CAPITAL IMPLICIT EXPENSES IN THE SHADOW ECONOMIC REVENUE

Oleg Tereshchenko
Prof., DSc, Head of Corporate Finance and Controlling Department,
Kyiv National Economic University named after Vadym Hetman,
e-mail: tereshchenko@kneu.edu.ua, orcid.org/0000-0001-8808-1383, Ukraine
Natalia Voloshanyuk
Associate Professor, PhD, Kryvyi Rih Economic Institute of Kyiv National Economic University named after Vadym Hetman,
e-mail: voloshanyk_nv@kneu.dp.ua, orcid.org/ 0000-0002-3436-2400, Ukraine

Abstract. In many countries related to emerging markets (EM), there is a high proportion of the shadow economy. The main source of shadow incomes replenishment are incomes that are actually generated in the official sector of the economy, however, they are withdrawn to the shadow segment. The article is dedicated to solving the actual task of income amount estimating that flows from the official sector of the economy to the shadow one. The paper shows that the amount of annual profits that "poured" into the shadow sector corresponds to the size of the hidden (implicit) payment for capital. The problem of shadow payment for capital is closely connected with the shadowing of profits, salaries and payments for the resources usage.

The causal relationship between risk premium, shadow economy and key macroeconomic parameters of individual countries are shown in the article. The average income to GDP per capita ratio in Ukraine and other EM countries is significantly lower than in developed countries. In addition, there is a low share of staff costs in the structure of costs of enterprises. Thus, in the EM countries, the orientation of the business to the interests of the shareholders is clearly manifested and the interests of the stakeholders are ignored. In emerging markets, an increase in risks primarily leads to an increase in the risk premium and the shadowing level, to rising prices and to a substantial reduction in real salaries.

For the estimation of real capital expenditures, it is advisable to use indirect methods, especially modification of capital assets pricing model (CAPM), adapted to the conditions of the EM. The proposed modification (hybrid crisis model) involves minimum usage of the data from the local financial market. It includes the following parameters: global risk-free rate of return, global market premium for risk, country risk premium, beta-factor, calculated on the basis of the analogue approach, and premium for specific risks of investing in a particular asset. According to our assumption, the shadow interest rate on capital is the difference between the expected return by CAPM and the averaged ROE that follows from the official reporting. Thus, the size of annual profits, "transferred" into the shadow sector, corresponds to the size of the implicit capital charge. The calculations made have showed a stable relationship between the level of country risks and the size of shadow revenues in the country.

Keywords: shadow economy, cost of equity, cost of debt, CAPM, CRP, expected market return, emerging markets.

DOI: http://dx.doi.org/10.23856/2509

All countries that are among emerging markets have the same issue of estimation of shadow return on investments. For such purposes there has been used a range of direct and indirect methods, including matching method, structured method, monetary method, expert

method, approach of technological coefficient and many others. But, for the usage of abovementioned methods, there is still an issue regarding the final entity of estimation. Different publications mean under the sizes of shadow economy the income, accruals, revenue position that are made by a shadow sector or a size of involved resources and quantity of workers. Pursuant to the general definition, a notion «shadow economy» means economic activity that is beyond the limits of state regulation, taxation policy and statistical accounting, but the result of such economics is reflected in income. The scientific problem is in the estimation of part of Gross Domestic Product that is being produced in the shadow sector of economics and in the determination of profit that has a shadow nature. Thus, a scientific task is in justification of instrumentarium of the estimation of payment size for capital that is being used in the shadow sector and in the development of recommendations regarding unshadowing of expenses involved in capital. The last ones may have an administrative and economic nature and can produce effect only in case of their comprehensiveness, completeness and substitution. The problematic of shadow fee for capital is closely related to the shadowing of profits, salary and payments for the resources usage. The purpose of the offered investigation is a justification of the methodical approach to the calculation of profit value that is being generated by a shadow sector in fact, and is directed to the shadow.

In reality, a shadow economy has numerous forms of occurrence and it can not be fixed through the direct methods. One of such forms is a transformation of incomes from the official sector of economy and shadow sector. In accordance with our assumption, the amount of annual income that is being directed to the shadow sector corresponds to the amount of hidden (implicit) fee for capital. In other equal conditions, the scales of shadow economy and volumes of investors' income in the shadow sector depend on the complex of macro – and microeconomic risks that are together with financial and economic activities of the enterprises. The criterion of risks of investments into assets is an interest rate. The interest rates influence level of employment and salary, prices, amount of investments and business activity.

A schedule 1 provides the information that characterizes causal connections among risk premium, average income, level of unemployment, inflation and size of the shadow sector of economy in 20 countries, 17 of them are in the group of emerging markets. The criterion of investments risk is a country risk premium (CRP) that depends on the complex of reasons; one of them is a country rating *(Damodaran, 2017).*

A conducted correlation analysis confirmed a hypothesis regarding the influence of risks that define a fee for capital on the average level of income, inflation and sizes of the shadow sector of economy. The obtained meanings of the correlation coefficients certify a high level of connection between:

- CRP and average income of the population (a negative meaning of coefficient is 0,61);
- CRP and ration of average incomes with gross domestic product per capita (a negative meaning of coefficient is 0,53);
- CRP and inflation (a positive meaning of coefficient is 067);
- CRP and sizes of the shadow sector of economy (a positive meaning of coefficient is 0,75).

Herein analysis certified the absence of substantial connection between the level risks of country and volumes of unemployment. In our opinion, it can be explained by the complexity of coverage of the actual level of unemployment in separate countries that are in the group of emerging markets. In such countries, there is a considerable part of hidden

unemployment. Moreover, due to the low salaries, the effect of employee termination through the increase of risks is being levelled off significantly. The main source for more shadow incomes is income that is actually generated in the official sectors of the economy, however, it is moved in the shadow segment.

Table 1

Casual connections among risk premium, shadow economy and key macroeconomic parameters of separate countries, 2016

Country	GDP per capita, TUSD	Average income annually, TUSD	Ratio of average incomes to GDP per capita	Unenploy-ment rate, %	Inflation rate, %	CRP, %	Shadow economy, percent of GDP	Country rating
USA	57,4	56,2	0,98	4,9	1,26	0	8	Aaa
Germany	48,1	43,6	0,91	4,3	0,48	0	10	Aaa
France	42,3	38,9	0,92	10,0	0,18	0,71	12	Aa2
Czech Republic	33,2	17,5	0,53	4,1	0,64	1,0	15	A1
Slovakia	31,4	16,8	0,54	10,0	-0,52	1,21	14	A2
Lithuania	29,9	14,8	0,49	9,2	0,91	1,71	26	A3
Poland	27,8	12,7	0,46	6,21	-0,61	1,21	24	A2
Hungary	27,5	12,6	0,46	5,2	0,4	3,13	22	Baa3
Russia	26,5	9,7	0,37	5,7	7,05	3,55	39	Ba1
Kazakhstan	25,2	8,7	0,35	5,2	14,51	3,13	39	Baa3
Romania	22,4	9,5	0,42	6,5	-1,54	3,13	28	Baa3
Bulgaria	20,3	7,5	0,37	8,0	-0,8	2,71	30	Baa2
Argentina	20,0	11,9	0,60	6,6	10,62	9,25	24	B3
Turkey	10,8	10,1	0,93	10,3	7,78	3,55	26	Ba1
Belorussia	18,0	5,6	0,31	0,5	11,84	10,66	44	Caa1
Brazil	15,2	8,8	0,58	11,5	8,74	4,27	35	Ba2
Georgia	10,0	3,8	0,38	11,6	2,13	5,12	42	Ba3
Armenia	8,6	3,8	0,44	16,8	-1,27	6,4	42	B1
Ukraine	8,3	2,3	0,28	8,9	13,9	14,21	46	Caa3
Moldova	5,3	2,1	0,40	5,0	6,38	9,25	43	B3

* Own calculations on the basis of the following data *(Schneider, 2016; Emerging from the shadows 28, 2017)*

Moreover, if the incomes are higher, the extent of concealment of income is higher too. In order to estimate the relevant income, first of all, it is necessary to settle the issue of calculation of the real capital expenditures attracted by the enterprises of the official sector. From the perspective of enterprises, that are the recipients of resources, the interest rate characterizes the relative size of cost of debt or investment capital. For investors, the interest rate is an indicator of the expected rate of return on invested capital. Due to the accruals and payments of income to the investors, the enterprises bear costs. That is why, at the level of enterprises, it is appropriate to use term «rate of expenses on capital». The peculiarity of the rate of expenses on capital as a financial instrument is a fact that it is integrated in the vast majority of methods and technologies for substantiating financing and investment decisions, being an indicator of the ratio of risks and return on investments. Moreover, a rate of expenses on capital is a weak side of the defined methods. Due to the absence of unbiased information regarding the average price of capital or its improper calculation, it is impossible to provide a objective assessment of the business value, to calculate a fundamental assets value, to estimate

a profitability of the investment projects and a usefulness for attraction of some sources of financing.

In economically developed countries, the starting point for determination of the rate of return on capital is information coming from the financial market, in particular, from its credit segment and capital market. It is necessary to differentiate two components of the average rate cost of capital: cost of debt and cost of equity. The cost of debt in most cases corresponds to the interest rate on loans, which is recorded in loan agreements. The relevant interest costs are provided in the profit and loss statement. The cost of equity in many cases is implicit (hidden or shadow). The information about them in the official statement is incomplete or absent. They can be determined with a usage of indirect methods (models). But, the ideal models from a theoretical perspective (in particular, CAPM, Fam-French three-factor model) in their pure form on EM do not have any practical application as they operate only under some restrictive presumptions. Therefore, there is a necessity to develop modified approaches for calculation of cost of equity that would take into account the specifics of this segment of the global market. Capital charge is an integrated expression of a set of factors that reflect market expectations about the risks of investments in a particular asset, taking into account the market returns in general and it is determined by:

- level of interest rates on the global markets;
- interest rates on the local financial market;
- risk of financing of the certain enterprise.

The question is about quantitative evaluation (monetization) of risks. If this estimation marked-to-market closely, it is considered to be more impartial. Pursuant to the neoclassical model (CAPM), provided that the capital market is perfect, such estimations would be absolutely accurate. Mistakes that take place in practice are largely due to the level of market discrepancy with the criteria of excellence and the influence of the behavioural component.

While the general algorithm for calculation of interest rates, under which a capital is provided to the corporate enterprises is defined (risk-free interest rate plus risk premium), till now, there is no a single approach to the settlement of separate parameters that make up the specified algorithm. This problem is especially challenging in case of determination of risk-free interest rate and risk premium of investment into enterprises that have been operating on the emerging markets, including Ukraine. It can be also explained with a fact that all standard models that are being used on the developed markets are not applicable on the EM. The distinguishing features of the countries that belong to EM can be the following:

- higher economic growth and low capital expenditures in comparison with developed countries;
- high economic and political volatility;
- liberal access conditions for foreign investors, however, high risks of capital investments, in particular, the risks of corruption;
- privatization processes;
- information inefficiency of local capital markets;
- a significant shadow sector.

The specified peculiarities somehow influence a rate of expenses on capital, the procedure for its determination, and the mechanism of payment of income to the investors. In countries with a deformed capital market, the non-conformity with the criteria for market perfection is critical. Therefore, information generated by the relevant local market can only be partially accepted for the quantitative risk assessment. For such countries, as Ukraine, the problem of non-conformity of global markets of capital with the criteria of perfection is

supplemented with a problem of complete non-compliance with the specified criteria of the local market. Given the incapacity and manipulative nature of the capital market in Ukraine (as in many other EM countries), it can be assumed that the procedure for calculation of the rate of expenses on capital for all domestic enterprises will be the same, regardless of whether their corporate rights are traded on the local capital market or not. The exceptions are companies that are represented on international markets.

Taking into account the shadow component, in such deformed financial markets as Ukrainian, there are three types of interest rates: contractual rate of interest (it is provided in statements and official agreements), effective interest rate and market interest rate. The official fee for usage of capital is generally lower than effective and market. On some separate state enterprises due to the abusive management practice, we can observe the opposite picture. The question is whether the effective rate and capital correspond to the market rate. The answer depends on the type of capital that is attracted (debt or own), as well as on the conditions of attraction (public or non-public). On this basis, the capital can be classified in the following manner:

1) debt capital involved under the market conditions - bank loans attracted under market conditions and funds raised on the basis of public issue of bonds;

2) debt capital involved under non-market conditions - bank loans attracted under non-market conditions and funds raised on the basis of quasi-public placement of bonds;

3) equity capital attracted on market terms - funds raised on the basis of the issue of corporate rights under public conditions or market conditions by non-public companies;

4) equity capital attracted under non-market conditions - funds raised as a result of the issue of corporate rights under quasi-public terms or non-market conditions by non-public companies.

The market conditions of capital attraction mean a set of parameters dictated by the market: capital fee (interest rate), terms, security level and risk. If the capital is attracted under the market terms, it means that the interest rate for its usage corresponds to the market interest rate on investments with comparable terms, the level of risk and assurance. A quasi-public placement of securities means issue of shares or bonds, in which there is a formal compliance with regulatory requirements, however, the actual (hidden) violation of them. Taking into consideration the abovementioned, it is possible to admit that the expenses on the debt capital attracted under non-market conditions in general will be lower than the market interest rate for capital with similar conditions. This is explained by the fact that in the process of receipt of such capital, the corruption or criminal component is often involved. The examples of this matter are loans received by affiliated persons of the bank or loans issued to customers with insufficient size of credit and high level of default probability. Under the non – market conditions there may be attracted money through quasi-public or non-public bond placement, in particular, by limited liability companies. In fact, it is about low credit ratings of issuers, insecurity of issue with quick assets, too many current liabilities, absence of efficient underwriting, private placement of securities in the inner circle of participants, and about frankly fictitious securities. The stipulated problems concern both - non-market placement of bonds and the issue of shares. In the case of non-market placement of securities, two ways of the formation of capital price are possible:

1) concerning the small investors - the price of capital is artificially underestimated: due to non-payment of dividends, interest, debt restructuring on bonds under the terms unfavourable to their holders, etc.;

2) concerning the big investors - on the contrary, the capital price may exceed the market value.

The conclusion regarding non-market conditions for capital attraction can be made in case of the difference between official fee on capital and actual payments. In this case, the shadow capital expenditures are involved, which are being transformed into the shadow sector income. In the case of shadow expenses on capital, it is considered to be engaged under non-market conditions, even if the total amount of payments for its usage will correspond to the market interest rate. This is due to the fact that the transfer of payments for capital into the shadow sector is primarily connected with a tax evasion, which violates the market conditions for the attraction and operation of capital. In the countries with deformed financial markets, there have been used well – established schemes for transferring of the payment for capital into the shadow sector. The large businesses use offshore zones for such purposes, the small businesses use sole proprietors – entrepreneurs or other instruments for transferring of capital from the official sector into the shadow one.

In order to estimate the shadow sector of capital payment, it is expedient to use information regarding the amount of official payments within the framework of payment for capital in terms of its separate categories and the rate of return expected by the investors. It is about official dividends, the sizes of hoarding income, interest on bonds or bank loans. The task to determine real payment for capital through direct methods is unrealistic. Taking into consideration the diversity of schemes and forms of capital withdrawal, as well as many expenses of such control, it can only be done with respect to a small number of enterprises. According to our assumption, the size of the shadow sector of capital expenditures (additional shadow interest rate) corresponds to the difference between the rate determined with usage of indirect methods and the cost of capital, as outlined in the official statement.

If we assume that the whole realized income of enterprises, regardless of whether it is distributed or not, is a fee for capital, the rate of expenses on the investment capital that is being fixed with an official statements, will correspond to the return on equity capital invested in the enterprise. Thus, the difference between the expected rate of return, calculated on the basis of the modified CAPM and the return on investment capital will be approximate to the level of shadow payment for the investment capital. The determining factor here is the correctness of the indirect calculation of the cost of capital. It is expedient to calculate it as the average meaning for the relevant period. For debt capital, the shadow rate will correspond to the difference between the average annual market interest rate and the ratio of financial expenses to the amount of debt. The main component of the shadow interest rate on loans is in the segment of commercial loans (credit indebtedness).

The problematic of usage of the neoclassical CAPM for local markets that are under the category of EM is being discussed in numerous scientific and practical studies (for example, L. Pereiro, D. Lessard, S. Godfrey, R. Espinosa, A. Damodaran).

A schedule 2 provides the algorithms for determination of local CAPM (pursuant to L. Pereiro), modifications of CAPM offered by S. Godfrey and R. Espinosa, A. Damodaran and D. Lessard and there has been also offered a model for determination of rate of expenses on capital in case of financial crises in the country and absence of equity market that is trustworthy.

Table 2

Modifications CAPM for emerging markets

Modification and algorithm of calculation	Interpretation of parameters
Local CAPM *(Pereiro, 2006)* $Re = rf_L + \beta_{LL} \cdot (\mathbf{MR_L} - rf_L)$ $Re = rf_L + \beta_{LL} \cdot (\mathbf{MR_L} - rf_L)$ $rf_L = rf_g + CRP$	Data of local equity market; $rf_L\, rf_L$ – local risk – free rate; $rf_g\, rf_g$ – global risk – free rate; $\mathbf{MR_L}\, \mathbf{MR_L}$ – market income on the local market; $\beta_{LL}\, \beta_{LL}$ - local beta, calculated on the basis of data of local equity market
Godfrey-Espinosa Model *(Godfrey & Espinosa, 2009)* $Re = rf_g + CRP + \beta_{mod} \cdot (\mathbf{MR_g} - rf_g)$ $Re = rf_g + CRP + \beta_{mod} \cdot (\mathbf{MR_g} - rf_g)$ $\beta_{mod} = \frac{\sigma_L}{\sigma_{G,US}} \cdot \mathbf{0,6}$	Data of equity market of the USA as global and local market; $rf_g\, rf_g$ – global risk – free rate (USA) ; $\mathbf{MR_g}\, \mathbf{MR_g}$ – market income on the global market (USA); $\beta_{mod}\, \beta_{mod}$ - modified beta, calculated on the basis of data of local equity market and the USA market $\sigma_L\, \sigma_L$ – standard deviation of returns on the local market; $\sigma_{G,US}\, \sigma_{G,US}$ – standard deviation of returns on the USA market
Additive Model *(Damodaran, 2009)* $Re = rf_g + \beta_{LL} \cdot \mathbf{MRP_g} + \mathbf{CRP}$ $Re = rf_g + \beta_{LL} \cdot \mathbf{MRP_g} + \mathbf{CRP}$	The same influence of CRP on the rate of expenses on capital for all enterprises; $\mathbf{MRP_g}\, \mathbf{MRP_g}$ – global market premium for risk
Beta Model (Damodaran, *2009)* $Re = rf_g + \beta_{LL} \cdot (\mathbf{MRP_g} + \mathbf{CRP})$ $Re = rf_g + \beta_{LL} \cdot (\mathbf{MRP_g} + \mathbf{CRP})$	Peculiar influence of CRP on the rate of expenses on capital, depending on the parameter β
Lambda Model *(Damodaran, 2009)* $Re = rf_g + \beta_{LL} \cdot \mathbf{MRP_g} + \boldsymbol{\lambda} \cdot \mathbf{CRP}$ $Re = rf_g + \beta_{LL} \cdot \mathbf{MRP_g} + \boldsymbol{\lambda} \cdot \mathbf{CRP}$	Peculiar influence of the risks of country on the rate of expenses on capital, depending on the level of influence of local risks on the enterprise; λ – a coefficient that determines the level of influence of the risks of country on the activity of enterprise.
Lessard Model *(Lessard , 1996)* $Re = rf_g + CRP + \beta_{LG} \cdot \beta_G \cdot (\mathbf{MR_g} - rf_g)$	Hybrid model that takes into consideration data of global and local markets. The USA market is considered to be a global market; $\beta_{LG}\, \beta_{LG}$ – local beta that characterizes correlation between income on the local market and returns of market portfolio in the USA; $\beta_G\, \beta_G$ - beta of the comparable assets in the USA; $\mathbf{MR_g}\, \mathbf{MR_g}$ - returns of market portfolio in the USA
Hybrid crisis model *(Tereshchenko, 2015)* $Re = rf_g + \beta_{ga} \cdot (\mathbf{MRP_g} + \mathbf{CRP}) + R_{id}$	Hybrid model that is being oriented to the maximum enumeration of global data due to the lack of confidence in the local equity market and the local financial crisis; $\beta_{ga}\, \beta_{ga}$ - global sectorial (analogue) beta that is adapted to the certain enterprise; $R_{id}\, R_{id}$ – an increment for the specific risks of investment in a particular asset.

Taking into account the impossibility of impartial calculation of the model parameters due to the absence of credible information from local financial markets, for EM it is expedient to use the modifications CAPM that involve minimum usage of data from the defined local markets. However, almost all modifications provided in the schedule 2 foresee the usage of certain data of the local capital market. In the hybrid crises model the following parameters are engaged: global risk-free rate of return, global market risk premium, country risk premium, beta-factor, calculated on the basis of analogue approach, an increase for the specific risks of investing in a particular asset. In this case, hybridity means the combination of different types of risks in one model: global, local, and specific risks peculiar to the particular asset. To our mind, lower global operational risks that are specific to a certain type of activity and the financial risks of the certain enterprise mean less influence of the specific risks of the country, and vice versa. Thus, an approach that involves the correlation between beta factor and CRP is justified. Other risk premiums (for the size of enterprise, level of the parts mobility, inaccuracy of target settlements) are individual and they depend on the certain enterprise and the purposes of calculation of cost rate on capital.

With the help of the parameter of the expected rate of capital costs, we can make approximate estimations of the profits that are derived from the shadow economy. Pursuant to our assumption, the shadow interest rate on capital is the difference between the expected return on the modified CAPM and official ROE (under other conditions being equal). Thus, the return on the invested (own) capital at the shadow interest rate corresponds to the revenues of the shadow sector. The schedule 3 provides an estimation of income of the shadow sector of Ukraine pursuant to the offered method.

Table 3

Estimation of incomes that are being transformed in the shadow sector of the economy of Ukraine pursuant to the method of implicit rate of expenses on the invested capital, 2013-2016

Indicators	2013	2014	2015	2016
Moody's rating	B3	Caa1	Caa3	Caa3
RfR	2,4	2,5	3,15	2,8
CRP	9,0	11,25	15,0	14,9
Total Equity Risk Premium	14,8	16,25	20,75	20,9
Expected market return, USD	17,2	18,75	25,9	23,7
Inflation rate, UA	100,5	124,9	143,3	112,4
Expected market return, UA	16,0	47,2	76,7	36,0
ROE, %	-1,2	-35	-18	0,5
Shadow income, Mlrd. UAH	332	770	1571	635,5
Percent of GDP	22,7	48,5	79	25

As we see, the rate of return on capital and the income of the shadow sector expected by investors increase pursuant to the increase of risks and the abovementioned CRP parameter. High risks lead to a reduction in revenues, which are shown in the official statement. The average return on equity of Ukrainian enterprises during the analyzed period was negative, or it was at the minimum positive level. The results of the analysis give grounds to submit that with the decrease of the risk premium of the country, there will be a decrease of shadow interest rate on the invested capital and the size of the shadow sector in general.

The high costs for capital, in particular, on its shadow component, are one of the reasons of low level of salaries in Ukraine. Thus, the part of salary costs in the structure of expenses and in relation to GDP in Ukraine is lower than in developed countries. If the share of labour costs in the structure of production prime cost in Ukraine is 12-13% in average, this indicator reaches 30% in the countries of euro zone.

A high level of correlation between risks that are reflected in the high premium for country risk, the rate of expenses for the investment capital, the level of salaries and the growth of unemployment indicates a heavy-handed orientation of business towards the interests of shareholders and ignorance of interests of stakeholders. The calculated correlation coefficients between the analyzed variables on the basis of the information for 2007-2016 showed the existence of connection between the growth of risks, the level of salaries and unemployment. The corresponding correlation coefficients are -0.645 and 0.82. It means that an increase in the country risks leads to the decrease of salaries and increase of unemployment level. At the same time, the analysis showed a low dependence between the risks of country and the level of inflation (about 0.2). These results are a little bit different from the analysis of the impact of CRP on the relevant parameters under the sample multitude of countries (schedule 1). A low level of correlation between risks and inflation rate in Ukraine is due to the fact that for a long period of time there was an artificial controlled inflation in the country through the directive fixation of exchange rate.

Thus, the rate of expenses on capital is a product of impact of globalization processes on the financial activity of corporate enterprises, a necessary parameter for evaluation of their performance, a variable that determines the financial relations between the corporate and financial sectors of the economy, the result of macroeconomic policy and economic reforms of the local government, the criterion of risk of investment into the certain country, market segment, asset.

Conclusions

Many countries that are related to emerging markets have a large part of shadow economy. One of the sources of its increase is a transformation of income of the official sector into shadow one. Due to high financial and investment risks, the structure of economic costs of enterprises in such countries is deformed. A disproportionally big part in it belongs to the expenses on capital (in particular, their shadow part), while the part of costs on personnel is rather low. The part of corruption expenses is rather big too. Taking into consideration a big value of implicit payment part for capital, it is possible to assume that the relevant costs through the mechanism of transfer - pricing are expressed in the underestimated indications of revenue from sales or they are hidden in the expenses on raw materials, work and services.

The ratio of average income to GDP per capita in Ukraine and other countries related to EM is much lower than in developed countries. In addition, the part of costs on personnel is rather low in the structure of enterprise costs. Thus, the EM countries have a strict orientation of business towards the interests of shareholders and ignorance of interests of stakeholders. It is possible to make a conclusion regarding the dependence between the level of risks and the full consideration of the interests of stakeholders. In developed countries, the increase of risks and expenses on capital leads to the increase of unemployment rate. On emerging markets, the consequences of risk increase lead to the essential decrease of salaries and to the increase of unemployment rate too.

In order to estimate the real expenses on capital of enterprises, it is desirable to use indirect methods, in particular, adapted to the conditions of EM modification of Capital Asset Pricing Model (CAPM). The offered modification (hybrid crisis model) involves minimum usage of data from the local financial market. It includes the following parameters: global risk-free rate of return, global market premium for risk, country risk premium, beta-factor, calculated on the basis of the analogue approach and increment for specific risks of investments in a certain asset. According to our assumption, the shadow interest rate on capital is the difference between the expected return pursuant to the modified CAPM and average ROE that follows from the official reporting. Thus, the volume of annual income that is directed to the shadow sector corresponds to the size of the hidden (implicit) fee for capital. The conducted calculations revealed a strong dependence between the level of risks of the country and amounts of shadow income in the country.

References

Damodaran, A. (2009). Equity Risk Premiums (ERP): Determinants, Estimation and Implications – A Post-Crisis Update./ Financial Markets, Institutions & Instruments,, No. 18(5), 289–370. [in English].

Damodaran, A. (2017). Country risk premium. [Electronic resource]. Retrieved from http://pages.stern.nyu.edu/~adamodar/. [in English].

Emerging from the shadows. (2017). The shadow economy to 2025 (2017). The Association of Chartered Certified Accountants. [Electronic resource]. Retrieved from http://www.accaglobal.com/content/dam/ACCA_Global/Technical/Future/pi-shadow-economy-report.pdf. [in English].

Godfrey, S., Espinosa, R. (1996). A practical approach to calculating costs of equity for investments in emerging markets. Journal of Applied Corporate Finance, No. 9 (3), 80–90. [in English].

Lessard, D. R. (1996). Incorporating country risk in the valuation of offshore projects. Journal of Applied Corporate Finance, No. 9 (3), 52–63. [in English].

Pereiro, L. E. (2006). The practice of investment valuation in emerging markets: Evidence from Argentina. Journal of Multinational Financial Management, No. 16 (2), 160–183. [in English].

Schneider, F. (2016). Estimating the Size of the Shadow Economies of Highlydeveloped Countries: Selected New Results. CESifo DICE Report, No. 4, 44-53. [in English].

Tereshchenko, O. (2015). Pragmatics of the discount rate calculation during the financial crisis. Journal Finance of Ukraine, No. 6, 58-71. [in Ukrainian].