



FINANCIAL SYSTEM PERFORMANCE IN EUROPEAN UNION COUNTRIES: DO COUNTRY'S GOVERNANCE INDICATORS MATTER?

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Abstract. The study analyses the impact of country's governance factors on the financial behaviour and performance of financial intermediaries operating in European Union countries, by covering the period 2000–2017. Empirical evidence provided by the paper relies on a set of financial and political factors that has not been previously studied. Four indicators are jointly used as proxies for capturing the various dimensions of a country's good governance, while 21 financial indicators represent the alternative dependent variables meant to comprehensively depict the banking sector and capital market development. Each panel regression has been controlled for country's degree of economic development and its membership to OECD and euro-zone. The findings indicated that various dimensions of political factor caused different effects on financial sector features. Control of corruption, solid political and economic stability determine significant effects on most financial variables considered (almost two-thirds of the financial indicators considered). Even after controlling for the lagged effect of governance factors the main results hold, in that monitoring corruption, maintaining political stability and designing sound economic policies still have an impact on most financial indicators considered. Another interesting conclusion supported by the results is that not all political instability indicators are detrimental for banking and stock market functioning.

Keywords: banking system, stock market, governance indicators, regulatory quality, political instability, economic policy uncertainty, state fragility, corruption, panel regression.

JEL Classification: C23, G21, H11.

Introduction

Financial systems are evolving at the confluence of complex and heterogeneous political, social and economic factors. Economic literature, although witnessing various approaches, emphasizes a common denominator: a country's political stability, regulatory quality and level of corruption are determining in a considerable extent the performance and degree of development of a financial system.

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The importance and influence of the political factor translated in government's ability to ensure a country's good governance by designing and implementing sound and sustainable policies and regulations, is increasingly the subject of research papers attempting to uncover whether there is a direct and significant relationship with economic and financial fundamentals.

The theoretical and empirical assessment of political and regulatory instability effects on financial system performance, in terms of banking and stock market developments, has become an important topic of debate especially after the 2008 financial crisis.

Several European strategies and Action Plans for inclusive and smart economic growth, for better connecting the financial industry with socially responsible, sustainable investments or the ample regulatory and supervisory reforms meant to restore financial stability in EU have been transposed in the national laws and have determined a series of radical transformations. Although the overall opinion is that these reforms and action plans have beneficial effects for the economy and the financial system, they are continuously monitored "to check whether they are delivering as intended and to assess whether the new rules have any unintended consequences", especially on the soundness, volatility and risks in the financial system (European Commission, 2020).

In a complementary manner, international organizations (e.g. the World Bank) as well as research centers have proposed various measures and proxies of a country's good governance, by relying on public perception survey data gathered from people, companies or expert respondents in developed and developing countries. The result is represented by the development of several complementary indicators and indices, each of them focusing on a specific governance dimension.

The paper attempts to enrich the existing strand of literature, by analyzing the link between countries' quality of governance and the main components of a financial system, namely the banking system and the capital market. More specifically paper's aim is to assess whether various dimensions of governance, represented by political instability, regulatory quality, control of corruption, and economic policy uncertainty may trigger effects on the further development and evolutions in the banking and stock market.

The novelty of this research is that it examines the influence of country's governance quality on a broad set of financial indicators. The analysis significantly differentiates from previous research as it jointly considers several complementary measures of country's governance in order to acquire an in-depth picture of the relationship established with the financial sector. This empirical approach emphasizes these linkages from multiple standpoints, such as banking system access, stability, efficiency and depth and respectively stock market development. The sample comprises data from 28 European Union countries in the period 2000–2017, with annual frequency. It is the most comprehensive study in terms of financial indicators' coverage and number of countries considered. It contributes to existing literature by providing new results, focused on a single geographic region (European countries, as opposed to other studies focused on a single country or on a group of countries pertaining to different geographical areas). The final purpose relates to increasing policymakers' awareness on the deep and broad implications triggered by political decisions on banking and stock market developments.

This research is justified also by the fact that it addresses a real, widespread concern at European level: do increased political uncertainty, unpredictable changes of regulations, civil society protests and increased perception of the corruption phenomenon trigger any effects on the financial system sound functioning and development prospects? Answering this question is of interest for the research community, for European and national decision makers, for professional associations and financial institutions. As the European Central Bank warns, Europe is witnessing rising political risks at both national and supranational levels which overlap on the increasing public support gained by populist political parties (perceived as less reform-oriented). The uncertain political background is susceptible to be translated into delays of structural and fiscal reforms (ECB, 2016).

Consequently, the paper attempts to fill a literature gap by exploring an underdeveloped field of research, which connects country's managerial or governance capabilities with the development prospects of the financial system. So far, literature has mainly assessed the impact exerted by financial institutions' governance on their own business strategy and performance, neglecting the macro-level background a financial institution operates. However, the quality of governance performed by the central administration, translated into regulations issued and implemented, into using the public power, into triggering a state of political and economic uncertainty and instability, represents a leading factor in shaping the managerial decisions and business model complexity of financial intermediaries.

The remainder of the paper is structured as follows: the first section summarizes the existing empirical background which connects various measures and proxies of country's quality of governance with the financial system developments. Section two describes the proposed methodology and the dataset, while section three summarizes and explains the empirical results. Finally, the last section concludes.

1. Literature review

Empirical evidences discuss the effects triggered by various country governance indicators on relevant financial system indicators. However, there is no consensus in this regard, the findings being mixed and sometimes contradictory, in close dependence with the criteria used when building the datasets (country-specific versus regional analyses, state-owned versus private-owned banks, large banks versus medium sized ones etc).

Several strands of research investigating the impact exerted by political instability, regulatory features and corruption over the financial system have emerged over time.

1.1. Overview of a country's main governance indicators

Most often, the political factor has been perceived in terms of propensity of a government change or collapse (Aisen & Veiga, 2011), or it was associated with the degree of governmental power (Fayman et al., 2018). Other views are linking the political factor with the quality of governmental institutions (Asongu, 2012) or with governance efficiency measured by a series of indicators known as World Governance Indicators: i) voice and accountability; ii) political stability; iii) government effectiveness; iv) regulatory quality; v) rule of law; and vi) control of corruption.

Although regulatory quality usually encompasses all types of economic and financial regulations, some studies (Lakštutienė et al., 2011) have relied only on a given regulatory framework, namely the deposit insurance mechanism and uncovered that it triggers positive impact on Baltic States' bank credit ratings and financial stability. Safeguarding financial stability through suitable regulations creates the premises for boosting economic growth through the channel of banking stability (Ijaz et al., 2020). Political decisions translated into regulation changes may affect the functioning of particular markets. For instance, Witkowska et al. (2019) found that new financial regulations affected the efficiency of investment fund market in Poland, in that they caused an increase of risk and a decrease of efficiency.

The study of Chinoda and Kwenda (2019) identifies a positive impact of institutional and regulatory quality on financial inclusion; therefore the nexus between financial indicators and governance ones has to be further investigated.

A particular dimension of political factor impact on banking activity resides in state's participation as main shareholder of banks' equity. Several studies (Shen & Lin, 2012; Pina et al., 2016) argue that state-owned banks are more vulnerable during electoral cycles, as they use to increase the provision of loans in the years preceding the elections.

Often, the political factor is associated with the perceived level of corruption. According to Park (2012), at institutional level corruption is accompanied by a low level of institutional quality, and inefficiency in terms of performance and stability. Corruption can be associated with the allocation of bank resources to non-performing investment projects, which affect the stability and soundness of banking activity.

Moreover, in extreme cases corruption may constitute a catalyzing factor for the onset of a financial crisis. In this respect, Kaufmann (2010) argues that as a country hides the data about the real state of its financial system, the measures taken for resolving the crisis will be adopted later and will be more expensive. The research framework tested by Kosi and Bojnec (2013) suggests that there is a statistically significant and positive association between business creation or entry and the overall institutional freedom, as well as the freedom from corruption. McFarlane (2000) claims that corruption is harmful not only because of the impact on good governance, but also because it erodes one of the most important human values, trust. In author's opinion, lack of trust is crucial due to the long-lasting vulnerabilities that it engenders from an economic and financial standpoint.

The economic policy uncertainty, as another proxy for a country's governance capabilities, has been found to negatively affect the portfolio returns of top US firms (Sum, 2014). The statistical analysis performed by the author exhibited high granularity, as he relied on the monthly changes in the economic policy uncertainty indicator.

1.2. Review of governance factors which determine banking activity

Some studies (Hartwell, 2018) found that political instability has the potential to impede the further development of the financial system. A broader analytical approach belongs to Roe and Siegel (2011) which outline that political instability, economic development and financial development are interlinked. They uncovered that political instability generates a direct, statistically significant impact on financial development, as well as an indirect one, through

its effects on economic development. The conclusion is straightforward: political stability is a fundamental leading factor explaining financial development discrepancies among countries. Recent research (Epstein & Rhodes, 2018) reinforces this argument, by showing that optimal bank performance can be distorted by the politicization of banks which has often assigned them the accomplishment of social and political goals. Sayılır et al. (2018) uncovered a significant positive relationship between various governance indicators included in the Worldwide Governance Indicators database and the financial development index published by the World Economic Forum. Consequently, enhanced governance is expected to stimulate financial markets' breadth, depth and efficiency.

Jackowicz et al. (2013) point out that although the growth of lending activity seems not to be affected by the political cycle, banks exhibit smaller net interest income ratios in times of political transitions. A novel, singular analysis revealed there is a significant relation between losing the political connections due to elections and the increase of government lending by state-owned banks, through increasing purchases of sovereign bonds issued by the home state (Koetter & Popov, 2018).

Vasconcelos (2018) uncovered that political risks act as determinants for cross-border banking flows. In addition, foreign investors pay a particular attention to political risks and perceive and weight it differently in developed and developing countries. Another study found that political instability risk, overlapped on a corruption and government ineffectiveness background, significantly increases risk-taking in the banking sector (Rezgallah et al., 2019).

In times of economic policy uncertainty, banks tend to increase their liquidity position in terms of asset, liability and off-balance sheet activities (Berger et al., 2018), to slow down bank credit growth (Bordo et al., 2016) and to make more credit-risk provisions (Ng et al., 2020). The findings obtained by Asteriou et al. (2016) indicate that greater economic freedom has mixed effects on bank profitability and stability, depending on the measure used to proxy them. Tight regulation exerts a negative impact on bank profitability, while it decreases the risk of bankruptcy. As regards the control of corruption, it slightly improves bank profitability but isn't statistically significant in relationship with bank stability.

The impact exerted by corruption on banking system stability is reinforced by the findings obtained by Fhima (2018). Corruption amplifies the occurrence of non-performing loans and hence impairs the stability of banks to risks. Bolarinwa and Soetan (2019) have discriminated between countries' degree of development in order to explain corruption impact on banks' profitability. The results indicated mixed effects in emerging countries, and significant positive effects validated for developed countries.

A complementary study has assessed the interaction between regulation and banking performance (Mamatzakis et al., 2013). The findings show that the regulation index, composed by regulation in credit, labour and business, is the one that depicts more importance for the banking sector among all other economic freedom indices, being negatively related to bank cost inefficiency. The nexus between bank efficiency, in terms of both profit and cost efficiency, and governance indicators has been investigated by Gee and Abd Karim (2016), which uncovered that controlling corruption, improving government effectiveness and less stringent regulatory framework exert a positive impact on bank efficiency.

1.3. Review of governance factors which determine stock market development

Another strand of literature examines the relationship between stock market development and political instability. The quality of government's policies is positively correlated with stock market capitalization (Asongu, 2012) while corruption, as a failure of country's quality of governance, exerts a significant negative influence on stock market development (Ayaydin & Baltacı, 2013). Ahmed (2020) found that irrespective if an economy is developed or developing, corruption has significant negative effects on stock returns. Also, the sensitivity of developing-country stock markets is higher to corruption than developed-countries.

An environment characterized by political instability or uncertain socio-political conditions determines a strong negative impact on stock market index returns (Asteriou & Sarantidis, 2016; Toraman & Tuncay, 2017; Hartwell, 2018), on stocks price-to-earnings ratio (Kapolková & Tolstova, 2015) and increases stock market participants' risk perception (Dai & Zhang, 2019). The study of Boadi and Amegbe (2017) gathers various dimensions of governance quality such as voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption and uncovers they significantly affect international stock market performance.

Economic literature seems to have arrived at a consensus in respect of the relationship established between political uncertainty in the pre-elections times and stock market development. Addoum and Kumar (2016) highlight that changes of the party in power, by means of elections, exert systematic influence on stock prices. Investors are attempting to predict political winners and consequently they are changing the composition of their portfolios. By relying on several measures of political uncertainty, Smales (2015) found that an environment of increased uncertainty around the election result generates higher levels of market volatility. A second major finding is related to the party currently governing, whose economic policies are well-known: during election times, increasing likelihood for winning again the elections has the effect of decreasing market volatility. From the standpoint of individual investors, empirical findings (Agarwal et al., 2018) show a significantly decrease of their stock market participation, during periods of increased political uncertainty preceding state elections. Brogaard et al. (2020) confirm the link between political uncertainty occurring during election cycles and the fall in equity returns and rise of market volatilities. They explain that political uncertainty increases investors' risk aversion and may generate a flight to safety. However, the literature linking country's governance indicators to capital market is still underdeveloped.

2. Methodological insights and variables selection

2.1. Variables employed and data sources

In order to comprehensively assess the influence of several country-governance indicators on banking system and the capital market, it has been considered a comprehensive sample of 21 financial indicators and 4 governance indicators. Details on all indicators employed in the analysis, brief explanations and sources of data can be found in Table 1.

Table 1. Variables employed and data sources

Type of indicator	Indicator	Explanation	Source
Governance indicators	Political Stability	measures public perceptions of the likelihood of political instability	Worldwide Governance Indicators, http://info.worldbank.org/governance/wgi/#home
	Regulatory quality	public perception of government's ability to design and implement sound policies and regulations	
	Control of corruption	reflects public perceptions of the extent to which public power is exercised for private gain	
	Economic policy uncertainty – EU level	measures the European policy-related economic uncertainty, by counting the frequency of newspaper articles containing the terms uncertain or uncertainty, economic or economy, and one or more policy-relevant terms	Baker, Bloom, Davis, Measuring Economic Policy Uncertainty
Economic development	GDP per capita growth rate	gross domestic product divided by mid-year population number	Eurostat
Banking system access	Bank branches 100,000 adults	number of bank branches as a share of population number	The Global Economy, https://www.theglobaleconomy.com/rankings
	Savings as percent of GDP	Existing amounts in the savings accounts, as a share of country's GDP	
Banking system stability	Non-performing loans (% of total loans)	non-performing loans divided by the total value of the loan portfolio; it is a loan portfolio quality indicator	
	Credit/deposit ratio	bank financing to the private sector as a share of total bank deposits	
	Z- score	the index measures the probability of default of a country's banking system	
	Liquid assets to deposits and short term funding (%)	the ratio of liquid assets which can be easily converted to cash (cash and due from banks, trading securities, loans and advances to banks, reverse repos)	
	Index of financial stress	composite indicator measuring the financial system's current stress level	ECB
Banking system efficiency	Operational costs/bank assets	operating expenses of a bank as a share of the value of all assets held	The Global Economy, https://www.theglobaleconomy.com/rankings
	Return on assets ROA	banks' pre-tax income as a share of yearly averaged total assets	
	Return on equity ROE	banks' pre-tax income as a share of yearly averaged equity	
	Bank non-interest income to total income	non-interest related activities (gains on trading and derivatives, on other securities, fees and commissions) as a percentage of total income	
	Bank cost to income ratio	operating expenses of a bank as a share of the operating income	

End of Table 1

Type of indicator	Indicator	Explanation	Source
	Net interest margin	net interest revenue as a share of bank's average interest-bearing assets	
Banking system depth	Bank credit to private sector	the financing provided by banks to the private sector as % of GDP	
	Bank credit to government	bank financing to the public sector as a share of country's GDP	
	Lerner index	measures bank's market power, by relying on price and marginal cost	
	Banking system concentration	share of bank assets held by top three banks in total banking system's assets	
	Foreign bank assets	percentage of the total banking assets held by foreign banks	
	Foreign banks (% of total banks)	number of foreign banks in total banks operating in a banking system	
Capital market development	Stock market capitalization (% of GDP)	the share price multiplied by the number of shares outstanding for listed domestic companies, as % of GDP	
	Stock price volatility	average of the 360-day volatility of the national stock market index	

The indicators included in this study are based on theoretical considerations developed by practitioners and economic literature and on empirical results obtained by previous studies in this field of research. Some of them have been tested by other studies too, while most of them are investigated now for the first time. It is the case of banking system indicators which cover a broad and complementary range of banking activity intrinsic features. These financial system and governance indicators are complemented with several control variables, which haven't been included before in similar studies.

The cross-section sample is represented by the twenty-eight European countries, while the time dimension covers the period ranging from 2000 to 2017, data being collected with annual frequency.

The research hypothesis defined is related to whether a country's governance capabilities are able to trigger effects (positive or negative) on the subsequent functioning and prospects for development of the banking system and stock market.

2.2. Model specification

For performing the empirical analysis it has been relied on panel data regressions due to several reasons. First, existing literature (Wooldridge, 2003, p. 434) emphasizes that panel data methods are more and more used in applied work, especially for policy analysis studies. Second, by gathering datasets with both a cross-section and a time dimension it is ensured that the sample includes a large number of observations so as to provide reliable estimates. Third, econometric theory (Roberts & Whited, 2012; Wooldridge, 2003)

points out a series of drawbacks that may distort the statistical accuracy of estimates, namely the presence of endogeneity, of non-stationary features, of seasonality and multicollinearity. In this study one of the sources of endogeneity is present, being represented by measurement errors or computational inaccuracies due to the use of proxy variables, such as indexes or other composite indicators designed to measure unobservable or difficult to quantify variables.

It has been performed a series of panel data regressions using first the Pooled Least Squares method and a model with fixed effects to account for the presence of cross-section fixed effects and/or period fixed effects. Then the redundant fixed effects test has been performed in order to statistically assess which of these models best describe the data, but the results show no presence of any fixed effect. The general specification of the panel regression model is as follows:

$$\text{Financial sector variable}_{it} = \alpha G_{it} + \beta \text{Log GDP per capita}_{it} + \text{Dummy OECD} + \text{Dummy euro-zone} + \varepsilon_{it},$$

where $i = 1, 2, \dots, N$ represents the number of countries in the sample; $t = 1, 2, \dots, T$ is the time frame; $\text{Financial sector variable}_{it}$ = the dependent variable, represented by specific banking sector / capital market development indicators for country i at time t ; G_{it} = vector of governance indicators; ε_{it} = the error term.

The same regression model has been estimated for each alternative dependent variable. The dependent variables are represented by indicators related to banking system access, efficiency, stability and depth, as well as by the stock market development. The set of independent, explanatory variables comprises four governance indicators, as well as a control variable (GDP per capita growth rate) to account for a country's economic development or well-being and two dummy variables, to examine the "OECD effect" and respectively the "euro-zone effect". More specifically, the aim is to investigate whether a country's membership to OECD or to the euro-zone triggers an impact on the development of its financial system. The reason for testing these two effects relies on the findings of previous studies which pointed out that there are some differences in the economic/fiscal behavior exhibited by developed versus developing (non-OECD) countries. Another aim is to check whether these discrepancies are present also in terms of financial intermediaries' activity.

2.3. Preliminary analytical techniques

As the study gravitates around the various measures of a country's governance, it is useful to gain some insights on the statistical features of these time series. Standard deviation indicates the spread of a time series' raw values around their mean. The higher its level, the more pronounced the heterogeneity within the sample. In this case, economic policy uncertainty exhibits the largest deviation (43.94) across considered countries and time periods, followed by control of corruption (12.8), political stability (10.51) and regulatory quality (8.4). Therefore, the presence of extreme low or high values is more frequent for these governance variables. To figure out the shape of the distribution function it has to be analyzed the skewness and kurtosis statistics. All the five time series exhibit a kurtosis below the threshold 3, meaning that the distribution function is platikurtic and its height is lower than that of a normal dis-

tribution. Skewness levels indicate that time series depict a positive asymmetry, higher values of the governance indicators being more present in the time series than lower ones. Thus, descriptive statistics analysis reveals that there are dissimilarities between the four dimensions of governance. When testing for the presence of multicollinearity between these variables, there is evidence of low correlation coefficients. By summing up these preliminary results, the conclusion is that one can differentiate between these separate dimensions of a country's good governance as each of them depicts a specific, particular feature of governance. Thus, it is worthwhile to include all of them in the further regression analysis to examine whether they exert different influence on the financial system developments.

Other two summary statistics are represented by the minimum and maximum values recorded by the governance indicators. The largest the gap between them, the broadest the fluctuations recorded by the variable across countries and timeframes. Political stability and absence of violence/terrorism have recorded the most cases of lower values across time and countries, so improvements are needed in this regard. Regulatory quality and control of corruption follow a similar pattern of evolution; however in most cases the path of the monitoring and strengthening of corruption control is placed behind the one of tightening regulations. Overall, both variables outperform political stability for most countries and time periods.

By summing up the information provided by the above mentioned governance indicators, it can be emphasized two main conclusions:

- i) political governance in Central and Eastern European countries followed a different path of evolution over time, although they all witnessed the Soviet or Communist experience, then they entered into a transition economy stage. Despite the end of the transition period, economic gaps still persist among these countries. Interestingly, the two second-wave accession countries represented by Romania and Bulgaria, persistently exhibit the worst performance in terms of governance indicators among all countries considered.
- ii) Northern Europe countries, as well as some Central and Western Europe countries constantly outperform in terms of political governance strength.

3. Results obtained and interpretation

Before running the panel regressions, all dependent and explanatory variables have been tested for multicollinearity and unit root presence. Natural logarithms have been used for the entire dataset to account for data variability and stationary issues.

Table 2 reports a synthesis of the panel estimation results for each model specification, by controlling for countries' degree of economic development (measured as GDP per capita) and membership to OECD and euro-zone. It has been run 21 different panel regression models, the dependent variables being depicted on the first row while the set of independent variables is common to all tested regressions and is illustrated on the first column. Each column presents the estimated coefficients for the explanatory variables, as well as their statistical significance.

Table 2. Results of the panel regressions

	ROE	ROA	Savings (% of GDP)	NPL (% of total bank loans)	Bank credit to government)	Bank credit to private sector	Bank cost to income ratio	Lerner index	Z score	Liquid assets to deposits	Credit/ deposit ratio
Intercept	5.21*	5.86*	-0.90***	18.42*	10.41*	-3.51*	6.33*	-1.96	-7.22*	-2.6**	4.13*
Political Stability	0.38	0.57**	0.40*	-0.56**	0.71*	-0.84*	-0.18**	0.11	0.05	-0.3***	-0.58*
Regulatory quality	0.40	0.29	0.46**	-4.14*	-4.29*	1.03**	-0.75*	0.28	0.49	1.50*	0.49
Control of corruption	-0.53	-1.62*	0.01	-0.61	1.36*	1.52*	0.36*	-0.15	1.28*	0.58**	0.27
Economic policy uncertainty	-0.77*	-0.52*	0.04	1.22*	0.38*	0.08	0.03	-0.09	0.30*	-0.31*	-0.09
GDP per capita	0.04	0.13*	0.01	-0.04	-0.11*	-0.09*	0.00	0.00	-0.07**	-0.01	-0.01
Dummy (euro-zone)	-0.2***	-0.24**	-0.04	0.15	0.20**	0.03	-0.01	-0.29*	0.15***	-0.19*	-0.22*
Dummy (OECD)	-0.05	-0.17	0.05	0.11	0.09	-0.15**	0.09*	-0.15	-0.16***	-0.29*	0.44*
No. obs.	287	285	309	299	316	316	313	209	314	315	304
R-squared	0.18	0.26	0.25	0.51	0.19	0.35	0.08	0.08	0.24	0.28	0.25

Note: * indicates significance of the estimated coefficient at the .01 level, ** indicates significance at the .05 level, and *** indicates significance at the .10 level.

End of Table 2

	Bank concentration	Stock market cap. (% of GDP)	Stock price volatility	Operational costs/ total assets	Net interest margin	Foreign bank assets (% of total bank assets)	Bank branches per 100,000 adults	Bank non-interest income to total income	Foreign banks (% of total banks)	Index of stress
Intercept	3.35*	-5.37*	2.83*	12.81*	11.23*	-2.65	12.65*	1.02	0.25	-4.48*
Political Stability	0.10	0.51**	-0.22***	-0.06	0.03	2.91*	-0.54*	-0.09	0.42	0.10
Regulatory quality	0.01	0.71	0.39	-0.78	-1.00**	2.32**	-1.83*	0.32	3.87*	0.59
Control of corruption	0.10	2.81*	-0.35***	-1.69*	-1.28*	-3.90*	0.80**	0.19	-3.83*	-0.43
Economic policy uncertainty	-0.04	-0.80*	0.13**	-0.29**	-0.11	0.20	-0.38*	0.14*	0.25	0.18**
GDP per capita	0.00	-0.10*	-0.02	0.04	0.04***	0.12***	-0.07**	0.06*	0.04	-0.03
Dummy (euro-zone member)	0.09*	-0.09	-0.04	-0.26*	-0.22**	-0.32**	0.07	0.00	0.06	-0.04
Dummy (OECD member)	0.06***	-0.21**	0.24*	0.22**	-0.06*	-0.67*	-0.49*	0.00	-0.52*	-0.03
No. of observations	304	232	299	230	311	152	269	314	199	307
R-squared	0.09	0.58	0.12	0.41	0.48	0.55	0.29	0.08	0.31	0.03

Note: * indicates significance of the estimated coefficient at the .01 level, ** indicates significance at the .05 level, and *** indicates significance at the .10 level.

The overall picture reveals that corruption control exerts an impact on 13 financial system indicators, political stability and economic policy uncertainty on 12 indicators, while regulatory quality is influencing 10 indicators. Consequently, it seems that monitoring of the corruption phenomenon as well as political and economic stability is triggering effects on most financial variables considered. Each of the four proxy indicators for a country's quality of governance determines an almost equal number of financial variables. Thus, it can be concluded that there are no significant differences among the four indicators, from the standpoint of their impact on a given number of financial indicators; each governance dimension has its own contribution to the financial sector evolution. All governance indicators have a simultaneous statistically significant impact on only three banking system variables, namely the share of liquid assets to deposits, the bank credit channeled to public institutions and the number of bank branches per 100,000 adults. The remaining variables are determined only by some governance indicators. Different governance indicators are triggering different effects on the financial sector development variables.

For instance, from the two banking system access variables, the one related to savings as percent of GDP is positively determined by political stability. The savings rate seems to increase in stable political times, maybe as a result of a wealth effect due to sound economic policies and developments. On the other hand, the number of bank branches per 100,000 adults is negatively influenced by four governance indicators, excepting corruption control. It means that lower incidence of corruption in a country creates incentives for bankers to expand the territorial network and coverage. Interestingly, a country's membership to OECD, as well as strengthening of its regulatory quality and political stability exhibit a negative relation with the dependent variable, meaning that they create stimulus for lowering the existing number of bank branches. This result may be explained in correlation with the continuous technological developments in the provision of financial services, which go far beyond the traditional way of access and focus on digitization of financial products.

As regards banking system stability indicators, the sign of the estimated coefficients confirms the economic intuition. Increases of economic policy uncertainty trigger a subsequent rise of non-performing loans (% of total bank loans) and of the financial stress index levels and a drop of liquid assets share into deposits and short term funding. Also, political stability has a beneficial influence on lowering the credit/deposit ratio, meaning that banks' liquidity position improves as the amount of financing provided through loans is covered in a greater proportion from financial resources attracted through deposits. Increased control of corruption has a positive influence on banks' liquidity, as indicated by a rise in liquid assets share to deposits, and on short term funding but also it may increase the probability of default for some banks (as designated by the *z*-score).

Economic policy uncertainty exerts a negative impact on four (ROE, ROA, operational costs, number of bank branches) out of six banking system efficiency indicators. Improvements in regulatory quality and political stability stimulate households' savings behavior, the increase of foreign banks' assets and contribute to decreasing banks' operating expenses and non-performing loans. Fighting against corruption has negative effects on banking profitability (ROA, net interest margin) and operational costs. This last result is consistent with the finding of Gee and Abd Karim (2016), which argued that corruption is negatively related with bank efficiency.

In terms of banking system depth indicators, improvements in regulatory quality have an impact on four out of six variables. They determine increases in the number of foreign banks (as percent of total banks), in the share of foreign bank assets into total bank assets, increases in the level of bank credit channeled to private sector (% of GDP) and decreases of bank credit to government (% of GDP). In other words, sound regulations create the prospects for an active presence of foreign banks into the national financial system and favor the channeling of financing towards the real economy. Also, low corruption levels have a positive impact on lending activity, represented by both loans to private and public sector; however, the impact on foreign banks (in terms of number and market share) is negative. In times of increased economic policy uncertainty banks tend to increase the amount of loans provided to government (% of GDP). This is probably due to the fact that loans to private sector might be perceived as riskier in times of economic turmoil. If banks are changing their financial behavior and become risk averse, they are prone to turn to lending the state as the state cannot enter bankruptcy.

As regards capital market development, it seems that impairments in the state fragility index and an environment of economic policy uncertainty determine increases of the national stock market index volatility and drops of the market capitalization. Enhanced control of corruption and political stability stimulate capital market capitalization and curb market volatility. This result is consistent with the one obtained by Roe and Siegel (2011) or Boadi and Amegbe (2017), which found that political instability has a negative and highly significant relationship with stock market capitalization as a share in GDP. Another similar finding is the one of Sum (2014), which validated too the same negative impact of the economic policy uncertainty on market capitalization and returns.

The estimates for the two dummy variables show that there are four financial indicators for which none of them has a statistical significant impact and 7 indicators out of the 21 considered for which both of them exert an influence. There are 13 financial indicators for which a country's membership to OECD (hence signaling a developed country status) exhibits a significant impact and 11 indicators determined by a country's membership to euro zone.

So far it has been discussed only the contemporaneous effects of the governance indicators on the banking and capital market development indicators. In the following, the same 21 panel regression specifications have been estimated again, by considering the lagged effect of each explanatory variable. As Wooldridge (2003, p. 444) mentions, it is of utmost importance to allow for the lagged effect in the model, otherwise the researcher implicitly assumes that the influence of the explanatory variable is only contemporary and doesn't last one year from another. In addition, this new analysis serves as a robustness test, in order to check the validity and stability of previous results.

Strengthening political stability with one-year lag positively influences changes in contemporary savings level (% of GDP), in banks' liquidity position and in the presence of foreign banks (market share), as well as increases in the non-performing loans (% of total bank loans) levels. Thus, the domestic banking system becomes attractive for foreign banks, households are confident in future wellbeing prospects and save more, the liquidity position improves and banks are tempted to increase lending, which puts pressure on the quality of banks' loan portfolio. Bank income other than the main, interest-based one, tends to de-

crease. A stable political environment exerts a beneficial effect on potential financial turmoil, by lowering the level of the financial stress index.

Improvements of regulatory quality one year ago have a positive impact on banks profitability and liquidity, on increasing the amount of savings and the number of bank branches. The negative impact is related to lending activity (bank credit to private and public sectors, non-performing loans) and to alternative sources of bank revenues (noninterest income to total income).

The lagged effect of strengthening the corruption control exerts a positive impact on bank credit to private sector, on liquid assets to deposits and short term funding, on savings level, bank profitability and stock market capitalization. The effect is negative on net interest margin and non-performing loans.

The lagged effect triggered by economic policy uncertainty at EU level is negatively statistically significant for the following dependent variables: ROE, ROA, lending to private sector, the number of bank branches, and positive for noninterest income, bank concentration and stock market volatility. Specifically, banks are facing drops in their profitability ratios and increases of operating expenses.

Conclusions

The overall perception is that country's governance capabilities are closely mirrored by the real economy and business environment, neglecting however the transmission effects to the financial sector. The purpose of this paper has been to provide empirical evidence on the interplay established between various governance indicators and financial sector variables in European Union countries.

To assess the amplitude of the impact on banking and stock market indicators generated by a set of country-governance issues, it has been conducted a series of panel regressions. This research approach contributes to the existing literature as the conclusions based on empirical results may act as a warning signal and awareness raising for policy makers regarding the effects that political and regulatory instability has on banking and stock market's functioning and development prospects.

Overall, the results indicate that the four dimensions of country's sound governance have different influences on financial indicators. Control of corruption, solid political stability and predictability of the economic environment determine significant influence on most financial variables considered, in both a contemporaneous and lagged frame. A subsequent finding is that in most cases the estimated lagged effects of the four proxies are of almost the same size than their contemporaneous effects. This result emphasizes the need for coherence, smoothness, stability and predictability of the public policies over time, while showing no tolerance to corruption, so as the financial system develops on sound, resilient bases.

Another conclusion is that not all governance proxies have the same significant importance with regards to banking system and stock market specific features. Some of them prove to be non-statistically significant in determining financial indicators meanwhile others exhibit a positive or negative effect. In addition, their effect may be different for stock market and banking specific indicators. For instance, strengthening political stability negatively im-

pacts the provision of bank credit to private sector (as percent of GDP), but has a positive impact on stock market capitalization. Thus, it can be argued that stock market witnesses development prospects during stable political regimes, as investors become more confident in experiencing alternative sources of investment.

This finding is in line with the results obtained by other previous studies which have also noticed that not all political instability indicators are bad for banking and stock market functioning. This is also validated in this analysis, too. It seems that low corruption levels have a negative impact on banks' profitability (expressed as net interest margin, ROA), as well as on the presence of foreign banks in the national banking system (both in terms of number and market share). The lagged effect triggered by political stability is negatively significant for credit/deposit ratio. In fact, this is a beneficial situation as by diminishing the share of loans covered by deposits attracted from customers the bank improves its liquidity position. It means that core, stable financial resources represented by deposits are enough in order to sustain the lending activity. To sum up, it seems that some governance vulnerabilities may still bring benefits to the financial markets, most of them related to banking profitability and entrance of foreign banks into the national banking system. This last result points out the complexity of the relationship between political instability issues and the financial system intrinsic features.

Although the nexus between financial system and various governance indicators is gaining increased attention of policymakers, practitioners and academia, existing research coverage is limited mainly due to data availability and low frequency of reported data (annual data). Future research may emphasize novel financial indicators, to cover not only the banking system, but also the stock and insurance sectors. So far, in-depth research in these sectors is limited, mainly due to data scarcity and low number of variables disclosed by statistical databases.

The overall conclusions of this study show that it is necessary to promote good public governance, due to the effects it exerts on the financial system and the economy in general. Thus, several categories of decision-makers and market participants need to know and understand the effects of public governance indicators on banking systems and the capital market.

At the level of political factors, they can improve the design and implementation of public policies in specific areas, increasing hence both economic and financial stability. The findings obtained may be useful for regulatory and supervisory authorities of the banking systems and capital markets, such as central banks and security and exchange commissions, through potential implications on the financial decisions for diminishing the risk aversion of investors, in conditions of political uncertainty and instability.

By awareness rising at the level of civil society, non-governmental organizations, and financial institutions, one can expect they will become a vector of opinion that will monitor and support the central public administration in promoting efficient governance, controlling corruption phenomenon and ensuring a climate of public policies' stability and predictability.

Author contributions

TCB and IAB were responsible for data collection, for conceiving the study and results' interpretation. IAB was responsible for conducting the empirical analysis. TCB and IAB wrote the first draft of the article.

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We, the authors, declare we don't have any competing financial, professional, or personal interests from other parties.

References

- Addoum, J. M., & Kumar, A. (2016). *Political sentiment and predictable returns*. SSRN. <https://doi.org/10.2139/ssrn.2169360>
- Agarwal, V., Aslan, H., Huang, L., & Ren, H. (2018). *Policy uncertainty and household stock market participation* (Working Paper). Georgia State University. <https://doi.org/10.2139/ssrn.3223597>
- Ahmed, W. M. A. (2020). Corruption and equity market performance: International comparative evidence. *Pacific-Basin Finance Journal*, 60, 101282. <https://doi.org/10.1016/j.pacfin.2020.101282>
- Aisen, A., & Veiga, F. J. (2011). How does political instability affect economic growth (IMF Working Paper, 2011/12). International Monetary Fund. <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/How-Does-Political-Instability-Affect-Economic-Growth-24570>
- Asongu, A. S. (2012). *Government quality determinants of stock market performance in African countries*. https://mpira.uni-muenchen.de/39631/1/Government_Quality_Determinants_of_Stock_Market_Performance_in_African_Countries.pdf
- Asteriou, D., & Sarantis, A. (2016). Political instability and stock market returns: Evidence from OECD countries. *Economics and Business Letters*, 5(4), 113–124. <https://doi.org/10.17811/ebf.5.4.2016.113-124>
- Asteriou, D., Pilbeam, K., & Tomuleasa, I. (2016). *The impact of economic freedom, business regulation and corruption on bank profitability and bank stability: Evidence from Europe*. <http://openaccess.city.ac.uk/16839/1/FreedomRegulationCorruption.pdf>
- Ayaydin, H., & Baltacı, N. (2013). Corruption, banking sector, and stock market development: A panel data analysis. *European Journal of Research on Education* (Special Issue: Human Resource Management), 94–99.
- Berger, A. N., Guedhami, O., Kim, H. H., & Li, X. (2018). *Economic policy uncertainty and bank liquidity hoarding* (Working Paper). SSRN. <https://doi.org/10.2139/ssrn.3030489>
- Boadi, I., & Amegbe, H. (2017). The link between quality of governance and stock market performance: International level evidence. *European Journal of Government and Economics*, 6(1), 78–101. <https://doi.org/10.17979/ejge.2017.6.1.4324>
- Bolarinwa, S., & Soetan, F. (2019). The effect of corruption on bank profitability. *Journal of Financial Crime*, 26(3), 753–773. <https://doi.org/10.1108/JFC-09-2018-0102>
- Bordo, M. D., Duca, J. V., & Koch, C. (2016). Economic policy uncertainty and the credit channel: Aggregate and bank level U.S. evidence over several decades. *Journal of Financial Stability*, 26, 90–106. <https://doi.org/10.1016/j.jfs.2016.07.002>
- Brogaard, J., Dai, L., Ngo, P. T. H., & Zhang, B. (2020). Global political uncertainty and asset prices. *The Review of Financial Studies*, 33(4), 1737–1780. <https://doi.org/10.1093/rfs/hhz087>

- Chinoda, T., & Kwenda, F. (2019). The impact of institutional quality and governance on financial inclusion in Africa: A two-step system generalised method of moments approach. *Journal of Economic and Financial Sciences*, 12(1), a441. <https://doi.org/10.4102/jef.v12i1.441>
- Dai, L., & Zhang, B. (2019). Political uncertainty and finance: A survey. *Asia-Pacific Journal of Financial Studies*, 48(3), 307–333. <https://doi.org/10.1111/ajfs.12257>
- Epstein, R., & Rhodes, M. (2018). *Good and bad banking on Europe's periphery: Pathways to catching up and falling behind* (KFG Working Paper Series no. 83).
- European Central Bank. (2016). *Financial Stability Review. May 2016*. <https://www.ecb.europa.eu/pub/pdf/fsr/financialstabilityreview201605.en.pdf>
- European Commission. (2020). *Financial services policy*. https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-reforms-and-their-progress/financial-services-policy_en
- Fayman, A., He, L. T., & Casey, K. M. (2018). Politics in banking: does political party control impact bank risk and return? *Managerial Finance*, 44(2), 178–188. <https://doi.org/10.1108/MF-07-2017-0268>
- Fhima, F. (2018). Corruption, banking stability and economic growth in the MENA region. In *Proceedings of the 39 International Academic Conference, Amsterdam*. International Institute of Social and Economic Sciences. <https://doi.org/10.20472/IAC.2018.039.014>
- Gee, C. S., & Abd Karim, M. Z. (2016). Financial market regulation, country governance, and bank efficiency: Evidence from East Asian countries. *Contemporary Economics*, 10(1), 39–54. <https://doi.org/10.5709/ce.1897-9254.197>
- Hartwell, C. A. (2018). The effect of political volatility on capital markets in EU accession and neighborhood countries. *Journal of Economic Policy Reform*, 21(4), 260–280. <https://doi.org/10.1080/17487870.2017.1311793>
- Ijaz, S., Hassan, A., Tarazi, A., & Fraz, A. (2020). Linking bank competition, financial stability, and economic growth. *Journal of Business Economics and Management*, 21(1), 200–221. <https://doi.org/10.3846/jbem.2020.11761>
- Jackowicz, K., Kowalewski, O., & Kozłowski, Ł. (2013). The influence of political factors on commercial banks in Central European countries. *Journal of Financial Stability*, 9(4), 759–777. <https://doi.org/10.1016/j.jfs.2012.08.001>
- Kapolková, J., & Tolstova, E. (2015). *The impact of political risk on equity market performance*. Lund University, School of Economics and Management. <https://pdfs.semanticscholar.org/6c02/2b3cd6a1281460f882b2a6722277fc96fcf0.pdf>
- Kaufmann, D. (2010). *Can corruption adversely affect public finances in industrialized countries?* <https://www.brookings.edu/opinions/can-corruption-adversely-affect-public-finances-in-industrialized-countries/>
- Koetter, M., & Popov, A. (2018). *Politics, banks, and sub-sovereign debt: Unholy trinity or divine coincidence?* (ECB Working Papers Series No 2146). European Central Bank.
- Kosi, T., & Bojnec, Š. (2013). Institutional barriers to business entry in advanced economies. *Journal of Business Economics and Management*, 14(2), 317–329. <https://doi.org/10.3846/16111699.2011.633348>
- Lakštutienė, A., Krušinskas, R., & Rumšaitė, D. (2011). The influence of deposits insurance on the stability of the Baltic States banking system. *Journal of Business Economics and Management*, 12(3), 482–502. <https://doi.org/10.3846/16111699.2011.599413>
- Mamatzakis, E., Kalyvas, A., & Piesse, J. (2013). *Regulations, economic freedom and bank performance: Evidence from the EU-10 economies* (MPRA Paper No. 51878). https://mpra.ub.uni-muenchen.de/51878/1/MPRA_paper_51878.pdf
- McFarlane, J. (2000). Corruption and the financial sector: The strategic impact. *Penn State International Law Review*, 19(1), Article 3. <http://elibrary.law.psu.edu/psilr/vol19/iss1/3>

- Ng, J., Saffar, W., & Zhang, J. J. (2020). Policy uncertainty and loan loss provisions in the banking industry. *Review of Accounting Studies*, 25, 726–777. <https://doi.org/10.1007/s11142-019-09530-y>
- Park, J. (2012). Corruption, soundness of the banking sector, and economic growth: A cross-country study. *Journal of International Money and Finance*, 31(5), 907–929. <https://doi.org/10.1016/j.jimonfin.2011.07.007>
- Pina, V., Torres, L., & Bachiller, P. (2016). Political influence and the performance of Nonprofit Spanish Banks. *Nonprofit Management and Leadership Journal*, 26(4), 471–488. <https://doi.org/10.1002/nml.21205>
- Rezgallah, H., Ozatac, N., & Katircioglu, S. (2019). The impact of political instability on risk-taking in the banking sector: International evidence using a dynamic panel data model (System-GMM). *Managerial and Decision Economics*, 40(8), 891–906. <https://doi.org/10.1002/mde.3075>
- Roberts, M. R., & Whited, T. (2012). *Endogeneity in empirical corporate finance* (Simon School Working Paper No. FR 11-29). SSRN. <https://doi.org/10.2139/ssrn.1748604>
- Roe, J. M., & Siegel, I. J. (2011). Political instability: Effects on financial development, roots in the severity of economic inequality. *Journal of Comparative Economics*, 39(3), 279–309. <https://doi.org/10.1016/j.jce.2011.02.001>
- Sayılır, Ö., Doğan, M., & Soud, N. S. (2018). Financial development and governance relationships. *Applied Economics Letters*, 25(20), 1466–1470. <https://doi.org/10.1080/13504851.2018.1430311>
- Smales, A. (2015). Better the devil you know: The influence of political incumbency on Australian financial market uncertainty. *Research in International Business and Finance*, 33(1), 59–74. <https://doi.org/10.1016/j.ribaf.2014.06.002>
- Shen, Ch.-H., & Lin, Ch.-Y. (2012). Why government banks underperform: A political interference view. *Journal of Financial Intermediation*, 21(2), 181–202. <https://doi.org/10.1016/j.jfi.2011.06.003>
- Sum, V. (2014). Can firms with the best training program withstand the storm of economic policy uncertainty? *Journal of Business Economics and Management*, 16(1), 206–213. <https://doi.org/10.3846/16111699.2012.761647>
- Toraman, C., & Tuncay, M. (2017). Effect of the political risk on capital asset valuation in financial markets: The case of Turkey. *Business and Economics Research Journal*, 8(3), 413–432. <https://doi.org/10.20409/berj.2017.58>
- Vasconcelos, A. M. (2018). Why political risk matters for banking flows? In *Proceedings of the 40 International Academic Conference, Stockholm*. International Institute of Social and Economic Sciences. <https://doi.org/10.20472/IAC.2018.040.066>
- Witkowska, D., Kompa, K., & Mentel, G. (2019). The effect of government decisions on the efficiency of the investment funds market in Poland. *Journal of Business Economics and Management*, 20(3), 573–594. <https://doi.org/10.3846/jbem.2019.9861>
- Wooldridge, J. (2003). *Introductory econometrics – a modern approach* (2nd ed.). South-Western Publishing Co.