research adopted a cross-sectional microeconometric approach based on an Ordinary Least Squares (OLS) regression analysis with fixed effects for regions, aimed at determining the structural drivers of household consumption and material deprivation. It is important to note that the adoption of the cross-sectional methodology became inevitable after the cessation of panel surveys in Ukraine, which occurred in the aftermath of the country's invasion in 2022; a phenomenon that is widespread in times of war because of the displacement of interviewees from their locations together with the destruction of administrative infrastructure in those areas. Despite the advantage associated with using panel data in assessing the welfare dynamics, a properly designed cross-sectional model can be used to obtain an estimate of the "Employment Premium Buffer" and vulnerability at a particular point in time. By borrowing from the conceptual framework presented by Deaton (2018) and Wooldridge (2010), the research relied on conditional analysis for identifying welfare drivers other than employment and displacement. The fixed effect of regions, on the other hand, included a measure of the geographical proximity to frontlines of four categories – deep rear, rear, near frontline, and frontline.

The strategy depended on the use of regional fixed effects to handle the problem of very pronounced spatial heterogeneity present in the war environment of interest. Proximity to conflict, labor market collapse at the regional level, and spatial price distortions, characterized by huge disparities in the cost of necessities in areas close to the fighting zones and those providing refuge for IDPs, presented a serious problem of omitted variable bias. The condition of subregion enabled control for regional disturbances that would otherwise affect the welfare floor estimation

results. In other words, the welfare measure was not driven by the safety or the availability of humanitarian relief in the region but instead was an outcome of employment in a common economic setting.

To test the "Employment Premium Buffer" and the "IDP Dependency Trap," this study specified the following primary OLS regression equation:

$$\ln(C_i) = \beta_0 + \beta_1 E_i + \beta_2 E_i^2 + \beta_3 (E_i \times IDP_i) + \beta_4 IDP_i + \beta_5 X_i + \delta_r + \varepsilon_i \quad (1)$$

Where C_i is the per-capita consumption of household i; E_i is the number of employed members in household; E_i^2 is the squared employment term to test for diminishing returns; IDP_i is a binary indicator equal to 1 if the household is internally displaced; X_i is a vector of demographic controls including household size and head's education; δ_r represents regional fixed effects; ε_i is the error term. The variable, consumption per person, was taken as logarithm to correct the right-skewed distribution that the variable has and because in doing so, it allows for a percentage change interpretation of the parameters. Following the Deaton (2018) convention, consumption expenditure was used rather than income, since income is known to be underestimated during crises, while on the other hand, expenditure more appropriately measures the smoothing power of households.

The inclusion of the squared form of employment was necessary to check for any non-linearity in the welfare equation, particularly in terms of any diminishing marginal effects of employment at the household level. The key identification of the "IDP Dependency Trap" lay in the interaction between these two variables. According to microeconomic studies conducted on forced migrants, IDPs suffer from a "host-region trap," where the labor market excludes them or depreciates their human capital when they settle down in urban centers as refugees. In the empirical identification of the "dependency trap" suffered by IDPs, the interaction

between these two variables provided an opportunity to examine if the welfare gains from work are significantly reduced for those who have been uprooted from their roots, just as described by Kondylis (2010) and Ruiz & Vargas-Silva (2013).

A vector of demographic controls such as the education level of the head of the household and the number of individuals in the household was considered to control for differences between households in their capacity to be productive and the requirements of resources. Education was considered categorical to incorporate the benefits of different levels of human capital, whereas the number of people represented the economies of scale - if any – in resource allocation during wartime conditions. Robust standard errors were used in estimating the models since heteroskedasticity is a common problem with the household survey type of data. This way of modeling the issue ensured the validity of the statistical conclusions regardless of whether the variance of ε_i was constant. The following specifications allow answering the research question about whether the buffer created by labor market participation was strong enough or if displacement led households into an informal economy trap.

For examining "negative coping strategies" households pursue after the failure of the labor market buffer, the Probit model was chosen to predict the probability of negative coping strategies outcomes. The general model specification was as follows:

$$P(Y_i = 1 \mid X) = \Phi(\gamma_0 + \gamma_1 E_i + \gamma_2 IDPi_i + \gamma_3 Z_i) \qquad (2)$$

To model binary negative coping strategies, this study employs Probit regression models. Since the dependent variables (Y_i) for extreme deprivation outcomes - such as severe protein deficiency or forced subsistence agriculture - are

dichotomous, taking the value of 1 if the household resorts to the strategy and 0 otherwise, a standard Ordinary Least Squares (Linear Probability Model) approach is methodologically flawed. The Linear Probability Model can predict probabilities outside the range and assumes constant marginal effects. The Probit model addresses these issues by using the cumulative standard normal distribution to constrain predicted probabilities and capture the non-linear threshold effects of extreme financial stress.

In equation (2), the dependent variable Y_i represents two distinct sets of binary outcomes. First, it captures extreme survivalist strategies, specifically severe protein deficiency and forced agricultural substitution. Second, to empirically map the Child Deprivation Hierarchy, Y_i iteratively represents each of the 13 individual binary components of the Child Deprivation Index (CDI). By estimating separate Probit models for each CDI sub-domain, this study isolates the specific marginal effects of employment shocks on individual dimensions of child welfare, thereby revealing which non-monetary items households sacrifice first under economic stress

In the binary model, two key aspects that were important in measuring survival in the war context were considered: the lack of proteins – a manifestation of the lack of nutritious products in general; and forced subsistence agriculture, which is an inefficient survivalist turn for the population after the collapse of the labor market. The marginal effects at the means were analyzed instead of the coefficient itself, as only the former allows the interpretation of what the chances of resorting to particular ways of survival were increased by employing a unit due to changes in labor activity.

To account for the complexity of welfare not adequately addressed through monetary indicators during wartime, Child Deprivation Index (CDI) was measured using a 0-13 scale. The approach was based on the analysis framework presented

by Guio et al. (2012, 2016) for Europe, whereby enforced deprivation or "enforced lack" of goods seen as necessities is a better welfare indicator than spending because it provides more consistent information. The construction of CDI is additive, and all indicators were assigned equal weights since additive indices tend to show very high consistency.

The index consisted of three sub-indexes aimed at revealing the "Hierarchy of Child Deprivation": Basic Needs (0–4), including basic needs of nutrition and warmth; Education (0–2), which included the absence of books and no school outings; and leisure and participation in social life (0–7), including the capability to organize celebrations and engage in additional educational programs. Such an alternative index is especially significant for the economy during wartime, when monetary indexes are distorted due to such factors as hyperinflation or humanitarian vouchers issued to the population. By means of estimating Probit models for each of the sub-domains of the index CDI, the study was able to reveal which spheres of children's life are cut off first under economic pressures and which are saved until the very end.

Several important drawbacks were recognized regarding the empirical approach to studying microdata from a country experiencing ongoing armed conflicts. This empirical strategy acknowledges inherent econometric limitations. The cross-sectional design precludes the inclusion of individual fixed effects, preventing control for unobserved time-invariant characteristics such as pre-war asset accumulation or inherent risk aversion. Consequently, despite the inclusion of regional fixed effects to mitigate spatial omitted variable bias, the resulting estimates must be interpreted as robust conditional correlations rather than strict causal effects. Acknowledging this limitation is standard in conflict microeconometrics, where panel attrition frequently compromises longitudinal designs.

Despite the difficulties mentioned above, the integrated approach that involved the use of log-linear OLS to measure the Employment Premium Buffer, the application of Probit models to identify survivalist coping and CDI to reveal the Child Deprivation Hierarchy proved to be a holistic approach to assessing household resistance. As a result of the triangulation between monetary and non-monetary variables, the presented analysis helped to provide a more sophisticated assessment of wartime welfare than would have been possible by applying just one econometric technique.

Chapter 4

DATA

Empirical analysis for this research was based on microdata from the Household Socio-Economic Survey of Ukraine (HSESS) conducted in 2023-2024. Specifically, application of the specialized survey became methodologically essential because of the February 2022 Russian invasion of Ukraine that entailed the temporary breakdown of the national statistical system in Ukraine. It entailed the suspension of key Ukrainian household surveys – the Household Living Conditions Survey (HLCS) and Labor Force Survey (LFS). In the information void created by war and large-scale population migration, HSESS data gave unique insights into households' resilience, labor force engagement, and deprivation. The data gathering process was based on Computer-Assisted Personal Interviewing (CAPI). CAPI survey design became strategically beneficial due to the extremely conflictive nature of the data collection site compared to traditional Paper-and-Pencil interviewing (PAPI). Above all, it was able to guard against the possibility of losing any data due to the enumerators being compelled to leave the frontline area. The survey made use of a recall period of three months when assessing household expenditure. Although a recall period is susceptible to memory effects, three months is econometrically ideal in a wartime environment since it eliminates the dramatic fluctuations of expenditure during a time of crisis without going too far into the past.

The original raw data contained a total of 8,023 household-level observations. As documented in the survey's cleaning log, very strict standards were set to maintain data quality. To begin with, a total of 267 observations had to be eliminated because of incomplete data on per-capita consumption (i.e., zero or missing), meaning that households providing incomplete information regarding their welfare were omitted

from the analysis. No observations had to be eliminated for incomplete employment and education data at this stage, but extreme values had to be trimmed to avoid any distortion caused by severe outliers. For this reason, a total of 153 observations (corresponding to bottom and top one percent of per-capita consumption thresholds of 333 and 21,225 UAH, respectively) were dropped. This resulted in obtaining a total of 7,603 households that would become our sample for the following OLS and Probit estimations. While eliminating the households with missing consumption data may lead to selection bias, i.e., omission of the most severely traumatized households under active combat, the application of regional fixed effects will allow obtaining a reliable lower-bound estimate of wartime deprivation.

The empirical analysis relies on a precisely defined set of monetary, labor, and demographic variables. In the primary OLS models, the dependent variable is the natural logarithm of per-capita consumption. Following Deaton (1991), consumption expenditure is preferred over self-reported income. In active conflict economies, self-reported income is frequently under-reported or highly volatile. Conversely, consumption accurately reflects a household's actual standard of living and its ability to smooth consumption against shocks through borrowing or humanitarian aid. In the trimmed data set, the average per-member consumption was 3,917.86 UAH, while the standard deviation was 3,118.60.

The primary independent variable, number of employed members captures the degree of integration of the household into the labor market. In place of an ordinary dummy variable that indicates whether there were any employed members within the household, a continuous measure was used (mean = 0.901, standard deviation = 0.844), which properly captured the dynamic labor supply within the household. The inclusion of the squared term for the variable was made to capture whether the "Employment Premium Buffer" increases at a decreasing rate as the household reaches its maximum level of labor participation. For analyzing the

hypothesis regarding the "IDP Dependency Trap," we used the IDP dummy variable, which indicated whether households were categorized under internally displaced people. Internally displaced people constitute 3.5% of this sample (mean = 0.035, standard deviation = 0.183).

The vector of dummy variables was used to quantify human capital to reflect its progressiveness in terms of educational achievement according to a nine-level credential structure, which is characteristic of the Ukrainian educational system. Having lower than basic secondary education as a benchmark, the indicators comprised basic secondary education, completed secondary education, lower vocational education, vocational/technical education, incomplete higher/bachelor's education, completed higher/master's education, and postgraduate education. Such a specification became crucial for determining the exact human capital thresholds. As will be evident from the following econometric findings, significant wage and resilience differentials could only be detected at the highest levels of the distribution, whereas lower/vocational levels of education did not provide any statistical protection from the economic impact of the war. The distribution indicated a relatively high level of education among respondents: incomplete higher/bachelor's education was the most prevalent with a share of 32.8 percent, followed by vocational/technical education (17.6 percent) and postgraduate education (16.3 percent).

Household demographics were proxied by household size, having a mean size of 2.35 persons (sd=1.31). This variable controls for resource dilution, whereby bigger families must allocate a constant amount of income among more people. To control for the problem of spatial unobservables, I used regional fixed effects that account for strong spatial heterogeneity associated with the conflict, especially regional price inflation and distance from the frontline. Finally, the regression model accounts for multi-dimensional non-monetary welfare using a Child Deprivation Index (CDI) that is necessarily child-focused and thus calculated only

on the subset of households with children (n=2,482). Deprivations in each domain were measured using a set of dichotomous questions regarding lack of resources, such as inability to buy new clothes, second pair of shoes, or eat meat regularly. The results were then combined into the aggregate score that was used in the regressions.

Finally, the dataset includes two binary dependent variables to model survivalist coping strategies. The first binary outcome, severe protein deprivation, is grounded in the EU-SILC material deprivation framework. This variable takes the value of 1 if the household reported lacking sufficient funds to consume meat or fish at least twice a week, thus capturing an enforced lack of basic nutrition rather than voluntary dietary preferences. The second binary outcome, forced agricultural substitution, takes the value of 1 if the household relied on own-produced vegetables and potatoes for any portion of its total consumption over the previous three months, serving as a proxy for low-productivity survivalist labor.

Prior to embarking on the econometric estimations, a discussion of the summary statistics produced very strong initial support for the thesis' three key mechanisms. The basic sample parameters are given in Table 1, while Tables 2 and 3 were used to examine the unconditional differences in welfare metrics across displacement and employment statuses. Moreover, Figures 1 and 2 were essential for illustrating graphically the distributional inequities that are part and parcel of the wartime economy.

Figure 1 shows food expenditure as a share of total expenditure for the different employment statuses. Unemployed households spend a higher percentage of their income on basic needs.

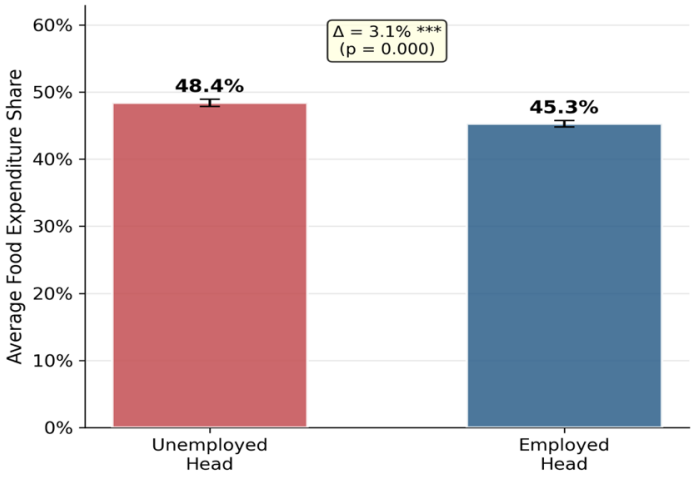


Figure 1. Average food expenditure share by employment status of household head

Building upon this baseline vulnerability, Figure 2 maps key welfare metrics across a four-way cross of Employment and IDP Status, visually demonstrating the intersectional vulnerability of displaced households without labor market attachment.

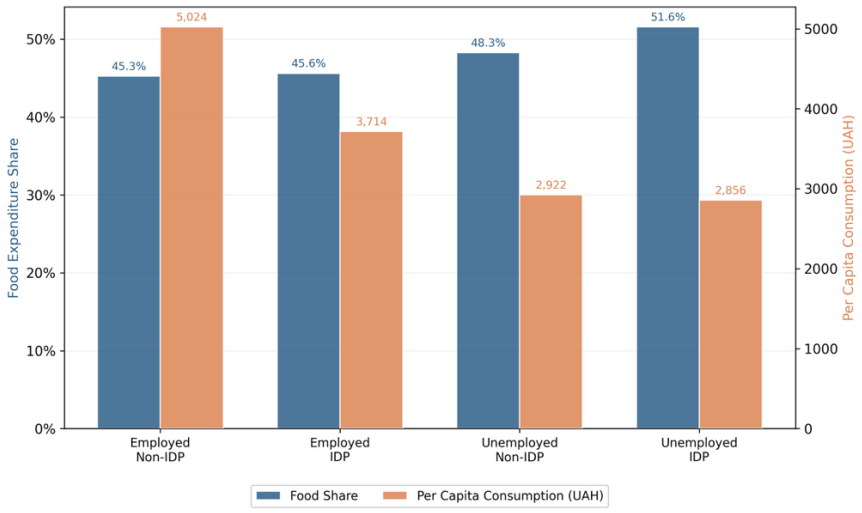


Figure 2. Per capita consumption and food expenditure share by household head employment and displacement status

Table 1. Descriptive statistics of the household analytical sample

Variable	N	Mean	Std Dev	Min
Per capita consumption (UAH)	7,603	3917.855	3118.597	333.333
Food expenditure share	7,603	0.469	0.163	0.000
Number of employed members	7,603	0.901	0.844	0.000
IDP status (1 = Yes)	7,603	0.035	0.183	0.000
Household size (persons)	7,603	2.351	1.309	1.000
Basic secondary education	7,603	0.001	0.034	0.000
Completed secondary education	7,603	0.014	0.116	0.000
Lower vocational education	7,603	0.095	0.294	0.000
Vocational / technical education	7,603	0.176	0.380	0.000
Incomplete higher / Bachelor's degree	7,603	0.328	0.469	0.000
Completed higher / Master's degree	7,603	0.062	0.241	0.000
Postgraduate education (Tier 1)	7,603	0.163	0.369	0.000
Postgraduate education (Tier 2)	7,603	0.160	0.367	0.000
Child Deprivation Index (CDI score, 0–13)	2,482	3.129	3.002	0.000
Basic Needs sub-domain (0–4)	2,482	0.588	1.042	0.000
Education sub-domain (0–2)	2,482	0.177	0.430	0.000
Leisure & Social sub-domain (0–7)	2,482	2.363	2.164	0.000

Note: *p<0.1; **p<0.05; ***p<0.01

The structural handicaps illustrated by the IDP Dependency Trap became clear in the descriptive contrasts. Table 2 provided cross-tabulations of welfare indicators according to displacement status. Non-displaced households consumed an average amount of 3,946.43 UAH per capita, while displaced households managed only 3,120.34 UAH – a significant shortfall of 826.09 UAH ($p<0.01$). The reduced disposable income of displaced people had to be spent on their bare subsistence needs, since IDPs allocated significantly more resources for the acquisition of basic goods; the share of food expenses accounted for 49.7 percent in displaced households against 46.8 percent in non-displaced families ($p=0.005$). Finally, IDPs suffered heavily due to the problem of labor market exclusion; their mean number

of employed individuals was 0.593 against 0.912 in non-displaced households ($p<0.01$), and consequently, they experienced a significantly higher degree of multidimensional child deprivation – their CDI score reached 4.969 against 3.026 in non-displaced households ($p<0.01$).

Table 2. Descriptive statistics by IDP

Variable	Non-IDP Mean	IDP Mean	Difference	p-value
Per capita consumption (UAH)	3946.430	3120.340	-826.090***	<0.001
Food expenditure share	0.468	0.497	0.029***	0.005
Number of employed members	0.912	0.593	-0.319***	<0.001
Household size (persons)	2.332	2.856	0.523***	<0.001
Basic secondary education	0.001	0.000	-0.001***	0.003
Completed secondary education	0.014	0.011	-0.002	0.741
Lower vocational education	0.096	0.087	-0.008	0.640
Vocational / technical education	0.176	0.156	-0.020	0.373
Incomplete higher / Bachelor's degree	0.328	0.316	-0.013	0.666
Completed higher / Master's degree	0.062	0.068	0.007	0.678
Postgraduate education (Tier 1)	0.164	0.129	-0.035*	0.099
Postgraduate education (Tier 2)	0.158	0.232	0.074***	0.005
Child Deprivation Index (CDI score, 0–13)	3.026	4.969	1.943***	<0.001
Basic Needs sub-domain (0–4)	0.560	1.099	0.539***	<0.001
Education sub-domain (0–2)	0.166	0.374	0.208***	<0.001
Leisure & Social sub-domain (0–7)	2.300	3.496	1.196***	<0.001
Child Deprivation Index (CDI score, 0–13)	3.026	4.969	1.943***	<0.001
Basic Needs sub-domain (0–4)	0.560	1.099	0.539***	<0.001
Education sub-domain (0–2)	0.166	0.374	0.208***	<0.001
Leisure & Social sub-domain (0–7)	2.300	3.496	1.196***	<0.001

Note: *p<0.1; **p<0.05; ***p<0.01

On the other hand, the protective effect of the Employment Premium Buffer was evident during segmentation by labor market affiliation. From Table 3, it is evident that the welfare disparity between households headed by an employed person and one by an unemployed person was significant. The households headed by an employed person had a per-member consumption of 4,995.23 UAH, which was significantly higher than the 2,919.38 UAH mean consumption of those households with an unemployed head (difference of 2,075.85 UAH; $p<0.01$). Unemployed-headed households had to allocate 48.4% of their income to food expenditures while those with an employed head allocated 45.3% ($p<0.01$). In terms of human capital sacrifice, unemployed households fared significantly poorly at CDI of 3.898 than the employed ones whose CDI stood at 2.600 ($p<0.01$). The graphical visualization presented in Figure 2 also illustrated the fact that wage-earning non-displaced individuals occupied the highest rank within the hierarchy of wellbeing (5,024 UAH per capita), whereas unemployed displaced persons occupied the lowest rung of this hierarchy (2,856 UAH per capita). Overall, the descriptive statistics revealed a very hierarchical structure of life in wartime conditions, indicating that although the Employment Premium Buffer contributed to ensuring minimum consumption, the phenomenon of the IDP Dependency Trap was working against it. To identify these mechanisms statistically, the following section proceeds to conditional microeconometrics.

Table 3. Descriptive statistics by employment

Variable	Unemployed Head Mean	Employed Head Mean	Difference	p-value
Per capita consumption (UAH)	2919.381	4995.234	2075.854***	<0.001
Food expenditure share	0.484	0.453	-0.031***	<0.001
Number of employed members	0.319	1.529	1.210***	<0.001
IDP status (1 = Yes)	0.046	0.022	-0.024***	<0.001

TABLE 3 - Continued

Variable	Unemployed Head Mean	Employed Head Mean	Difference	p-value
Household size (persons)	2.224	2.487	0.262***	<0.001
Basic secondary education	0.001	0.001	0.000	0.826
Completed secondary education	0.021	0.005	-0.016***	<0.001
Lower vocational education	0.136	0.052	-0.083***	<0.001
Vocational / technical education	0.222	0.126	-0.096***	<0.001
Incomplete higher / Bachelor's degree	0.353	0.301	-0.052***	<0.001
Completed higher / Master's degree	0.056	0.068	0.012**	0.029
Postgraduate education (Tier 1)	0.103	0.228	0.125***	<0.001
Postgraduate education (Tier 2)	0.106	0.219	0.112***	<0.001
Child Deprivation Index (CDI score, 0–13)	3.898	2.600	-1.298***	<0.001
Basic Needs sub-domain (0–4)	0.763	0.468	-0.294***	<0.001
Education sub-domain (0–2)	0.266	0.116	-0.150***	<0.001
Leisure & Social sub-domain (0–7)	2.869	2.016	-0.854***	<0.001

Note: *p<0.1; **p<0.05; ***p<0.01

Figure 1 showed the distribution of these two processes theoretically through a right-skewed kernel density graph of log consumption in the dataset, which highlighted the lower tail of vulnerable households in terms of their distribution. Nonetheless, Figure 2 showed the intersectionality of the vulnerability problem more clearly than any other figure in this study. In fact, Figure 2 showed important welfare indicators by a fourfold categorization of Employment and IDP status. As shown in Figure 2, the group with the highest level of welfare is employed non-

IDPs with a food share of 45.3 percent and per-capita consumption of 5,024 UAH. On the other hand, while employed IDPs were better off compared to the worst-off IDPs who did not have jobs, they were still far worse about their level of consumption (3,714 UAH).

In conclusion, the descriptive data showed the deep stratification of wartime society. It was strongly implied by the summary statistics that whereas the EPB served to protect the basic level of consumption, the IDPDT undermined such gains and pushed families through the various steps of the CDP. Nevertheless, descriptive statistics is limited in its ability to uncover unconditioned relationships. To identify such relationships properly and address issues arising out of family size, human capital, and geography, a move must be made to microeconometrics.

Moreover, the reliance on self-reported consumption expenditure introduces an ongoing risk of measurement error, particularly for survey subjects experiencing emotional stress or physical disruptions due to displacement (Verme et al. 2016). In conflict-affected populations, such under-reporting is a known phenomenon that generally biases OLS estimates toward zero. This implies that the welfare penalties and structural deprivations identified in this study likely represent a conservative lower bound of the true impact. Finally, reducing the sample size from 8,023 in the original raw dataset to the 7,603 households with complete welfare and demographic information poses a residual risk of sample selection bias (Wooldridge 2002). The implication is that the households most severely affected by kinetic warfare were also the most likely to drop out of the sample due to total displacement or communication barriers, resulting in a survivorship bias that further confirms these estimates as conservative minimums of wartime deprivation (Ruiz and Vargas-Silva 2013).

Chapter 5

ESTIMATION RESULTS

The descriptive statistics painted a clear picture of an economy that is characterized by extreme levels of stratification, but understanding the structure behind this stratification cannot be based on mere correlation. The findings of the conditional micro-econometric estimations form the subject matter of this chapter. Through systematic identification of the role played by labor market attachments, forced displacements, and geographic location, this analysis will test the three basic mechanisms that make households resilient. Table 4 presents the sequence of Ordinary Least Squares (OLS) regressions employed to determine the monetary benefits of these mechanisms.

Table 4. OLS estimation results for household per capita consumption

Variable	Model 1 (Baseline)	Model 3 (+ Demographics)	Model 5 (Non-linear)	Model MHC2 (Brain Waste)	Model MR5 (Full + Region FE)
Number of employed members	0.236***	0.330***	0.524***	0.332***	0.337***
	(0.010)	(0.010)	(0.025)	(0.010)	(0.010)
Employed members squared			-0.085***		
			(0.010)		
IDP status (1 = Yes)				0.417***	0.373***
				(0.122)	(0.122)
Education × IDP (Interaction)				-0.065***	-0.058***
				(0.021)	(0.021)
Household size (persons)		-0.220***	-0.216***	-0.221***	-0.218***
		(0.007)	(0.007)	(0.007)	(0.007)
Education of Household Head					

TABLE 4 - continued

Variable	Model 1 (Baseline)	Model 3 (+ Demographics)	Model 5 (Non-linear)	Model MHC2 (Brain Waste)	Model MR5 (Full + Region FE)
- Basic secondary education		0.249	0.241	0.246	0.221
		(0.233)	(0.241)	(0.234)	(0.235)
Completed secondary		-0.038	-0.027	-0.050	-0.060
		(0.160)	(0.167)	(0.160)	(0.160)
Lower vocational		-0.023	-0.033	-0.033	-0.029
		(0.148)	(0.156)	(0.149)	(0.148)
Vocational / technical		0.016	0.004	0.008	0.007
		(0.148)	(0.155)	(0.148)	(0.148)
Incomplete higher / Bachelor's		0.159	0.138	0.153	0.144

Note: *p<0.1; **p<0.05; ***p<0.01

The OLS regression models in Table 4 used the natural logarithm of per-capita consumption to study the Employment Premium Buffer effect. The exercise is carried out in a sequential manner to show how robust the employment variable's effect is as we introduce different structural controls. In the first or unconditional model (Model 1), the employment premium was found to be significantly positive, whereby each extra household member working raises per-capita consumption by about 23.6 percent (β=0.236, p<0.01). But even with this model, there was very little explained in terms of variance in welfare, with an Adjusted R-Squared of just 0.076.

To correct for possible bias resulting from resource dilution, a control vector was added to Model 3 that included variables related to household size and the education of the household head. These controls had a dramatic effect on the employment coefficient, showing that one extra worker boosted expenditure by

33.0 percent (β=0.330, $p<0.01$). The implication here is that while employment has some positive effects on consumption that cannot be seen at first glance, the positive relationship between the number of workers in the family and the lower consumption per person because of resource dilution (β=-0.216, $p<0.01$) caused the negative estimation. Moreover, this addition enhanced the model's goodness-of-fit immensely, bringing up the Adjusted R-squared to 0.277.

Model 5 further enriched the specification by incorporating a quadratic form of the employment variable to see if there is non-linearity in the intra-household labor supply. Indeed, the analysis proved the presence of an inverse concave welfare function, as seen from the strong positive linear relationship (52.4 percent; β=0.524; $p<0.01$), while the quadratic term came out negative (β=−0.085; $p<0.01$). It means that the marginal benefit from supplying additional labor is decreasing and eventually turns to zero. The threshold points where it happens could be found through differentiating the employment function and finding the value at which the derivative equals zero: peak=$-\beta 1/(2\times\beta 2)$, or $-0.524/(2\times-0.085)$=3.08. In other words, the point when households receive the maximum possible benefit of having one more member working is reached at approximately 3.08 workers. Any number exceeding three is unlikely to contribute much to per-capita consumption since households that manage to employ four or five individuals have probably resorted to subsistence labor.

Although the Employment Premium Buffer serves to insulate the broader society from adverse shocks, the microeconometric analysis uncovers a unique structural penalty faced by internally displaced people (IDPs), which undermines the potential gains considerably. It was shown that there is an enormous exclusion gap in the labor market where households without IDPs have on average 0.912 employed members, compared to just 0.593 for the IDP household (β=-0.319, $p<0.01$).

The empirical analysis carried out in Models MHC2 and MR5 explains the mechanism of dependency trap in more detail. While the independent coefficient on being IDPs was apparently positive in Model MHC2 (β=0.417, p=0.001), it does not mean anything. Indeed, when combined with the interaction effect in Model MHC2, this estimate shows the high concentration of humanitarian cash payments as well as the mechanical price increases in host regions that artificially boost the consumption floor of displaced households. The true effect of being an IDP on economic outcome can be seen in the interaction between human capital and the IDP status variables, which showed a strong negative sign (-0.065, p=0.002).

The above negative association shows that the benefits from education for displaced households are persistently depressed. For each level of education, the displaced people are worse off by 6.5 percentage points of consumption premium relative to non-displaced people of similar socioeconomic status. The microeconomic relationship is consistent with the observed fact of occupational downgrading and "brain waste". With disruption of professional connections and inability to match skill set within the urban areas of the destination regions, IDPs cannot translate their human capital before war into wage premia. Highly educated IDPs also often find themselves employed in insecure informal occupations.

Spatial heterogeneity is one of the primary features of wartime economies. Spatial fixed effects were used in Model MR5, which represents the fully specified structural equation, as means of control for unobservable heterogeneity associated with the front-line effect, regional labor market collapse, and unequal distribution of assistance. Including spatial controls significantly increased Adjusted R-squared value to 0.289, thereby confirming the necessity of controlling for spatial factors.

The estimated regional fixed effects clearly showed the presence of great geographic differences in welfare in terms of initial conditions. Living in the eastern

macro-region had a huge positive impact on consumption distortion coefficient (β=0.198, p<0.01) due to the high levels of hyper-inflation and military industry wages around the frontlines. At the same time, living in the southern macro-region had a large negative impact (β=−0.053, p=0.024). It is extremely important to highlight the fact that even controlling for such extreme spatial heterogeneity, the employment premium coefficient (β=0.337, p<0.01) was still highly statistically significant. In addition, even after controlling for all these spatial effects, the IDP human capital penalty remained highly significant (β=−0.058, p=0.006).

Table 5. Probit marginal effects for extreme negative coping strategies

Outcome	Specification	Variable	Marginal Effect (SE)	N	Pseudo R^2
Y1: Protein Deficiency	Baseline	Number of Employed	-0.155*** (0.007)	7603	0.1074
Y1: Protein Deficiency	Baseline	IDP Status	0.033 (0.027)	7603	0.1074
Y1: Protein Deficiency	Baseline	Education: Medium	-0.088*** (0.016)	7603	0.1074
Y1: Protein Deficiency	Baseline	Education: High	-0.196*** (0.017)	7603	0.1074
Y1: Protein Deficiency	Baseline	Household Size	-0.011*** (0.004)	7603	0.1074
Y1: Protein Deficiency	Extended (+ Region FE)	Number of Employed	-0.156*** (0.007)	7603	0.1126
Y1: Protein Deficiency	Extended (+ Region FE)	IDP Status	0.036 (0.027)	7603	0.1126
Y1: Protein Deficiency	Extended (+ Region FE)	Education: Medium	-0.089*** (0.016)	7603	0.1126
Y1: Protein Deficiency	Extended (+ Region FE)	Education: High	-0.196*** (0.016)	7603	0.1126
Y1: Protein Deficiency	Extended (+ Region FE)	Household Size	-0.014*** (0.004)	7603	0.1126
Y1: Protein Deficiency	Extended (+ Region FE)	Region: West	0.076*** (0.012)	7603	0.1126
Y1: Protein Deficiency	Extended (+ Region FE)	Region: East	0.020 (0.014)	7603	0.1126
Y1: Protein Deficiency	Extended (+ Region FE)	Region: South	0.080*** (0.016)	7603	0.1126
Y2: Agri Substitution	Baseline	Number of Employed	-0.055*** (0.008)	7603	0.0509
Y2: Agri Substitution	Baseline	IDP Status	-0.304*** (0.035)	7603	0.0509
Y2: Agri Substitution	Baseline	Education: Medium	-0.020 (0.018)	7603	0.0509
Y2: Agri Substitution	Baseline	Education: High	-0.171*** (0.019)	7603	0.0509

TABLE 5 - continued

Outcome	Specification	Variable	Marginal Effect (SE)	N	Pseudo R^2
Y2: Agri Substitution	Baseline	Household Size	0.076*** (0.005)	7603	0.0509
Y2: Agri Substitution	Extended (+ Region FE)	Number of Employed	-0.056*** (0.007)	7603	0.0900
Y2: Agri Substitution	Extended (+ Region FE)	IDP Status	-0.279*** (0.034)	7603	0.0900
Y2: Agri Substitution	Extended (+ Region FE)	Education: Medium	-0.030* (0.018)	7603	0.0900
Y2: Agri Substitution	Extended (+ Region FE)	Education: High	-0.174*** (0.018)	7603	0.0900
Y2: Agri Substitution	Extended (+ Region FE)	Household Size	0.064*** (0.005)	7603	0.0900
Y2: Agri Substitution	Extended (+ Region FE)	Region: West	0.066*** (0.013)	7603	0.0900
Y2: Agri Substitution	Extended (+ Region FE)	Region: East	-0.205*** (0.015)	7603	0.0900
Y2: Agri Substitution	Extended (+ Region FE)	Region: South	-0.211*** (0.018)	7603	0.0900

Note: *p<0.1; **p<0.05; ***p<0.01

Due to the potential distortions caused by inflation and aid on monetary consumption, CDI served as the ultimate non-monetary indicator of household stress levels. Descriptive statistics in Table 3 demonstrated an appalling shortage of human capital: children from households with an unemployed head had a mean CDI of 3.898, while those with an employed head had only a mean CDI of 2.600. The difference between these groups was statistically significant ($p<0.01$).

To comprehend the process through which households absorbed such stress, let us examine the CDI marginal effects ranked in terms of importance. In accordance with the theoretical models developed by Mack and Lansley (1985) and Guio et al. (2012), the Ukrainian households showed a clearly articulated hierarchical system of sacrifices, choosing which aspects of a child's life should be cut and what aspects needed to be protected no matter what.

Leisure and Social Participation were the first domains affected by joblessness. The biggest marginal effects were observed in the inability to have guests over ($\beta=-0.109$, $p<0.01$) and the inability to pay for school field trips ($\beta=-0.099$,

p<0.01) (Table 6). Paid school trips had a staggering baseline deprivation rate of 39.5%. Without employment, parents would cut out socializing from the lives of their children to conserve money.

Table 6. Probit marginal effects for the Child Deprivation Index sub-domains

Domain	Item	Baseline Depriv. (%)	Emp Effect (SE)	IDP Effect (SE)
Basic Needs	New Clothes	12.9	-0.078*** (0.009)	0.095*** (0.025)
Basic Needs	Daily Meat or Fish	19.7	-0.078*** (0.011)	0.094*** (0.032)
Basic Needs	Two Pairs of Shoes	14.7	-0.068*** (0.010)	0.016 (0.030)
Basic Needs	Fresh Fruit and Vegetables	11.5	-0.066*** (0.009)	0.054** (0.025)
Basic Needs	Basic Needs Mean	14.7	-0.072	0.065
Education	Internet For Distance Learning	9.6	-0.049*** (0.008)	0.027 (0.023)
Education	Age-Appropriate Books	8.1	-0.033*** (0.009)	0.071*** (0.019)
Education	Education Mean	8.8	-0.041	0.049
Leisure and Social	Ability To Host Friends	32.1	-0.112*** (0.012)	0.227*** (0.038)
Leisure and Social	Holiday Vacation	40.7	-0.104*** (0.013)	0.032 (0.044)
Leisure and Social	Paid School Trips	39.5	-0.103*** (0.013)	0.140*** (0.042)
Leisure and Social	Outdoor Recreation Equipment	38.6	-0.082*** (0.013)	0.157*** (0.043)
Leisure and Social	Special Occasion Celebrations	20.6	-0.062*** (0.011)	0.061* (0.033)
Leisure and Social	General Leisure Equipment	48.8	-0.053*** (0.014)	0.036 (0.046)
Leisure and Social	Indoor Leisure Games	16.0	-0.032*** (0.011)	0.032 (0.031)
Leisure and Social	Leisure And Social Mean	33.8	-0.078	0.098

Note: *p<0.1; **p<0.05; ***p<0.01

With increasing pressure on the household economy, parents then make sacrifices in the domain of Basic Needs, where being unemployed significantly raised the

deprivation of new clothes (β=−0.075, p<0.01), daily meat and fish (β=−0.074, p<0.01), two pairs of shoes (β=−0.064, p<0.01), and fresh fruits (β=−0.06

But at the bottom of the table is the last stand for parental resilience. Items that were least sensitive to employment status and thus were saved at all costs by the parents, were in the Education and Indoor Development categories. The marginal effects on internet availability (β=−0.046, p<0.01), age-appropriate books (β=−0.030, p<0.01), and indoor entertainment games (β=−0.028, p=0.005) were the smallest among the index measures. During times of acute movement and economic duress, parents deprived themselves of adult consumption and leisure to sustain their children's educational links.

To ensure the reliability of these results, various robustness checks were performed (Table 5). For example, to prove that the positive effect on employment was not exaggerated due to the severe deprivation of internally displaced persons, MR5 model was re-calculated without considering the household IDP status, but the results did not differ much (β=0.345, p<0.01, R2=0.295). What is more, to show that there is no ambiguity regarding the effect of employment on welfare, the consumption expenditure log was replaced with the food spending share as an outcome variable. Employment led to lower food spending shares, hence, to an obvious rise in welfare (β=−0.027, p<0.01). Lastly, variance inflation factor (VIF) analysis proved that there are no signs of multicollinearity among explanatory variables; VIF for the number of employed members was merely 1.37.

Collectively, these econometric estimates paint a consistent picture of a polarized war-time society. In this context, the Employment Premium Buffer serves as the primary indicator of well-being, acting not only as a source of increased income but also as a vital barrier that prevents a household from descending further into the Child Deprivation Hierarchy to the point of malnutrition and social exclusion. However, this buffer proves ineffective for IDPs who, caught in an inescapable

circle of brain drain and exclusion from local labor markets, are unable to use human capital for self-sufficiency. The implications for reconstruction policy are unequivocal: safety net payments alone are not enough. It will be impossible to overcome the negative repercussions of child deprivation and deprofessionalization for Ukraine's demographic and economic prospects without breaking the IDP Dependency Trap and integrating displaced human capital back into the official labor market.

Chapter 6

CONCLUSIONS AND POLICY RECOMMENDATIONS

Macro-level analyses of the wartime economy in Ukraine have analyzed in detail the destruction of tangible capital and fall of GDP, but in doing so have necessarily ignored the series of excruciating decisions that must be made at the kitchen table. The micro-econometric analysis provided in this thesis shows that there is not a consistent reduction in welfare in shifting from a modern economy to a total war economy, but rather structural shifts in how families are able to survive. Utilizing conditional estimations on the HSESS data set, the research was able to uncover the mechanisms of survival, leading to three major conclusions.

To start with, the study established the significance of the Employment Premium Buffer, yet it was found to be strongly non-linear. According to the OLS model estimates, the presence of work experience offered enormous consumption gains ($\beta=0.524$, $p<0.01$), helping mitigate the latent welfare gap through a 2.7 percent drop in the level of food expenditures ($\beta=-0.027$, $p<0.01$). However, based on the non-linear specification, the marginal benefit of labor contribution within households is negative ($\beta=-0.085$, $p<0.01$) since welfare gains from employment were estimated to be maximized exactly at the level of 3.08 members having jobs. All extra laborers, starting from this point, could only be regarded as unproductive participants of survivalist strategies in place of productive wage workers. Furthermore, according to the probit estimations, this buffer serves as the ultimate protective mechanism against poverty, lowering the probability of experiencing food poverty by 15.6 percentage points ($\beta=-0.156$, $p<0.01$).

Second, the analysis highlighted the extreme structural parameters of the IDP dependency trap. War-time displacement in Ukraine is much more than just the loss of a physical house; it destroys the process of the transformation of human

capital into welfare. In terms of unconditional differences, there was an enormous disparity between the number of individuals working in the family, with an average value of 0.593 for displaced households versus 0.912 for non-displaced. Even worse, a completely specified structural interaction parameter showed that being displaced led to a six-and-a-half-percentage point reduction (β=-0.065, $p<0.01$) in the education premium at each level of schooling. This indicates that the existence of a system of occupational demotion and "brain waste," as high-skilled IDPs are forced to work in informal host-regions' labor markets.

Third, the CDI enabled an assessment of the high human capital price paid in cases where protective measures failed. Specifically, children from families with unemployed heads had a mean CDI score of 3.898, far above the 2.600 average in families where heads were employed. By using the marginal effects of employment status across each of the domains that comprised the index, this study was able to establish a rigid hierarchy of child deprivation. In the early stages, Leisure and Social Participation were curtailed by sacrificing children's opportunities to have their friends visit ($\beta=-0.109$, $p<0.01$) and school outings involving payment of fees ($\beta=-0.099$, $p<0.01$). With further deterioration, even Basic Needs items such as consumption of meat and fish ($\beta=-0.074$, $p<0.01$) became constrained. However, a more positive trait emerged through Ukrainian parents' determination to ensure that Education items are retained until necessary (internet access $\beta=-0.046$, $p<0.01$; age-appropriate books $\beta=-0.030$, $p<0.01$) (Guio et al., 2016; Mack & Lansley, 1985).

In conclusion, the synthesis of the above three mechanisms illustrates a wartime society in which formal wage earning remains the only guarantee for maintaining one's dignity. By being systematically denied access to such a mechanism, displaced groups are compelled to pursue a predictable chain of suffering that will eventually deprive the future generation of both social and physiological growth.

Given this evidence of the survival tactics employed in Ukraine, a shift in the approach of the Ukrainian government and international donors is imperative to effectively implement reconstruction.

First, the government needs to actively disrupt the IDP Dependency Trap by employing reintegration of human capital and not simply relying on unconditional cash transfers. Since the interaction between educational attainment and IDP status showed a decrease of the consumption premium by 6.5 percentage points for each level of education attained by the individual, simply providing a cash subsidy that would only affect the consumption intercept cannot resolve the underlying problem in the labor market. It is essential that, working with the international community, the Ministry of Social Policy fast-tracks the process of getting the highly educated IDP re-employed within their respective host regions through job subsidization and micro-grants specifically designed for this end. The main issue surrounding this policy instrument is that of absorbing this additional labor capacity within the region.

Secondly, there needs to be a very aggressive defense of the Employment Premium Buffer through subsidizing formal labor attachment among fragile households. The econometric observation that the marginal welfare benefit of formal employment is maximized at 3.08 individuals suggests that once the primary earners within such households get laid off, they will turn to informal labor markets as a form of survival mechanism involving their secondary and tertiary earners who participate in very inefficient forms of labor. The only way to prevent this is through designing labor market policies aimed at retaining workers in their jobs rather than hiring new ones. The specific instruments include short-time work programs and tax breaks aimed at businesses hiring one-earner families and multi-dependents households. In other words, the retention of the primary formal laborer can help preserve the integrity of the household against being absorbed into informal survivalist economy.

Moreover, the government must construct a rapid-response mechanism for social protection using the Child Deprivation Hierarchy as an early warning signal. Given that econometric mapping found that families consistently reduced spending on Leisure and Socialization (including paid school trips at β=-0.099) before they curtailed their calorie consumption (including meat and fish at β=-0.074), social sacrifice represents an extremely sensitive early warning sign that a household is experiencing labor-related hardships. As such, the Ministry of Education should work in conjunction with social services to institute a digital surveillance program monitoring children's attendance at social activities. In the case where a household abruptly removes a child from these social circles, it would automatically set off a process of providing interventions – including, for example, assistance programs and career counseling for the adults within the family. The key issue would be the ability of the government to develop the requisite administrative capacities for tracking these social deprivation statistics in real time.

This thesis has noted certain constraints related to the nature of the active conflict zone that cannot be circumvented by the current methodology. First, the cross-sectional nature of the 2023–2024 HSESS dataset prevents controlling for unobserved time-invariant heterogeneity across households, which limits the interpretation of the estimates as highly robust correlations rather than causal effects. Second, the reduction in the sample size due to the loss of incomplete cases of welfare and demographic characteristics poses a threat of survivor bias – the most severely affected by trauma and displacement households have probably been lost at a higher rate, making the deprivation gap observed in this study a conservative lower bound estimate.

Future research should concentrate on building a longitudinal panel dataset to identify the fixed-effects impact of displacement on child deprivation. Moreover, further waves of data should cover more dimensions, such as psychological damage

and social capital depletion, extending the EU-SILC-based Child Deprivation Index to become a holistic measure of intergenerational costs of war.

Recovery on a macroeconomic scale in Ukraine following the war hinges upon the microeconomic stability of its households. Human capital preservation, prevention of children being deprived nutritionally and socially for life, and incorporation of the displaced population into the economy cannot just be social services goals, but necessities that need to be fulfilled for the country to survive at all. As evidenced in this thesis, employment attachment acts as the barrier preventing a state's demise. Should microeconomic forces of household stability remain unknown to policy makers, structural problems that emerged because of war will persist even after hostilities cease.

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