COUNTRY RISK

Country Risk

Definition: Country Risk

Country risk (CR) represents the risk attached to a borrower/investor by virtue of its location in a particular country.

Q: Why do we care about CR?

- MNCs make decisions on DFI projects on the basis of NPVs.
- MNCs use discount rates to establish NPV for projects

  (the higher the discount rate, the lower the chances of a project to have a NPV>0).

Q: Where do discount rates come from?

A: For projects abroad, a key element is Country risk (CR)

Note: CR is different than FX risk. CR risk can be zero and FX can be huge for a given country. The reverse, though unusual, can also happen.

CR reflects the (potentially) negative impact of a country's economic and political situation on an MNC's or an investor's cash flows.

• Situations that can affect MNC's Cash flows
- Nationalization of subsidiaries or joint ventures.
- Labor strikes in an industry.
- A political scandal that introduces new laws or regulations.
- New trade restrictions, limiting imports or exports.

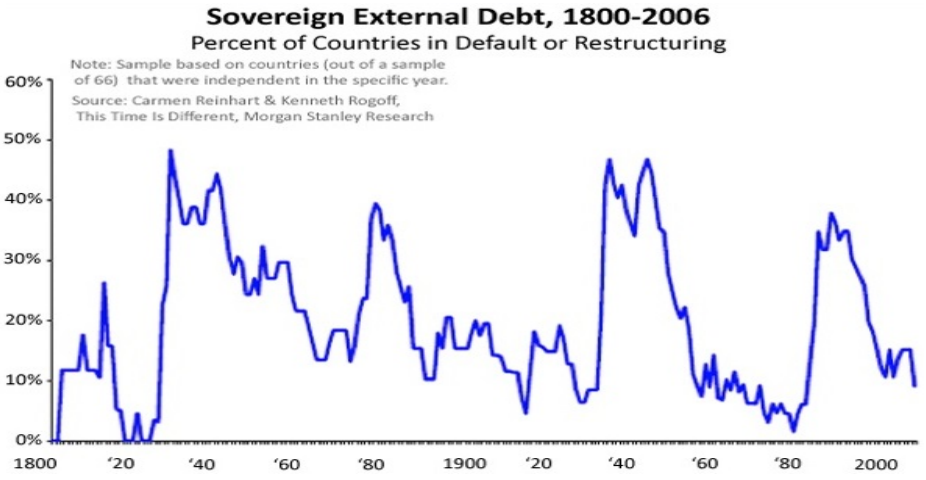
Q: Does *country risk* analysis matter?

A: Look at companies investing in Ukraine and Russia in 2014! Value of Russian assets went down significantly. Global investors, MNCs, bondholders realize the relevance of country risk analysis.

International Defaults are not rare

Graph X.1

Sovereign External Debt1800 - 2006 – Taken from Reinhart and Rogoff (2011)



• Measures to reduce country risk:

- A *cap* on the total amount invested in a particular country.
- Diversification.
- Credit/Political Risk Derivatives

Diversification and Country Risk (From The Economist, Sep 20, 2014)

After China's revolution in 1949 HSBC, then a purely Asian bank, lost half its business. Iran's nationalization in 1951 of the Anglo-Iranian Oil Company's assets devastated the firm, a precursor of BP.

Modern episodes.

• Repsol (Spain) fell in love with Argentina, leaving it vulnerable when YPF, the firm it bought there, was nationalized in 2012.

• First Quantum, (Canada), had made a third of its profits from a mine that the Democratic Republic of Congo nationalized in 2009.

Ben van Beurden, the boss of Royal Dutch Shell, recently said diversification is "the only way to inoculate yourself".

• Simple Idea

There are many factors that can influence a country's economic policies: political, economic, social, etc.

We want to create a global indicator that assesses the likelihood of a (negative) change in a given country's economic policy.

This indicator, reported as a single number, is called *country risk* (CR).

• Similar to *credit risk* ratings, CR is usually measured (and reported) as a letter (A=excellent, C=bad) $\Rightarrow$ Letter = Grade

• Ideally, CR gives companies and lenders a very good indicator of a country's likelihood of default.

• Credit and Interest Rate Risk for Bonds: Brief Review

Bonds are subject to two types of risk:

1) *Interest rate risk* (risk associated to changes in interest rates)

2) *Credit/default risk* (risk associated to the probability of default combined with the probability of not receiving principal and interest in arrears after default)

Credit rating agencies describe (measure) the risk with a credit rating (a letter grade).

Rule: The higher the grade, the lower the yield of the bond (measured as a spread over risk-free rate). (For us, the risk-free rate is the yield of government bonds).

• General Idea

From a big data set (with a lot of economic, socioeconomic and political variables and observations), we come up with a single measure (a letter).

• Two approaches to measure CR (and get a grade)

(1) Qualitative – collect data, get an opinion from "experts," form a "consensus" grade.

(2) Quantitative – collect data, process the data with a computer model, get a grade.

(1) *Qualitative Approach*: Talk to experts (politicians, union members, economists, etc) to form a consensus opinion about the risk of a country. The consensus opinion becomes the grade.

(2) *Quantitative Approach*: Start with some quantifiable factors that affect CR. Use a formula to determine numerical scores for each factor. Calculate a weighted average of the factors' numerical scores. This weighted average determines the final grade.

(1) Qualitative Approach is considered *"subjective."*
(2) Quantitative Approach is considered (or seems more) "*objective*."

We will emphasize the Quantitative Approach.

- **Pros**
  - It is simple
  - It allows cross-country and across time comparison.
- **Cons**
  - It is too simple.
  - In practice, ratings tend to converge (*herding*).
  - Not a lot of predictive power.

Note: Ideally, rating companies are independent. But, they have incentives to accommodate clients (countries).

CR: Is it really a good indicator of economic problems/default?

The lack of predictive power for many crisis is a major criticism.

For example, a month before the 1997 Asia crisis, South Korea was rated as Italy and Sweden. Then, Fitch went from rating Korea as AA- (investment grade) to B- (junk) in one month. Other rating agencies replicated the same dramatic sudden change in Korea's CR rating.

In early 1998, Fitch justified the situation:

"There were no early warnings about Korea from us or, to the best of our knowledge, from other market participants, and our customers should expect a better job from us."

Similar sudden downgrades occurred during the recent European debt crisis with Greece, Ireland, Italy, Portugal, and Spain.

• Practical use of CR

• We will associate CR to the spread over a base, risk-free rate, say U.S. T-bills. That is, CR influences the interest on the debt issued by a government of a country (and the discount rate on foreign projects!).

Example: Setting yields for Mexico (actually, the Mexican government)

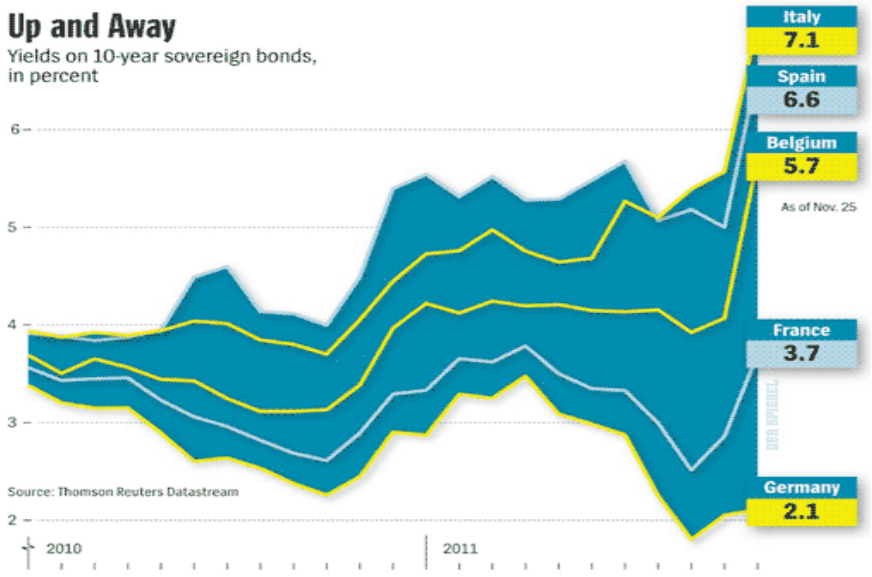
Yield on Mexican government debt = US Treasuries + spread (risk premium, a function of CR)

Mexico's grade: BBB -a spread of 140 bps (1.40%) over US Treasuries

US Treasuries yield 4% $\Rightarrow$ $Yield_{Mex}$ = 4% + 1.40% = 5.40%

If we have a project in Mexico, to calculate the discount rate, the $Yield_{Mex}$ becomes the risk-free reference rate. That is,

Discount Rate $Project_{Mex}$ = $Yield_{Mex}$ + project's risk premium. ¶



• What explains the difference between the yields in Germany and Italy? Country Risk.

• Risk Rating Method (Check list)

• Weighted average of grades for four major aspects of a country:

- Economic Indicators (financial condition)
- Debt management (ability to repay debt)
- Political factors (political stability)
- Structural factors (socioeconomic conditions)

The grades (between 0 and 100) for each factor are a function of "fundamental data." For example, the economic indicator's grade depends on GDP per capita, GDP growth, inflation, interest rates, etc.

A specific formula is used to compute the grades. For example,

$$\text{Score(EI)} = \alpha_0 + \alpha_1 \text{ GDP growth} + \alpha_2 \text{ Inflation} + \alpha_3 \text{ Productivity} + \ldots.$$

Regressions and experience will determine the coefficients (α_0, α_1, α_2,...).

• Risk Rating Method (Check list)

We expect better GDP growth and lower inflation to have a positive and negative coefficient, respectively.

• The final score –i.e., the CR letter- will be determined by a weighted average:

$$\text{Final Score} = w_{EI}\,\text{Score(EI)} + w_{DM}\,\text{Score(DM)} + w_{PF}\,\text{Score(PF)} + w_{SF}\,\text{Score(SF)}$$

Note: Weights should be positive & up to 1 –i.e., $w_{EI}+w_{DM}+w_{PF}+w_{SF}=1$.

Q: Where are the weights and the formulae for the grades coming from?

A: This method seems more "*objective*," because it is based on hard economic data, but weights and formula for grades might be "*subjective*."

$\Rightarrow$ It is more an art, than a science.

- The model can deliver different forecasts: Short-term, Medium-term, and Long-term.

  ⇒ The weights and grades can change depending on your horizon.

For example:

(a) Short-term: more weight to debt management and political factors.

(b) Long-term: more weight to economic indicators and structural factor.

- Each grade is associated with a spread in basis points (bps) over base rate, usually a risk free rate.

TABLE 16.1

Conversion Table of a Country's Grade into a Rating and Spreads over US Treasuries

Overall grade Rating	Rating	Interpretation	Spread (in bps)	Average
91-100	AAA	Excellent	10-70	50
81-90	AA		50-100	70
71-80	A		80-130	100
61-70	BBB	Average risk	110-220	160
51-60	BB		190-300	240
41-50	B		270-410	350
31-40	CCC	Excessive risk	360-490	450
21-30	CC		450-700	570
10-20	C		700+	800
0-10	D	In Default	(debt in arrears)	

• If a country is rated as **A**, its bond will trade at base rate plus a **(80-130)** bps spread.

Note I: A rating of BBB or better is considered "*investment grade*."

Note II: A rating of BB or less is considered "*junk*." In the U.S., the usual spread of junk debt is between 400 to 600 bps over 1-yr T-bills. Range is very wide: Spreads can go over 2600 bps.

Example: Spread on government European bonds: Nov 11. 2014.
Higher risk (PIIGS), higher spread! ¶

European Bond Yields and Spreads

Yields online between 9:00am to 5:30pm CET.

Time snapshot: 14/11/2014 - 5:29 PM CET

Country	Yield	Spread*	Close†	Change‡
Germany (1% 15 Aug 2024)	*0.79*	-	*0.80*	*-0.01*
France (1.75% 25 Nov 2024)	1.15	+ 35	1.17	-0.02
Belgium (2.6% 22 Jun 2024)	1.07	+ 28	1.10	-0.03
Italy (2.5% 1 Dec 2024)	2.35	+ 156	2.37	-0.01
Spain (2.75% 31 Oct 2024)	2.20	+ 141	2.13	0.07
Denmark (1.75% 15 Nov 2025)	1.03	+ 23	1.02	0.00
Finland (2% 15 Apr 2024)	0.89	+ 10	0.91	-0.01

From MTS Indices: http://www.mtsindices.com/european-bond-spreads.

Example: Bertoni Bank evaluates the country risk of country DX.

	Short-term Horizon			Medium-term Horizon		
Factor	**Weight**	**Grade**		**Weight**	**Grade**	
Economic	.3	80	24	.3	70	21
Debt managt	.3	90	27	.2	70	14
Political	.3	67	20.1	.2	50	15
Structural	.1	75	7.5	.3	60	12
Total			**78.6**			**63**

Short-term ranking: A
Medium-term ranking: BBB

That is, the short-term debt of country DX will get a spread in the **80-130** bps range, say **93 bps** over US Treasuries; while the medium-term debt will get a higher spread, say 128 bps.

Suppose the short-term US Treasuries yield **4%** (s.a.). Then, the short-term debt of country DX yields **4%** (s.a.) + 0.93% (s.a.) = 4.93% (s.a.) ¶

Example: Country Risk in Practice

Euromoney produces semi-annual country risk analysis of 189 countries using a panel of more than 400 experts. *Euromoney* rates six categories with a score (0 to 100).

• Categories and weights:

Economic performance	-30%
Political Risk	-30%
Structural assessment	-10%
Debt indicators: Debt/GDP; Debt service/X; & X-M/GDP	-10%
Credit rating: Moody's or S&P's or Fitch IBCA's rating	-10%
Access to bank finance/Capital markets: Grade from 0 to 10	-10%

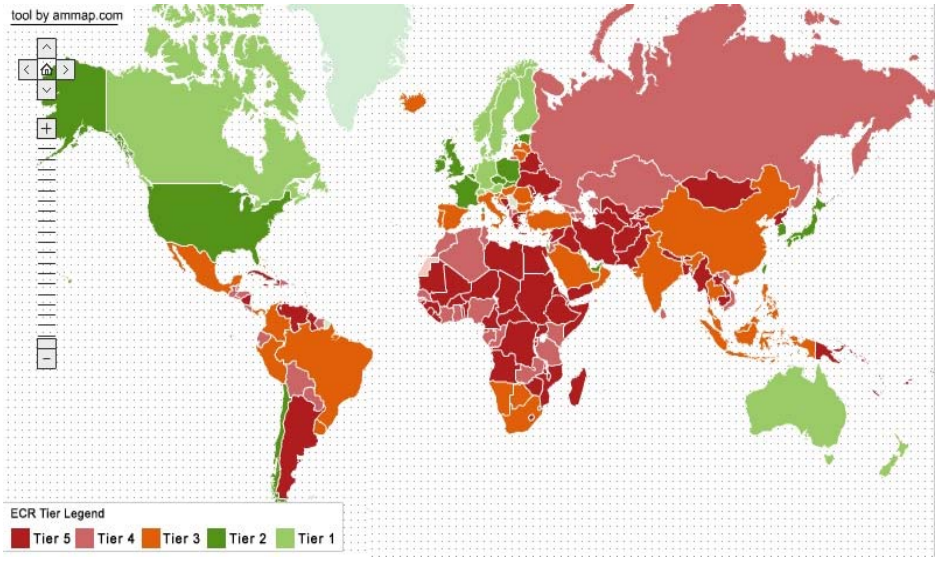
The first three categories are qualitative and the last three categories are (mainly) quantitative.

Based on the weighted average for each country, each country is placed on a Tier (Tier 1=AAA, Tier 5=C). ¶

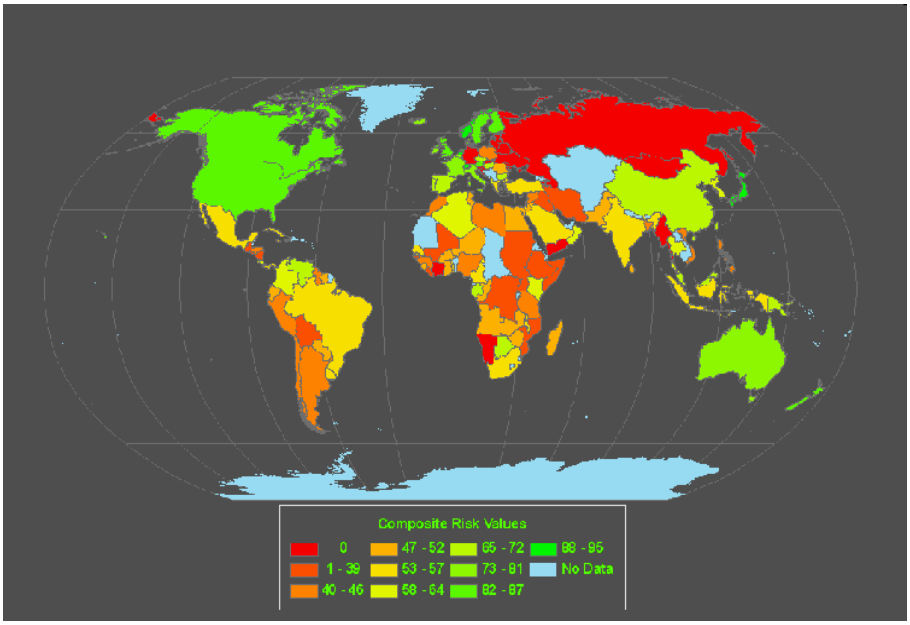
Example: Country Risk in Practice

Euromoney's experts evaluate each category for each country and grade them from 0 to 100. For example, they look at the category: Debt Indicator (10% weight) and grade it:

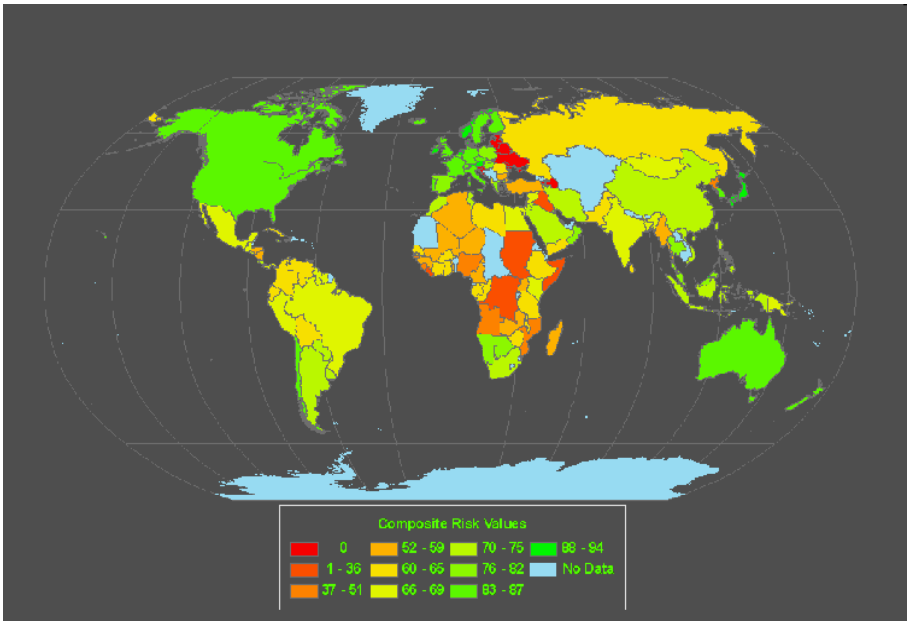
Example: ***Euromoney,*** *World* Country Risk February, 2016
World Country Risk weighted average: 42.94 (B rating or Tier 4)



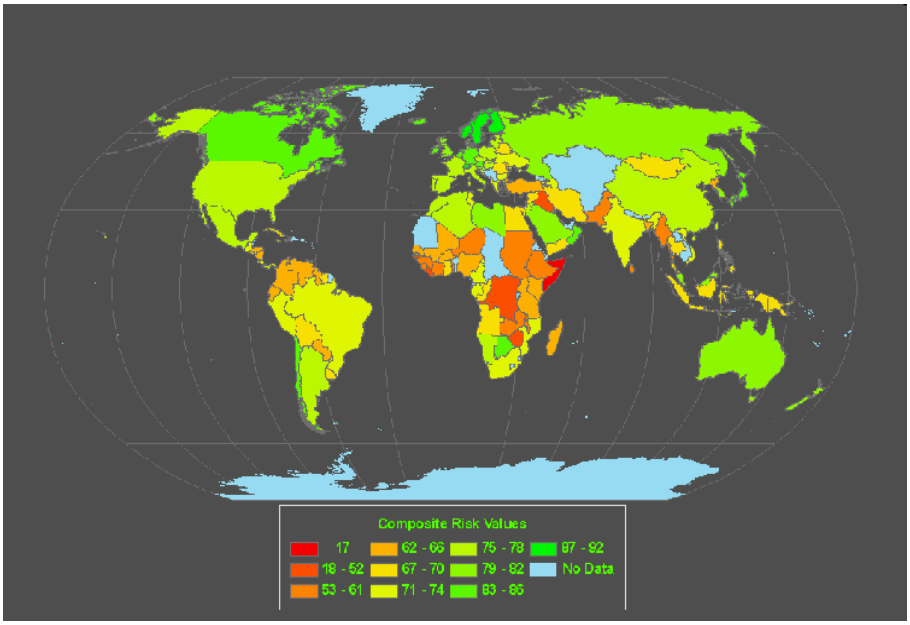
Example: **World Composite Risk 1986**



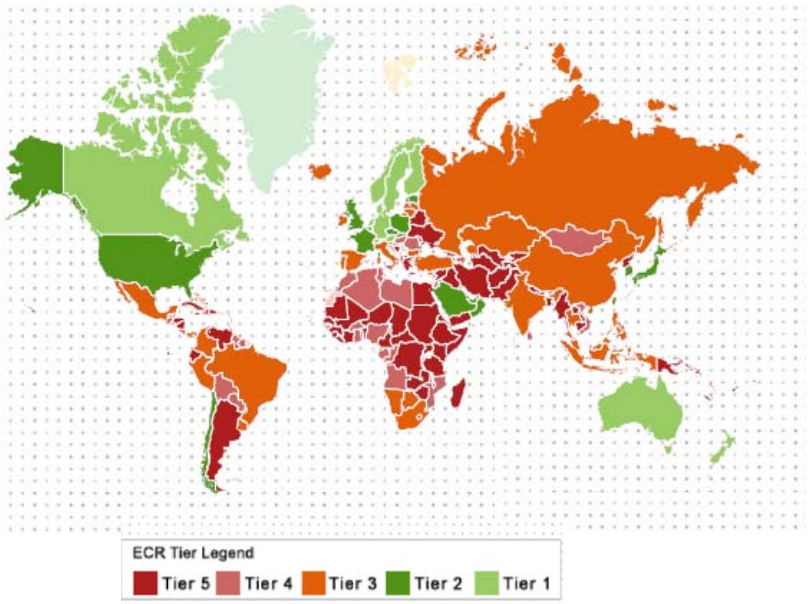
Example: World Composite Risk 1997



Example: World Composite Risk 2007



Example: **World Composite Risk 2014**



Example: **Country Risk in Practice**

• *Euromoney* CR ratings

- *Congo*

2011: 28.89 (World ranking: 139. In 2001, Congo ranked 180th.)

- *Romania*

2011: 49.09 (World ranking: 72. In 2001, Romania ranked 89th.)

- *China*

2011: 63.55 (World ranking: 40. In 2001, China ranked 45th.)

- *Taiwan*

2011: 80.04 (World ranking: 18. In 2001, Taiwan ranked 28th.)

- *Singapore*

2011: 87.48 (World ranking: 6. In 2001, Singapore ranked 14th.)

• As expected, there is a wide dispersion of CR across countries. Ratings, however, tend to be persistent over time.

• Other Country Risk Indicators

• Given the lack of predictive power of CR, a single indicator may not be enough. There are other indexes that may be also signal the *true* riskiness of a country –i.e., they can be correlated with the CR.

• Popular indicators

- A.T. Kearny: *Globalizaton Index* (it measures a country's global links)
- A.T. Kearny: *FDI confidence index* (survey of MNFs indicating the likelihood of investment in specific markets).
- World Economic Forum: *Global competitiveness index* (it uses to indexes to rate growth environment and opportunities).
- Institute for Management Development *World Competitiveness index.*
- PWC: *Opacity Index* (it measures the adverse impact of opacity of capital -the cost of borrowing funds- in different countries).
- Heritage Foundation: *Index of economic freedom* (absence of government obstructions).

• Other Country Risk Indicators

• Popular indicators

- Fraser Institute: *Index of Economic Freedom*
- UNDP: *Human Development Index* (HDI is a composite index measuring average achievement in life expectancy, education, and standard of living).
- Nord Sud Export (NSE) index (market potential assessment for foreign investor

• Other Country Risk Indicators

• Popular indicators: Summary

In general, we see countries' rankings moving in a similar range (say, Japan is between 9 and 28; UK between 2 and 20); but it is not always the case. The economic freedom rankings of Brazil and China make huge intervals for these countries, far away from the others.

Country	Euromoney (2011)	Global'n (2007)	GCI - WEF (2011)	WCI - IMD (2011)	Opacity (2009)	Economic Freedom (2011)
Brazil	41	67	53	44	28	99
China	40	66	26	19	45	138
Japan	25	28	9	26	16	22
UK	17	12	10	20	2	14
USA	15	7	5	1	6	10