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RISKS FACING FOREIGN DIRECT INVESTMENT IN LEBANON AND TOOLS OF THEIR ASSESSMENT

There is a research of risks that occur during investment process and a methodic how to calculate the total amount of necessary investment in condition of uncertainty and risks. It is formulated the main approach to investment effectiveness' evaluation when the first step is risk assessment and its tools. The corruption is the main part of country risks facing the investors in Lebanon. Country risks are divided into economic, financial, political, cultural. Corruption is getting a culture in Lebanon. It has a three style of influence on the foreign direct investment: negative, positive and neutral. There are a list of qualitative and quantitative methods with their advantages and disadvantages which can be used in project management. The main tools of evaluating risks are the discount rate adjustment method, confidence coefficient method, sensitivity analysis of performance criteria, Monte-Carlo simulation. There is a discussion about the more appropriate tools of corruption risk evaluation in the article.

Key words: risk, country, risk assessment, method, discount rate.

Introduction. It is very important to investors in host country to know what kind of risks they can meet and how these risks impact on the efficiency of the investment project. New reality in Lebanon shows a list of problems. Today situation in Lebanon illustrates the economic crisis in which the main problems are corruption, indiscriminate employment, waste of public funds, distrust of institutions, low growth rates in addition to the financial crisis following the downgrade of Lebanon's credit rating and its repercussions on borrowing and interest rates. In addition to all that, what is new – this is the political crisis in Lebanon and the popular demonstrations resulting from the inaction in the economic and financial treatments in the country and the corruption, sit-ins call for the downfall of the entire political class. Investment climate is not good for doing business in Lebanon now. Risk of corruption can influence on foreign direct investment (FDI) in three manners. It is the big determinant of all parts of life in Lebanon now and the influence of corruption is very bad.

Main part. All types of risks we can classify in general and specific involved in concrete project. Foreign direct investment depends on risks and the latest influence on the amount of FDI.

The method for assessment the level of investment consists of two stages:

- 1) risk assessment of an investment project;
- 2) evaluation of the investment project effectiveness with calculating the required level of investment.

We pay attention to the first stage.

The method of risk assessment of an investment project consists in forming a list of potential risks that play a significant role in the implementation of the project, their formalization and further quantitative assessment.

Risks that are clearly difficult to quantify, in particular, to determine the probability of occurrence of certain events, possible losses and damages, corruption, etc. are included in the model for evaluation of the investment project effectiveness with calculating the required level of investment through an adjustment of the discount rate adjusted for the risk premium.

It is very necessary to classify risks facing FDI in Lebanon.

The essence of risk can be defined as the probability of an unexpected event. All business transactions involve risks. However, when such transactions occur across international borders, they involve risks, called *country risks*, which arise from ambiguity in the political, financial and economic structure of countries.

Risks are among the most important determinants of foreign investment decisions of companies. Which take into account the degree of uncertainty, such as financial and political instability, political crises, administrative corruption, insecurity and instability, etc., which negatively affect the investment climate in a country where investment is planned, FDI cannot abandon the host country easily. Therefore, there is a close relationship between the level of *country risk* and FDI flows.

The International Monetary Fund (IMF) shares a similar view, arguing that international invest-

ments offer different opportunities for investors, but investors do not take full advantage of these opportunities due to information asymmetry, home asset preferences, transaction costs, and high risk aversion.

In short, country risk refers to all the potential risks investors may face in the country in which they plan to invest, and can be classified into economic, financial, political and cultural risks.

When it comes to Lebanon, it is necessary to identify the multiple risks that impact on the inflow of foreign direct investment, which makes many foreign companies hesitate a lot before investing in Lebanon, knowing that there are many incentives parallel to these risks.

Some of these risks are political, economic, financial and cultural (social), which we will talk about each risk individually.

It is clear that all political factors, decisions and events are seen as creating a degree of risk, a possibility that negatively affects the economic profit of the investment.

Speaking of corruption as a risk and its effects on foreign direct investment, that corruption can be the first risk that companies see when making an investment decision in a country like Lebanon, which will increase either the cost factor or the benefit factor in analyzing the interest cost of companies when deciding to make a foreign direct investment.

Risk of corruption can influence on foreign direct investment (FDI) in three directions:

- studies in which corruption affects FDI flows negatively (countries with high levels of corruption do not seem attractive to foreign investors because corruption creates a high degree of uncertainty, which negatively affects the return on investment and reduces FDI flows);

- studies in which corruption affects FDI flows positively (corruption is a catalyst for FDI flows);

- studies that do not indicate a relationship between corruption and foreign direct investment (corruption does not have a significant impact on FDI inflows and that market size, corporate tax rate, labor cost, and openness are the most powerful determinants of FDI in the developing countries).

The situation in Lebanon is the following.

First, corruption *can increase the risk* of FDI. When you bribe someone for the service you want or the project you want to implement, it requires easy financial costs and it is possible that there is something you have to provide for these facilities. Investment in infrastructure in Lebanon is the best proof of these companies that paying bribes and may not get the project.

However, corruption is inherently unenforceable. You can't know with absolute certainty that what you paid for is what you get, and possible

you can't get something. The degree of risk that corruption can create for investment is so great that the entire project can be lost. For example, the process of oil exploration in Lebanon was not transparent as there was no competition between companies and no tender was conducted:

- the lack of reputable companies for fear of engaging in corrupt supplies;

- the authority did not want to approve companies that do not cooperate with them in distributing shares and sharing profits.

Second, corruption is also *expected to bring benefits* in terms of reducing costs and not holding the company accountable when it violates certain terms of the contract, increasing profit margins from investments and providing competitive advantages over other companies. Thus, corruption can increase the flow of foreign direct investment. This has already happened with the oil companies that have been awarded the oil exploration contracts in Lebanon, which certainly have concluded side agreements with the political parties in Lebanon to obtain these contracts.

Third, corruption can also *create open uncertainty*. To the extent that you know nothing, or very little about how corruption affects your investment profit, corruption not only creates an impact and increases risk, but uncertainty leads to a lack of clear vision, and corruption can occur from another company that overthrew everything you have done before. Uncertainty is separated from risk because you cannot determine the probability of corruption on your investment in a negative or positive way.

The economic risks in Lebanon indicate a significant change in the economic structure that will result in a significant change in the expected return on investment, which will become clear in the near future. From a more general viewpoint, economic risk is defined as the probability of investment being affected by macroeconomic conditions and is an important indicator for multinationals.

The economic risk level of a country is estimated by taking into account variables such as mentioned in table 1.

Table 1

Indicators of economy development in Lebanon [1]

Indicator	2015	2017	2019
GDP per capita, USD	7644.5	7792.6	6249.8
Real GDP growth, %	0.82	2.02	-1.9
Inflation rate, %	3.00	3.17	6.96
Budget balance, % from GDP	-7.48	-8.6	-9.76
Current account balance, ml USD	-810.25	-1599.17	-540.9
Exchange rate, LBP/USD	1507.5	1507.5	1507.0

GDP per capita declined in Lebanon in 2019 to its lowest levels (from 7756.7 in 2010 to 6249.8 in 2019), real GDP growth, inflation rate, budget balance, current account balance and exchange rate show high economic risks for investors in Lebanon.

Any positive or negative change in these macroeconomic indicators affects foreign investors' perception of economic risks in the host country. For example, foreign investors consider Lebanon's high inflation as a result of an imbalance between its budget and the implementation of a stable monetary policy. It creates uncertainty and reduces the real value of assets and gains of multinationals. High inflation (about 7%) increases Lebanon's economic risk levels and reduces FDI inflows. Similarly, the exchange rate risk that we talked about as the official exchange rate is \$ 1 = 1507 ll while the market exchange rate per dollar is 1900 ll and this indicates macroeconomic risk due to its impact on the cost / profitability of investments. Currency valuation adversely affects FDI flows because it increases prices and costs and reduces profitability. However, the main problem for investors is the rapid volatility that creates uncertainty and makes it difficult for investors to make investment decisions.

Financial risk is defined as the risk that a country will be unable to meet its external obligations. Undoubtedly, countries with high financial risks are likely to face a financial crisis. In the case of deterioration of the financial situation of the host country, unlike other forms of foreign capital (short-term bank loans, portfolio investment), foreign direct investment cannot easily abandon the country. Therefore, foreign companies are very sensitive to the level of financial risk of the host country.

External debt and other variables, such as current account balance and net international liquidity, exchange rate stability are used to measure financial risk. With the public debt share of Lebanon increasing to 150% of GDP, financial risks increase, thus reducing Lebanon's ability to repay its debts. Thus, these high levels of public debt of 85 billion USD will lead to less attractive from multinationals and foreign direct investment. In this sense, the large and chronic current account and budget deficit for many years due to corruption, lack of economic plan and high public debt service are the main reasons for increasing public debt and increasing the level of financial risks. Thus, the increased financial risk, which is an indicator of the deterioration of the financial situation in Lebanon, which is evident through the exchange rate differences between the official rate and the market in addition to the closure of banks since the period of the month and the banks refraining from providing account holders with more than 10% of their accounts are all manifestations it deters FDI flows to Lebanon.

Political risks can be defined as governmental or community actions and policies, arising either within or outside the host country, which adversely affect foreign business operations and investments. As the definition suggests, the main problem of political risk with respect to foreign investors is the negative impact it has on profitability.

From this point of view, political risk factors that may be faced in developing countries include nationalization or expropriation of foreign assets.

Given the political reality in Lebanon, corruption, administrative bureaucracy, political instability, lack of a plan to address the current crisis (autumn 2019) and lack of institutional quality are key determinants of the preferences of multinational companies. We can say that the presence of political risk factors in Lebanon is a bitter reality experienced by various foreign companies, which creates ambiguity and high risk and increases the costs of these companies when investing in Lebanon, and thus reduce the efficiency of foreign companies and make it difficult for them to do business because of all these factors, the political risks facing Lebanon and political instability prevent FDI flows.

We can mention the last group of risks – *cultural risks* as following:

- failing to adapt global business models to the local market;
- failing to identify regional and subculture differences;
- failing to understand local business practices;
- failing to adapt management practices across cultures, national regulation, human resource management.

Day after day *corruption becomes a culture* spread in the minds of young people, future generations as in the ideas of the elderly.

After giving the classification of risks it is necessary to describe or calculate them.

There are to different ways of calculating the risks in investment projects: qualitative methods (1–3) and quantitative methods (4–10) (table 2).

Thus, the considered methodic apparatus for risk assessment has its advantages and disadvantages. Some methods are widely used mainly in foreign practice: the method of assessing capital assets CAPM (Capital Asset Pricing Model) as a variant of the discount rate adjustment, sensitivity analysis of performance criteria (Spider Graph), the Monte Carlo Simulation.

The main task of the qualitative approach is to identify possible types of risks of the investment project, as well as to identify and describe the sources and factors that affect this type of risk. In addition, qualitative analysis includes a description of possible damage, its cost assessment, and measures to reduce or prevent risk (diversification, risk insurance, creation of reserves, etc.).

Table 2

Methods of risk assessment in investment projects

Method	Content	Advantages	Disadvantages
1. Cost appropriateness analysis	The basis is the assumption that cost overruns may be caused by one or more of the following factors: initial undetermination of the cost project; unseen circumstances; difference in machine performance, etc.; increase cost due to inflation or changes in tax legislation	A checklist is drawn up of a possible increase in costs per project elements or phases. The financing process is divided into stages associated with the phases of the project	It is assumed that the financing of the project ends in conditions of a significant increase in costs at any stage of the project, which is inefficient for the investor because he invested earlier in the project
2. Analogy method	The bottom line is to analyze all available data on equally risky similar projects, study the consequences of exposure to adverse factors in order to determine the potential risk in the implementation of a new project	The list of risks and their consequences can be as complete as possible, which increases the project effectiveness and reduces its uncertainty	The difficulty of selecting an analogue; no methods describing the details of the risk assessment procedure
3. Expert assessment method	Experts draw up an exhaustive list of risks for all stages of the project, determine risk weights to calculate the project integral risk	Experts with wide experience in participating of investment projects are involved	The reliability of the research results depends on the competence of experts; subjectivism; complexity
4. Discount rate adjustment method (risk premium)	Adjustment of the discount rate in accordance with the expected risk level of the project	Ease of calculation	It is assumed to increase the risk over time with a constant coefficient. Inadequate assessment because of experts' evaluation
5. Capital asset pricing model	The risk is assessed by comparing fluctuations in the share prices of the company implementing the projects with fluctuations in the stock market as a whole	It is based on the analysis of changes in the yield of freely traded shares on the stock market	Applicable only to assets that are freely available sold on the stock market
6. Confidence coefficient method	There is not the discount rate is adjusted, but the cash flows calculate directly by evaluation of the mathematical expectation of cash flows	Optimal from the point of view of the influence of individual initial factors on the final result	It is difficult to calculate the probabilities of receiving certain cash flows in practice
7. Sensitivity analysis of performance criteria	Compare the impact of various factors of an investment project on key performance indicator (NPV, IRR and etc.)	Allows you to visually assess the impact of input factors (price, sales, investment, cost, etc.) on the final result	A change in each factor is considered in isolation
8. Probability distribution analysis	Formation of a probabilistic distribution of profitability values, determination of a standard deviation from average profitability and coefficient of variation	We have information on expected profits	It is assumed that the probabilities for all cash flows are known or can be accurately determined but in practice these are difficult to do
9. Scenario analysis	There are several plans of doing projects: the basic set of project input data, and a number of other data sets; according to the project developers	Ability to take into account the impact of a complex of poorly formalized risk factors on project results	Complexity, time consuming, subjectivism
10. Monte-Carlo simulation	The method allows you to build a mathematical model of the project with uncertain parameter values and, knowing the probability distributions of the project parameters, as well as the relationship between parameter changes (correlation), obtain the distribution of the project's profitability	Wide possibilities of usage in investment management, especially in conditions of risk uncertainty	Technically sophisticated method

A qualitative approach that does not allow to determine the numerical value of the risk of an investment project is the basis for further research using quantitative methods that widely use the mathematical apparatus of probability theory, mathematical statistics, and the theory of operations research.

The main objective of the quantitative approach is to numerically measure the impact of risk factors on the behavior of investment project performance criteria.

As we can see for investment projects in Lebanon, the entire set of risks is divided into two blocks.

The first block consists of risks that are clearly difficult to quantify, in particular, to determine the probability of occurrence of certain events, possible losses and damages, etc. The inclusion of these risks in the assessment and the assessment of the economic efficiency of the investment project is proposed to be carried out through an adjustment of the discount rate by the risk premium.

The essence of the discount rate adjustment method is to adjust the discount rate in accordance with the estimated risk level of the project.

In the scientific literature the coefficient – discount rate r is determined by the formula

$$r = r_i + p, \tag{1}$$

where r_i – discount rate of i year; p – risk premium, coef.

According to this method, it is proposed to determine risk premium when implementing innovations (for Republic of Belarus): low risk – $p = 3-5\%$, medium risk – $p = 6-10\%$, high risk – $p = 11-15\%$, very high risk – $p = 16-20\%$.

In foreign practice, the Fischer formula is used, this method includes inflation risk:

$$r = g + i, \tag{2}$$

where g – discount rate without risk; i – expected level of inflation per year, coef.

In conditions of high inflation, adjustments are made to the classic Fischer ratio (formula 2). At low rates of inflation, the essence of the formula is not in doubt, but at higher rates it is necessary to apply a more accurate indicator taking into account the depreciation of not only the capital amount, but also the interest:

$$r = g + i + g \cdot i.$$

Now we try to calculate the discount rate for the second stage of the method for assessment the level of investment (Part 2. Evaluation of the investment project effectiveness with calculating the required level of investment).

Risk premium we can define by international scoping (table 3). The main role in the list of risks plays the corruption risk that is why we pay attention to measurement of corruption.

Table 3

Measurement of Lebanese corruption

Title of survey	Measurement of corruption	Lebanon-2019
Corruption Perceptions Index (CPI)	A scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. According to experts and businesspeople	28/180
Global Corruption Barometer (GCB)	GCB ranks countries by corruption levels using direct surveys instead of perceived expert opinions, which has been under criticism for substantial bias from the powerful elite	41%

Lebanon scored 28 points out of 100 on the 2019 Corruption Perceptions Index reported by Transparency International [2].

Corruption Index in Lebanon averaged 28.50 points from 2003 until 2018, reaching an all time high of 36 points in 2006 and a record low of 25 points in 2009. It is meant that risk of corruption in Lebanon is very high.

GCB gives percentage of corruption – 41%.

Political parties, public administration, parliament and the police are the most corrupt institutions in Lebanon.

For Lebanon we can corrected discount rate by using the discount rate adjustment method:

$$r = r_i + p = 9.69 + 28 = 37.69\%,$$

where $r_i = 9.69\%$ average Interest Rate on LBP Discount and Loans in November 2019; $p = 28\%$ according CPI (see table 3).

However, it is believed that adjusting the discount rate does not adequately account for economic risks. It is necessary to operate with monetary units rather than discount interest rates, since risks arise not in net cash flows, but in individual cash inflows and outflows. The most correct way to take into account economic risks when evaluating the investment project effectiveness is to adjust the expected risks accordingly cash flows with mandatory consideration of the principle of asymmetry of economic estimates [3].

The fluctuation of a possible result is the degree of deviation of the expected value from the average value. To determine it, the variance or standard deviation is usually calculated. Further, for each selected group of risks, it is necessary to calculate the coefficient of variation of cash flows, which will allow to identify those areas of activity of the enterprise that are characterized by the greatest changes in cash flows and, as a result, high risks.

Based on the data obtained, it is necessary to calculate an integrated indicator that characterizes

the overall dynamics of changes in the company's cash flows. This indicator can be used as the total coefficient of change in cash flows, which is the arithmetic average of the coefficients of cash flows variation for all risk groups.

The proposed approach, in contrast to adjusting the discount rate in the context of investment projects in Lebanon, is the most appropriate, since the main component of the risk – corruption risk – does not operate at each stage of the project, but at the beginning of its implementation, and often the fact of corruption is present once at the initial approval of the project.

The second block consists of risks that are taken into account in the investment project using the Monte Carlo simulation method: standard deviations for risks, statistical fluctuations, variations, correlation dependencies, etc. These risks are the input data of the simulation model and directly affect the performance indicators of investment projects. This unit risks include the following risks associated with the activities of external parties (customers, suppliers, creditors, public authorities, partners): for example, the risk of increasing the value of construction in investment project, the risk of changes in market prices for electricity, the risk of changes in demand for products and so on.

In relation to the second block of risks, it is legitimate to use the sensitivity analysis method,

which is simple and clear also allows to take into account the probability and degree of impact of a complex of risk-forming factors.

Conclusion. So, it is proposed to evaluate the volume of necessary investment in the project taking into account the risk factor, while the first stage of the study is to determine and classify risks into two blocks: general (business conditions) and specific ones that relate directly to the implementation of the project in a certain area.

Next, it is proposed to combine several methods for accounting and assessing the risks of investment projects, with the maximum coverage of all possible risks specific to investment projects in Lebanon.

It should be noted that the algorithm proposed is not opposed to other methods and approaches, but integrates the existing theory of risk analysis in the most acceptable form for evaluation, taking into account the specifics of the Lebanese economy.

Corruption is the most important risk that adversely affects on the investment in all sectors. Perhaps the most difficult task for foreign companies when they enter Lebanon is how to find a broker who can solve the contract and the problems they face and can mitigate the risks to them before and after the project they intend to implement.

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