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Counteracting the Risks of International Investment in the Conditions of War

The study aims to determine critical components of the protection of foreign investors in time of war by case of Ukraine and with account to various categories of investors. Foreign direct investment (FDI) is very volatile due to the sensitivity of foreign investors to information signals, caused by much higher riskiness of foreign markets than internal ones. Heavy FDI inflows in the past are not a guarantee of their similar inwards in the future and vice versa. The process of taking investment decisions depends on the investors' aversion and the investment climate in a host country. The aversion of companies is dependent on size, organization and origin, which is a result of varying capabilities of counteracting international risks. The investment climate is conditional on the performance of democratic institutions, the formation of democratic society and the progress in a host country, especially in information technologies. The sensitivity to information signals essentially increases for investment projects in countries at war. The war risks feature much higher uncertainty than the risks of peacetime, being extreme by nature, which means that they may have devastating effects for an investor in spite of a low probability of the occurrence, i. e. cause abnormal losses, partial or total ruining of invested assets, or physical injuries, captivity, hostage-taking or death of company staff. This offers an argument for reasonability of the systemic approach to setting up the public policy on attracting foreign direct investment in time of war with accounting for various investor categories and special emphasis on the risk management tools that are capable to increase the level of investors' protection and certainty. We believe that the key ones are information support for the process of taking investment decisions, formation of reserve capital by estimating value at risk and conditional value at risk, double diversification of invested assets, risk premium and international insurance of FDI. International insurance is the core component of a scheme for the protection of investors in time of war, and when the aggressor is a country with permanent membership in the UN Security Council, its guarantee will require initiatives collaborated with international partners

Key words: *foreign direct investment, country risk, war risk, value at risk, diversification, risk premium, international insurance.*

Introduction. The balanced and active policy on attracting foreign direct investment (FDI) is a critical factor in the development of all the national economies. Its importance essentially grows in the countries suffering from a military aggression imposing heavy limitations on the financing sources, internal and external alike. In these conditions, the availability of sufficient scopes of foreign capital required to operate the economy, finance military opposition to the aggression and ensure acceptable living standards for the population is an issue of survival.

Foreign direct investment forms the overall external monetary inflow to the national economy together with portfolio investment, international loans, international technical assistance and non-residents' transfers.

The specificity of FDI is that, based on a business initiative, it is a driver of the economy and a guarantor of its gradual development. Unlike portfolio investment, FDI comes to a domestic market for a long time. FDI is streamlined in the economy

directly, i. e. to productive economic activities, trade and services, rather than indirectly through consumption, e.g. by way of non-residents' monetary transfers. FDI does not create debt obligations for the country's population, as external loans usually do, which further repayment may weigh heavily on future generations.

Research results. In time of war, FDI, along with international technical assistance (ITA) streamlined in the rebuilding of ruined infrastructures, helps create a competitive business environment required for the successful economic growth. However, the excessive inflow of ITA in the postwar period may give a negative signal for investors who may consider it as an evidence of a prolonged economic and political instability and uncertainty in the country ([10]). It follows that in a certain moment of time measures aimed at attracting FDI have to become central ones in the public policy devoted to the search for external sources of financing.

An analysis of forecasting and setting the policy concerned with sources and forms of FDI attraction is complicated by (i) volatility of the time series on FDI inflow, and (ii) lack of agreed theoretical foundations for FDI.

Contrary to many macroeconomic indicators, FDI flows have no steady tendency. Time series of these FDI flows are highly volatile, and their distributions are very asymmetric. It means that such distribution is very likely to have the occurrence of extreme values which identification and analysis, if not forecasting, is quite a difficult problem, especially in crisis periods like the war. FDI is sensitive to political, social or economic instabilities, added recently by environmental and epidemiological uncertainties or the uncertainty of natural disasters. Sensitivity to information signals is a factor of the strategic intentions of foreign investors, which should be taken into account in the state policy on investment incentives. In some periods a FDI flow can have negative values next to previous highly positive values. During the war, this is because of massive disinvestment, especially at the beginning of the war. It can also be if the parent company borrowed money from its affiliate or if the affiliate paid off a loan from its direct investor; and, if reinvested earnings are negative ([9]).

Figure 1 shows that only the fourth degree polynomial is able to reveal a tendency in annual FDI inwards to Ukraine over 2003–2022. The same can be true for the data on quarterly FDI inwards to Ukraine (Figure 2). It should be noted that figures 1, 2 were constructed on the data from [19]. These data for 2014 and onwards do not include the occupied territories (Crimea, Sevastopol, part of the Donbas region).

These time series are unlikely to be useful for forecasting. Heavy FDI inflows in the past are not a guarantee of their similar inwards in the future and vice versa. An analysis of retrospective data series would be even less informative in the conditions of war, with many foreign investors either fleeing or suspending economic activities in Ukraine.

It cannot be admitted, however, that in time of war FDI inflow shows a constant downward trend. Evidence from Ukraine and other countries which territories are hit by war demonstrate that, first, not all the investors have a similar level of aversion to an extreme risky market; second, investors

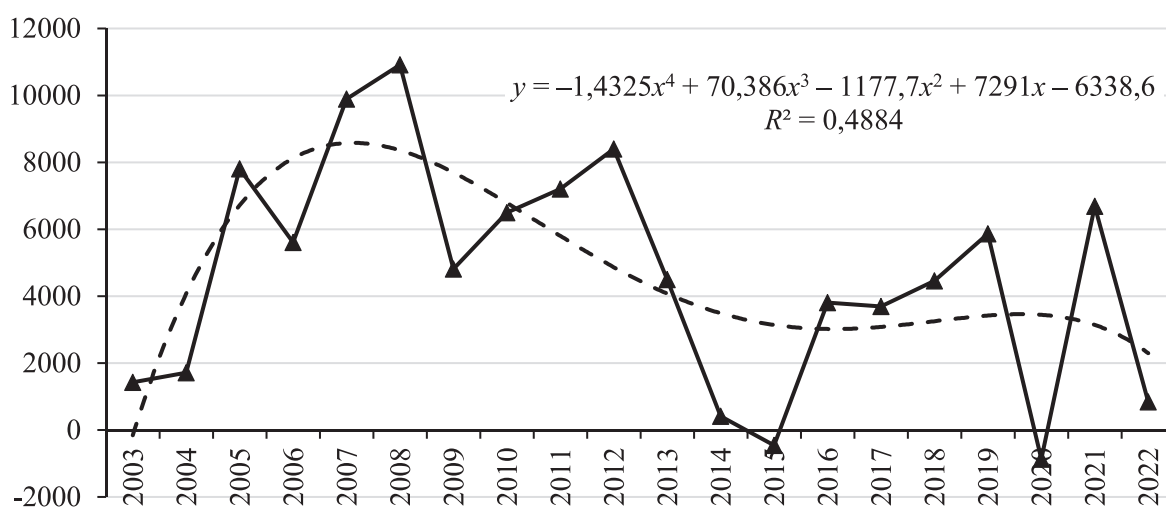


Figure 1. Annual FDI inwards to Ukraine, 2003–2022, million USD

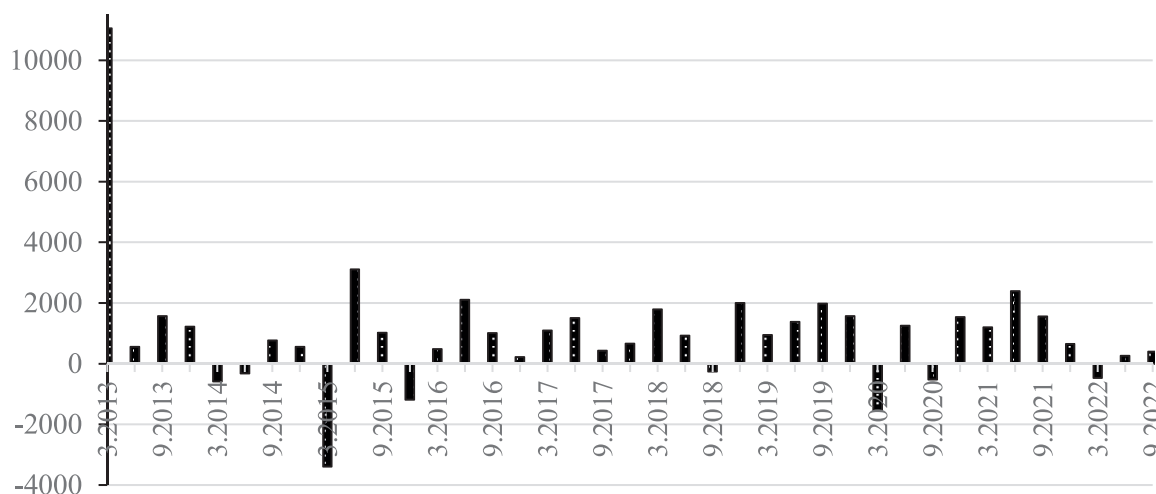


Figure 2. Quarterly FDI inwards to Ukraine, 2013–2022, million USD

fleeing from a country are replaced by new ones concerned with investment in activities involved in the military economy. Still other category of FDI has lesser than usual aversion to war risks, because a country of their origin also has high political risks. There exists an evidence of a stronger willingness of foreign investors coming from countries with weak democratic institutes or from undemocratic ones to invest in politically unstable markets, including the ones being at war ([7]). And most importantly, taking into account the international political, financial and military assistance for Ukraine and the successes of the Ukrainian armed forces, foreign investors began to return to the Ukrainian market.

As regards Ukraine, after the initial shock at the beginning of the war and a negative value of investment inflows in the first quarter (–470 million USD), in the second and third quarters its positive values were recorded, i. e. 260 million USD and 400 million USD, respectively ([19]).

Theoretical foundations of FDI encompass various approaches in the research literature, but a single theory has not yet existed. All these approaches are complementary; although they enrich the understanding of FDI, they are quite eclectic and unable to provide a vision of FDI in a coherent and comprehensive manner ([28]).

A theoretical framework for FDI is yet to be built mainly due to a high volatility of the international business environment where transnational companies (TNC) invest, which makes investors seek novel means for protection against international risks, continuing change and growing complexity of internal organization in TNC.

On the other hand, while earlier, i. e. several decades ago, foreign investors were represented by large TNC, the progress in information and telecommunication in the latest years gave birth to many small and medium enterprises (SME) interested in FDI and capable of making it ([31]; [32]). Compared to large investors, SMEs demonstrate such advantages as the speed of response to market changes, flexibility, greater number of innovation, and lower costs for capturing a new market ([30]). While the contribution of SME investors is very significant in selected economic activities, theoretical explanations for the incentives and patterns of such investors are very limited ([20]). The theory of FDI does not take into account that the capabilities to manage war risks are not equal for enterprises, being size-specific.

Within the framework of theoretical research on FDI we have previously suggested the so-called triad of the driving forces for FDI: (i) type of the capitalist system in a host country for FDI; (ii) human attitudes to the investment in a home country, and public attitudes to domestic institutions in a host country; (iii) progress achieved, especially in information and communication technologies. Interactions of the

three groups create a synergetic triad, i. e. the ‘CHT triad’: capitalist system, human, and technology ([29]). The three groups of driving forces and their synergetic link, as well as the type of investors should be accounted for in setting the policy on attracting FDI in a long-term perspective. The foreign investors cannot be sought for irrespective of their capabilities to manage international risks.

The article consists of the introduction, the main section, conclusions and the list of references. The main section contains an analysis of the scheme for protecting foreign investors from country risk and its key components. The final section ends up the study by the conclusions about the possibility of counteracting the risks of foreign investment in time of war.

The scheme for counteracting the risks international investment. There exists a well-established arsenal of means for protecting international investors from country risks. Because these risks tend to become extreme ones in the conditions of war, a great many conventional tools of risk management become ineffective. We believe that a scheme for counteracting the risks of investment can be built within the abovementioned CHT triad (capitalist system, human, and technology).

The dependence on external sources of financing, implicit in the dependent capitalism to which the Ukrainian political and economic system belongs ([22]), increases manifold in the conditions of war and gains the vital importance. In these conditions, democratic systemic transformations and fight against corruption are the factors attracting FDI to the Ukrainian market, because they help increase the trust of foreign investors and international insurers in the public administration institutions and reduce the aversion.

Technological conditions, especially in IT, are linked directly to the systemic factors. Apart from creating a new modern convenience for the business, they essentially increase the transparency of business operation and partnership with public authorities, which constitutes another factor of attractiveness for FDI. At time of war, such technologies provide additional opportunities for country risk management by reducing the direct physical presence of the investor's assets and personnel in high-risk territories.

The group of factors constituting the so-called human factor covers risk perception by investors and public attitudes in a host country to the political system and the scheme for management of capital flows.

As regards public attitudes, they are largely dependent on the fostering of the civil society able to conduct a continuing dialog with the authorities, to initiate and control democratic transformations and contribute in the assurance of control over financial flows and capital redistribution in favor of the population and

the sustainable development of the country. This factor gains a greatly important weight in the conditions of war due to the necessity to assure the transparency and the targeted use of international financial and military assistance, on which the trust of international partners and investors in Ukraine is built.

The attitude of international investors results in their reaction on the coming of external signals that can either increase or decrease the aversion. These signals cover the whole spectrum of information about potential benefits and risks or about the capability to manage country risk. Because the risks faced by business in time of war are to a larger extent exogenous, interest will be drawn first and foremost to the tools allowing international investors to reimburse the losses caused by partly or totally ruined assets, physical injuries, death, captivity or hostage-taking of company staff. But also, investors are very sensitive to the political signals mentioned above, which are the first determinants in the investment choice.

It should be noted that each investor who starts developing an investment project has a choice between the rejection of a too risky investment and the willingness to invest in a high- risk project. In the former case, an investor rejects a project and withdraws from the market. In the latter case, an investor assesses the risks and forms a budget to manage them.

We believe that a scheme for counteracting the investment risks of a country suffering from military aggression has to involve the following means: information support for investment decision-making, and, first of all, country risk classification; assessment of value at risk (VaR); double diversification of assets; risk premium requirement; and, international war insurance.

Information support – country risk. Relevant and exhaustive information is a background for taking decisions on perspectives of investment in new markets. The degree to which the uncertainty associated with investing in a particular country carry the prospect of loss or damage is identified by “country risk” ([24]). From the viewpoint of foreign investment, the concept of country risk belongs to the group of geopolitical risks, and it gradually developed from an indicator of country’s political risk into a set of risk groups: political, economic and financial risks. The group of political risks incorporates social, demographic and cultural risks. A set of endogenous and exogenous risks was conceptualized by S. H. Robock ([23]).

An impulse to rethinking, substantiating and developing the country risk concept was given by a series of massive crises that put international investment capital face to face with extreme risks (Table 1). The military aggression of Russia against Ukraine will also make some corrections in the interpretation of country risk from the war risk perspective.

Table 1

Massive crises in the latest decades

1982	The Global Debt Crisis
1994	The Mexican Peso Crisis
1997	The East-Asian Crisis
1998	The Russian Default
1999	The Russian a The Brazilian Crisis Default
2001/ 2002	The Argentine Catastrophe
2008	The Global financial crisis
2012	The Eurozone debt crisis
2009/ 2019	The European sovereign debt crisis
2022	Russian armed aggression against Ukraine

Country risk is usually assessed by use of composite that is average weighted indicator, with political risks assigned 50%, economic and financial risks – 25% each.

Political risks are assessed by expert method that allows for transforming a qualitative description into its quantitative measure. Economic and financial risks are the result of an aggregated quantitative estimate derived from data of macroeconomic, banking and financial statistics. When it is necessary to account for other components, such as environmental or epidemiological ones, the above groups of indicators can be supplemented by respective data. Another option is creating separate supplementary groups, which will require a restructuring of weights in the final indicator.

The overall framework for building up the country risk indicator is provided in the Handbook of Country and Political Risk Analysis, published as early as in 1998 by “Political Risk Services” agency ([11]). The country risk indicator is produced by numerous agencies that are not inclined to fully disclose its methodology, especially in part of expert assessment, due to commercialization of the results and competition between the agencies. Recently, the list of rating agencies producing the country risk classification, apart from American ones, has been supplemented by many European and Asian offices, international organizations and institutions, academic research centers, national investment agencies, institutional investors, banks, insurance companies, specialized publications, etc. The most influential ones are given in Table 2.

The European Security and Market Authorities (ESMA) agency, incorporated in the overall European system of financial supervision, continually monitors rating agencies and publishes the listed ones ([4]).

The making of policy on sustaining and attracting FDI in time of war requires understanding of (i) what is in focus of investors’ attention in assessing the risk

Table 2

Influential rating agencies engaged in country risk assessment

Rating agencies: Fitch Ratings (U.S.) Moody's Investor Services (U.S.) Standard & Poor's Rating Group (U.S.) COFACE (France) CTRISKS (Greater China) JPMorgan Risk Metrics Group Coplin-O'Leary Rating System Control Risks Information Services (CRIS) Political Risk Services S.J. Rundt & Associates	Analytical agencies: IHS Country Risk Bank of America World Information Services BMI Research Country Risk Solutions Economist Intelligence Unit (EIU) Business Environment Risk Intelligence (BERI) S.A. Eurasia Group Maplecroft Oxford Analytica The PRS Group, Inc. OECD European Investment Bank International banks sites
With the option of downloading a country risk report: The Benche Analysis & Reports International Country Risk Guide (ICRG) Euler Hermes Country Reports Maplecroft The PRS Group, Inc. Xiphias Consulting	Specialized reviews: Euromoney Magazine Institutional Investor Magazine ... Websites of influential institutional investors: Black Rock

of a host country, and what risk components are of critical importance for them, and (ii) what is the reliability of the country risk indicator when it comes to the assessment of war risks.

It is obvious that in the conditions of war foreign investors are by far and large concerned with political risks that can be defined as “the risk of a strategic, financial, or personnel loss for a firm because of such nonmarket factors as macroeconomic and social policies (fiscal, monetary, trade, investment, industrial, income, labour, and developmental), or events related to political instability (terrorism, riots, coups, civil war, and insurrection)” ([13]). We believe that this definition can be supplemented by “military external aggression” and, accordingly, by “geographic political condition”, i. e. the neighborhood with a hostile country.

Political risks often incorporate factors like presence of corruption, stability and compliance with democratic norms of the legal field in a host country, which importance grows essentially in time of war. Massive corruption practices cause restraint of international investors due to apprehensions that private capital invested in the Ukrainian economy may get in hands of Ukrainian or even Russian oligarchs. International organizations are currently engaged to exercise control over utilization of FDI in Ukraine ([25]).

Being widely in use, the country risk indicator is nevertheless subject to substantial criticism. Although the country risk assessment involves real data, its concept remains for the most part an abstract construct unable to predict political turmoil or market turning points. The political component of this indicator is formed by expert assessment, which is a source of the methodological ambiguity and non-transparency. It was as early as in 1978 that S. J. Kobrin argued that “in one increasingly important area of international business

– assessing and evaluating the impact of the political environment—major decisions are often made on the basis of superficial and subjective impressions” ([14]). In 2001, Journal of World Business published a study which results produced through an analysis of 11 country risk variables by data from 17 countries over 19 years raised doubt about the capacity of the risk country indicator to predict not only political risks, but extreme risks per se, thus making the authors propose to limit its application to usual risks ([18]). In fact, it is very difficult to reveal a causal link between country risk variables, endogenous and exogenous alike. The risk per se, especially the country risk, is a phenomenon so complex that it is practically impossible to isolate its political, social and economic factors that are obviously inter-correlated. The problem becomes even more complicated when the key variables are artificially aggregated into the country risk indicator, because a specific variable (or variables) correlating with the country risk cannot be extracted ([18]).

In view of the above said, the country risk indicator needs to be used in a careful manner; an investor should be aware of what information sources are used by the producing agency and what is the estimation methodology, especially with regard to political risks. It is also clear that the country risk indicator has to be an information source that can be used cautiously as part of a scheme for counteracting international investment risks.

As an alternative to the conventional country risk indicator in the conditions of war, when the course of events is very fast, a team of researchers has recently proposed to use an indicator based on daily news about the course of military events ([3]), which allows for updating the information base for making decisions on FDI.

Another option able to essential increase the efficiency of the country risk indicator is using big

data together with artificial intelligence. Thus, the success of international investment by an influential American institutional investor such as “Black Rock” results from using its own algorithm, so called Aladdin system, for big data analysis for the assessment of all the potential areas of foreign investment. This algorithm not disclosed by the company is perhaps its most valuable asset. Due to the effective performance “Black Rock” enjoys the unprecedented trust of pensioners, i. e. a client category traditionally prone to aversion, who willingly deposit their money in it.

Value at risk – VaR. From the investor’s viewpoint, value at risk is the maximal loss of an asset for a chosen time horizon and confidence level given the assumption on the occurrence of the worst scenario, i. e. in the conditions of extreme risk. The investors estimating likelihood of this occurrence raise logical questions of which of the probable future scenarios may be the worst and what maximal losses may be involved in it.

In practical terms, VaR is a part of the investors’ capital that they need to keep for the occurrence of extreme loss, to be capable to cover it and guarantee the reimbursement of incurred losses to his shareholders, clients and partners.

This tool has been rapidly developing since 1980s due to a series of devastating global financial crises. The Basel Accords (Basel I and Basel II) established the requirements to capital reserves in banking, financial and insurance activities. Currently, VaR is used also in many non-financial sectors of the economy. Methods of estimating VaR have been adapted for public administration, military sectors, library activities etc.

Mathematically, VaR is $(1-\alpha)$ -quantile of distribution of change in an asset (ΔP) occurring in t days, where α is a standard normal deviate for a chosen confidence level (c) ([16]):

$$\alpha = 1 - c; 0 < \alpha < 1,$$

$$1 - c = \int_{-\infty}^{-VaR} f_{\Delta P}(x) dx = F_{\Delta P}(-VaR).$$

In the Standard Normal Distribution, the variables x are expressed by the corresponding z -values:

$$x = \mu + z \times \sigma,$$

where μ is a mean and σ is a standard deviation. That is, in percentage, $VaR_{c,t}^{\%}$ is the product of multiplication of the variable z that is the left-side percentile of the distribution, standard deviation for this distribution and square root from the chosen time horizon (t):

$$VaR_{c,t}^{\%} = \sqrt{t} \times z \times \sigma.$$

To obtain a monetary measure, the percentage result should be multiplied by the overall value of an asset.

This is so called parametric approach to the estimation of VaR, which is based on the knowledge of the parameters of a distribution, namely the mean (or the mathematical expectation) and the standard deviation. In case of unknown distribution parameters, the function inverse to the cumulative distribution function (CDF) is used. When CDF of the distribution probability is known, a random sample from the respective distribution can be generated.

$$CDF \rightarrow F_{\Delta P}(-VaR); \text{ inverse CDF} \rightarrow F_c^{-1}(1 - c) = z.$$

By definition, extreme values in a distribution are rare and the probability of their occurrence is very small, but the losses they represent can be devastating. The smaller confidence level the higher the probability, and as a result the smaller VaR. Therefore, for an investor who intends to invest in a country in a state of war, the arbitration must be in favour of a higher confidence level than for other markets.

VaR is obviously the reserve capital that needs to be withdrawn by an investor from his own business process, hence, its value has to be neither too optimistic nor too conservative. In the former case, the capital reserve can prove to be insufficient for covering extreme losses, whereas in the latter case a too large amount of funds may be unreasonably frozen. In estimating VaR for portfolios, the matrix method of variance-covariance is used, which accounts for the weight of each asset in a portfolio and the correlation in each pair of assets, thus allowing to produce “risk economy”, i. e. a lower value under the risk.

A number of derivative indicators, such as Conditional VaR (Expected Shortfall), Entropic VaR, Cash Flow at risk, Earning at Risk, and Revenue at risk, were proposed to improve VaR, especially its capacity to account for extreme values at the distribution tails. In the context of war, Conditional VaR (CVaR) can be more appropriate than VaR because it involves estimating losses in situations of extremely high uncertainty. CVaR is the expected loss that occur beyond the VaR threshold that is the average of values situated beyond VaR limits. On the basis of CVaR, it is possible to estimate reserve capital to cover losses caused by extremely disruptive situations.

Another important issue is what category of foreign investors are able to afford the sufficient reserve capital. It is obvious that the withdrawal of an essential amount of funds to create the reserve capital is a step affordable for mainly large TNCs, especially the ones built on the principle of conglomerate, i. e. the ones incorporating a financial center ([28]),

and otherwise an investor is forced to go to lenders. However, SMEs may have impediments in obtaining loan capital for own foreign investment projects, e. g. due to a lesser awareness of potential sources for financing ([15]).

Government measures on attracting foreign capital need to account for the difference in the protection of various investor categories, in order to offer vulnerable ones (small and medium entities) rather attractive investment terms involving loans and guarantees in the occurrence of losses caused by war.

Diversification of assets. When investing in other country, an investor has to be ready to manage additional risks one part of which can be diversified and the other cannot. The possibilities for diversification depend on the type of risk: if it can or cannot be subject to diversification.

Systemic risk is an exogenous shock to the system, capable to trigger mass-scale market ruining of industries or even the whole economy. This risk is hard to predict or measure. A systemic one is the war risk. Market risk pertains to a local or international market. This risk is better measurable than the systemic risk, and in some cases it can be predicted and managed. Systemic and market risks cannot be eliminated by diversification, because their occurrence is associated with the existence of a positive correlation between assets within an international market segment or a group of domestic markets. There can be also a case when a marginal investor is not globally diversified ([5]). Non-systemic risk (specific or residual risk) can be diversified.

Non-systemic domestic risk can be managed by simple diversification. The idea of diversification is based on the theory of the portfolio and consists of the possibility of reducing the volatility, i. e. risk of the portfolio by taking into account the covariance for each pair of assets among all possible combinations. At the same time, the optimal composition of the portfolio is also determined. The same mechanism is involved in the variance-covariance method for VAR assessment.

Non-systemic risk of FDI can be reduced by double diversification, i. e. diversification by type and number of assets and by geographic allocation of assets. Geographic diversification can reduce the impact of riskiness of a specific country or region. The practice of double diversification gave rise to the patterns of FDI organization like horizontal and conglomerate structures of TNC, which, contrary to the oldest, vertical, structure, allow one to avoid ruining the overall production chain by limiting extreme losses to certain local sections ([28]).

Not all the categories of investors are capable to carry out diversification of own assets. Small and medium enterprises obviously have limited capacities for maneuver, like in case of VaR. It follows that when such investors choose a country hit by war as a destination one they will encounter much higher risks than TNCs. Together with the systemic risk of

war which cannot be diversified away this creates much higher uncertainty for small and medium-sized investors than for large ones.

Risk premium. When the possibilities for diversification have been exhausted but the investment risk remains high, an investor can envisage an extra return on the invested capital, taking form of the additional risk premium ([5]). This premium is an additional one, because a domestic market will always involve a risk, even in most stable and developed economies, which can be compensated by the normal risk premium, and by additional premium a foreign investor is intended to have a compensation for additional risk. Business that operates in high-risk markets rewards investors with an additional risk premium.

The additional risk premium is conventionally estimated by the Capital Asset Pricing Model (CAPM) measuring the relationship between the systemic risk and the market risks, i. e. the ones that cannot be eliminated by diversification, and the expected return on an asset:

$$R_i = R_f + \beta_i (R_m - R_f),$$

where R_f – return on risk-free assets; β_i – indicator measuring the reaction of asset i on market fluctuations; R_m – average market return on assets; R_i – return on asset i ; $(R_m - R_f)$ – usual market risk premium.

It follows that CAPM involves an adjusting of the usual risk premium by the risk factor that cannot be diversified. The value of β indicates if a specific asset is more or less risky on the market for which a representative sample of assets for an economy is taken.

Specialized literature and investment practices offer several approaches to estimating the overall risk premium, including the usual risk and the country risk ([5]):

$$\beta_i (R_m - R_f) + CRP, \quad (1)$$

$$\beta_i (R_m - R_f + CRP), \quad (2)$$

$$(R_m - R_f) \times \lambda + CRP, \quad (3.1)$$

$$(R_m - R_f) + CRP \times \lambda. \quad (3.2)$$

According to the first approach, each foreign investor encounters the same risk in a host country. The second approach is based on the assumption that the impact of country risk on a foreign investor in a host country is similar to the other market risks. In the third approach, country risk is interpreted as a separate risk factor with the adjusting by the value lambda (λ) signifying the relative standard deviation. The relative standard deviation is estimated as the ratio of the standard deviation of a host country to the standard deviation of a benchmarking country that is often taken to be U.S. which risk is assumed

as the lowest. The correction by the relative standard deviation can be made for the usual risk premium and the country risk premium alike.

The feasibility of a method depends on the results of country risk analysis. If country risk is assumed as a group of risks separable from usual market risks, then the first and the third approaches will be more appropriate. The reasonability of grouping country risks within CAPM has been subject of recent discussions, because extra-normal losses caused by extreme events, such as a war, have to be regularly accounted for in the risk premium ([2]). An argument supporting this idea is that in the conditions of war additional risk is automatically accounted for in the bank rates. Thus, the data from the National Bank (NBU) of Ukraine show that once the war began, the interest rates of deposit corporations (except for NBU) on new loans grew from 12.9% to 16.9% in June and to 18.9% in December 2022 ([8]). In this case, the normal risk premium must not be increased by the extra value of country risk, whereas in the second approach, given this assumption, the estimate of normal risk premium will include double counting.

From the viewpoint of economic effect from the introduction of extra risk premium, the profitability of invested capital increased in this way will make the final product more expensive, thus decreasing the competitive capacity of a too averse foreign investor in comparison with the investors with a lesser level of aversion. Estimations made by international agencies on the eve of the war show that in the conditions of the increased political pressure and the threat of invasion, the average value of risk premium for Ukraine was 7.4%. Once the invasion began, it grew in February to reach 23.0%. In March, 2022, international assistance to Ukraine and successful actions of the Ukrainian Armed Forces caused the risk premium to fall down to 18.6%. This tendency proved to be reverse for the aggressor country, with the respective figures being 1.7%, 11.5% and 19.8%, which is, above all, could be attributed to the sanctions imposed on Russian Federation (RF), [17].

Like with the previous tools for counteracting the risk, the risk premium poses a problem of options for various categories of foreign investors. The country risk premium requires that investors should have high market sustainability that is guaranteed by sufficient capital reserves, a high level of diversification, and correlates with the company size.

An issue closely linked with the risk premium is international insurance of FDI.

International insurance. International insurance occurs once a foreign investor has transferred a share in his own risk to international insurers and reinsurers. It enables an insured investor to have a risk coverage guarantee on the condition of paying a risk premium.

A foreign investor can buy an insurance police in various kinds of institutions: government,

international or private ones. Examples of government institutions rendering services in international insurance are Overseas Private Insurance Corporation (OPIC) (U.S.), Economic Development Corporation (EDC) (Canada), Coface (France). However, government institutions do not cover all the types of risk. Of the international insurers who cover war and expropriation risks reference should be made to World Bank's Multilateral Investment Guarantee Agency (MIGA) and International Financial Corporation (IFC), European Bank of the Reconstruction and Development (EBRD), US International Development Finance Corporation (DFC). Examples of the private insurers who cover outdated losses of FDI not reimbursed by the government or international insurance funds, as well as new FDI that has not government guarantee are Lloyds and American International Group. There are also specialized broker courtiers working with all the insurance types, but their price is obviously higher.

Ukraine, however, had to face serious impediments for international insurance in the conditions of war. The biggest and paradoxical one, not allowing for international private investment and reinvestment in the Ukrainian economy, is blocking war insurance sources in the war time. Due to the Russian Federation being one of the five permanent members of the UN Security Council, insurance companies of other UN member countries cannot offer insurance services to foreign investors in the country suffering from this aggressor ([25]).

According to information coming from the largest foreign investment banks operating on the Ukrainian market, due to the lack of war insurance sources and uncertain expectations that international insurers like EBRD or MIGA will really reimburse the losses caused by the war, nearly 2 billion USD of private investment in domestic small and medium enterprises (in agricultural sector, manufacturing, logistics, IT sector and infrastructure) had to be frozen at the beginning of 2023. Another issue pertains to the legal definition of the notion "war" enabling for insurance and reinsurance of war risks. The war insurance issue is expected to be central in the discussion during the Ukraine Recovery Conference to be held in June 2023 in London ([27]).

Among others, the issue can find a solution through signing bilateral agreements between governments of countries and their investors. Also, the risk premium can be stabilized if governments of partner countries grant targeted subsidies to national insurance companies pledging to secure war insurance for FDI. Finally, a feasible option can be issuance of government bonds by Ukraine for the reimbursement of premium cost and losses caused by the war, but it is largely conditional on the progress of the war and the aversion of the Ukrainian population ([26]).

The U.S. government and Congress has the authority enabling them, irrespective of UN, to allow International Development Finance Corporation to provide war insurance for private investors in the short-term perspective, and to renew financing of the companies that have already invested in Ukraine. According to DFC, its private-sector capital that is expected to be streamlined in the Ukrainian economy reach 1 billion USD ([6]).

The urgent need to protect investment, both external and internal one, is realized by the Ukrainian authorities. In September 2022, the government launched an investment initiative "Advantage Ukraine" covering a set of measures for attracting investment in the Ukrainian market ([1]). Favorable conditions for foreign investors are expected to include the possibility to locate production entities within the industrial parks and a series of tax privileges, especially for small and medium business.

Meanwhile, the central issue remains to be looking for opportunities to get guarantees with respect to international insurance of war-specific investment risks. The main declared partners of Ukraine in international insurance being MIGA and DFC, cooperation is going on with the largest institutional investors like Black Rock and J.P. Morgan companies. A progress in direct long-term lending is also expected from IFC, EBRD, EIB ([21]).

On the other hand, the government is creating a scheme for protecting not only external, but also domestic investors, which aims to reduce the outflow of investment capital from the country. The Verkhovna Rada of Ukraine has registered the draft law No 9015 on insurance of investment in Ukraine from war risks, allowing the Export-Credit Agency (ECA) to insure the Ukrainian investment streamlined in the domestic economy from war risks, which has been impossible by now. The Verkhovna Rada of Ukraine commissioned the Cabinet of Ministries of Ukraine jointly with NBU to finalize, in the following three months, all the normative acts required for the approval of this law ([12]). The insurance of Ukrainian business in parallel with foreign one is a factor inviting FDI, because it provides a guarantee that local partners of foreign investors, involved in the chain of production, logistics and trade, are also protected from war risks.

According to numerous reports, the measures already implemented have arisen expectations of incoming FDI in the military & industrial complex, agricultural sector, IT, renewable energy, extraction and storage of gas, logistics and infrastructures, construction, as well as in metallurgy and metal work, pharmaceuticals, mineral extraction, furniture and woodwork, etc.

Conclusions. Investment risks of a country suffering from the military aggression have extreme

character compared with the risks of peacetime and may cause abnormal losses, partial or total physical ruining of invested assets.

A basic component in a scheme for counteracting the risks of foreign investment in time of war is the information support embodied in the composite indicator of country risk. Apart from the advantages, the indicator of country risk has a number of drawbacks, especially in the period of war. Possible improvement is in timely updating and supplementing by alternative indicators. A broader perspective for country risk analysis and forecasting can be opened by big data used together with artificial intelligence.

The policy of sustaining and attracting FDI, apart from creating economically and politically favorable conditions, needs to incorporate a series of cohered measures on the protection of investors, foreign and domestic alike, because the latter are not only obviously important for the domestic economy, but often operate in partnerships with foreign investors.

The Ukrainian experience demonstrates that a scheme for the protection of investment cannot be secured by only investors' initiatives; it has rather involve national and international initiatives at macro- and micro-level. The macro-level refers to the systemic boundaries for successful business activities, created by far and large by democratic transformations launched by the government and democratic society with the involvement of international partners. The micro-level requires effective conventional measures on risk management by investors: information support, VaR and CVaR, double diversification, risk premium and international insurance.

A current tendency is the appearance, along with TNCs, of a great many small and medium foreign investors. While the role and advantages of small and medium investors are critically important in many economic sectors, their capacities of counteracting war risks are much more limited than the ones available with large TNCs. SME have not enough access to reliable and exhaustive information about the host country. Their financial sources are also limited. Accordingly, their risk tolerance is lower than that of large investors. The public policy on FDI, apart from the interests of TNCs, must account for the specifics of SME.

International insurance in the conditions of war is the cornerstone of a business protection measures. However, obtaining of insurance coverage by investors continues to face impediments of political nature, by far and large in UN, thus allowing the aggressor country to block the operation of key international insurers in Ukraine. Measures aimed at unblocking this problem along with looking for alternative decisions would help essentially improve the investment attractiveness of Ukraine.

The study does not pretend to cover the issue exhaustively. The further progress of the war in Ukraine and the corresponding international policy will add new evidence and allow a deeper understanding of the incentives of foreign investors, their tolerance for the war risks and joint efforts with international partners to protect FDI against such threats.

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Протидія ризикам іноземного інвестування в умовах війни

Дослідження має на меті визначення вирішальних складових системи захисту іноземних інвесторів під час війни на прикладі України і з урахуванням різних категорій інвесторів. Завдяки чутливості іноземних інвесторів до інформаційних сигналів, зумовлених набагато вищою ризиковістю зовнішніх ринків порівняно із внутрішніми, прямі іноземні інвестиції (ПІІ) є високо волатильними. Суттєві надходження прямих інвестицій у минулому не є гарантією такого самого рівня надходжень у майбутньому і навпаки. Процес прийняття інвестиційних рішень залежить водночас від рівня аверсії інвесторів і від інвестиційного клімату країни-отримувача ПІІ. Рівень аверсії є різним для різних за розміром, організацією і походженням компаній, що впливає з їх неоднакової здатності протидіяти міжнародним ризикам. Інвестиційний клімат, своєю чергою, пов'язаний із розвиненістю демократичних інституцій, формуванням демократичного суспільства та прогресом, передусім, у сфері інформаційних технологій у країні-отримувачі. Чутливість до інформаційних сигналів суттєво посилюється для інвестиційних проєктів у країнах у стані війни. Інвестиційні ризики війни характеризуються значно вищим за ризики мирного часу рівнем невизначеності та є за своєю природою екстремальними, тобто такими, які, незважаючи на низьку ймовірність виникнення, можуть мати руйнівні для інвестора наслідки, а саме, спричинити наднормальні збитки, часткову або остаточну втрату інвестованих активів, а також фізичну шкоду, полон, взяття у заручники або загибель персоналу компаній. За таких умов доцільним є використання системного підходу до формування державної політики із залучення інвестиційного капіталу з урахуванням різних категорій інвесторів і з особливою увагою до тих інструментів управління ризиками, які в умовах високої невизначеності дозволяють підвищити рівень захищеності й упевненості інвесторів. Серед таких інструментів, на наш погляд, ключовими є інформаційне забезпечення процесу прийняття інвестиційних рішень, формування резервного капіталу на базі оцінки вартості під ризиком та умовної вартості під ризиком, подвійна диверсифікація інвестованих активів, передбачення премії за ризик та міжнародне страхування ПІІ. Міжнародне страхування посідає центральне місце в системі захисту інвесторів під час війни, а в умовах, коли агресором є країна – постійний член Ради Безпеки ООН, можливість його гарантування потребує спільних з міжнародними партнерами ініціатив.

Ключові слова: прямі іноземні інвестиції, країновий ризик, воєнний ризик, вартість під ризиком, диверсифікація, премія за ризик, міжнародне страхування.

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