THE IMPACT OF WORLD GOVERNMENT INDICATORS ON MARKET INVESTMENT BEHAVIOR

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Abstract

Although the behavioral finance sector has recently developed considerably, investors have irrational issues while taking the investment decisions on the capital market. We aim to empirically analyze the way in which aspects such as asymmetric information, emotional state, public policy and organizational culture affect their behavior. In the present paper we used quantitative data, building a database of 30 countries divided into two categories: socio-mature economies and respectively emerging and border economies.Using global governance indicators and calculating the Hurst exponent, the symmetry coefficient, the Kurtosis coefficient and the fractal dimension, we applied the Bayesian estimate method in order to establish the link between the dimensions of the global governance indicators and the dependent variables.
The results of the linear regression have been disseminated, while the long-term and short-term effects were observed taking into account issues related to the quality of regulations, public policy, governance effectiveness, the rule of law, corruption control, stability policy and lack of violence/terrorism and participation and accountability.
The purpose of the paper is to study the impact of macroeconomic factors such as world government indicators, by analysing their impact over the efficiency of financial markets.

Keywords: behavioral finance, psychological biases, world government indicators, investment behavior, bayesian estimation method.

JEL Classification: G11, G38, G40, G41

Introduction

In macro economy deciding how to invest can be difficult, as the market experiences continuous fluctuations in the fields of finance, politics and technology. Given these conditions, investing presupposes risk – the purpose of this article being the empirical investigation of the relationship of World Governance Indicators (WGI) and the context of reaching an investment decision.

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The fundamental assumption from which we proceed implies that aspects pertaining to public policy, WGI and organizational culture influence the investment decision. Our analysis, which is spread over 30 countries, divided in 2 groups; countries with socially mature economies and countries with emerging and frontier economies, will explore their capacity to overcome the shocks within the markets. The findings of this research will further the understanding of the context of reaching investment decisions and of the changes made in the functioning mechanisms of the market following changes regarding the rule of law, quality of regulations, political stability and absence of violence/terrorism, efficiency of governance, control of corruption, participation and accountability.

We wish to empirically validate the results and assess potential differences which may become apparent between developed markets and emerging or frontier markets. The paper is structured as follows: the first section makes a quick overview of the scientific literature pertaining to the field, namely aspects related to public policy, organizational culture and the impact of WGI relevant to our study. The second section presents the research methodology along with the variables taken into consideration for the study: the Hurst exponent, the long-term memory indicator, the Skewness coefficient, the Kurtosis coefficient, the fractal dimension; and also the method being used – BMS, the Bayesian estimation method. The third section presents the main results and the conclusions.

1. Scientific Literature Review

1.1. Public Policy and Organizational Culture

With the goal of reaching profitable financial decisions public policy can come to the investors' aid. The investor must be aware of the context of reaching decisions, namely the legislature, the social and economic climates and the politics at the moment of the decision making, and public policy is precisely about the government's response to problems raised by individuals.

The public authorities elaborate a course of action with the help of which they bring change to the fields of economy, social, culture and politics. The field of public policy is defined by the study of political/administrative decisions pertaining to the allocation of various forms of resources.

There are significant differences in the rates of long term development in various countries of the world. The differences between them is accounted for by the national public policy, which affects the incentives individuals must accumulate in order to gain capital in human or physical form. There are numerous elements that constitute public policy. Public policy is a frame of correct measures which constitute the core of public policy. One element of public policy is that they are defined by decisions, ways of allocation of resources. A second aspect states that public policy should function within a general frame of action – which basically differentiates between public policy and mere isolated measures. Another aspect of public policy shows that they have carefully established goals and objectives, arrived at on the basis of certain values or interests and addressing the public or a specific group of target individuals.

In the 1990's in order to estimate the institutional development we saw the emergence of the concept of governance, a concept which stems from historical neo-institutionalism.

Governance doesn't refer strictly to government, ministries and governmental agencies, but also to nongovernmental public authorities(both regional and local authorities). Governance is the behavior and performance of public and central institutions.

Kaufmann (1999) states that governance is represented by tradition. Both official and unofficial institutions manifest authority in a country. Kaufmann affirms that in most countries and regions it is an obvious case of slow progress or even regression as far as governance is concerned.

The World Bank and the European Commission give the best definitions of governance. The World Banks defines governance as a manner by which power is wielded in the management of economic and social resources.The European Commission characterizes European governance as a framework of legislation, processes and behaviors that affect the powers within the UE, but also as a complex system of interactions between EU-community and national institutions or between the private and public sector.

Governance is often associated with the management of public resources, but the former field covers a larger area. Depending on the level of performance governance can be viewed as performing or not performing.

Weak governance is the result of exaggerated intervention on behalf of the state in the socio-economic field, excessive, inefficient or biased regulations, lack of transparency or accountability, presence of corruption and the drawing of personal benefits from state authority, policy and strategy.

In good transition periods, governance consists of quality and depth as far as economic and institutional reforms are concerned. If the institutions have good governance this will be reflected in the quality of the policies, regulations and strategies adopted by the institutions and in their impact on the economy and society at large.

If institutional establishment and development are the basis of good governance then institutional changes are extremely important for any state or governing structure. In the case of transitioning economies applying the concept of good governance allows for the evaluation of the quality of government activity and of the effectiveness of economic and social policies.

1.2. World Governance Indicators

World Governance Indicators (WGI) or indicators of institutional quality were created to gage the impact of the system of governance on socio-economic development. In 1996 a project was launched, WGI – having the goal of amassing a large number of indicators meant to measure different elements from as many countries as possible. The term of *governance* was quickly adopted, Cheema stating that it embodied a series of principles such as maintaining transparency, participation, responsibility, the rule of law, effectiveness, equity and strategic vision.

The definition that the WGI database is based upon is "traditions and institutions on the basis of which authority is exercised in a given country". This includes: the processes by which governments are elected, monitored and changed, the capacity of the government to elaborate and implement viable policy, the respect granted by both the citizens and the state to the institutions that govern the social and economic interactions between them.

These indicators can be used in *measuring* the success rate of governance policy. They produce data that can be used to compare aspects of governance for different countries over long periods of time. The indicators have been viewed as incentives in some cases, triggering reforms meant to improve the quality of governance. Other authors postulate that these dimensions present some negative aspects as well and the emergence of a new generation of governance indicators is required, ones equipped with a more clear delimitation of sectors. (Arndt, 2008)

6 dimensions of governance indicators are analyzed within 6 sets of indicators, as follows:

- Voice and Accountability – This dimension is concerned with the perception of citizen involvement is government elections as well as other aspects pertaining to the freedom of speech, the freedom of the press, the freedom of association and so on.
- Political Stability and Absence of Violence/Terrorism – This dimension assesses the probability of a government destabilization or overthrow by violent, unconstitutional means.
- Government Effectiveness – This dimension assesses the quality of public service, the quality of the body of public servants and its independence in relation to political pressure, the quality of elaborating and implementing public policy or government credibility.
- Regulatory Quality – This dimension gages the capacity of the government to elaborate and implement of viable policy that supports the private sector.
- Rule of Law – This dimension assesses the extent to which the agents of the state respect the norms of society, especially relating to contract accountability.
- Control of Corruption – This dimension assesses whether public power is wielded for personal gain.

2. Research methodology

In this article we use the WGI to measure different aspects of the markets and to observe the evolution of changes in the respective markets. The indicators offer data for 30 countries for a period spanning from 2005 to 2016.

After synchronizing the database we have obtained a number of 986 observations. Using the R system for statistical and graphical analysis I have run the code for the Hurst exponent, the Skewness coefficient, the fractal dimension and Kurtosis both for the whole period of 2005-2016 and for each year separately.

2.1 The Hurst exponent

Methodologically speaking, in order to see whether the analyzed markets present deviations from the level of efficiency we have used Kristoufek's method with 2 variables: the Hurst exponent and the fractal dimension. The long term dependencies are estimated on the basis of the Hurst exponent, calculated both for the entire period and for each year separately for each country. The Hurst exponent is estimated using the RHRV function.

The value of the Hurst exponent is 0.5. If $0 \leq H < 0.5$ and the correlation coefficient $c < 0$, the events indicate that they are negatively correlated in time. This type of dynamic is called anti-persistence – if a term (observation) in the series has grown most likely it will shrink by the next observation. The intensity of anti-persistence behavior depends on the value of H.

The Hurst exponent expresses the probability of 2 similar events appearing consecutive because every entry of an event is not equally likely as in the case of perfectly random dynamic series.

2.2 The Skewness symmetry coefficient

The Skewness indicator is used in the analysis of data series distribution with the aim of calculating the empirical distribution deviation in respect to a symmetrical distribution across the mean. The reference value of S is 0. The Skewness is calculated as follows:

$$S = \frac{\frac{1}{n-1}\sum_{i=1}^{n}(xi-\bar{x})^3}{\sigma^3} \quad (1)$$

The negative values of the Skewness coefficient show extreme values to the left and a distribution leaning to the right. In the case of S>0 the extreme values are to the right and the distribution is leaning to the left.

2.3 The Kurtosis Coefficient

Kurtosis is an indicator used in the analysis of data series distribution for indicating the degree of flatness or sharpness of a distribution, a series of data. The arch is considered normal is the kurtosis is equal to 3 (mezokurtic distribution) when it doesn't have a degree of flattening, but one of arching or excess of data series distribution. Deviations from the reference value are called excesses or arches. When we have high, positive values of the Kurtosis it's called a leptokurtic distribution. An increase of the kurtosis can be accounted for by the possibility of the existence of shocks of an endogen nature that have the capacity to destabilize the market. Kurtosis is calculated using the following formula:

$$K = \frac{\frac{1}{n-1}\sum_{i=1}^{n}(xi-\bar{x})^4}{\sigma^4} - 3 \quad (2)$$

2.4 The Fractal dimension

For the Fractal Dimension we have used the Box-Count, Hall-Wood and Variogram estimators. If with the help of the Hurst exponent we have observed the presence of long term memory, the fractal dimension is centered on rendering local short term memory. The Fractal Dimension has a value of 1.5 representing the point of reference – efficiency. A common feature of fractal objects is similarity specifically the existence of the original object in all the parts resulting from its fragmentation.

2.5 The Bayesian estimation method (BMS)

I have tested the Bayesian estimation method which establishes the relation between the explicative variables (the 6 dimensions of WGI) and the dependent variables Y (in this case the Hurst exponent and the fractal dimension with all the 3 estimation methods) on the WGIs and the values obtained by running the dependent variables (Hurst, Skewness, Fractal Dimension and Kurtosis) in R.

The Bayesian method produces a linear regression which combines the dependent variables with different coefficients building a weighted average with them. Taking into account a model with a linear structure, with y a dependent variable, α_y a constant, β_y being the coefficients and Ɛ the error with a variant σ^2 we have: y=α_y+X_y β_y+Ɛ. The problem of selecting potential explicative variables for matrix X is addressed by BMA, by estimating the models for all possible combinations of {X} and building a weighted average out of them. In case for X there are K potential variables, then there will be 2^K models. The Bayesian method estimates support averages out of the posterior probabilities of the model which stems from Bayes' theorem:

$$p(M_\gamma|y,X) = \frac{p(y|M_\gamma,X)p(M_\gamma)}{p(y|X)} = \frac{p(y|M_\gamma,X)p(M_\gamma)}{\sum_{s=1}^{2^K} p(y|M_s,X)p(M_s)} \quad (3)$$

3. Results and discussions

3.1 Interpreting data

We have run the data in a panel-type format both globally on all the countries and in 2 distinct subgroups separating the 30 countries in mature and emerging and frontier with a view on understanding the impact that each indicator has on the memory of the data series and on informational efficiency. For each result we have determined the number of visited models, top models (100), the correlation of posterior-PMP probability, Shrinkage statistics, number of observations, priors used (uniform), g-Prior (EBL/UIP), burn-in number (10000), iterations (1000000) and MCM (jump type).

3.1.1. The Hurst exponent

Table nr. 1 Hurst results (global, emerging and frontier, mature)

GLOBAL	HURST (H-0.5)^2			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.6464	-0.0077	0.0093	0
Rule of Law	0.5463	0.0044	0.0083	0.822
Government Effectiveness	0.4627	-0.002	0.0059	0.1228
Control of Corruption	0.4468	0.0006	0.0044	0.601
Political Stability and Absence of Violence/Terrorism	0.4296	-0.0003	0.0021	0.135
Voice and Accountability	0.4227	0.0002	0.0019	0.7096
EMERGING AND FRONTIER	**HURST (H-0.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.5721	-0.0071	0.0098	0
Rule of Law	0.4355	0.003	0.0087	0.8878
Government Effectiveness	0.5443	-0.0065	0.0099	0
Control of Corruption	0.4052	-0.0014	0.0065	0.2662
Political Stability and Absence of Violence/Terrorism	0.3759	0.0006	0.0038	0.9663
Voice and Accountability	0.3614	-0.0001	0.0023	0.3569
MATURE	**HURST (H-0.5)^2**			
Variables	**PIP**	**POST.**	**ST.**	**POS.SIGN.**

		MEAN	DEV.	DEV.
Regulatory Quality	0.5041	-0.0027	0.0081	0
Rule of Law	0.5046	0.0023	0.0009	0.4385
Government Effectiveness	0.4917	0.0003	0.0041	0.2696
Control of Corruption	0.4978	0.0008	0.0049	0.3372
Political Stability and Absence of Violence/Terrorism	0.4925	-0.00008	0.0014	0.0311
Voice and Accountability	0.5039	-0.0001	0.0075	0

As far as the values of the Hurst exponent are concerned the following can be said about the 6 dimensions:

.Regulory Quality

The dependency of the Hurst exponent deviation from the efficiency value to the variables taken into consideration was analyzed on the basis of 882884 visited models, of which 100 top models, globally. Upon applying the Bayesian estimation method, the probability of posterior inclusion for this dimension shows us that 64% of the models taken into consideration have included this dimension. The posterior mean in the case of the global level indicator, more precisely -0.77%, underlines the impact it has on the Hurst dependable variable. A negative dependency can be observed between the two. This indicates an effect of persistence. We find that a change in the value of the coefficient pertaining to regulatory quality will not generate a change in the pulse of the market (government-produced changes to legislation and policy enactment will not have a strong impact). The results from the posterior standard deviation bring new evidence to support the sign, while the value of posterior sign probabilities also confirms the sign. Comparing to the global results we can see that for the socio-economically mature countries 50% of the visited models took this dimension into consideration. We can see that the value is lower than the global one. The impact of regulatory quality for mature countries is -0.27%. The Hurst coefficient is near its reference value in this case also. The impact is small again, indicating persistence with market mechanisms not recording sudden changes. For countries with emerging and frontier markets the results show a probability of inclusion of 57% of the models, the percentage being higher than in the case of countries with mature markets. This dimension has an influence of -0.71% on the Hurst exponent, with the negative sign conveying persistence once again.

Rule of Law

In the case of rule of law, the PIP shows that 54% of the models taken into consideration have included this dimension. The posterior mean is at 0.44%. The variable being positive is indicative of anti-persistence. In cases of anti-persistence, when a change occurs in this dimension its effects will be felt and the financial market will be affected. These changes

will deviate the Hurst exponent from the efficiency level. The amplitude of the variable, however, is not very big, having a value of 0.04%. For this variable 50% of the mature countries reflect a PIP similar to the global one. The posterior mean in the case of the indicator, 0.23% more precisely, underlines the impact it has on the Hurst dependable variable. The impact is positive (+), resulting in anti-persistence, but we notice the value is lower than the global level. For countries with emerging and frontier markets the posterior mean is 0.30%, indicating a slightly bigger impact than in the case of mature markets.

Government Effectiveness

Globally, the dimension representing the effectiveness of government has a probability of 46% of posterior inclusion. The posterior mean is -0.2% and it underlines the impact it has on the Hurst dependable variable. There is a relationship of dependency, in a negative sense. We have the effect of persistence. A change in the value of the coefficient of government effectiveness will not generate a change of market mechanisms (government credibility will not be affected). For mature countries the PIP is at 49%, a value slightly bigger than the global one. The posterior mean has a positive value(0.03%), which indicates anti-persistence, but only to a small extent as the value is very small. In the case of emerging and frontier markets, government effectiveness has a PIP of 54%, a figure approaching the reference value, and posterior mean has a negative(-) sign, which lets us know that there are no shocks in the market mechanics – persistence, Hurst standard deviation not being very large.

Control of Corruption

The dimension pertaining to corruption control has a statistically insignificant PIP level of 44% and the posterior mean is positive, indicating anti-persistence, but with little impact – 0.06%. Within mature markets the PIP approaches a statistically significant value, but does not qualify at only 49%. The value of the posterior mean for the control of corruption, a dimension tracking whether public power is wielded for personal interest with the intent of personal gain has an anti-persistence value of 0.08%. The variable for countries with emerging and frontier markets was used in 40% of the models taken into account out of the 840388 visited. The posterior mean exhibits a negative impact of -0.14%. There is an effect of persistence. A change in the value of the coefficient regarding the control of corruption will not bring major changes onto the financial market.

Political Stability and Absence of Violence/Terrorism

The probability of posterior inclusion for the Political Stability and Absence of Violence/Terrorism dimension is 42%, with the posterior mean having a negative impact of -0.03, indicating persistence. The probability of posterior inclusion is 49% in the case of mature economies, and the posterior mean has a negative impact of -0.08%, indicating persistence and the Hurst deviation not straying far from the reference level. The probability of posterior inclusion in countries of emerging and frontier economies is 37%, the posterior mean indicating anti-persistence with a positive value of 0.06%. Unlike the countries with mature economies that are not affected by changes to this dimension, we can see that emerging markets are reacting to these changes regarding the probability of government being destabilized or violently, unconstitutionally overthrown.

Voice and Accountability

For the Voice and Accountability variable, the global PIP is 42%, and the posterior media shows a positive value, indicating anti-persistence. This result shows that when something changes on this dimension, the market will sense it and there will also be changes on the financial side. This dimension considers the perception of the measure of citizens' participation in the election of the government, as well as other aspects linked to freedom of expression, freedom of the press, freedom of association. For mature countries, Voice and Accountability is statistically significant, the model being considered in proportion of 50%. The result of the posterior average is negative – 0,01% indicating persistence. For emerging countries, the extent of participation and responsibility is not statistically significant, the PIP being 36%. The result of the posterior average is negative -0.01%, which shows persistence.

3.1.2 The Skewness Symmetry Coefficient

Regarding the results of the Skewness symmetry coefficient on the 6 dimensions, the following findings were made:

Table no. 2 Skewness symmetry coefficient (global, emerging and frontier/borderline, mature)

GLOBAL	**SKEWNESS (S)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.6482	-0.4085	0.482	0
Rule of Law	0.5155	0.2149	0.4317	0.8678
Government Effectiveness	0.5172	-0.2268	0.4148	0.0918
Control of Corruption	0.4961	0.1489	0.3219	0.898
Political Stability and Absence of Violence/Terrorism	0.4009	0.004	0.1128	0.4899
Voice and Accountability	0.4333	-0.0407	0.1254	0
EMERGING AND FRONTIER	**SKEWNESS (S)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**

Regulatory Quality	0.4952	-0.0099	0.3126	0
Rule of Law	0.4822	0.1047	0.3601	0.709
Government Effectiveness	0.5124	-0.1488	0.4104	0
Control of Corruption	0.5485	0.293	0.5043	0.8963
Political Stability and Absence of Violence/Terrorism	0.553	-0.1573	0.2936	0
Voice and Accountability	0.4689	0.0059	0.8744	0.3708
MATURE	**SKEWNESS (S)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.6102	-0.2006	0.2734	0
Rule of Law	0.5627	0.2167	0.3548	0.9226
Government Effectiveness	0.5438	0.1687	0.2733	0.9794
Control of Corruption	0.4601	-0.0522	0.1796	0.1258
Political Stability and Absence of Violence/Terrorism	0.4837	0.0355	0.0847	0.9193
Voice and Accountability	0.5386	-0.1614	0.2874	0

Regulatory Quality

In the case of regulatory quality, in terms of global results, we see a PIP of 64%, while PIP results for the countries with socio-mature economies show that 60% of it is taken into account, and for emerging and borderline countries 49% was considered. In regard to the posterior average, both globally, as well as for countries with mature, emerging and borderline economies, the result is negative, indicating persistence, with no sudden changes in the market. For mature countries, the posterior average is -20.26%, while for the emerging and borderline countries the value is -0.99%, i.e. 20 times less. Therefore, with regard to the changes to the dimension of the regulatory quality, we notice that their impact is greater on the emerging and borderline countries.

Rule of law

For the rule of law, the results show that globally, the probability of posterior inclusion is 51%, in mature countries the probability being 56% and unlike previous results, the PIP for the emerging and borderline regions fails to pass the threshold of statistical significance. Global posterior average is 21.49%, for mature markets it is 21.67%, and for emerging and borderline countries the value is 10.47%. We note that for mature countries the impact of changes to the rule of law is twice as high than the impact on emerging and borderline countries.

Government Effectiveness

In terms of governance effectiveness, the global PIP is 51%, for mature economies, 54% and for emerging and borderline countries, it is 51%. At the global level as well as at the level of emerging and borderline countries, the posterior average of this dimension indicates persistence with values of -22.68% and -14.88 respectively, while for mature economies, the 16.87% they have, indicates persistence. The results prove that the changes brought about by this dimension affect more seriously mature countries and influence the decisions on the financial markets. The stability of institutions, the quality of public services and the credibility of the government are more strongly affected in the case of mature economies than in the case of those with emerging and borderline economies.

Control of Corruption

The highest statistical significance for this dimension is represented by the emerging and borderline countries with 54%, the mature economies with 46% and the global economy with 49%. Concerning posterior media, we see that the results are positive for emerging and borderline countries and for global computing, while mature economies have a negative result of -5.22%, not very different much from the 0 benchmark. In contrast, for the other categories, 14.89%, and 29.3% fairly high amplitude values, indicating anti-persistence and certain disturbances, major changes that will also be reflected in the financial market mechanisms.

Political stability and absence of violence / terrorism

For mature countries, a 48% included the dimension of political stability and the absence of violence / terrorism. For emerging and borderline countries, the value is higher, 55%, and at a global level it is 40%. The global and mature countries posterior average indicate anti-persistence, and at the level of emerging countries it shows persistence, but with a very high amplitude - 15.73%.

Voice and Accountability

Using the Bayesian estimation method, the value of the PIP posterior inclusion probability for the Voice and Accountability dimension for global, emerging and borderline countries levels shows that 43% of the models considered, have included this dimension, and at country level the mature value is 53%.The posterior average for the global and mature countries shows persistence, while for the emerging and borderline countries we have a negative result.

3.1.3 The Kurtosis Vaulting Coefficient

Regarding the results of the coefficient of the Kurtosis Vaulting Coefficient on the 6 dimensions, the following findings were made:

Table no. 3 Kurtosis Vaulting Coefficient (global, emerging and borderline, mature)

GLOBAL	**KURTOSIS (K-3)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.5894	-11.5123	16.2119	0
Rule of Law	0.498	3.88	11.9874	0.636
Government Effectiveness	0.4621	-2.3599	10.1977	0.1188
Control of Corruption	0.5234	4.4684	10.3223	0.7406
Political Stability and Absence of Violence/Terrorism	0.4548	-0.162	3.3639	0.1439
Voice and Accountability	0.4557	-0.5551	3.4794	0
EMERGING AND FRONTIER	**KURTOSIS (K-3)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Calitatea reglementărilor	0.4975	-5.2504	14.584	0
Rule of Law	0.463	3.3836	15.375	0.5582
Government Effectiveness	0.4808	-3.8661	15.1054	0.0531
Control of Corruption	0.5815	16.0417	23.7375	0.9075
Political Stability and Absence of Violence/Terrorism	0.5893	-9.3973	15.016	0
Voice and Accountability	0.4671	0.6144	4.4352	0.4909
MATURE	**KURTOSIS (K-3)^2**			

Variables	PIP	POST. MEAN	ST. DEV.	POS.SIGN. DEV.
Regulatory Quality	0.6628	-8.6315	9.6316	0
Rule of Law	0.6208	10.4962	13.2347	0.971
Government Effectiveness	0.4969	4.6384	8.1447	1
Control of Corruption	0.4149	-1.1941	5.7322	0.2503
Political Stability and Absence of Violence/Terrorism	0.5757	2.7547	3.8128	1
Voice and Accountability	0.6355	-9.6667	11.5695	0

Regulatory Quality

Globally, the PIP for this size is 58%, for emerging countries it is 49% and for mature countries it is 66%. The posterior average shows negative results of persistence, of a high magnitude -1151.23% globally, -863.15% for mature countries and -525.04% for the emerging and borderline countries. Regarding the changes to the dimension of the quality of regulations, we note that their impact is greater on mature countries than on emerging and borderline countries.

Rule of law

For the rule of law variable, the global PIP level is 58%, and the posterior average is positive, indicating anti-persistence. This result shows that when something changes in this dimension, the market will sense it and there will also be changes on the financial side. For mature countries, the rule of law dimension is statistically significant, with a PIP of 62%. The result of the posterior media is positive 1049.62%, which shows anti-persistence.

Efficiency of governance

In terms of governance effectiveness, the global PIP is 49%, for mature economies it is 48% and for emerging and border countries, 46%. At the level of mature, emerging and bordering countries the posterior average of this dimension indicates persistence with values of -235.99% and -386.61% respectively, while the overall 463.84% result indicates anti-persistence.

Control of Corruption

The corruption control-related dimension at the global level shows a 52% insignificant statistical PIP, and its posterior average is positive, indicating anti-persistence, but with a small impact of 446.84%. In mature markets, the PIP is 41%. The value of the posterior average for corruption control indicates a persistence value of -119.41%. The variable in corruption control for countries with emerging and bordering markets was used in 58% of

the models considered from the 918562 visited. The posterior average has a positive impact of 1604.17%. We have anti-persistence effect. A change in the value of the corruption control factor will bring major changes to the financial market.

Political stability and absence of violence / terrorism

The probability of posterior inclusion for the size of the Political stability and the absence of violence / terrorism at the global level is 45% and the posterior average has a negative impact of 16.2%, indicating persistence. The posterior inclusion probability is 57% for mature economies, and the posterior average has a positive impact of 275.47%, indicating anti-persistence. The potential for ulterior inclusion in countries with emerging and bordering economies is 58%, and the posterior average indicates persistence, with a negative value of -939.73%.

Voice and Accountability

Following the Bayesian method of estimation, the global value of the PIP post-inclusion probability for Participation and responsibility and at the level of emerging and bordering countries is 45% and 46% respectively, and for mature countries the value is 63%. The posterior global and mature countries average shows persistence, while for emerging and bordering countries we have a positive anti-persistence effect.

3.1.4 Fractal Dimension- Hall-Wood

Regarding the results of the coefficient of the Hall-Wood on the 6 dimensions, the following findings were made:

Table no. 4 Hall-Wood results (global, emerging and bordering, mature)

GLOBAL	HALL_WOOD (V-1.5)^2			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.5185	0.0093	0.0208	0.9742
Rule of Law	0.4922	-0.0073	0.0223	0.0889
Government Effectiveness	0.4748	0.0034	0.016	0.8285
Control of Corruption	0.4884	0.0049	0.016	0.9449
Political Stability and Absence of Violence/Terrorism	0.4503	-0.0004	0.0062	0.1579

Voice and Accountability	0.4621	-0.0011	0.0065	0
EMERGING AND FRONTIER	**HALL_WOOD (V-1.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.5067	0.0034	0.0129	0.4099
Rule of Law	0.5051	-0.0052	0.0177	0
Government Effectiveness	0.4946	-0.00002	0.0058	0.0302
Control of Corruption	0.5115	0.0029	0.0121	0.2882
Political Stability and Absence of Violence/Terrorism	0.4946	0.0001	0.0032	0.0032
Voice and Accountability	0.4978	-0.0002	0.0024	0.0024
MATURE	**HALL_WOOD (V-1.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.1083	0.0008	0.0204	0.7819
Rule of Law	0.1097	0.001	0.0224	0.9188
Government Effectiveness	0.1203	0.0042	0.0284	1
Control of Corruption	0.1095	0.0005	0.0168	0.8607
Political Stability and Absence of Violence/Terrorism	0.1085	0.00009	0.0089	0.7197
Voice and Accountability	0.1084	0.00001	0.0246	0.7807

Regulatory Quality

In the case of Regulatory Quality the analysis of 1008875 models, of which 100 top models, in terms of global results, shows a PIP of 51%, that is, the percentage in which this dimension was included in the total of models, while the results for PIP in the countries with socio-mature economies, the analysis of 3829342 models shows that this dimension is

taken into account at 0.10%, and for the emerging and bordering countries the proportion is 50%, after analyzing 1038832 models, of which 100 being top models. Concerning the posterior average, at all three levels of analysis, results shows a positive sign, indicating anti-persistence, with sudden changes in the market.

Rule of law

For the rule of law, the results show that the global probability of posterior inclusion is 49%, with a 10% probability for mature countries, and unlike previous results, the PIP for emerging and bordering countries is 50% . The posterior average is 0.93%, for mature markets, it is 0.1%, and for emerging and bordering countries the value is 0.52%.

Government Effectiveness

In terms of governance effectiveness, the global PIP is 49%, for mature economies, 12%, and for emerging and bordering countries 49%. At the level of the emerging and bordering countries the value is -0.002% and for the mature posterior average of this dimension, it indicates persistence with values of -0.42%, while the global average is 0.34%.

Control of Corruption

The global corruption control dimension has a 48% non-statistically significant PIP, and its posterior average is positive, indicating anti-persistence. In mature markets, the PIP is 10%. The value of the posterior average for corruption control indicates an anti-persistence of 0.05%. For countries with emerging and bordering markets, the variable was used in 51% of the models considered from the 1038832 models visited. The posterior average has a positive impact of 0.29%. We have an anti-persistence effect. A change in the value of the corruption control factor will bring changes in the financial market.

Political stability and absence of violence / terrorism

The global probability of ulterior inclusion for the size of the Political stability and the absence of violence / terrorism is 45% and the posterior average has a negative impact of -0.04% indicating persistence. The possibilities of ulterior inclusion for the dimension of Political stability and absence of violence / terrorism is 10% in the case of mature economies, and the posterior average has a positive impact of 0.009%, indicating anti-persistence. The likelihood of ulterior inclusion in countries with emerging and bordering economies for the dimension of Political stability and the absence of violence / terrorism is 49% and the posterior average indicates anti-persistence, with a positive value of 0.01%.

Voice and Accountability

Based on the Bayesian estimation method, the value of the probability of ulterior PIP inclusion for Participation and responsibility at global level and at the level of the emerging and bordering countries is 46% and 49%, respectively, and in the mature countries the value is 10%. The global posterior average for emerging countries shows persistence, while for mature countries we have a positive anti-persistence effect.

3.1.5 Fractal dimension- Box-count

Regarding the results of the coefficient of the Box-count on the 6 dimensions, the following findings were made:

Table no. 5 Box-count results (global, emerging and bordering, mature)

GLOBAL	**BOXCOUNT (V-1.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.7465	-0.002196	0.0019	0
Rule of Law	0.7842	0.003148	0.0026	0.9791
Government Effectiveness	0.384	-0.000216	0.001	0.1706
Control of Corruption	0.6986	0.001779	0.0017	0
Political Stability and Absence of Violence/Terrorism	0.3592	0.00007	0.004	0.9099
Voice and Accountability	0.4021	-0.000175	0.0004	0
EMERGING AND FRONTIER	**BOXCOUNT (V-1.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.5682	-0.0007	0.0014	0
Rule of Law	0.5557	0.0011	0.0019	0.8
Government Effectiveness	0.4764	0.00004	0.0006	0.157
Control of Corruption	0.5215	-0.0036	0.001	0
Political Stability and Absence of Violence/Terrorism	0.5228	-0.0002	0.0006	0
Voice and Accountability	0.4691	-0.000006	0.0002	0.101

MATURE	BOXCOUNT (V-1.5)^2			
Variables	PIP	POST. MEAN	ST. DEV.	POS.SIGN. DEV.
Regulatory Quality	0.5018	0	0	0
Rule of Law	0.5001	0.0000042	0.0001	0.0621
Government Effectiveness	0.4999	-0.0000214	0.00024	0
Control of Corruption	0.5011	0	0	0
Political Stability and Absence of Violence/Terrorism	0.5011	0.0000056	0.00007	0.0636
Voice and Accountability	0.5014	0	0	0

Regulatory Quality

For regulation quality, the analysis of 624038 models, of which 100 top-ranked models, shows a PIP of 74%, that is, the percentage in which this dimension was included in the total of models, while the results for PIPs in the countries with socio-mature economies, the analysis of 1087964 models shows that 50% of this dimension is taken into account, and for the emerging and bordering countries 56% was considered, after an analysis on 906671 models, of which 100 top models. As far as the posterior average is concerned, we have 0.2196% at the global level, 0.007% at the level of emerging and bordering markets, and for mature societal systems the value is 0, so it does not produce any impact.

Rule of law

For the rule of law, the results show that the probability of ulterior inclusion is 78%, with mature countries the probability is 50%, and unlike previous outcomes, PIP for emerging and bordering regions is 78%. Global posterior average is 0.3148%, mature markets are 0.0004%, and for emerging and bordering countries the value is 0.11%.

Government Effectiveness

In terms of governance effectiveness, the global PIP is 38%, for mature economies it is 49%, and for emerging and bordering countries 47%. At global level and for mature countries, the posterior average is negative indicating persistence, while for the emerging and the bordering countries we have a result indicating persistence.

Control of Corruption

The global corruption control dimension has a 48% statistically insignificantly PIP, and its posterior average is positive, indicating anti-persistence. In mature markets, the PIP is 50%. The value of the posterior average for corruption control is zero. The variable of

corruption control for countries with emerging and bordering markets was used in 52% of the models taken into consideration. The posterior average has a negative impact of -0.36%. We have a persistence effect. A change in the value of the corruption control factor will not bring significant changes to the financial markets.

Political stability and absence of violence / terrorism

The probability of posterior inclusion for the size of the Political stability and the absence of violence / terrorism at global level is 35%, and the posterior average has a positive impact of 0.007% indicating anti-persistence. The probability of posterior inclusion is 50% for mature economies, and the posterior average has a positive impact of 0.005% indicating anti-persistence. The likelihood of ulterior inclusion in countries with emerging and bordering economies is 52% and the posterior average indicates persistence, with a negative value of 0.02%.

Voice and Accountability

Based on the Bayesian estimation method, the value of the global PIP probability inclusion ratio for the Participation and responsibility dimension and emerging and bordering levels is 40% and 46% respectively, and for mature countries the value is 5%. Global posterior average and emerging countries show persistence, while for mature countries we have a result equal to zero.

3.1.6 Fractal dimension-Variogram

Regarding the results of the coefficient of the Variogram on the 6 dimensions, the following findings were made:

Table no. 6 Variogram results (global, emerging and bordering, mature)

GLOBAL	**VARIOGRAM (V-1.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.4302	0.0056	0.0141	1
Rule of Law	0.3982	0.0013	0.0142	0.592
Government Effectiveness	0.3849	-0.0009	0.014	0.2309
Control of Corruption	0.4638	0.0066	0.0137	1
Political Stability and Absence of Violence/Terrorism	0.3551	-0.0007	0.0059	0.0996

Voice and Accountability	0.4657	0.0043	0.0081	1
EMERGING AND FRONTIER	**VARIOGRAM (V-1.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.5701	0.0099	0.0148	1
Rule of Law	0.5535	-0.0102	0.0173	0.0349
Government Effectiveness	0.4432	-0.0026	0.0106	0.1481
Control of Corruption	0.4915	0.0053	0.0118	0.9526
Political Stability and Absence of Violence/Terrorism	0.5864	0.0065	0.0091	1
Voice and Accountability	0.4241	0.0008	0.0037	1
MATURE	**VARIOGRAM (V-1.5)^2**			
Variables	**PIP**	**POST. MEAN**	**ST. DEV.**	**POS.SIGN. DEV.**
Regulatory Quality	0.4864	-0.0027	0.0163	0
Rule of Law	0.4889	0.0013	0.0191	0.2871
Government Effectiveness	0.5153	-0.0171	0.0391	0
Control of Corruption	0.4861	0.0007	0.0154	0.2874
Political Stability and Absence of Violence/Terrorism	0.4841	0.00009	0.006	0.1893
Voice and Accountability	0.5067	0.0086	0.0303	0.5591

Regulatory Quality

In the case of the quality of regulations, the analysis of 1008875 models, of which 100 top models; in terms of global results, shows a PIP of 43%, that is, the percentage in which this dimension was included in the total of models, while the results for PIP in the countries with socio-mature economies are somewhat higher, 48%, the analysis of 1041138 models shows that 60% this dimension is taken into account, and for the emerging and the bordering countries, it was taken into account in a proportion of 57%, the analysis being based on 900497 models, of which 100 top models. In terms of the posterior average, both globally and for countries with emerging and bordering economies, the result is a positive sign, indicating anti-persistence, with some changes in the market. For mature countries the posterior average value is negative of -0.27%. Therefore, with regard to the changes to the dimension of the quality of regulations, we notice that their impact is greater on the emerging and bordering countries, and within the mature, developed markets, the effects on this dimension are not felt so strongly.

Rule of law

In the case of the Law Supremacy / Rule of Law, the global PIP shows that 39% of the models considered included this dimension. The posterior average is 0.13%, and this percentage is affected by Skewness by the dimension of the Rule of Law. The variable is positive and indicates anti-persistence. In cases of anti-persistence, when a change occurs on this dimension, its effects will be felt and changes will also occur in the financial market. These changes will deviate skewness from the reference level. However, the amplitude of the variable is not very large. For the Law Supremacy variable, mature countries reflect a PIP of 48%. The ulterior average for the indicator, namely 0.13%, highlights the impact it exerts on the Skewness dependent variable. The impact is positive (+) resulting in anti-persistence and we observe an equal value with the global one. For the Law Supremacy variable, the PIP for emerging and bordering countries is 53%. The posterior average has a negative result, -1.02, indicating persistence.

Government Effectiveness

In terms of government effectiveness, the global PIP is 38%, for mature economies, 51%, and for emerging and bordering countries, 44%. For all three categories, the result of the posterior average is negative and indicates persistence. Deviations from the reference value are not high, so the magnitude of the effects is small.

Control of Corruption

The dimension of control of corruption at the global level shows a statistically insignificant PIP of 46% and its posterior average is positive, indicating anti-persistence but with a small impact of 0.66%. In mature markets, the PIP is 48%. The value of the posterior average for control of corruption indicates an anti-persistence value of 0.07%. This variable for countries with emerging and bordering markets was used in 49% of the models considered. The posterior average has a positive impact of 0.53%. We have anti-persistence effect. A change in the value of the corruption control factor will bring major changes to the financial market

Political stability and absence of violence / terrorism

The probability of posterior inclusion for the dimension of the Political Stability and the absence of violence / terrorism at global level is 35% and the posterior average has a negative impact of -0.07% indicating persistence. The probability of posterior inclusion is 48% for mature economies, and the posterior average has a negative impact -0,009% indicating anti-persistence. The likelihood of ulterior inclusion in countries with emerging and bordering economies is 58% and the posterior average indicates persistence, with a positive value of 0.65%.

Voice and Accountability

For the Voice and Accountability variable, the global PIP is 46%, and the posterior average is positive, indicating anti-persistence. This result shows that when something changes in this dimension, the market will sense it and there will also be changes on the financial side. Freedom of expression, of association, etc. may be affected. For mature countries, Voice and Accountability is statistically significant, with the model being taken 50% into account. The result of the posterior average is positive, 0.86% indicating anti-persistence. For emerging countries, the size of the variable is not statistically significant, with PIP at 42%. The result of the posterior average is 0.08%, positive, which shows anti-persistence.

Conclusions

Following the empirical analysis of the 30 countries over a period of 12 years, we have found that factors such as political, institutional, cultural, social issues related to the quality of regulations, the rule of law, participation and responsibility, measuring the quality of public services impact decisions made within the financial markets. Global governance indicators have a considerable impact on the dependent variable, acting on the financial mechanisms and the dynamics of the capital market.

Global governance indicators have a considerable impact on the dependent variable, acting on the financial mechanisms and the dynamics of the capital market.

Behavioural issues, public policies, organizational culture influence the investment decision, taking into account the preferences, beliefs, attitudes and values of each individual. By aspects of individual circumstances and psychological factors, the decisions of each individual will be influenced by his behaviour, representing a set of manifestations, attitudes, motivations and decisions.

The quality of governance can come to affect the behaviour, and in the case of shocks even contribute to their propagation. Financial turmoil may later impact the entire economy. The situation related to the 6 dimensions is the following:

Table no. 7 Overall results

Regulatory Quality	GLOBAL	MATURE	EMERGING AND FRONTIER

HURST	-	-	-
SKEWNESS	-	-	-
KURTOSIS	-	-	-
BOX COUNT	-	**0**	-
HALLWOOD	+	+	+
VARIOGRAM	+	-	+
Rule of Law	**GLOBAL**	**MATURE**	**EMERGING AND FRONTIER**
HURST	+	+	+
SKEWNESS	+	+	+
KURTOSIS	+	+	+
BOX COUNT	+	+	+
HALLWOOD	-	+	-
VARIOGRAM	+	+	-
Government Effectiveness	**GLOBAL**	**MATURE**	**EMERGING AND FRONTIER**
HURST	+	+	-
SKEWNESS	-	+	-
KURTOSIS	-	+	-
BOX COUNT	-	-	+
HALLWOOD	+	+	-
VARIOGRAM	-	-	-
Control of Corruption	**GLOBAL**	**MATURE**	**EMERGING AND FRONTIER**

HURST	+	+	-
SKEWNESS	+	-	+
KURTOSIS	+	-	+
BOX COUNT	+	0	-
HALLWOOD	+	+	+
VARIOGRAM	+	+	+
Political Stability and Absence of Violence/Terrorism	**GLOBAL**	**MATURE**	**EMERGING AND FRONTIER**
HURST	-	-	+
SKEWNESS	+	+	-
KURTOSIS	+	+	-
BOX COUNT	+	+	-
HALLWOOD	-	+	+
VARIOGRAM	-	+	+
Voice and Accountability	**GLOBAL**	**MATURE**	**EMERGING AND FRONTIER**
HURST	+	-	-
SKEWNESS	-	-	+
KURTOSIS	-	-	+
BOX COUNT	-	0	-
HALLWOOD	-	+	-
VARIOGRAM	+	+	+

Posterior means with the highest values indicating anti-persistence (+) with impact on Skewness, Kurtosisis, Hurst, Fractal Dimension (the largest impact) are found on the

dimensions of the Rule of Law, Control of Corruption and Political stability and absence of violence/terrorism;

While on the dimensions of Participation and responsibility, Efficiency of Governance, Regulation Quality impact is predominantly negative (-) indicating persistence, so there are no significant deviations from the reference level.

As far as the results for the fractal dimension showing the short-term effect / memory are concerned, considering the institutional policy issues, the quality of the regulations was expected to be zero, as these dimensions suffer changes over longer cycles, not a short-term impact.

The empirical results are diverse, revealing both positive persistence results with destabilizing effects and negative results, with stabilizing effects of anti-persistence of the variables. For some dimensions, we notice that the changes have a bigger impact on emerging and bordering markets, but at the same time we see the deviations from the efficiency level in the markets with socio-mature economies.

Consequently, financial decisions are never "pure", but are the result of a cumulation of objective and subjective factors of organizational, cultural, psychological and behavioral nature.

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