



GlobalArenaRank™ Comparative Analysis Model - Explained

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GlobalArenaRank™

The process

Global Arena Rank

What is measured?

Global Arena Rank™ utilizes basic macroeconomic data provided by a wide variety of providers including: international financial research firms (e.g. Thomson-Reuters), government-provided statistical reports, World Bank information and others. Global Arena validates the raw data. Then, statistical analysis is used to identify correlations in the data series. The correlated data is categorized as follows:

Economic	Talent	Attractiveness
Labor Cost	Education	Market Attractiveness
Labor Productivity	Labor Availability	Socio-Political
Infrastructure	Labor Market Flexibility	Cost of Living

(A full definition of each category as well as an explanation of the data used in each category is provided in the appendix.)

For each of the nine categories, the component inputs for all in-scope locations are statistically correlated to create an ordered list. A meaningful overall ranking, i.e. one that depends on all nine categories, is possible only if there is mathematically consistent way to compare rankings across categories. Global Arena Rank™ solves this issue by mapping the raw ordered list of each category into a Gaussian distribution - a mechanism to allow each category to be converted to a ranking number between 0 and 1. (If the number of data sources is inadequate to make a Gaussian distribution mathematically viable, a flat mapping is used.) For convenience, these are presented in ranking reports as percentages. Informally, a location with a rank of 85% in a specific category would rank higher than 85% of any other location.

Once the macroeconomic data has been correlated and mapped, the information necessary for to complete the ranking is in place. Global Arena ranks are not static, but are computed based on the relative importance, assigned by the user, of each of the location categories. Different weights will lead to different results. This dynamic feature of the model is useful sense the things that are important for locating a call center are not the same as those for a HQ.

Global Arena Rank

Data Sources

- Market labour costs: Economic Research Institute, IMF
- Labour productivity: Eurostat
- ICT infrastructure: CIA World Factbook, OECD
- Education: United Nations
- Labour availability: CIA World Factbook
- Labour market flexibility: the World Bank
- Market attractiveness: Eurostat, CIA World Factbook, regional statistical offices
- Socio-political: the World Bank, the Heritage Foundation, Transparency International
- Cost of living: Economic Research Institute

GlobalArenaRank™ Explained

GlobalArenaRank™ Explained

- Location Ranking Charter

Provide a mathematically sound and objective analysis of macroeconomic indicators to support business location decisions.

Provide a dynamic analysis that allows the customer to weight decision criteria. (The requirements for a regional headquarters site are different from those for a shared service center.)

- Customized Ranking Report Charter

Use GlobalArenaRank™ technology to rank the client location against major competitors. Develop appropriate decision criteria to show client location in the best way.

(I.e. Identify ideal characteristics for ideal candidate to relocate)

Provide data to identify client location strengths and weaknesses.

The Process

Challenges

- **A common mechanism is needed to compare disparate data sources**

Example:

Redundancy costs (\$,€,¥,£, etc.)

Population (numbers)

Real GDP Growth (%) . High is 'good'

Productivity (\$/person; \$/hour worked – and alternative currencies)

taxation rate (%), Low is 'good'

- **Common, comparable data sources**

Research and standard statistical techniques to fill gaps

- **Correlation of multiple fields into a single index**

Standard statistical techniques

- **Mapping into a comparable index**

Normal (bell) curve – mapped from 0% - 100%

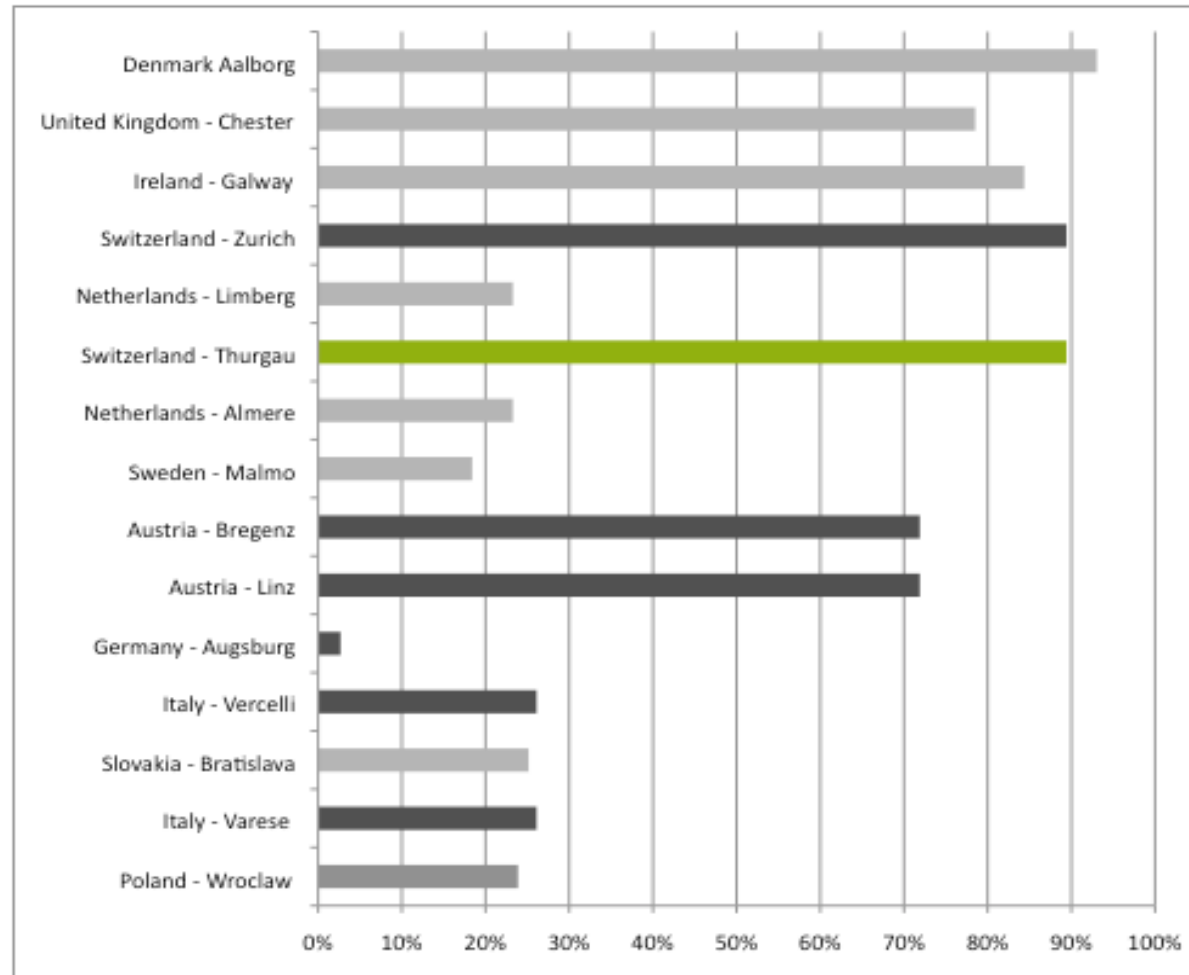
Example

Labor Market Flexibility

- **Select the locations to be analyzed**
- **Choose, standardize validate (correlation analysis) index components**
 - Difficulty of hiring index
 - Rigidity of hours worked index
 - Difficulty of Redundancy index
 - Redundancy Cost
- **Adjust data sources so that 'good' is always interpreted the same way**
- **Perform correlation statistical analysis**
- **Map results into Normal Curve, determine Standard deviation**
- **Convert results into percentages (mean = 50%)**
 - Low percentage corresponds to less than mean
 - High percentage corresponds to greater than mean

Partial result

Labor Market Flexibility



Process sequence

- **Repeat the process**

Remaining components

Taxation

Labor Market Productivity

Labor Market Cost

Labor Market Flexibility

Socio-economic stability

IT Infrastructure

Quality of Life

Cost of Living

Etc.

- **Create Ranking Database (indices, countries)**

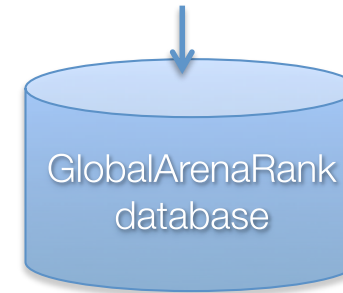


GlobalArenaRank™

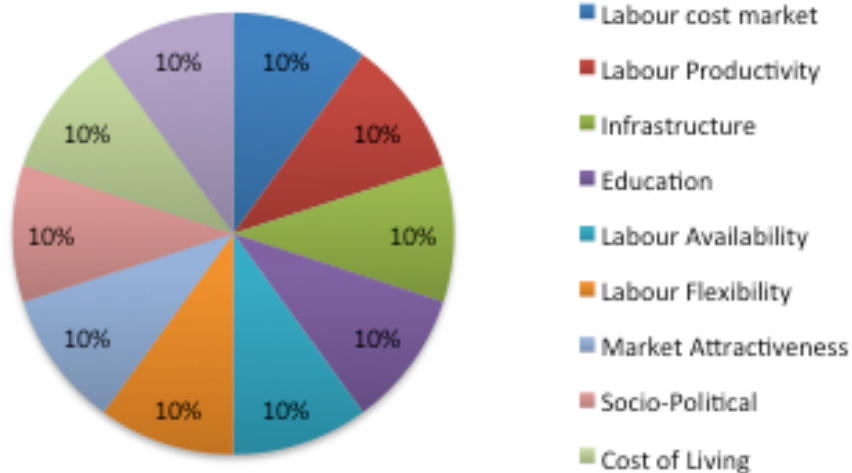
Consolidated Result

- Get Decision Criteria input from client
- Generate consolidated result

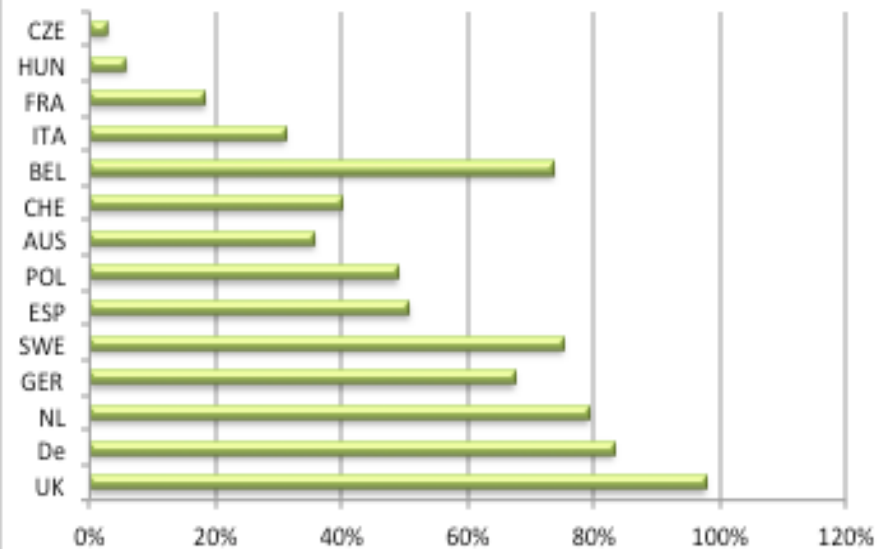
Decision Criteria Weighting



Decision Criteria



Consolidated Score



The Data Sources

The Data Sources

Available at:

Variable definitions

- **GDP per capita (Thomson Financial)**

Gross domestic product (GDP) is a measure for the economic activity. It is defined as the value of all goods and services produced less the value of any goods or services used in their creation. GDP per capita is expressed in Purchasing Power Parity (PPP).

- **Graduates in tertiary education (United Nations)**

The number of a country's graduates in tertiary education (per 100 000 inhabitants).

- **Students enrolled in tertiary education (United Nations)**

The country's number of students enrolled in tertiary education (per 100 000 inhabitants).

- **Difficulty of hiring index (the World Bank)**

The Difficulty of Hiring index measures (i) whether term contracts can only be used for temporary tasks; (ii) the maximum duration of term contracts; and (iii) the ratio of the mandated minimum wage (or apprentice wage, if available) to the average value-added per working population.

- **Rigidity of hours index. (the World Bank)**

The Rigidity of Hours index has five components: (i) whether night work is restricted; (ii) whether weekend work is allowed; (iii) whether the workweek consists of five-and-a-half days or more; (iv) whether the workday can extend to 12 hours or more (including overtime); and (v) whether the annual paid vacation days are 21 days or less.

- **Difficulty of redundancy index (the World Bank)**

The difficulty of redundancy index has eight components: (i) whether redundancy is not grounds for dismissal; (ii) whether the employer needs to notify the labour union or the labour ministry for firing one redundant worker;

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- **Redundancy costs (the World Bank)**

The redundancy costs indicator measures the cost of advance notice requirements, and severance ^ payments and penalties due when firing a worker, expressed in terms of weekly wages.

- **Political stability index (the World Bank)**

This criterion measures the country's political stability from the following nine dimensions: (1) genocidal incidents involving communal victims or mixed communal and political victims; (2) the occurrence of a civil war; (3) the number of assassinations per thousand population; (4) the number of extra-constitutional or forced changes in the top government elite and/or its effective control of the nation's power structure; (5) the number of illegal or forced changes in the top government elite, any attempt at such change, or any successful or unsuccessful armed rebellion whose aim is independence from the central government; (6) violent demonstrations or clashes involving more than a hundred citizens involving the use of physical force; (7) the number of major government crises, where a crisis is defined as any rapidly developing situation threatening to bring the downfall of the present regime, excluding instances of revolt aimed at overthrow; (8) the number of times in a year that a new premier is named and/or 50 percent of the cabinet posts are occupied by new ministers;

and (9) the number of basic alterations in a state's constitutional structure, the extreme case being the adoption of a new constitution that significantly alters the prerogatives of the various branches of government.

- **Index of economic freedom (the Heritage Foundation)**

Economic freedom is defined as the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself. In other words, people are free to work, produce, consume, and invest in the ways they feel are most productive. In order to measure economic freedom, the index is comprised of ten broad categories:

- ✓ Trade policy
- ✓ Fiscal burden of the government
- ✓ Government intervention in the economy
- ✓ Monetary policy
- ✓ Capital flows and foreign investment
- ✓ Banking and finance
- ✓ Wages and prices
- ✓ Property rights
- ✓ Regulation and
- ✓ Informal market activity

- **Corruption perception index (Transparency International)**

The corruption perception index measures the country's degree to which corruption is perceived to exist among public officials and politicians. This criterion focuses on corruption in the public sector and defines corruption as the abuse of public office for private gain. This index incorporates the misuse of public power for private benefits, with a focus, for example, on bribe-taking by public officials in public procurement.

The Data Sources

- **Telephones – mobile cellular per thousand inhabitants (CIA World Fact Book)**

The country's number of mobile telephone users per thousand inhabitants.

- **Internet users per thousand inhabitants (CIA World Fact Book)**

The country's number of internet users per thousand inhabitants.

- **Internet hosts per thousand inhabitants (CIA World Fact Book)**

The country's number of internet hosts per thousand inhabitants.

- **Airports (CIA World Fact Book)**

The country's number of airports per 100 000 inhabitants as one indication of a country's mobility.