

COUNTRY RATING AND STOCK MARKET VOLATILITY: AN EMPIRICAL ESTIMATION FOR KARACHI STOCK EXCHANGE

MUHAMMAD BILAL SAEED
ARSHAD HASSAN

Mohammad Ali Jinnah University, Islamabad, Pakistan

ABSTRACT

This study is aimed to explore the relationship between country rating and volatility of Karachi Stock Exchange for the period 1999 to 2012. This study employs daily data of country ratings and stock market returns to investigate influence of rating on volatility of market. Univariate Asymmetric GARCH model is used to explore the relationship and results reveal that country rating has a significant role in explaining volatility in Karachi Stock Exchange.

INTRODUCTION

Investors are mainly concerned with returns so their interest is in current and prospective risks. Investors have to allocate funds in local as well as foreign markets that is why huge finances are spent on identifying and explaining the risks involved along with the ways to manage these risks. But most of the efforts are diverted to formulating plans for risks that can be managed through insurance, financial planning or other financial measures. However there exist some risks that cannot be managed through these measures. The conventional approach to evaluate an investment opportunity, such as purchasing a treasury bond or buying a basket of stocks, focuses on the identification and examination of prevailing risks. The investors while evaluating risks consider two things. Firstly, the information requirements and secondly the mathematical model to capture the risk. These decisions are taken in advance so that the optimal investment opportunity can be evaluated. This approach only works fine if the goal is to improve the returns nominally. But interestingly it has been observed time and again that even when the opportunities are favorable, offering good returns with less risk, the investment managers as well as the institutions seem dissatisfied. One of the reasons is that once the investment opportunity is opted or the selection of the portfolio is made no one is interested to pay attention to figuring out how the information that is available has been utilized and how that piece of information could be used to make more informed decisions or gain higher returns. Some unanticipated benefits as well as drawbacks that may have provided insight into the investment decision may be overlooked. For example an investment opportunity that an institution

thinks to exist in the insurance sector of a specific country could only be optimized if and only if a proper mechanism is installed and set in place to evaluate the anticipated and unanticipated aspects pertaining to the decision that is vital for any institution.

This study involves the identification of an alternative approach to evaluate and quantify risk that continually allows the exploitation of the available data in new ways. Instead of the using the conventional political risk that is thought to be a good proxy for risks involved for evaluation of an investment opportunity in a specific country, it focus on the exploration of information beyond. Rather than viewing the conventional method as the only resource that can be used for evaluation it sees the risk existing within a country not only as the political risk but also a composite risk that comprise both risks i.e. governance risk, economic and financial risk. Most of the researchers are of the view that the investment opportunities that involve the stock markets of a country has nothing to do with other risks except the financial risk but over a time a large number of researchers have tried to analyze as well as quantify various types of risk that can affect investors' interest. Sometimes the financial as well as the economic reforms shape the risk preference of the investor and align the decision making process with a specific path of available set of information. This type of information can also result in inflows and outflows of capital especially in developing economies (Ramcharan, 1999). Under these circumstances it becomes important to understand that how the information specific to a country can affect an investment opportunity. The investment managers have to consider the country dynamic risk and it is not related to a specific set of factors in evaluating risk.

Number of studies that argue the matter discussed above cannot be treated in a conventional way. An analytical base with concrete evidences is required for defining, as well as explaining the impact of different types of ratings on volatility of stock markets, as these mostly address the effect of political risk ratings (Aliber, 1975). Commissioned to address this problem or opportunity that has been sensed, this study provides insight and then iteratively analyzes via empirical testing to gain knowledge and create understanding.

LITERATURE REVIEW

Hurwitz (1973), Taylor and Jodice (1983) have explained the three dimensions to political risk. The first one links political stability with level of democracy prevalent in the political system of a country. It is a conventional wisdom that the countries where non democratic systems exist have more political instability. The second one takes into account patterns of change in governments, and the way these changes are brought about in countries. The last and the third one adhere to the extent to which civil and social unrest take place within a country. Credit rating as a measure of risk and its impact on equity markets has been analyzed by Erb, Harvey and Viskanta (1995). The study provides evidence aligned with portfolio theory that higher risk rating is followed by higher expected returns. Cosset and Suret (1995) analyze the benefits of international portfolio diversification into politically risky countries. This study uses conventional mean-variance optimization procedure to assess the impact of political risk constraint on the risk and return of internationally diversified portfolio. Findings of the study suggest that diversification among politically risky countries improve risk return characteristics of optimal portfolios. In 1996 it is investigated that whether the risk indices encapsulate information about expected returns or not. This study employs five measures i.e. Political risk, economic risk, financial risk and composite risk from political risk service' International Country Risk Guide (ICRG) and a fifth measure from Institutional Investor's (II) country credit rating. Diamonte et al. (1996) and Diamond, Larry and Jay (2002) argue that the impact of political as well as economic risks especially in emerging and developing markets are matter of great concern, as these can influence the return earning ability of the informed investors. Bekaert and Harvey (1997) explore the changing influence of world factors on the volatility in emerging markets and report a weak negative relation between country credit rating and volatility. The study also find that political risk explain a large amount of variation in volatility.

Bilson, Brailsford, and Hooper (2002) contribute to the political risk literature in two ways. First, the study

presents a model of return variation that incorporate political risk, after taking into account both global and local influences on returns. Second, it tests the impact of political risk at both individual and aggregated portfolio levels. It reports that political risk is important in explaining return variation in individual emerging markets, particularly in the Pacific Basin. Ramcharran (2003) contribute to the existing literature by estimating the effect of political, economic and credit risk on equity returns, dividend yield, P/E ratio and price/book value ratio and report that political risk has significant impact on emerging market returns. Jensen and Nathan (2003) and afterwards Brady, Henry and Collier (2004) use the data for country's credit ratings from the International Country Risk Guide of political risk services and examine the effect of local factors through utilizing the country's credit rating of political, financial and economic risk on the stock market volatility, predictability and portfolio diversification in the context of ten emerging markets in Middle East and Africa (MAEF). The study uses GARCH-M model by allowing the shocks in local factors to affect conditional variance. It presents the shocks (Variable from the ICRG) by taking the difference between the risk ratings and report that the shocks in the political, economic and financial risk rating transfer the volatility constraints in the MAEF emerging markets. However, five out of ten countries have only three years of data, which may raise questions on the findings. Alon et.al (2006) carried out a cross country analysis to study the factors that are important to manage micro political risks.

Howell, Simpson and John (2007) study the composite risk rating provided by the ICRG (International Country Risk Guide) to measure the impact of political risk on stock returns in addition to the company's fundamental evaluation such as price-to-earnings ratio, dividend yield and price-to-book ratio in five emerging markets for the period of 1997 to 2001. The study reports that the company's fundamental and country rating factors help to explain the returns in selected markets and suggests that despite financial, political and economic reforms, there is a still impediment for investors due to political risk in these emerging markets.

METHODOLOGY

Data Description

The data for stock market index is taken from Karachi Stock Exchange. The daily closing value of KSE-100 index is used for calculating the daily returns. The closing prices are taken for the period January 1, 1999 to December 31, 2012. The daily return series has been generated by using the following equation:

$$R_t = \ln \left(\frac{KSE_t}{KSE_{t-1}} \right)$$

Where R_t is the return for day 't' and KSE_t and $KSE_{(t-1)}$ represents the closing value of the KSE-100 index for day 't' and 't-1' respectively and 'ln' stands for Natural Log. This study uses Country rating which is developed as follows:

Country rating comprises of two major components i.e. Governance risk and economic and financial risk. It is worth mentioning that this rating is the first of its kind as all the country ratings prior to this and developed by well reputed institutes such as Bank of America, Standard and Poor's Rating Group, ICGR (International Country Risk Guide) and some others take into account the political risk only. One of the argument that could be set forth as a challenge to this dimension resides in the fact that the political state is just a mere part of governance and hence for the development of rating or a score for the country it is impudent to consider the governance component fully and not just a single dimension of it i.e. the political aspect only. For the development of this rating a separate index is created for each component. The governance risk index comprises of 100 points and 50 points are assigned to each of financial and economic risk. The total points from these indices are divided by two to produce weights in order to calculate a composite score for country risk. The following section entails the complete details pertaining to the development of a risk rating for the country. As mentioned above the country rating is a composite index developed by using distinct set of risks. The first one is the governance risk. The governance risk rating includes five dimensions that are captured by 150 attributes from different sources. The points assigned to each variable are as follows:

COMPONENT	POINTS/ SCORE
GOVERNMENT SELECTION, POTENY & AC-COUNTABILITY	25
FREEDOM OF SPEECH AND EXPRESSION	25
POLITICAL INSTABILITY AND ENVIRONMEN-TAL UNREST	25
LAW AND ORDER SITUATION	15
CORRUPTION AND BRIBERY	10

Governance potency and accountability is the assessment of perceptions of the extent to which a country's citizens are able to participate in selecting their government, the quality of public as well as civil service provided by the government and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's

commitment to such policies. The risk rating is assigned to the attributes on a scale from 0 to 5. A score of zero means very low risk and a score of 5 means very high risk. The scores from all the attributes are then used to estimate a single score for Government Selection, potency and accountability. The attributes that have been employed are listed in the appendix I.

Freedom of Speech and Expression is the assessment of the perceptions of the extent to which a country's citizens enjoy freedom of expression, freedom of association, and a free media. The risk rating is assigned to the attributes on a scale from 0 to 5. A score of zero means very low risk and a score of 5 means very high risk. The scores from all the attributes are then used to construct a single score for Freedom of Speech and Expression. The indicators that have been employed are listed in the appendix I.

The Political Instability and environmental unrest is the assessment that measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means along with the factors that could result in unrest or chaotic situation of the environment. The risk rating is assigned to the attributes on a scale from 0 to 5. A score of zero means very low risk and a score of 5 means very high risk. The scores are then combined to capture the discussed dimension. The indicators that have been employed are listed in the appendix I.

The Law and Order Situation is a dimension that measures the perception of the extent to which participants of society abide by law and how the government is able to enforce laws and protect them from activities of violence and crime. The risk rating is assigned to the attributes on a scale from 0 to 5. A score of zero means very low risk and a score of 5 means very high risk. The scores are then used to measure the dimension Law and Order Situation. The indicators that have been employed are listed in the appendix I.

The Corruption and Bribery is the dimension that measures the perceptions of the extent to which participants of the society are involved in corruption and bribery paying activities. The risk rating is assigned to the attributes on a scale from 0 to 5. A score of zero means very low risk and a score of 5 means very high risk. The scores are then combined to capture Corruption and Bribery. The attributes are listed in the appendix I.

The economic risk rating as well as the financial risk rating is adopted from International Country Risk Guide. The composite score for Country rating is calculated by using risk rating calculated earlier i.e. the governance risk, the economic and the financial risk.

The governance risk rating contributes 50% of the composite rating, while the financial and economic risk contribute the remaining.

The following formula is used to calculate the aggregate political, financial and economic risk:

$$CGEFR_t = 0.50(GR_t) + 0.25(ER_t) + 0.25(FR_t)$$

where

CGEFR = Composite governance, economic and financial risk ratings

GR = Total governance risk indicators

ER = Total economic risk indicators

FR = Total financial risk indicators

Model and Methodology Description

ARCH/GARCH method is used to the impact of country rating on stock market volatility. The model suggests that the variance of the residuals at time t depends on the squared error terms from the past periods. Engle simply suggest that it is better to simultaneously model the mean and the variance of a series when it is suspected that the conditional variance is not constant.

Consider the simple model:

$$Y_t = \alpha + \beta X_t + \mu_t \quad (A)$$

Where X_t is an $n \times k$ vector of explanatory variables and β is a $k \times 1$ vector of coefficients.

Normally, it is assume that μ_t is ideally, independently distributed with a zero mean and a constant variance σ^2 , or in mathematical notation:

$$\mu_t \sim \text{iid } N(0, \sigma^2) \quad (B)$$

ARCH Model allows the variance of the residuals (σ^2) to depend on past history or to have heteroskedasticity because the variance may change over time. One way if allowing for this is to have the variances depend on lagged period of the squared error terms as follows:

$$\sigma_t^2 = \gamma_0 + \sum_{j=1}^q \gamma_j \mu_{t-j}^2 \quad (B)$$

Also

$$\gamma_i \geq 0 \forall i = 0, 1, 2, 3, \dots, q$$

Where:

X_t = Set of Explanatory Variables

σ_t^2 = Conditional variance at time t

Y_t = Set of Dependant Variables

μ_t = Disturbance term

Where equation (A) is called the mean equation and equation (B) is called the variance equation. ARCH provided a framework for the analysis and development of time series models of volatility. However the ARCH model is only the starting point of the empirical study

and relies on a wide range of specification tests. One of the drawbacks of ARCH specification, according to Engle (1995), is that it looked like a moving average specification than an auto regression. From this, a new idea is born which was to include the lagged conditional variance term as autoregressive terms. The Generalized ARCH (GARCH) model of Bollerslev (1986) fulfils this requirement as it is based on an infinite ARCH specification which reduces the number of estimated parameters from infinity to two.

The general GARCH (p, q) model has the following form:

$$Y_t = \alpha + \beta X_t + \mu_t \quad (C)$$

$$\mu_t \sim \text{iid } N(0, \sigma^2)$$

In that case, the GARCH (p, q) model (where p is the order of the GARCH terms σ_t^2 and q is the order of the ARCH terms μ^2 is given by:

$$\sigma_t^2 = \alpha_0 + \sum_{i=1}^q \alpha_i \mu_{t-i}^2 + \sum_{i=1}^p \beta_i \sigma_{t-i}^2 + \gamma_1 CRR_{t-1} + \gamma_2 SCRR_t \quad (D)$$

Where:

$$\sigma_t^2 = \text{Conditional variance at time } t$$

$$\mu_t = \text{Disturbance term}$$

The above can be describe as, the value of the variance scaling parameter σ^2 now depends both on the past values of the shocks (the q MA terms), which are captured by the lagged squared residual terms, and on past values of itself (the p AR terms), which are captured by lagged σ^2 terms.

Where equation (C) is called the mean equation and equation (D) is called the variance equation. This model specification usually performs very well and is easy to estimate because it has only three unknown parameters. The model for this study could be defined as follows:

$$R_t = \alpha + \gamma_1 R_{(t-1)} + \mu_t \quad (E)$$

$$\log(\sigma_t^2) = \omega + \alpha f(Z_{(t-1)}) + \gamma_2 \log(\sigma_{(t-1)}^2) + \gamma_3 (CRR)_t + \gamma_4 (SCRR)_t \quad (F)$$

RESEARCH ANALYSIS

Table 1 show that average daily returns in KSE is 0.08%. The maximum daily return in the Karachi stock market is 8.5% whereas the maximum loss in one day is 7.7%. Study uses country rating to capture the impact of country risk in Pakistan on the volatility of Pakistani stock returns. The average country risk is 1.44.

TABLE 1
Descriptive Statistics

	RETURN	COUNTRY RISK RATING
Mean	0.000879	1.439928
Median	0.001295	1.418919
Maximum	0.085071	1.652070
Minimum	-0.07741	1.364688

Table 2 show ARCH (1) model. The results represent the presence of ARCH effects.

TABLE 2
ARCH (1) model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001206	0.000203	5.945700	0.0000
RESID ² (-1)	0.079312	0.014549	5.451399	0.0000
Variance Equation				
C	0.000132	2.67E-06	49.23935	0.0000
RESID(-1) ²	0.417293	0.027492	15.17895	0.0000

Table 3 present the results for a GARCH (1, 1) model. The significant value of R_KSE(-1) show that in GARCH (1,1) the current returns can be predicted by past prices. From the variance equation, it is seen that current volatility can significantly predicted by past price behaviors and GARCH(-1) term show that phenomena of predicting past volatility is persistent over the period of time. It is also seen that explanatory variables country risk has a significant impact of the price volatility.

TABLE 3
A GARCH (1, 1) model with country rating

$$GARCH = C(3) + C(4)*RESID(-1)^2 + C(5)*GARCH(-1) + C(6)*CRR$$

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001206	0.000184	6.540232	0.0000
R_KSE(-1)	0.072347	0.017472	4.140669	0.0000
Variance Equation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.59E-05	8.19E-06	-5.602795	0.0000
RESID(-1) ²	0.167077	0.011189	14.93171	0.0000
GARCH(-1)	0.790243	0.010929	72.30619	0.0000
CRR	3.88E-05	5.96E-06	6.513266	0.0000

TGARCH (Threshold GARCH) model is used to capture asymmetric behavior in the stock market in terms of negative and positive shocks. Table 4 represents TGARCH (1,1) model for the KSE-100. The results of the TGARCH (1,1) showed that the coefficient of RESID(-1)²*(RESID (-1) <0) term is highly statistically significant (significance level is 5%)

and positive which indicate that bad news are creating more volatility in stock market than good news. From the variance equation, it is seen that current volatility can significantly predicted by past price behaviors and GARCH term show that phenomena of predicting past volatility is persistent over the period of time. It is also seen that country rating has a significant impact on the price volatility.

TABLE 4
A TGARCH (1,1) model with country rating
GARCH = C(3) + C(4)*RESID(-1)² + C(5)*RESID(-1)²*(RESID(-1)<0) + C(6)*GARCH(-1) + C(7)*CRR+ C(8)*SCRR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001053	0.000195	5.414286	0.0000
R_KSE(-1)	0.083404	0.017894	4.661026	0.0000
Variance Equation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.97E-05	8.28E-06	6.002727	0.0000
RESID(-1) ²	0.126567	0.012290	10.29830	0.0000
RESID(-1) ² *(RESID(-1)<0)	0.085209	0.017374	4.904412	0.0000
GARCH(-1)	0.780990	0.011811	66.12119	0.0000
CRR	4.22E-05	6.05E-06	6.975634	0.0000
SCRR	3.16E-06	4.02E-05	3.26842	0.0000

The ARCH/GARCH model may not capture the volatility clustering observed in financial returns data when shocks to the volatility are not symmetric. Table 5 is showing the results of exponential general autoregressive conditional heteroskedastic.

The results of the EGARCH (1, 1) shows that the coefficient of RESID (-1)/@SQRT (GARCH (-1)) term is highly statistically significant (significance level is 5%) and negative. Therefore for the KSE-100 index bad news has larger effects on the volatility of the return of KSE-100. From both of the TGARCH and EGARCH results, it can be reveal that for the return of KSE-100 there are asymmetries in the news especially bad news has a larger effects on the volatility of series than good news.

TABLE 5
EGARCH (1,1) model with country rating
LOG(GARCH) = C(3) + C(4)*ABS(RESID(-1)/@SQRT(GARCH(-1)))+C(5)*RESID(-1)/@SQRT(GARCH(-1))+C(6)*LOG(GARCH(-1))+C(7)*CRR+C(8)*SCRR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001215	0.000124	9.816377	0.0000
R(-1)	0.075408	0.017259	4.369231	0.0000
Variance Equation				

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(3)	-0.946766	0.058757	-16.11313	0.0000
C(4)	0.326208	0.017745	18.38336	0.0000
C(5)	-0.063189	0.009549	-6.617293	0.0000
C(6)	0.919323	0.005729	160.4673	0.0000
C(7)	0.812332	0.006290	4.234279	0.0000
C(8)	0.052162	0.016630	3.682103	0.0000

CONCLUSIONS AND RECOMMENDATIONS

This study analyzes the impact of country risk on volatility dynamics of Karachi Stock Exchange (KSE) using daily time series data from January 1, 1999 to December 31, 2012. In order to examine that country risk has a statistically significant effect on volatility of stock market, ARCH family models are used. Since, in ARCH / GARCH model a positive shock will have exactly the same effect in the volatility of the series as a big negative shock of the same magnitude. However, for equities it has been observed that negative shocks (or bad news) in the market have a larger impact on the volatility than a positive shocks (or bad news) of the same magnitude. EGARCH model also confirms the results. Threshold GARCH (TGARCH) model indicates that bad news creates more volatility than good news. It is possible for the investors to forecast the future as there exists a predictive link between stock market volatility and past price volatility. The country's rating as developed and used in this study can be used by investors to measure the risk pertaining in any country. The results reveal that country rating has an impact on stock market volatility. These results are consistent with Simpson and John (2007) that study the effect of political instability on stock market volatility. It has also been observed that negative shock has more impact than positive shock. The volatility of the equity market of Pakistan to country risk provides clues to investors and speculators in Pakistan to adjust their positions accordingly.

REFERENCES

- Aliber, R. A. 1975. Exchange risk, Political Risk and Investor Demands for External Currency Deposits. *Journal of Money, Credit and Banking* (7) 161-179
- Alon, I., Gurumoorthy, R., Mitchell, M. C., & Steen, T. 2006. Managing Micropolitical Risk: A Cross-Sector Examination, *Thunderbird International Business Review*, 48(5), 623—642.
- Bekaert, G., Harvey, C. R., 1997. Time-Varying World Market Integration. *Journal of Finance*, 50, 403-444.
- Brady, Henry E. and David Collier, eds, 2004 Rethinking

- Social Inquiry: Diverse Tools, Shared Standards.
- Cosset, J., Suret, J., 1995. Political Risk and the Benefit of International Portfolio Diversification. *Journal of International Business Studies* 26, 301-318
- Diamond, Larry Jay, 2002. Thinking About Hybrid Regimes, *Journal of Democracy*, 13, 21-35
- Diamonte, R.L., J.M. Liew and R.L. Stevens 1996., Political Risk in Emerging and Developed Markets, *Financial Analysts Journal*, 71-76.
- Erb, Claude B., Harvey, Campbell R., Viskanta, Tadas E. 1996 Political Risk, Economic Risk and Financial Risk, *Financial Analysts Journal*.
- Howell, Llewellyn D., 2007. Country and Political Risk Assessment for Manager, in Howell, Llewellyn D. (ed.) *The Handbook of Country and Political Risk Analysis*(4thEdition) The PRS Group, Inc.
- Hurwitz, Leon 1973 Contemporary Approaches to Political Stability, Comparative Politics, Vol. 5, No. 3, *Special Issue on Revolution and Social Change* (April):449-463
- Jensen, Nathan M. 2003. Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment, *International Organization* 57 (3): 587-616.
- Jodice, David A. 1984, Trends in Political Risk Assessment: Prospects for the Future, in Fariborz Ghadar and Theodore H. Moran, eds., *International Political Risk Management: New Dimensions, Ghadar and Associates*, 8-26.
- Ramacharan 1999. 'Foreign Direct Investment in Tamil Nadu: Review and Comparison Across Host Sites', Center for International Development, Harvard University.
- Simpson, John, 2007. Expert Political Risk Opinions and Banking System Returns: a Revised Banking Market Model, *American Review of Political Economy*, 5(14-33)
- Taylor, C. L., and D. A. Jodice. 1985. World Handbook of Political and Social Indicators III, 1948–1982; Part 2: Daily Political Events Data [machine-readable data file]. Second ICPSR edition (ICPSR 7761)

APPENDIX I

1. Accountability of Public Officials (from EIU)
2. Quality of bureaucracy / institutional effectiveness (from EIU)
3. Excessive bureaucracy / red tape (from EIU)
4. Infrastructure (from GCS)
5. Quality of primary education (from GCS)
6. Satisfaction with public transportation system(from GWP)
7. Satisfaction with roads and highways (from GWP)
8. Satisfaction with education system (from GWP)
9. Coverage area: public school (from IPD)
10. Coverage area: basic health services (from IPD)
11. Coverage area: drinking water and sanitation (from IPD)

12. Coverage area: electricity grid (from IPD)
13. Coverage area: transport infrastructure (from IPD)
14. Coverage area: maintenance and waste disposal (from IPD)
15. Bureaucratic quality (from PRS)
16. Unfair competitive practices (from EIU)
17. Price controls (from EIU)
18. Discriminatory tariffs (from EIU)
19. Excessive protections (from EIU)
20. Discriminatory taxes (from EIU)
21. Burden of government regulations (from GCS)
22. Extent and effect of taxation (from GCS)
23. Prevalence of Trade Barriers (from GCS)
24. Intensity of Local Competition (from GCS)
25. Ease of starting a new business (from GCS)
26. Effectiveness of anti-trust policy (from GCS)
27. Stringency of environmental regulations (from GCS)
28. Investment Freedom (from HER)
29. Financial Freedom (from HER)
30. Ease of starting a business governed by local law? (from IPD)
31. Ease of setting up a subsidiary for a foreign firm? (from IPD)
32. Share of administered prices (from IPD)
33. Does the State subsidize commodity prices (i.e. food and other essential goods, excluding oil)?
34. Does the State subsidize the price of petrol at the pumps? (from IPD)
35. Importance, de facto, of barriers to entry for new competitors in markets for goods and services (excluding the financial sector and beyond the narrow constraints of the market)... related to the administration (red tape etc.) (from IPD)
36. Importance, de facto, of barriers to entry for new competitors in markets for goods and services (excluding finance and beyond the narrow constraints of the market)... related to the practices of already established competitors (from IPD)
37. Efficiency of competition regulation in the market sector (excluding financial sector)
38. Investment profile (from PRS)
39. Democracy Index (from EIU)
40. Vested interests (from EIU)
41. Human Rights (from EIU)
42. Freedom of association (from EIU)
43. Political Rights (FRW) (from FRH)
44. Civil Liberties (FRW) (from FRH)
45. Press Freedom Index (FRP) (from FRH)
46. Media (FNT) (from FRH)
47. Civil Society (FNT) (from FRH)
48. Electoral Process (FNT) (from FRH)
49. Transparency of government policy making (from GCS)
50. Freedom of the Press (from GCS)
51. Favoritism in Decisions of Government Officials (from GCS)
52. Effectiveness of Law-Making Body (from GCS)
53. Confidence in honesty of elections (from GWP)
54. Restrictions on domestic and foreign travel (CIRI)(from HUM)
55. Freedom of political participation (CIRI) (from HUM)
56. Imprisonments because of ethnicity, race, or political, religious beliefs (CIRI) (from HUM)
57. Freedom of Speech (CIRI) (from HUM)
58. Freedom of elections at national level (from IPD)
59. Are electoral processes flawed? (from IPD)
60. Do the representative Institutions (e.g. parliament) operate in accordance with the formal rules in force (e.g. Constitution)? (from IPD)
61. Freedom of the Press (freedom of access to information, protection of journalists, etc.)(from IPD)
62. Freedom of Association (from IPD)
63. Freedom of assembly, demonstration (from IPD)
64. Respect for the rights and freedoms of minorities (ethnic, religious, linguistic, immigrants...) (from IPD)
65. Is the report produced by the IMF under Article IV published? (from IPD)
66. Reliability of State budget (completeness, credibility, performance...) (from IPD)
67. Reliability of State accounts (completeness, audit, review law...) (from IPD)
68. Reliability of State-owned firms' accounts (from IPD)
69. Reliability of basic economic and financial statistics (e.g. national accounts, price indices, foreign trade, currency and credit, etc.)(from IPD)
70. Reliability of State-owned banks' accounts (from IPD)
71. Is the State economic policy (e.g. budgetary, fiscal, etc.)... communicated? (from IPD)
72. Is the State economic policy (e.g. budgetary, fiscal, etc.)... publicly debated? (from IPD)
73. Degree of transparency in public procurement (from IPD)
74. Freedom to leave the country (i.e. passports, exit visas, etc.) (from IPD)
75. Freedom of entry for foreigners (excluding citizens of countries under agreements on free movement, e.g. Schengen Area, etc.) (from IPD)
76. Freedom of movement for nationals around the world(from IPD)
77. Genuine Media Pluralism (from IPD)
78. Freedom of access, navigation and publishing on Internet (from IPD)
79. Military in politics (from PRS)
80. Democratic accountability (from PRS)
81. Press Freedom Index (from RSF)
82. Orderly transfers (from EIU)
83. Armed conflict (from EIU)
84. Violent demonstrations (from EIU)
85. Social Unrest (from EIU)
86. International tensions / terrorist threat (from EIU)
87. Cost of Terrorism (from GCS)
88. Frequency of political killings (CIRI) (from HUM)
89. Frequency of disappearances (CIRI) (from HUM)
90. Frequency of tortures (CIRI) (from HUM)
91. Political terror scale (PTS) (from HUM)
92. Security Risk Rating (from IJT)
93. Intensity of internal conflicts: ethnic, religious or regional (from IPD)
94. Intensity of violent activities...of underground political organizations (from IPD)
95. Intensity of social conflicts (excluding conflicts relating to land) (from IPD)
96. Government stability (from PRS)
97. Internal conflict (from PRS)
98. External conflict (from PRS)
99. Violent crime (from EIU)
100. Organized crime (from EIU)
101. Fairness of judicial process (from EIU)
102. Enforceability of contracts (from EIU)
103. Speediness of judicial process (from EIU)
104. Confiscation/expropriation (from EIU)
105. Intellectual property rights protection (from EIU)
106. Private property protection (from EIU)
107. Business Cost of Crime and Violence (from GCS)
108. Cost of Organized Crime (from GCS)
109. Reliability of Police Services (from GCS)
110. Judicial Independence (from GCS)
111. Efficiency of Legal Framework for Challenging Regulations

- (from GCS)
112. IPR protection (from GCS)
 113. Property Rights (from GCS)
 114. Informal Sector (from GCS)
 115. Confidence in the police force (from GWP)
 116. Confidence in judicial system (from GWP)
 117. Have you had money property stolen from you or another household member? (from GWP)
 118. Have you been assaulted or mugged? (from GWP)
 119. Property Rights (from HER)
 120. Independence of judiciary (CIRI) (from HUM)
 121. Degree of security of goods and persons by criminal organizations (drug trafficking, weapons, prostitution...) (from IPD)
 122. Degree of judicial independence vis-à-vis the State (from IPD)
 123. Degree of enforcement of court orders (from IPD)
 124. Timeliness of judicial decisions (from IPD)
 125. Equal treatment of foreigners before the law (compared to nationals) (from IPD)
 126. Practical ability of the administration to limit tax evasion (from IPD)
 127. Efficiency of the legal means to protect property rights.
 128. Generally speaking, does the State exercise arbitrary pressure on private property (e.g. red tape...)?(from IPD)
 129. Does the State pay compensation equal to the loss in cases of expropriation (by law or fact) when the expropriation concerns land ownership?(from IPD)
 130. Does the State pay compensation equal to the loss in cases of expropriation (by law or fact) when the expropriation concerns production means?(from IPD)
 131. Degree of observance of contractual terms between national private stakeholders(from IPD)
 132. Degree of observance of contractual terms between national and foreign private stakeholders(from IPD)
 133. In the past 3 years, has the State withdrawn from contracts without paying the corresponding compensation... vis-à-vis national stakeholders?(from IPD)
 134. In the past 3 years, has the State withdrawn from contracts without paying the corresponding compensation... vis-à-vis foreign stakeholders?(from IPD)
 135. Respect for intellectual property rights relating to... trade secrets and industrial patents(from IPD)
 136. Respect for intellectual property rights relating to... industrial counterfeiting(from IPD)
 137. Does the State recognize formally the diversity of land tenure system?(from IPD)
 138. Law and Order(from PRS)
 139. Trafficking in People(from TPR)
 140. Corruption among public officials (from EIU)
 141. Public Trust in Politicians (from GCS)
 142. Diversion of Public Funds(from GCS)
 143. Irregular Payments in Export and Import(from GCS)
 144. Irregular Payments in Public Utilities(from GCS)
 145. Irregular payments in tax collection(from GCS)
 146. Irregular Payments in Public Contracts(from GCS)
 147. Irregular Payments in Judicial Decisions(from GCS)
 148. Level of corruption between administrations and local businesses(from IPD)
 149. Level of corruption between administrations and foreign companies(from IPD)
 150. Corruption(from PRS)