"Improvement of evaluation method of financial system attractiveness for income legalization"

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Improvement of evaluation method of financial system attractiveness for income legalization

Abstract

The aim of the research is to summarize scientific and methodological approaches to evaluation of countries attractiveness for income legalization aimed to identify threats for using Ukraine as a platform for the legalization. This paper is based on a study of two-level approach to the assessment of the risks of the country use in the process of income legalization: the first stage based on the calculated integral criterion distinguishes the country, the use of which for illegal operations is the most likely; in the second phase their list is adjusted in terms of the ratio of cross-border movement of financial resources to GDP. The object of analysis is the assessment of the risks of the country use in the process of income legalization, which, unlike existing ones, takes into account the level of the overall tax burden and investment activity in the country, thus forming a list of countries whose use by residents of Ukraine as a base for illegal operations is the most probable. The period of analysis is 2008-2012. The research methodology is based on two-level risk analysis of income legalization.

Additional indicators for evaluating the attractiveness of the country based on consideration of the investment activity and the overall tax burden indicators are proposed. An assessment of financial system adequacy of the state to its foreign economic activity has been carried out. According to the results of this study the authors concluded that the list of countries that require special attention by the FIUs on the possibility of their operations in income legalization should include Cyprus, the Netherlands and Switzerland.

Keywords: financial monitoring, financial system, risk, income legalization.
JEL Classification: E60, E64.

Introduction

Transformation of anti-money laundering global system evidences about transition from object-oriented to risk-oriented financial monitoring model. Thus, about 2-5% of global GDP annually passes the process of income legalization [5]. Unlike developed countries, where national financial monitoring system has been established since 1980-90's, Ukrainian financial monitoring system was formed only in 2002 in response to Ukraine entry into the FATF list of countries with low levels of anti-money laundering (AML). According to international experts, the volume of shadow economy in Ukraine in 2012 amounted to 55-60% of national GDP, while only 0.17% of reports on suspicious financial transactions have administrative implications. The volume of resources involved in the process of income legalization in 2007-2012 increased by almost 2 times. This indicates that at present a number of issues, namely legal, personnel, financial, and methods of controlling the movement of questionable cash remains completely unsolved. This data indicates the existence of macroeconomic and prudential risks that may cause financial instability even in a small country. At the date in certain regions and countries there is tendency to income legalization, but these processes lead to a violation of macroeconomic stability, increase of bank financial risks, unexplained changes in money demand, volatility of exchange rates and international capital flows, violation of the financial infrastructure.

1. Analysis of recent research and publications

The development of theories of evaluation of income legalization volumes and directions became intensive at the end of the 20th century. It should be noted that considerable number of researchers, in particular Vaarden [10], Unger [9], Walker [13], Hartog [11], have been focused on the analysis of income legalization risks and their evaluation.

Walker (2009) developed a gravity model assessment of income legalization and attractiveness of countries for these purposes. Walker's method (1994) was one of the earliest that takes into account the factors that may influence the choice of base country to legalize income. Unger (2006) considered relevant factors that determine the amount and direction of income legalization under current conditions. On the practical value of the technique proves it's testing in a report of Unger to the Ministry of Finance of the Netherlands in 2006, with the cooperation conducted with the Netherlands Central Bank, Ministry of Justice, Ministry of Finance, the Financial Intelligence Unit of the Netherlands. Johan den Hertog studied modern methods of banking regulation and transformation of financial flows to other sectors of the financial market for transactions on income legalization. Van Waarden describes the risk-based approach to assess trends of income legalization through the financial system.

Most of foreign scientists tried to estimate the amounts of legalized revenue and their structure. At the date there is a list of countries and territories that according to international organizations have the most favorable conditions for income legalization, but the global financial crisis has caused a change in

regulating policy of banking and currency regimes. That evokes additional risks of entering the category of countries with favorable conditions for income legalization of new countries. However, despite the diversity and depth of the research the problem of analyses of Ukraine's attractiveness for income legalization is still understudied.

2. Methodology of research

In fact direct calculation methods based on the absolute indicators for evaluation the income legalization facility obtained by illicit means and terrorism financing on state level are not developed yet. It is explained by lack of reliable strategy on actual volumes of income legalization and difficulty of relevant factors selecting for factor model construction.

On the base of generalized experience of money laundering evaluation and terrorism financing it is proposed to implement the term "attractiveness of the financial system for income legalization". This term takes into account all relevant geopolitical, legal, economic, social, cultural, geographical and other factors and stands for facility of individual financial system to income legalization obtained by illicit means and terrorism financing. Dynamics of such financial system attractiveness state evidences about trends to change in effectiveness of financial monitoring system in separate countries. Thus, it is historically determined that individual countries are more attractive for income legalization, in part due to coordinating the activity of financial monitoring subjects.

"Tolerant" states with attractive financial systems are more attractive for money laundering and terrorism financing. These countries have high level of legal protection of bank secrecy and loyal attitude to income legalization, and simplified rules of regulation and control of foreign exchange, banking, property registration and business. Generally, countries can be divided into those that are effective in AML, countries that are tax havens and ensure tax payments minimization, countries that are grounds for income legalization and that create the most attractive regime for income legalization by the simplest regime of registration, banking operational activity, trade liberalization.

In particular, the certain features of attractiveness or unattractiveness of money laundering should be highlighted:

♦ high level of corruption and/or military or socio-political conflicts negatively affects country attractiveness for money laundering and terrorism, because risks of authorized funds loss would be higher;

♦ geographical (physical distance between countries), linguistic and cultural factors (language, mentality) are equally constraining individuals while income legalization;

♦ countries with high level of GDP per capita are more attractive for income legalization, because it is easier to conceal significant transactions in such countries than in countries with lower level of GDP per capita;

♦ the main trading partner is more attractive for money laundering and terrorism financing.

So, indicator of financial system attractiveness for income legalization is a combination of quantitative and qualitative indicators of the facility to hide the real origin of the funds in countries – trading partners.

Nowadays there are two most common evaluation methods of financial system attractiveness for income legalization developed by Walker and Unger. Unger has improved Walker's model with the aim to increase the efficiency of evaluation of country attractiveness for income legalization to improve the assessment of the attractiveness of the country. In particular, indicators of deposits share to GDP (*FD*) and the country's participation in the Egmont Group (*EG*) have been implemented for more accurate estimation of state attitude to money laundering and terrorism financing.

Higher banking secrecy protection level provides the initiators of financial transactions with additional protection, including the information on the sources of income. Grater evaluation indicators of government loyalty level to national financial monitoring system indicate the problems in financial monitoring organization in the country in past or present. All states under research belong to the group of countries that implement *SWIFT*. Conflicts in various forms and historical features determine confidence level of financial transactions initiators that tend to money laundering to states and relative security level and guarantees to save these funds. The high corruption level in the country leads to growth of transaction costs in the process of income legalization. Index of the country participation in the Egmont Group has been implemented for better assessment of individual countries coordination in the AML and terrorism financing system. All countries under research participate in the Egmont Group.

According to the models the higher score is, the higher is the country attractiveness for money laundering, as well as terrorism financing for the economy of the country, which is the base of the estimation. So, the financial system of the country is more attractive for income legalization.

Advantages of Walker's methods:

♦ usage of countries with different levels of economic development, peculiarities of banking systems;

♦ overestimation of income legalization according to calculations for 30-40% above the actual level.

Disadvantages of Walker's methods:

♦ evaluation of only primary transactions of legitimating income settlement, legalize, while not much attention is given to potential financial operations concerning income legalization during their transboundary shift, that in conditions of low-tax pressure in the country leads to a significant underestimation of income that can be legalized.

Advantages of Unger's method:

♦ model gives an opportunity to consider a person who intends to legalize income obtained by illicit means as the person providing the transformation of illegal financial solvency into legitimate financial solvency.

Disadvantages of Unger's method:

♦ disregarding of modern indications of indirect estimation of country attractiveness for income legalization.

Walker and Unger (developed the amendments to improve the valuation methods of financial system attractiveness for income legalization by indicator of the overall tax burden (TTR) and investment activity (In). They allow complementing models with indirect values of the tax system adequacy and investment climate conditions of financial monitoring.

3. Results

The authors have developed a two-levels approach to risk assessment using country in the process of income legalization from crime: the first stage based on the calculated integral criterion distinguishes the country, the use of which for illegal operations is the most likely; in the second phase their list is adjusted in terms of the ratio of cross-border movement of financial resources to GDP.

At the first stage, the methodology of Walker-Unger adopted as the research framework has been modified by introducing a mechanism to calculate the integral criterion of evaluation of the risk of two additional components that characterize the level of the overall tax burden and investment activity in the country:

$$RML = \frac{\frac{GDP_{ppp_a}}{GDP_{ppp_b}} \cdot \frac{TTR_b}{TTR_a} \cdot (\frac{I_a}{GDP_a} / \frac{I_b}{GDP_b}) \cdot (3 \cdot BS + GA + SWIFT + (\frac{D_a}{GDP_a} / \frac{D_b}{GDP_b}) - 3 \cdot CF - CR - EG + 10)}{L_b^a + 3 \cdot T_b^a + 3 \cdot CB_b^a + PD_b^a}, \quad (1)$$

where *RML* is the indicator of evaluation of the financial system attractiveness for income legalization; *a* is the code of the studied country; *b* is the country code that is taken as a basis of comparison (Ukraine); GDP_{ppp} is the gross domestic product per capita (US dollars); *GDP* is the gross domestic product; *TTR* is the ratio of the general tax rate; *I* is the investment; *BS* is the bank secrecy compliance rate, which ranges from 1 to 4 (1 – absence of banking secrecy compliance law in the country; 2 – general banking law in the country, but no particular law in the sphere of banking secrecy defense; 3 – additional security guarantees of banking privacy in the country; 4 – compliance of effective banking secrecy law, country is a member of the FATF and OECD); *GA* is the indicator of loyalty to income legalization that ranges from 0 to 4 (0 – country has an effective system of financial monitoring according to FATF estimation, 1 – country is a member of AML organizations, but not member of FATF, 2 – country that had not previously provided AML or has been in FATF list as a state that did not provided AML and terrorism financing in full extent, but is a member of FATF at the time, 3 – country that has been in FATF list as a state that did not provided AML and terrorism financing in full extent, 4 – country is in FATF list as a state that did not provided AML and terrorism financing in full extent); *SWIFT* is the indicator of the country participation in *SWIFT* network and varies from 0 to 1 (0 – if the country is not a member of *SWIFT*, 1 – if the country is a member of *SWIFT*); *CF* is the indicator of participation in military or socio-political conflicts, ranging from 0 to 4 (0 – if the country has not been involved in conflicts since 1989, 1 – if the country has been involved in a minor conflict, but at the moment it is settled, 2 – if the country has been involved in significant conflict, but at the moment it is settled, 3 – if the country is conflict party at period of evaluation, 4 – if the country is a member of the military conflict in period of evaluation); *D* are the total deposits in the country; *CR* is the corruption level indicator in the country according to Transparency International index that can vary from 1 to 5 (1 – if corruption level varies in the range of 8-10 points by Transparency International index, 2 – within 6-7 points, 3 – within 4-5 points, 4 – in the range of 2-3 points, 5 – 1 point); *EG* is the indicator of the country participation in The Egmont Group that can vary between 0 or 1 (0 – if the country is not a member of The Egmont Group, 1 – if the country is a member of The Egmont Group); L_b^a, CB_b^a are the binary indicators of community (0) or difference (1) linguistic, historical and cultural environment of *a* and *b*; T_b^a are the binary indicator of possibility (0) and inability (1) of countries *a* and *b* to be the major trading partners; PD_b^a is the indicator of physical distance between *a* and *b*, which is set by an expert

in points from 1 to 7 with increasing physical distance between them; 3, 10 – constant, determined empirically by Walker and Unger [12].

The attractiveness of Ukraine for income legalization obtained by illicit means has been calculated on the base of analyzed methods and embedded indicators of tax burden and investment activity. Let us determine financial system attractiveness of analyzed countries for income legalization on the base of data presented in Table 1.

Summary results of risk assessment of the use several countries (most of its trading partners) by residents of

Ukraine shows that the most attractive for illegal transactions can be Austria, the Netherlands, Switzerland, Cyprus, Italy and Germany.

Establishment of the level of connection closeness between the level of wealth in the form of GDP per capita and the number of incoming and outgoing SWIFT messages per 100 000 persons is an important factor in attractiveness model verification. It allows us to compare the ratios of the country size in economic terms and in remittances that are the actual indicator of the possible capital movement in the process of income legalization.

Table 1. Summary results of the risk assessment of use the major trading partners of Ukraine for transactions on legalization of proceeds (detail)

Panel A														
Country	2012													
	BS	GA	SWIFT	CF	CR	EG	$\frac{D_a}{GDP_a}/\frac{D_b}{GDP_b}$	$\frac{GDPppp_a}{GDPppp_b}$	$\frac{TTR_b}{TTR_a}$	$\frac{I_a}{GDP_a}/\frac{I_b}{GDP_b}$	L_b^a	T_b^a	CB_b^a	PD_b^a
Italy	2	0	1	0	4	1	4.3	4.0	0.8	1.3	1	0	0	1
Germany	2	0	1	0	1	1	5.4	5.1	1.2	1.9	1	0	0	1
Poland	3	1	1	0	3	1	1.5	2.8	1.3	1.6	1	0	1	1
Russia	3	3	1	3	4	1	1.5	2.3	1.2	1.5	0	0	1	1
Cyprus	2	2	1	2	2	1	9.5	3.6	2.5	7.2	1	1	0	1
Austria	4	0	1	0	2	1	4.8	5.6	1.1	5.2	1	1	0	1
Great Britain	2	0	1	3	2	1	6.7	4.8	1.5	3.5	1	1	0	1
Netherlands	2	0	1	0	1	1	6.3	5.6	1.4	5.5	1	1	0	1
Switzerland	3	0	1	0	1	1	12.9	6.0	1.9	11.2	1	1	0	1
Panel B														
Country	RML													
	2008			2009			2010			2011			2012		
	1*	2*	3*	1*	2*	3*	1*	2*	3*	1*	2*	3*	1*	2*	3*
Italy	19,0	18,5	10,8	22,3	17,3	21,0	20,5	15,5	16,8	38.2	34.2	34.2	39.6	36.1	38.8
Germany	24,3	20,0	9,8	28,3	21,0	19,5	26,8	19,5	15,5	55.7	53.9	123.0	54.0	52.4	119.6
Poland	6,9	6,1	4,5	8,1	6,4	9,0	8,1	6,4	7,3	12.9	10.3	22.4	13.8	11.3	23.0
Russia	5,5	5,0	3,7	6,0	3,8	3,7	6,0	3,8	4,3	8.7	6.0	11.0	10.5	7.9	14.5
Cyprus	5,9	7,0	6,4	6,6	7,4	37,1	6,3	6,0	16,8	12.5	14.6	248.8	10.9	13.4	238.2
Austria	18,6	15,6	10,8	20,1	16,1	25,0	19,6	15,6	19,9	30.1	28.2	146.6	30.2	28.8	160.5
Great Britain	6,8	10,3	3,6	7,5	10,0	6,3	7,1	8,3	5,0	11.2	12.2	64.0	11.6	12.2	65.0
Netherlands	14,1	12,6	6,9	16,1	13,9	16,4	15,8	13,5	12,6	24.6	24.6	190.3	22.3	22.6	174.8
Switzerland	17,0	15,8	9,1	19,5	17,4	22.1	19,1	17,3	15,6	29.7	36.6	798.6	27.4	35.7	757.1

Note: 1* – Calculated by the authors according to the Walker's method, 2* – Calculated by the authors according to the Unger's method, 3* – Calculated by the authors based on the developed model (1).

The basis of analysis is a statistical evaluation of information and international organizations. Volatility is defined by outcomes fluctuations of the economic cycle and macroeconomic instability.

In the second stage, the results are adjusted based on the ratio of cross-border movement of financial resouces through to the level of GDP. This makes it possible to exclude from the list a risky countries that are not specialized in the implementation of international financial transactions (Table 2). This statistical data [1] may indicate the intensity of fi-

nancial transactions, depending on the country size, population size, development level of economy and financial system and other factors. Since the population is one of the most important factors influencing the intensity of financial transactions, let us adjust the volume SWIFT messages to the population size of each country.

So, calculated rating of financial system attractiveness for income legalization demonstrates that the most attractive for legalization are Austria, Switzerland and the Netherlands, that is condi-

tioned in particular by high level of GDP per capita, significant level of legal protection of banking secrecy, absence of conflicts in comparison with those in Ukraine. In addition to the Netherlands and Switzerland, Germany and Poland also showed high growth rate of the attractiveness. The analyzed set of indicators of financial system attractiveness for income legalization does not reflect the full range of relevant factors to evaluate processes of income legalization, because according to The State Statistics Service of Ukraine [8] the significant level of investment flows in Ukraine is connected with Cyprus that is positioned as an offshore zone and is very attractive area for income legalization. Evaluation rating of individual countries may vary slightly to the actual level due to individual differences in determining the attractiveness level.

Some countries tend to create favorable conditions in financial logistics and taxation to attract more investments and capital. However, these intentions also cause the attraction to money laundering, that is why the country has to choose the balance between the desired volume of investments and the level of assessment of funds' sources. The level of tax burden in the form of general tax rate indirectly reflects the countries attractiveness for taxation minimization through capital flows. Along with this the higher level of tax burden increases transaction costs for initiators of financial transactions on the process of money laundering. At the same time, countries with low level of tax burden are very attractive for income legalization, at the expense of dynamic private foreign investment movement.

As an indirect factor of financial system attractiveness for income legalization the investment to GDP ratio can be used in conditions of capital movement from countries with higher taxation levels to countries with lower taxation levels. It evidences about removal of capital to minimize taxation, its legalization in countries with low level of tax regulations and its return to the country of base in the form of direct foreign investment. The investment to GDP ratio above 20% during last few years can testify the favorable investment climate in the country and active capital movement between countries with the aim of legalization and taxation minimization. According to this dynamic of investment to GDP ratio one can conclude about the greatest orientation towards legalization in Cyprus.

So, the adjusted estimate of financial system attractiveness for income legalization allowed us to identify the most attractive directions of cash flows for the income legalization of Ukraine to Austria, the Netherlands, Switzerland, Cyprus, that generally corresponds to the main direction of capital movement to and from Ukraine. Summarizing the results of Unger's integrated model by 9 countries under research, it should be noted that there is high attractiveness of income legalization in Switzerland, Austria and the Netherlands. However, rating of Cyprus attractiveness is not heightened, because of the incomparable levels of GDP per capita in Cyprus and in most attractive for legalization countries, while the rest of the indicators point to the necessity of including the Cyprus to this list. Therefore, the introduction of indicators of tax burden and investment intensity to integrated assessment would enable Unger's model to smooth the impact of GDP per capita on the attractiveness for legalization of the country. Adjusted attractiveness estimate under Unger's model, adjusted on the impact of tax burden and investment activity, indicates the greatest legalization appeal of the following countries: Austria, Cyprus, Switzerland and the Netherlands.

Table 2. Results of countries grouping, which are the Ukraine's largest trading partners in terms of the ratio of cross-border movement of financial resources to GDP for 2008-2012

Country	2008		2009		2010		2011		2012	
	SWIFT messages amount per 100 000 persons	GDP per capita	SWIFT messages amount per 100 000 persons	GDP per capita	SWIFT messages amount per 100 000 persons	GDP per capita	SWIFT messages amount per 100 000 persons	GDP per capita	SWIFT messages amount per 100 000 persons	GDP per capita
Italy	381.4	31800	320.9	30100	331.4	30500	320.5	31000	313.4	30100
Germany	747.8	36200	709.8	34500	780.8	35700	847.6	38700	827.2	39100
Poland	83.2	17800	83.4	18100	97.2	18800	119.0	20500	129.7	21000
Russia	39.4	16500	38.0	15300	43.3	15900	59.8	17000	68.5	17700
Cyprus	875.0	21900	853.6	21200	902.6	21000	764.5	28500	778.6	27500
Austria	992.3	41300	869.8	39700	908.1	40400	986.7	42200	918.0	42500
Great Britain	2526.3	36600	2494.8	34600	2574.4	34800	2830.2	37100	3581.9	36600
Netherlands	1719.6	40400	1837.5	39400	1887.4	40300	2098.9	42700	1952.7	42300
Switzerland	3482.6	42600	3366.3	41600	3520.7	42600	3731.8	45200	3714.2	45300
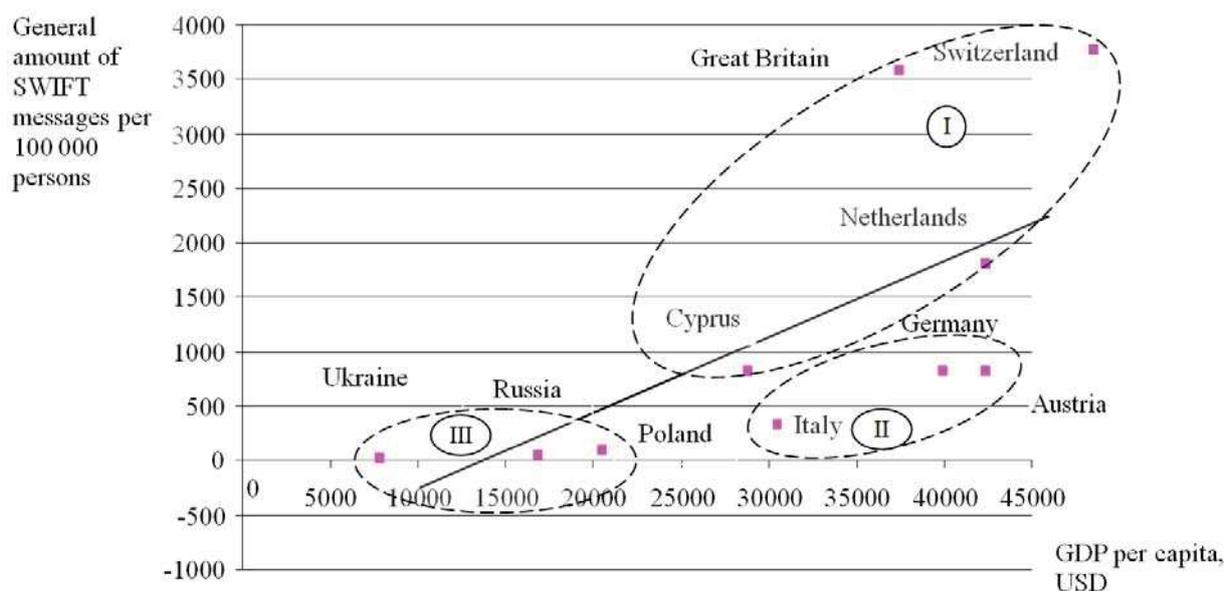
Source: Author's research.

Notes: I – group of countries with high levels of GDP and SWIFT messages per capita, indicating a specialization of these countries on the provision of international financial services. Given the high level of loyalty legal framework for financial monitoring in these countries and the existence of a tax advantage in international competition, these countries are very attractive to legalization of income. II – group of countries with high per capita GDP and low level of cross-border movement of financial resources. The national system of financial monitoring in these countries is quite effective, because they are attractive to legalization of income. III – group of countries with low GDP and the number SWIFT messages per population, given the high overall tax burden causes high levels of illegal outflow of funds received from these countries abroad.

Fig. 1. Ratio of SWIFT messages amount per 100 000 persons to level of GDP per capita for 10 countries under research in 2012

In 2008 specialization in financial services and banking in the countries with high level of GDP per capita, such as Switzerland, Great Britain, and Cyprus has been mentioned. At the same time, in Ukraine, Russia and Poland there were normal trading conditions and low intensity of financial transactions. Trend line indicates the expected number of SWIFT messages with regard to the level of GDP per capita for one of the researched countries in dynamics during 2008-2012. Countries that are above the trend line have high banking activity that is significantly higher than that required for normal trade servicing. That is why they belong to countries that specialize in financial services, and are very attractive for money laundering in conditions of loyal legislation in financial monitoring sphere. At the same time, countries with low level of GDP per capita and large number of SWIFT messages per 100 000 persons indicate capital outflow from the country that may be due to relatively higher levels of overall tax burden.

In 2009 the trend of specialization of individual countries (Switzerland, the UK and Cyprus) in banking and finance was in progress. Russia, Ukraine and Poland continued to join the group of countries with intensive capital outflow, and the main directions of capital outflow from these countries were countries – centres of financial transactions (Switzerland, the UK and Cyprus). In 2009 the

Netherlands has made a slight shift to the zone of countries that specialize in financial services and are attractive for income legalization, and has been on the trend line of SWIFT messages per 100 000 persons and GDP by per capita. In consideration of Unger's estimates and report of Ministry of Finance of the Netherlands in 2006 [9], it indicated the considerable attractiveness of the country for income legalization and a high risk of financial institutions to implicate the Netherlands in such processes.

On the base of analysis of specialization in financial services, countries' wealth dynamic and intensity of financial transfers in 2008-2012 for 10 countries it has been explored that three of them (Switzerland, the UK and Cyprus) are in the group of the most attractive for income legalization that is generally confirmed by calculations. Poland, Russia and Ukraine belong to the group of countries with intensive capital outflow. Germany, Italy and Austria belong to the group of countries with comparing national welfare amounts and financial transactions intensity, while the Netherlands are located in the trend line of SWIFT messages per 100 000 persons and GDP per capita during the analyzed period. This indicates the high risk of state's attraction to the group of countries that are attractive for money laundering. This position is explained by the Netherlands' geographic and economic location as a center of international trade, transit and hiding of the genuine sources of funds.

The results of this study showed that the list of countries that require special attention by the FIU on the possibility of their operations in income legalization ML should include only Cyprus, the Netherlands and Switzerland.

Conclusions

Analyzing the above mentioned the following conclusions can be made:

1. The techniques for evaluating the legalization attractiveness of Walker and Unger has been examined and improved by implementation of the following indicators: overall tax burden and investment activity. Improved methods have been adjusted on indicators of physical distance between the researched states that allowed identifying the most attractive countries for legalization, such as: Cyprus, Switzerland, Austria and the Netherlands. This list also includes Great Britain on the base of individual indicators.

2. The two-level approach was used during the research because when assessing the risks of the country use in the process of income legalization it is difficult to consider all the factors identified by the authors in the relevant formula expression. At the second stage the authors identify the most risky countries for income legalization, which are specialized in financial services and are the most attractive for subjects of income legalization. To assess the models adequacy the analysis of the ratio of SWIFT messages per 100 000 persons and GDP per capita has been made. As a result 10 researched countries has been divided into 3 groups: countries that specialize in financial services and are attractive for income legalization (Cyprus, Switzerland, the UK and the Netherlands), countries with intensive capital outflow (Poland, Russia and Ukraine), and countries with normal financial support of the trade (Austria, Germany and Italy).

3. The calculations allow us to determine that in most cases income legalization in Ukraine is carried out not through trading operations, but through equity transactions in the form of input-output of private foreign investment, including countries with loyal tax and banking law.

4. The adequacy of the modified method is confirmed by empirical data on major centers of income legalization in Europe, reports of relevant international organizations and national statistics in Ukraine.

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