

# RAKSTI

## EKONOMIKA

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### FACTORS OF INSTITUTIONAL ENVIRONMENT ENCOURAGING THE SOUNDNESS OF BANKS: THEIR SELECTION AND ANALYSIS IN THE WORLD COUNTRIES

Scientific literature highlights that the soundness of banks benefits from the quality of institutional environment. Although, there is no univocal opinion concerning the key factors of institutional environment that are crucial for the soundness of banks. Additionally, the previous studies mostly focus on separate factors and concrete case studies. The authors address the issue on factors of institutional environment encouraging the soundness of banks by trying to get the whole picture from the separately studied factors and conduct the analysis at the global level by differentiating countries depending on their level of the soundness of banks. As a result of scientific literature review, the authors offer six factors of institutional environment and select appropriate indicators from the Global Competitiveness Report of the World Economic Forum for empirical analysis. The authors' offered factors are as follow: external economic conjuncture, internal political conjuncture, technological conjuncture, socially humanitarian conjuncture, economic and legal positions of debtors and creditors, quality of analysis and monitoring of banks. Testing the linkage between factors of institutional environment and the soundness of banks in the countries' groups with different level of soundness of banks, the authors conclude that there are both common and distinct features of institutional environment depending on factors and the level of soundness of banks. The common features of institutional environment relate to quality of analysis and monitoring of banks as well as economic and legal positions of debtors and creditors. The distinct features of institutional environment appear in the countries' group with high level of soundness of banks and relate to technological conjuncture and socially humanitarian conjuncture.

**Key words:** factors of institutional environment, soundness of banks, world countries.

#### **Banku stabilitāti veicinošie institucionālās vides faktori: to izvēle un analīze pasaules valstīs**

Zinātniskajā literatūrā tiek uzsvērts, ka institucionālās vides kvalitāte ir nozīmīga banku stabilitātei. Tomēr, vienots viedoklis par banku stabilitāti veicinošās institucionālās vides atslēgas faktoriem nepastāv. Turklāt, iepriekšējie pētījumi pārsvarā koncentrē uzmanību uz atsevišķiem faktoriem un noteiktiem gadījumiem. Autori pēta banku stabilitāti veicinošās institucionālās vides faktorus kompleksi un globālajā līmenī, diferencējot pasaules valstis atkarībā no to banku stabilitātes līmeņa. Zinātniskās literatūras izpētes rezultātā autori piedāvā sešus institucionālās

vides faktorus un izvēlas atbilstošus rādītājus no Pasaules Ekonomikas foruma Globālās konkurētspējas pārskata empiriskās analīzes veikšanai. Autoru piedāvātie faktori ir: ārējā ekonomiskā konjunktūra, iekšpolitiskā konjunktūra, tehnoloģiskā konjunktūra, sociāli humanitārā konjunktūra, uzņēmumu kreditoru un debitoru ekonomiskais un tiesiskais stāvoklis, banku uzraudzības kvalitāte. Pārbaudot sakarību starp institucionālās vides faktoriem un banku stabilitāti valstu grupās ar atšķirīgu banku stabilitātes līmeni, autori secina, ka pastāv gan kopējās, gan atšķirīgas institucionālās vides iezīmes atkarībā no faktoriem un banku stabilitātes līmeņa. Kopējās institucionālās vides iezīmes ir attiecināmas uz banku analīzes un monitoringa kvalitāti, kā arī uz debitoru un kreditoru ekonomisko un tiesisko stāvokli. Atšķirīgas institucionālās vides iezīmes parādās valstu grupā ar augstu banku stabilitātes līmeni un ir attiecināmas uz tehnoloģisko konjunktūru un sociāli humanitāro konjunktūru.

**Atslēgas vārdi:** institucionālās vides faktori, banku stabilitāte, pasaules valstis.

### **Факторы институциональной среды, способствующие устойчивости банков: их выбор и анализ в странах мира**

В научной литературе акцентируется важность качества институциональной среды для стабильности банков. Однако однозначного мнения по поводу ключевых факторов институциональной среды, способствующих стабильности банков, пока не существует. К тому же в предыдущих исследованиях внимание, главным образом, фокусируется на отдельных факторах и конкретных случаях. Авторы статьи исследуют вопрос о факторах институциональной среды, способствующих стабильности банков, комплексно и на глобальном уровне — посредством дифференцирования стран мира в зависимости от уровня стабильности банков. В результате анализа научной литературы авторы предлагают шесть факторов институциональной среды и для эмпирического анализа выбирают соответствующие показатели из Отчёта глобальной конкурентоспособности Всемирного экономического форума. Факторы, предложенные авторами: внешнеэкономическая конъюнктура, внутривнутриполитическая конъюнктура, технологическая конъюнктура, социально-гуманитарная конъюнктура, экономическое и правовое положение дебиторов и кредиторов компаний, качество анализа и мониторинга банковских учреждений. Проверив связь между факторами институциональной среды и стабильностью банков, авторы делают вывод, что существуют как общие, так и дифференцирующие характеристики институциональной среды в зависимости от факторов и уровня стабильности банков. Общие характеристики институциональной среды относятся к качеству анализа и мониторинга банков, экономическим и правовым позициям дебиторов и кредиторов. Дифференцирующие характеристики институциональной среды появляются в группе стран с высокой стабильностью банков и относятся к технологической конъюнктуре и социально-гуманитарной конъюнктуре.

**Ключевые слова:** факторы институциональной среды, стабильность банков, страны мира.

## **Introduction**

Institutional environment and the soundness of banks are correlated variables. For example, as J. Baltgailis, V. Menshikov and V. Šipilova (2018) conclude there is positive and moderately close linkage between institutional environment and the soundness of banks at the global level. Thus, existence of the linkage indicates on possibilities to maintain and increase the soundness of banks through improvements in institutional environment.

In this regard, X. Hou and Q. Wang (2016) indicate that the soundness of banks benefits from the quality of institutional environment. Although, opinion about key factors of institutional environment for the soundness of banks still is developing. Scientific literature focuses on variety of factors, for example, supervisory processes, political stability, economic freedom (e.g., Chan et al. 2015), risk management culture (e.g., Berglund, Makinen 2019), social capital (e.g., Jin et al. 2017), and institutional reforms (e.g., Fang et al. 2014) etc.

Given differences in opinions, the authors address the issue on factors of institutional environment that may encourage the soundness of banks. It is noteworthy that the previous studies mainly focus on separate factors and certain case studies. Therefore, the authors try to get the whole picture from the separately studied factors and conduct the analysis at the global level by differentiating countries depending on their level of soundness of banks.

As a result of scientific literature review, authors employ interdisciplinary approach and offer six factors of institutional environment as encouraging the soundness of banks. These factors are as follow: external economic conjuncture, internal political conjuncture, technological conjuncture, socially humanitarian conjuncture, economic and legal positions of debtors and creditors, quality of analysis and monitoring of banks. The selected factors are tested empirically on the linkage with the soundness of banks using data of the Global Competitiveness Report (GCR) (World Economic Forum 2018). The authors select indicators from the GCR (World Economic Forum 2018), which by their sense are appropriate for the characterising of the set of selected factors.

The analysis results demonstrate that there are both common and distinct features of institutional environment encouraging the soundness of banks in countries with different level of soundness of banks. The common features of institutional environment relate to quality of analysis and monitoring of banks as well as economic and legal positions of debtors and creditors. Indicators characterising quality of analysis and monitoring of banks as well as economic and legal positions of debtors and creditors are linked with the soundness of banks regardless of the level of soundness of banks. The distinct features relate to socially humanitarian conjuncture and technological conjuncture. Indicators characterising socially humanitarian conjuncture and technological conjuncture are linked with the soundness of banks mostly at the higher level of soundness of banks.

## **Literature review**

The banking system is an integral and very important part of the entire societal system, especially the country's economy. The banking system is organically included not only in the financial and diverse production cycles, but also in many societal development processes. Studies on the problems of banking systems are supplemented by other theoretical approaches, especially institutionalism.

The concept of "institute" currently is interpreted quite broadly, including a system of norms, traditions, and habits that are rooted and supported by formal and informal

mechanisms as well as official supervisory activities. Scientists highlight the significance of institutional environment, when studying both overall economic issues (e.g., Komarova et al. 2018) and specified financial issues (e.g., Bermpei et al. (2018). Institutional approach significantly expands the range of tasks that can be solved for improving the quality of banks, especially their stability. According to institutional approach, focus has to be paid on transaction costs (e.g., Shirley et al. 2015; Havrylyshyn, Srzentic 2015), which may increase during the processes of changes within the institutional environment.

The banking system is a complex phenomenon. Assessing the quality of banking system functioning allows using its various options depending on the objectives of the study, or conducting a comprehensive audit taking into account one or another set of qualitative characteristics of banking systems. For example, scientists pay attention to such characteristics as stability, balance and reliability (Afanas'eva 2015). According to O. Afanas'eva (2015), these terms are not equivalent, they are not synonyms, and they are interrelated and correlated. Moreover, the central place among these concepts is given to the stability of banking systems. True, the stability of the banking system often is interpreted very broadly when all the elements and criteria for its effective functioning in the economy and in society as a whole are listed.

The stability of the banking system is a qualitative characteristic of its condition, in which the essence and purpose of both the entire banking system and an individual credit organization are realized. In this case, stability reflects changes in the process of functioning of the banking system towards positive, progressive development. Stability is a guarantee of the system's preservation, its ability to withstand force majeure and other non-routine factors and circumstances, without changing own structure. Thus, if the banking system has stability, it is able to maintain equilibrium and restore stability after external shocks or pressure, any deviations from the usual parameters caused by crisis phenomena (recession, financial crisis, transformation of the economy, etc.).

It is noteworthy that international financial organizations, research centres, in their documents and reports when assessing the quality of functioning of banking systems, prefer to use the concept of "stability".

Within the framework of the institutional approach, the banking system can be considered as a special economic institution, which largely determines the successful and stable development of the economy and the entire social system due to its unique functions. Although, the banking system also is the subject to numerous external and internal factors affecting differently its efficiency and stability. External factors that interest us in the framework of this article can be selected from different areas, given the involvement of the banking system in the actually all social relations. Therefore, one may differentiate these factors abstractly-theoretically, that is, distinguish and evaluate according to the criterion of the nature of these relations – economic, political, legal, social, cultural relations. Analysis of external factors from such set requires a good understanding of the specifics of not only the economic subsystem of society, but also other, non-economic subsystems. There is another approach to highlighting the factors of interest to us – rationally pragmatic. In this case, priority is given, as it

were, to the strategies and work plans of the owners, managers and regulators of banks. Here the focus is put to the search for the dominant of both positive and the most negative factors affecting the banking system and individual elements of its structure.

The authors offer possible set of factors of institutional environment encouraging the soundness of banks:

- external economic conjuncture;
- internal political conjuncture;
- technological conjuncture;
- socially humanitarian conjuncture;
- economic and legal positions of debtors and creditors;
- quality of analysis and monitoring of banks.

The external economic conjuncture is cross-border in nature, being directly dependent on the place and role of the country's economy in the global world at a given moment, how stable or fragile it is. Policy fulfils the goal-setting function, in relation to all other subsystems, including the economy and its long-term perspectives. Additionally, as B. Ashraf (2017) concludes, political institutions affect banks' behaviour in terms of risk-taking. Environment of financial services is rapidly changing because financial technologies (fintech) change the existing financial products and services (PwC 2016) and become a new way, in which financial business operates (PwC 2019). Thus, technologies and their use become crucial for financial services. The problems of social stratification, the formation of the middle class and the elimination of poverty are significant for banking systems, because it needs a constant influx of monetary accumulations of the population, when a significant part of them is provided by the wealthy classes. Special significance in this case has to be devoted to middle class (e.g., Menshikov 2016), as well as to financial literacy of society (e.g., Caplinska, Ohotina 2019). The bank is perhaps the most indicative case when the financial and economic situation of its debtors (borrowers), their ability to fulfil their obligations to it directly affect the ability of the bank itself seamlessly to make payments to its creditor customers. Usually, the banking system rightly is given a dominant position in solving the country's economic problems. Most of the recent economic crises matured precisely within the financial sector, and banking systems was the first thing that most often the states and international financial institutions hastened to save. Especially topical such rescue is in the countries with weak regulations and weak shareholder and creditor rights (Abreu et al. 2019). That is why timely and comprehensive analysis of the credit market is so important.

Such considerations stimulated the authors' interest to consider the offered six factors of institutional environment as encouraging for the soundness of banks. It is noteworthy that the issues on institutional environment and the soundness of banks intensively are debated in the scientific areas. Table 1 offers some examples.

Table 1

**Studies devoted to the issues of institutional environment  
and the soundness of banks**

Research authors	Research focus	Research findings
Y. Fang et al. (2014)	Institutional reforms in transition countries and their effects on bank risks.	Reforms of legal institutions increases bank stability. Such reforms may depend from banking reforms.
S. Chan et al. (2015)	Impact of market structure on bank efficiency and the role of institutional framework.	Better institutional framework reduces negative effects from market concentration.
J. Jin et al. (2017)	How social capital relates to bank stability.	Banks in high social capital regions are more stable during crises.
B. Ashraf (2017)	Impact of political institutions on bank risk-taking behaviour.	Sound political institutions stimulate higher bank risk-taking.
T. Bermpei et al. (2018)	If institutional quality conditions the impact of bank regulations and supervision on bank stability.	Such conditioning effects exist, but these depend on the type of institutional quality.
T. Berglund, M. Makinen (2019)	If banks take into account experience of severe financial crisis.	Nordic banks demonstrate that experience of the previous severe financial crises were taken into account what increases their stability.
J. Abreu et al. (2019)	Which commercial banks are more likely need to receive state rescue during financial crisis?	Weak regulations and weak shareholder and creditor rights are prerequisites for bank instability and necessity in state interventions during financial crisis.
H. Yin (2019)	If bank globalization affects financial stability.	Bank globalization affects financial stability, but effects are dependent on the regulatory and institutional framework of the host country.

Source: compiled by the authors.

Empirical research background is wide. Although, mainly studies devote attention to separate and/or only several factors within one research. Such studies focus on changes and quality of institutional environment. Additionally, the focus mostly is put on the case studies. The novelty of the authors' research is granted in attempts to get the whole picture about the offered factors of institutional environment encouraging the soundness of banks as well as the analysis at the global level.

### Methodology and data

The article is intended to analyse the linkage between the authors' offered factors of institutional environment with the soundness of banks in the world countries. The authors pay attention to the different level of soundness of banks in the world countries.

For the analysis purposes, the authors choose indicators that are appropriate for characterizing the selected factors of institutional environment encouraging the soundness of banks. Given that the selected factors are of interdisciplinary nature, the authors solve data availability issues through employing secondary data from the Global Competitiveness Report (GCR) (World Economic Forum 2018). Additionally, GCR offers the data on the soundness of banks, which are employed in the analysis as dependent variable. It is noteworthy that the authors use the term soundness of banks instead of stability of banks because the analysis within this article is based on the certain indicator, i.e. soundness of banks, from the Global Competitiveness Report. The set of indicators chosen for the analysis according to the selected factors of institutional environment is presented in the Table 2.

Table 2

**List of appropriate indicators for the selected factors of institutional environment**

<b>Factors of institutional environment encouraging the soundness of banks</b>	<b>Selected appropriate indicators from the Global Competitiveness Report</b>
External economic conjuncture	Debt dynamics (4.02)
Internal political conjuncture	Budget transparency (1.06)
	Burden of government regulation (1.10)
	Future orientation of government (1.13)
	Conflict of interest regulation (1.19)
Technological conjuncture	E-participation index (1.12)
	Internet users (3.05)
	Digital skills among population (6.05)
Socially humanitarian conjuncture	Social capital (1.05)
	Income Gini
Economic and legal positions of debtors and creditors	Judicial independence (1.07)
	Incidence of corruption (1.14)
	Property rights (1.15)
	Shareholder governance (1.20)
Quality of analysis and monitoring of banks	Efficiency of legal framework in challenging regulations (1.08)
	Efficiency of legal framework in settling disputes (1.11)
	Strength of auditing and reporting standards (1.18)
	Banks' regulatory capital ratio (9.09)

**Note:** Detailed explanations for indicators are available in the Global Competitiveness Report 2018 in the Appendix "Technical notes and sources", p. 633 (World Economic Forum 2018).

**Source:** compiled by the authors.

Table 2 presents indicators, which authors test empirically within the analysis using data for the year 2018. It is noteworthy to indicate that the selected indicators solve data availability and allow analysing the issue empirically, but at the same time, they

set limitations for the analysis. Thus, the factors selected as encouraging the soundness of banks numerically are presented through the selected data prism in the year 2018.

The next step of the analysis is differentiation of countries depending on their level of the soundness of banks. At this stage, authors use data from the GCR (World Economic Forum 2018) again. The world countries are differentiated based on the indicator “soundness of banks (9.06)”. According to the numerical values of the soundness of banks from the GCR (World Economic Forum 2018), it is possible to separate countries in three groups – countries with high soundness of banks, countries with moderate soundness of banks, countries with low soundness of banks. The additional group for the analysis is all countries. There are countries that were excluded from the analysis due to lack of data. Division of the countries according to their soundness of banks as well as the countries excluded from the analysis are presented in the Table 3.

Table 3

**The cases for the analysis according to the data  
on the soundness of banks, 2018**

<b>Countries with HIGH soundness of banks (case HIGH)</b>	Values of soundness of banks (9.06): from 6 to 7 n=11 countries	Australia, Canada, Chile, Czech Republic, Finland, Guatemala, Israel, Luxembourg, Norway, Slovak Republic, Switzerland
<b>Countries with MODERATE soundness of banks (case MODERATE)</b>	Values of soundness of banks (9.06): 3.6–5.9 n=81 countries	Albania, Argentina, Armenia, Austria, Azerbaijan, Belgium, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, China, Colombia, Costa Rica, Cote d'Ivoire, Croatia, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Eswatini, France, Georgia, Germany, Ghana, Guinea, Honduras, Hungary, Iceland, India, Indonesia, Ireland, Jamaica, Japan, Jordan, Kenya, Korea Rep., Kyrgyz Rep., Lao PDR, Latvia, Lebanon, Liberia, Lithuania, Macedonia FYR, Malawi, Malaysia, Malta, Mauritius, Mexico, Montenegro, Morocco, Namibia, Nepal, Netherlands, Nicaragua, Nigeria, Pakistan, Panama, Paraguay, Peru, Romania, Rwanda, Senegal, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Tanzania, Thailand, Trinidad and Tobago, Turkey, Uganda, United Kingdom, United States, Uruguay, Zambia
<b>Countries with LOW soundness of banks (case LOW)</b>	Values of soundness of banks (9.06): 1.7–3.5 n=28 countries	Algeria, Angola, Bangladesh, Benin, Burundi, Chad, Congo Democratic Rep., Cyprus, Ethiopia, Greece, Iran Islamic Rep., Italy, Kazakhstan, Lesotho, Mali, Mauri-

*Sequel to Table 3 see on the next page*



*Sequel to Table 3*

		tania, Moldova, Mongolia, Mozambique, Portugal, Russian Federation, Sierra Leone, Tajikistan, Tunisia, Ukraine, Viet Nam, Yemen, Zimbabwe
<b>Countries excluded from the analysis because of data availability in GCR according to the selected indicators</b>	Values of soundness of banks (9.06): from 3.3 to 6.4 n=20 countries	Bahrain, Brunei Darussalam, Cambodia, Cape Verde, Gambia, Haiti, Hong Kong, Kuwait, New Zealand, Oman, Philippines, Poland, Qatar, Saudi Arabia, Serbia, Seychelles, Singapore, Taiwan, United Arab Emirates, Venezuela

**Note:** Soundness of banks (9.06) – Response to the survey question “In your country, how do you assess the soundness of banks?” [1 = extremely low banks may require recapitalization; 7 = extremely high banks are generally healthy with sound balance sheets] (World Economic Forum 2018, p. 640).

**Source:** compiled by the authors using data from the World Economic Forum 2018.

Table 3 presents four cases for the analysis, totally 120 world countries. The biggest countries' group with 81 country is characterised with moderate level of soundness of banks. The smallest countries' group with 11 countries is characterised with high level of soundness of banks. It is noteworthy to indicate that the countries' group with low level of soundness of banks is relatively small with only 28 countries from 120 countries under review. The groups include countries that are highly differentiated both geographically and economically. Within the analysis, this provides exclusive focus on the soundness of banks regardless of the level of economic development and geographical positions.

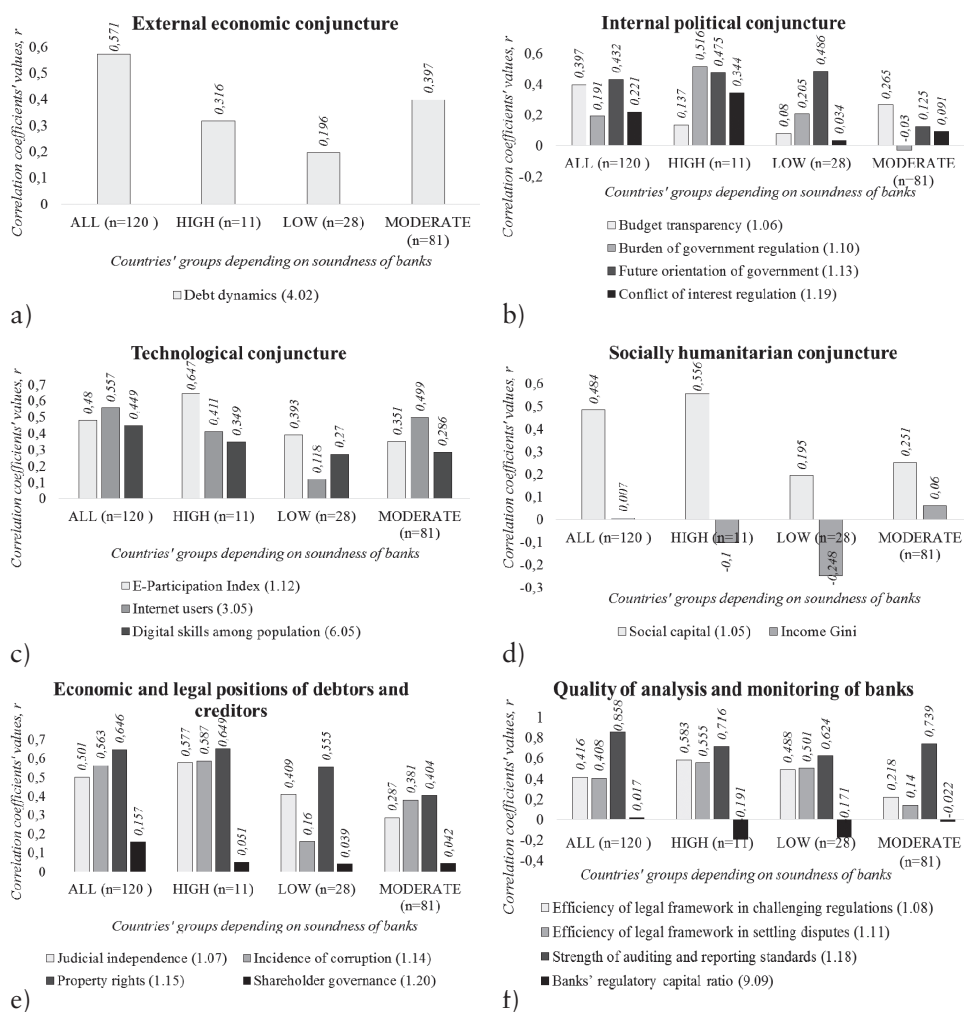
The next step of the analysis is calculation of correlation coefficients between indicators characterising factors encouraging the soundness of banks and the soundness of banks. For the correlation, the authors logically assumed that the indicators characterising factors encouraging the soundness of banks are independent variables and the soundness of banks is dependent variable. This assumption allows for concluding about significance of each indicator for the soundness of banks within the linkages detected. Correlation analysis and characteristics of numerical values occur according to the guidelines for social sciences as mentioned in I. Arhipova and S. Balina (2003).

Finally, the authors summarize the closest linkages between soundness of banks and factors of institutional environment encouraging the soundness of banks within each countries' group under review. Detecting of the closest linkages within each countries' group presents common and distinct features for linkages between the selected factors of institutional environment and the soundness of banks. This allows for understanding the factors, which are linked more with the soundness of banks at each stage of soundness banks.

## Research results

The analysis results characterise linkages between the soundness of banks and factors of institutional environment encouraging the soundness of banks using the set of indicators from the GCR (World Economic Forum 2018). Correlation coefficients' values are summarised in the Figure 1 (a, b, c, d, e, f).

Figure 1  
Correlation between the soundness of banks and indicators selected for the offered factors of institutional environment encouraging the soundness of banks, 2018, Pearson correlation



Source: authors' calculations using data from the World Economic Forum 2018.

Indicator selected for the “external economic conjuncture” demonstrates moderately close linkage with the soundness of banks. The linkage between changes in public debt to GDP ratio and the soundness of banks is positive and moderately close for the group of all countries under research ( $r_{all}=0.571$ ). However, correlation become weaker in other countries’ groups. Correlation coefficients for the group HIGH and for the group MODERATE indicate on weak linkages between the soundness of banks and debt dynamics, although, still positive (respectively,  $r_{high}=0.316$  and  $r_{moderate}=0.397$ ). The countries’ group with LOW soundness of banks in 2018 experienced the weakest linkage between the soundness of banks and debt dynamics ( $r_{low}=0.196$ ) within the case under research. Theoretically, country’s debt dynamics is significant for the soundness of banks. The results of correlation coefficients may be explained by the highly differentiated public debt and credit ratings in countries under research. Thus, calculations made using appropriate indicator from the GCR allows concluding that external economic conjuncture is significant, but at the moment is not crucial for the soundness of banks within the cases under research.

Indicators selected for the “internal political conjuncture” demonstrate different correlation in each countries’ group. Globally, the linkage with the soundness of banks is positive, although, moderately close or weak. The highest correlation coefficients’ values are observed between the soundness of banks and future orientation of government ( $r_{all}=0.432$ ) and budget transparency ( $r_{all}=0.397$ ) within the countries’ group ALL. Future orientation of government similarly correlates with the soundness of banks in countries’ group HIGH and LOW, respectively  $r$  values are 0.475 for the case HIGH and 0.486 for the case LOW. The case of countries with high soundness of banks indicates on the moderately close linkage between the burden of government regulation and the soundness of banks ( $r_{high}=0.516$ ). This is the highest correlation coefficient for the indicators selected for the internal political conjuncture across countries’ groups. Although, burden of government regulation demonstrates two to five times lower correlation coefficients’ values in other countries’ groups under research (respectively,  $r_{all}=0.191$ ,  $r_{low}=0.205$ ,  $r_{moderate}=-0.03$ ). Linkage between the soundness of banks and future orientation of government is the closest ( $r_{low}=0.486$ ) in the countries with low soundness of banks. Other indicators selected for the factor of internal political conjuncture in this case under research demonstrate brightly lower correlation values. The case MODERATE experiences low values of correlation coefficients. The highest correlation coefficient is observed between the soundness of banks and budget transparency, where  $r_{moderate}=0.265$  what indicates on weak linkage. Correlation coefficients allow concluding that future orientation of government is the most common indicator of internal political conjuncture, which reaches the closest linkage with the soundness of banks. According to the nature of this indicator (World Economic Forum 2018), it is possible to conclude that entrepreneurs link the soundness of banks with digital business models, stable environment for doing business, effective government’s reaction on economic, societal and demographic changes and government’s long-term vision in place.

Indicators selected for the “technological conjuncture” positively correlates with the soundness of banks in all countries’ groups. The closest linkage is observed between the soundness of banks and E-participation index for the case with high soundness of

banks ( $r_{\text{high}}=0.647$ ). In other cases under research this indicator is similarly positively correlated with the soundness of banks (respectively,  $r_{\text{all}}=0.480$ ,  $r_{\text{low}}=0.393$ ,  $r_{\text{moderate}}=0.351$ ). Linkage between internet users and the soundness of banks is positive and moderately close in all countries' groups except countries with low soundness of banks. The closest correlation is observed in group ALL ( $r_{\text{all}}=0.557$ ). In the countries' groups HIGH and MODERATE the indicator internet users correlates with the soundness of banks similarly ( $r_{\text{high}}=0.411$ ,  $r_{\text{moderate}}=0.499$ ), but in countries' group LOW correlation is weak and  $r_{\text{low}}=0.118$ . Indicator digital skills among population demonstrates lower correlation coefficients with the soundness of banks ( $r_{\text{all}}=0.449$ ,  $r_{\text{high}}=0.349$ ,  $r_{\text{low}}=0.270$ ,  $r_{\text{moderate}}=0.286$ ) than other indicators of the factor of technological conjuncture (except the case LOW). Calculations made and the nature of indicators used allow indicating that the use of online services and the use of internet for any purposes are recognized as positively linked with the soundness of banks.

Indicators selected for the "socially humanitarian conjuncture" are linked with the soundness of banks both positively and negatively depending on indicator under review. Social capital positively correlates with the soundness of banks. This linkage is moderately close for the case HIGH ( $r_{\text{high}}=0.556$ ). The cases ALL, LOW and MODERATE demonstrate weak correlation between social capital and the soundness of banks ( $r_{\text{all}}=0.484$ ,  $r_{\text{low}}=0.195$ ,  $r_{\text{moderate}}=0.251$ ), but the coefficients greatly vary. Correlation between the soundness of banks and Income Gini is very weak and even reaches negative coefficients' values for the cases HIGH and LOW ( $r_{\text{all}}=0.007$ ,  $r_{\text{high}}=-0.100$ ,  $r_{\text{low}}=-0.248$ ,  $r_{\text{moderate}}=0.060$ ). As GCR indicates in its technical notes, social capital means social cohesion and engagement, community and family networks, and political participation and institutional trust (World Economic Forum 2018) what according to the calculations made for the cases under research is linked positively with the soundness of banks. Negative correlation between Income Gini and the soundness of banks indicates on significance of reducing of poverty for the better soundness of banks.

The "economic positions of debtors and creditors" are presented with four indicators within the analysis. Property rights is the indicator that dominates in all cases under research, although, demonstrates moderately close to weak correlation coefficients' values ( $r_{\text{all}}=0.646$ ,  $r_{\text{high}}=0.649$ ,  $r_{\text{low}}=0.555$ ,  $r_{\text{moderate}}=0.404$ ). Protection of property rights including financial assets is linked positively and mostly moderately close with the soundness of banks regardless of the level of soundness of banks. The next indicator that is recognized as positively and moderately close linked with the soundness of banks is incidents of corruption. Although, values of correlation coefficients for this factor varies across cases depending on the level of soundness of banks. For example, incidents of corruption correlates with the soundness of banks in the countries' group HIGH much stronger ( $r_{\text{high}}=0.587$ ) than in countries' group LOW ( $r_{\text{low}}=0.160$ ). This indicates on highly differentiated perceptions of corruption in the public sector across countries with different level of soundness of banks. Judicial independence stronger correlates with the soundness of banks in the countries' group HIGH ( $r_{\text{high}}=0.577$ ), although, other cases under research demonstrate positive and moderately close linkage (respectively,  $r_{\text{all}}=0.501$ ,  $r_{\text{low}}=0.509$ ) also. Thus, independent judicial system is under-

stood as related to the soundness of banks. The weakest correlation is observed between the soundness of banks and shareholder governance in all cases under research. Correlation is positive, but weak. Respectively, correlation coefficients' values for the linkage between the soundness of banks and shareholder governance are as follow –  $r_{all}=0.157$ ,  $r_{high}=0.039$ ,  $r_{low}=0.042$ ,  $r_{moderate}=0.051$ . The calculations made indicate that the shareholders' rights in corporate governance are not related strongly to the soundness of banks.

Indicators of illustrating the “quality of analysis and monitoring of banks” are linked with the soundness of banks both positively and negatively depending on the indicator under review. It is noteworthy to indicate that correlation between the soundness of banks and strength of auditing and reporting standards has the highest coefficients and the strongest linkage among all indicators under review in all countries' groups ( $r_{all}=0.858$ ,  $r_{high}=0.716$ ,  $r_{low}=0.624$ ,  $r_{moderate}=0.739$ ). This means that strength of auditing and reporting standards is understood as crucial for the soundness of banks in all countries regardless of the level of soundness of banks. Efficiency of legal framework in challenging regulations and efficiency of legal framework in settling disputes are linked similarly and moderately close with the soundness of banks in the countries' groups ALL, HIGH, LOW, and only in the countries' group MODERATE correlation coefficients are lower and indicate on weak linkage. Very weak and even negative correlation is observed between the soundness of banks and banks' regulatory capital ratio. Thus, there is no sufficient linkage observed between the ratio of total banks' regulatory capital to total banks' assets, weighted according to the risk of these assets and soundness of banks. This may be explained by highly differentiated countries' experience in regulatory processes.

Mostly, the linkages between the selected indicators and the soundness of banks vary among the countries' groups depending on the level of soundness of banks. The next table (see Table 4) summarizes the closest linkages according to the correlation coefficients' values.

Table 4

**The closest linkages between the soundness of banks and indicators  
selected for the offered factors of institutional environment  
encouraging the soundness of banks**

Countries' groups depending on the level of sound- ness of banks	Factors of institutional environment encouraging soundness of banks	Selected indicators from the Global Competitiveness Report	The highest correlation coefficients' values, r, (linkage)
1	2	3	4
ALL countries (n=120)	Quality of analysis and monitoring of banks	Strength of auditing and reporting standards	0.858 (close)
	Economic and legal positions of debtors and creditors	Property rights	0.646 (moderately close)

*Sequel to Table 4 see on the next page*

Sequel to Table 4			
1	2	3	4
HIGH (n=11)	Quality of analysis and monitoring of banks	Strength of auditing and reporting standards	0.716 (moderately close)
		Efficiency of legal framework in challenging regulations	0.583 (moderately close)
		Efficiency of legal framework in settling disputes	0.555 (moderately close)
	Technological conjuncture	E-Participation Index	0.647 (moderately close)
	Socially humanitarian conjuncture	Social capital	0.556 (moderately close)
	Economic and legal positions of debtors and creditors	Property rights	0.649 (moderately close)
		Incidence of corruption	0.587 (moderately close)
		Judicial independence	0.577 (moderately close)
LOW (n=28)	Quality of analysis and monitoring of banks	Strength of auditing and reporting standards	0.624 (moderately close)
	Economic and legal positions of debtors and creditors	Property rights	0.555 (moderately close)
MODERATE (n=81)	Quality of analysis and monitoring of banks	Strength of auditing and reporting standards	0.739 (moderately close)

Source: elaborated by the authors using data from the World Economic Forum 2018.

The summary of calculations made allow concluding that *quality of analysis and monitoring of banks* and *economic and legal positions of debtors and creditors* are the factors of institutional environment, which are significant for the soundness of banks in all countries' groups regardless of the level of soundness of banks. For these factors, the common indicator that strongly or moderately close correlates with the soundness of banks in all countries is the strength of auditing and reporting standards. Correlation coefficients for this indicator vary from 0.624 to 0.858.

Other analysis results indicate that the countries' group with high level of soundness of banks experiences the wider linkages between indicators under research and the soundness of banks than countries' groups with the lower level of soundness of banks. For example, besides "quality of analysis and monitoring of banks" and "economic and legal positions of debtors and creditors" the group with high soundness of banks demonstrates moderately close linkage with indicators of "technological conjuncture" and "socially humanitarian conjuncture".

## Conclusions

1. According to the literature review, the authors offer six factors of institutional environment, which potentially are linked with the soundness of banks and may be crucial for supporting, saving and improving the soundness of banks. These factors are as follow: external economic conjuncture, internal political conjuncture, technological conjuncture, socially humanitarian conjuncture, economic and legal positions of debtors and creditors, quality of analysis and monitoring of banks.
2. Given that these factors are of interdisciplinary nature and availability of coherent numerical data is the issue, the authors offer as possible solution to select appropriate indicators from the Global Competitiveness Report for the empirical analysis. For the analysis purposes, 18 indicators that characterise offered factors of institutional environment as well as the indicator soundness of banks were selected from the Global Competitiveness Report.
3. Correlation analysis between the soundness of banks and selected indicators in countries with different level of soundness of banks allows detecting the closest linkages. The linkages are both similar and differential for the countries' groups depending on the indicators and the level of soundness of banks.
4. The common feature of the countries under research relates to the closest linkages between the soundness of banks and indicators of the economic and legal positions of debtors and creditors and quality of analysis and monitoring of banks.
5. The distinct feature of the countries under research relates to the additional closest linkages between the soundness of banks and indicators of the technological conjuncture and socially humanitarian conjuncture.
6. It is noteworthy that only in the countries with higher level of soundness of banks one may observe the closest linkages between the soundness of banks and development level of society and technology. In the countries with the lower level of soundness of banks, linkages with financial interests and supervisory duties dominate.
7. Given that for the correlation analysis purposes the authors logically assumed that the soundness of banks is dependent variable and indicators characterising the factors encouraging the soundness of banks are independent variables, it is possible to highlight that at different stages of soundness of banks there are different significant factors of institutional environment for the soundness of banks. Thus, according to the calculations made, it is possible to conclude that at the lower stages of soundness of banks quality of analysis and monitoring of banks and economic and legal positions of debtors and creditors are more likely to be linked with the soundness of banks through the institutional environment. At the higher stage of soundness of banks, technological conjuncture and socially humanitarian conjuncture additionally are more likely to be linked with the soundness of banks through the institutional environment.



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