SECTION 2.
FINANCE AND BANKING; TAXATION, ACCOUNTING AND AUDITING

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DEVELOPMENT OF A WAR DAMAGE QUANTIFICATION MODEL THROUGH THE PRISM OF MACROECONOMIC STABILITY

Traditional approaches to assessing the consequences of armed conflicts are often limited to the inventory of physical destruction, which is insufficient for understanding the profound degradation of the economic system. In modern conditions, war acts as an exogenous shock of colossal force that not only destroys capital but also fundamentally changes the trajectory of macroeconomic development. The relevance of this study lies in the need to create an integrated quantification model that accounts for the interrelation between asset loss and the stability of public finances, exchange rates, and price stability.

For correct quantification, it is necessary to distinguish between two types of losses: "stock losses" (asset losses) and "flow losses." Direct losses encompass the value of destroyed physical capital—housing, factories, and logistical hubs. Indirect losses manifest through GDP contraction, the disruption of value-added chains, and shortfalls in tax revenues. The model must integrate these indicators, as the destruction of a single plant (stock) generates a long-term decline in production volumes in related industries (flow) over many years [1-2].

The application of Dynamic Stochastic General Equilibrium (DSGE) models allows for an assessment of how war-induced destruction translates through the labor and capital markets into the overall level of welfare. A key variable here is the human capital degradation coefficient (L_{migration}), caused by mass migration and mobilization, which leads to structural unemployment and a shortage of skilled labor. Quantification in this context shows that the loss of the workforce can have a more significant negative impact on macro-stability than the loss of machinery or equipment.

Military actions inevitably pressure macroeconomic stability indicators through rising budget deficits and inflationary expectations. The quantification model must account for the "war premium" in inflation, which arises due to commodity shortages and logistical costs [3-5]. From the fiscal sector's perspective, the critical increase in defense spending creates a "crowding-out" effect on private investment, which lowers the country's potential GDP in the long run, even after the active phase of hostilities has concluded.

The banking system serves as the most sensitive indicator of real losses in the private sector. The growth of non-performing loans (NPLs) directly correlates with the geography of hostilities and the degree of destruction of collateral property [6-7]. The quantification model through the prism of financial stability allows for the assessment of hidden losses that are not yet reflected in physical reports but are already embedded in the capital of financial institutions through provisioning for loan losses.

The destruction of critical infrastructure, particularly energy, has a non-linear impact on the economy. We propose the use of a "destruction multiplier," which shows that \$1 of direct damage in the energy sector can lead to \$3–\$5 of losses in industrial production and the service sector. Calculating such multipliers is critical for prioritizing recovery: investments in objects with the strongest linkages to other sectors provide the fastest effect for stabilizing macro-indicators.

The central element of this research is the WIMI mathematical model, which aggregates three components: the direct value of assets, the integral of lost potential GDP over time, and the country's risk premium. The risk premium reflects the cost of borrowing and the absence of Foreign Direct Investment (FDI) resulting from high uncertainty. The formula provides a comprehensive figure suitable for international reparation claims.

$$\mathrm{Total}_{\mathrm{Loss}} = \sum_{i=1}^{n} n\left(\mathrm{Direct}_{\mathrm{Assets}_i}\right) + \int_{t_0}^{t} (t_n)\left(\mathrm{GDP}_{\mathrm{potential}} - \mathrm{GDP}_{\mathrm{actual}}\right)dt + \mathrm{Risk}_{\mathrm{Premium}}$$

The Central Bank and the Ministry of Finance have access to unique data that allow for the verification of losses through transaction volumes, tax reports, and capital flows. Damage quantification through the Regulator's lens includes monitoring currency outflows and pressure on gold and foreign exchange reserves, which reflects the loss of economic confidence. Without a stable currency and controlled inflation, the recovery process becomes impossible; therefore, maintaining macro-stability is itself a tool for minimizing long-term losses.

An important tool for quantification is the war risk insurance market. The market price of insuring an object in a risk zone is the most objective indicator of "expected loss." The creation of national and international insurance pools allows for a portion of the loss burden to be shifted from the state budget to financial markets, significantly increasing overall macroeconomic resilience and accelerating the attraction of private capital for reconstruction.

In summary, the quantification of war damages cannot be a purely accounting matter. It requires complex macroeconomic modeling that accounts for human capital dynamics, inflationary processes, and the cost of risk. It is recommended to create a unified state Register of Damages that would automatically adjust amounts based on macroeconomic changes (inflation, exchange rates). This will not only enable effective claims for reparations but also allow for the prudent planning of post-war recovery fiscal policy, focusing on sectors with the highest potential for economic stabilization.

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