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ESTUDIO ELCANO 2

# iepg ELCANO GLOBAL PRESENCE INDEX

ILIANA OLIVIÉ
IGNACIO MOLINA

10 años Real Instituto Elcano

ESTUDIO ELCANO 2

# ELCANO GLOBAL PRESENCE INDEX

iepg

Índice Elcano
de Presencia Global

Iliana Olivié (Elcano Royal Institute)
Ignacio Molina (Elcano Royal Institute)

*In collaboration with:*

*Ángel Badillo (University of Salamanca)*
*Émêrson Corrêa (Olympus Consulting)*
*Carola García-Calvo (Elcano Royal Institute)*
*Narciso Michavila (GAD)*
*Antonio Vargas (GAD)*

© 2011. Fundación Real Instituto Elcano
de Estudios Internacionales y Estratégicos
Príncipe de Vergara, 51
28006 Madrid
www.realinstitutoelcano.org

Publisher: Real Instituto Elcano
ISSN: 1989-922X
Design and layout: Quinteral Servicios Gráficos
Printing: Quinteral Servicios Gráficos

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The Elcano Royal Institute (Real Instituto Elcano) is a private entity, independent of both the public administration and the companies that provide most of its funding. It was established, under the honorary presidency of HRH the Prince of Asturias, on 2 December 2001 as a forum for analysis and debate of international affairs, particularly Spain's international relations. Its output aims to be of use to Spanish decision-makers, both public and private, active on the international scene, at the same time promoting knowledge of Spain in all strategic scenarios where the country's interests are at stake.

The Elcano Royal Institute considers itself a non-partisan – but not neutral – institution that seeks to promote the values with which it was inspired. By means of multidisciplinary analysis, the Institute aims to further develop its strategic and global perspective through the generation of practical, applicable, and forward-looking political and social proposals.

The 'Estudios Elcano' are unpublished, monographic studies which, besides responding to the Institute's goals, are governed by the most demanding international academic standards in terms of content and form. So as to guarantee that these studies meet the required level of excellence, the decision to publish is subject to prior, anonymous evaluation by two prestigious specialists unrelated to the governing bodies, management, or research teams of the Elcano Royal Institute. In this assessment, particular attention is paid to the scientific rigor, methodology, originality, and interest that the studies in question might hold.

ESTUDIO ELCANO 2

# ELCANO GLOBAL PRESENCE INDEX


## ABSTRACT

This study introduces the Elcano Global Presence Index (IEPG, after its Spanish acronym), the object of which is to measure the global positioning of different countries in the fields of the economy, defense, migration and tourism, science and culture, and development assistance. Its aim is to serve as an instrument for studying the current process of globalisation and its main drivers. Moreover, the IEPG is intended to become a tool for analysis of the external policy of those countries included in the Index (and, indirectly, of their international power or influence). Following a review of the literature and of other indexes on globalisation and international presence or positioning, this Estudio Elcano focuses on the IEPG itself, detailing the methodology employed in its design and implementation. Finally, the results for the first edition, IEPG 2010, are presented.



## KEYWORDS

Globalisation, international presence, foreign policy, index.

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# Introduction

# Introduction

In 2008, the Elcano Royal Institute began work on a new line of research aimed at analysing a key aspect of its fundamental mission: Spain's influence abroad. The goals of this initiative included shedding light on analysis of Spain's position in the globalised world, proposing recommendations applicable to foreign policy, and making better use of opportunities for the country to exert influence on the international stage in line with its values and interests.

It was decided that the first step in this ambitious, complicated task would have to be the development of an empirical base allowing for measurement of Spain's international presence, as well as that of other major economies, over time and in a comparative fashion. This exercise in measurement and comparison has taken the form of the Index introduced in this paper. The Elcano Global Presence Index (hereafter the IEPG, or simply the Index) aggregates and quantifies the economic, military, scientific, social, and cultural projection (or positioning) of Spain and other main countries on the international stage. In line with its initial premise, this empirical base in the form of an index is also designed to serve as a policy-making tool. It will allow for strategic reflection on the adequacy of tools (means) and policies (ends) related to Spain's overseas activities, although it can be equally as useful in assessing any of the nations included in the study.

Although many measurements of globalisation (and other efforts with goals similar to those of this Index) have been carried out, data on the international presence of any given country remain spread out across categories, greatly complicating analysis and aggregation. Strangely, and despite debate around the alleviation of this problem, there is still no single empirical base that orders and integrates said data. Nor is any ranking of such presence published in the academic world, or by any international organization, think tank, or news media outlet.

The coordinators and authors of this Index are Iliana Olivié and Ignacio Molina, both of the Elcano Royal Institute. The consulting firm GAD and a methodology working group of researchers have also made important contributions to this study. The members of the working group include Narciso Michavila and Antonio Vargas, from GAD; Émêrson Correa, of Olympus Consulting; the outside experts Alfredo Arahuetes, Ángel Badillo, José Fernández Albertos, and José Ignacio Torreblanca; and, from the Elcano Royal Institute, Félix Arteaga, Carola García-Calvo, Carmen González, Jaime Otero, Juan Antonio Sanchez, and Federico Steinberg, in addition to the aforementioned coordinators. The Institute's Scientific Council, to which the project was presented two years in a row, also participated in the creation of the Index.[1]

The first section following this introduction takes a brief look at some academic debates that have focused on the concepts driving the Index, also offering a review of the other main indexes directly or indirectly connected to measuring countries' presence, power, or international influence. The second section explains some general aspects of the IEPG, such as its objectives and the basic features of the indicators that have been chosen. Next, we detail the components of the Index – the areas as well as the indicators. The fourth section gives specifics on the technical and methodological decisions made regarding the estimation of missing cases, or the design of the scale. Finally, the paper presents the actual data for the first edition of the Index, corresponding to 2010.

**1** The coordinators would also like to express thanks for comments and suggestions made in the anonymous evaluation of this paper and incorporated into the final version. Other conceptual and methodological contributions to the Index also emerged over the course of many consultations with a variety of experts on specific issues. In this regard, we must acknowledge Philip Purnell (Thomson Reuters), Santiago de Mora-Figueroa, Marqués de Tamarón (Ambassador of Spain), Teresa G. del Valle Irala (University of the Basque Country), Ángel Vilariño (Complutense University of Madrid), and Cristina Ortega, Cintia Castellano, and Amaia Bernara (from the FECYT of the Ministry of Science and Innovation). We must also note interesting ideas that came up during numerous meetings held to present and discuss progress on the Index. Initially, these meetings were held at the Elcano Royal Institute and brought together the Scientific Council, the Board of Trustees (including its honorary president), the Executive Committee, the Media Committee, the Management Committee, and all researchers involved in the project. Later, in February and March 2011, a series of meetings were held with members of Parliament, senior ministry officials, and specialists in methodology.

Finally, we must also acknowledge the generous aid provided in data-gathering and operationalisation by Barbara d'Ándrea (World Trade Organization), Chiao-Ling Chien (UNESCO), Katie Jost (GAD), Manuel Moreno (Spanish delegation to the United Nations and other international organizations based in Geneva), Arantxa Prieto (WTO), Robert Robinson (Universidad Pontificia de Comillas), and Ann Zimmerman (OECD).

SECTION 1.

# Analysis and measurement of countries' global presence in academic literature

## Analysis and measurement of global presence in academic literature

Global presence is a concept that has not yet taken root in studies of international relations or analyses of foreign policy. There is no theoretical or empirical tradition on the international positioning of nations. For this reason, our review of prior studies related to the IEPG necessarily begins with consideration of a much broader and traditional intellectual problem: how power is conceptualized and measured. Because while it is probably the most relevant single concept in political science and international relations, power is also the hardest to quantify.[2] Academic literature has dwelt extensively on the nature of power by addressing all of its facets, from its essence to its exercise, also debating methods for its possible measurement. Under Max Weber's famous definition, power is invariably linked to an actor's ability to carry out his own will, even against the will of others. Put another way, power is the ability to influence someone else's behavior, be it deliberately or not, with or without resistance. Systematic measurement of something this intangible is obviously difficult because it requires detailed information (or at least information that is not inaccurate) on: the context in which power acts are carried out; the explicit will of all actors taking part in such acts; preferences that are sometimes hidden; the effort expended in defending one's position during the process; possible changes in behavior along the way; influences that are not always manifest; and final results. And while it is difficult enough to measure power in the more-or-less limited realm of social interactions among individuals, or of political interactions within a community of states (where the rules of play are relatively institutionalized), the task becomes next to impossible in the extremely complex world of international relations.

Granted, until the fall of the Berlin Wall – in a Cold War context that divided countries into blocs, with further divisions depending on levels of industrialisation – world power was expressed fundamentally in terms of economic production, principally the military capability of the United States or Soviet Union and their respective allies. But now that this bipolarity is gone, the economy has evolved toward a post-industrial world, and globalisation has emerged, the outlook changing considerably with the arrival of new players and new kinds of relationships among them. All of these changes are reflected in proposals raised since the fall of the Wall as to how to gauge the power of nations.[3]

**2** Hans Morgenthau, a well-known expert in international relations, put it this way: "The concept of political power poses one of the most difficult and controversial problems of political science."

**3** This issue, while not addressed in detail in this paper (although featured tacitly in the final Index), is in fact examined in many studies. A good example of these reflections from the world of think tanks, focused specifically on the need to change the basis for measuring national power, is the work of Tellis *et al.* (2000). This study reaches the interesting conclusion that, in the early stages of globalisation, a country's power should be measured not so much by its most visible military resources, but rather through factors such as its aptitude for innovation, the quality of its knowledge, and the strength of its social institutions.

In the following review of scientific literature, drawn mainly from the political science discipline of international relations, our goal has been to investigate how the study of power has been addressed, and how it has evolved. As we shall see, tracking this academic debate within the current context of globalisation has fueled our debate on the definition of the IEPG; but it has also prompted us to ensure that the final dependent variable in the Index avoid, as much as possible, the intractable problems of definition and measurement inherent in concepts of power or influence. We also review existing indexes which might to some extent be similar to the IEPG, demonstrating that, although some partial efforts toward an index have been made, the IEPG fills a major conceptual and methodological vacuum when it comes to measuring how countries confront globalisation.

## 1.1. EVOLUTION OF THE NATURE OF INTERNATIONAL POWER: FROM A BIPOLAR WORLD TO A GLOBALISED ONE

The concept of power is so fundamental to political science that the studies addressing it are countless.[4] The dimensions of power are as plentiful its theoreticians and political approaches: pluralists (Dahl, Lindblom, etc.), elitists (Michels, Schumpeter, Downs, Wright Mills, etc.), Marxists (Marx, Lenin, Althusser, etc.), feminists (Millett). And one can further differentiate between more classical perspectives – power as decision-making – and more complex ones , such as elite control of the agenda (Bachrach and Baratz, Lukes, etc.), or mental control and cultural hegemony (Gramsci, Foucault, etc.).[5]

In the more specific field of studies on international relations, the term is virtually inseparable from realist theory. In his classic 1948 work *Politics among nations: the struggle for power and peace*, Hans Morgenthau, the father of this school of thought, distinguished between material power (which is imposed economically or militarily) and political power (established and exercised in terms of influence). First of all, this approach is interesting because it introduces an analytical distinction between power in the strict sense – the ability to change situations – and power as influence – the ability to control and modify the perceptions of others. The former is obviously key in international relations, where the traditional policy regarding power (*Machtpolitik*) consists of a competitive struggle among states to promote their interests in a world of scarce resources. But Morgenthau does not ignore the second dimension, believing that both international politics and politics in general represent a struggle for "human control over the minds and actions of other human beings." In other words, there is a psychological

**4** An exhaustive bibliography on power also exists in other disciplines such as political philosophy or communications theory, but these would be even more dispersed and further removed from the empirical aim of the IEPG.

**5** Just by way of an example, see Lasswell (1936), Dahl (1957), Bachrach and Baratz (1962), or Lukes (2005).

relationship between those who exercise power and those over whom power is exercised, the former exert control over the ideas and actions of the latter via mental influence. This influence can be carried out through orders, threats, persuasion, or any combination thereof. Morgenthau's theses on power have obviously been debated and reviewed, and even outdone, both by critics of realism (liberals, Marxists, constructivists, feminists, etc.) and by authors who subscribe to his way of thinking. Nevertheless, Morgenthau's works remain a classical and undeniable point of reference.

Still, the international order changed radically with the fall of the Berlin Wall in 1989; for nearly half a century, from the end of World War II, the prevailing order had been characterized by two ideologically opposed blocs, led by the United States and the Soviet Union. These blocs managed to establish a delicate balance between them, but when the communist bloc collapsed and the Cold War ended, a new international context marked by growing economic globalisation began to emerge. New states appeared, European integration deepened, and some of the so-called emerging economies launched processes (mainly economic, but with an indisputable political component) that would usher in significant changes to the distribution of world power. In particular, China, India, Brazil, and several other medium-sized nations began to increase their relevance. Meanwhile, the system of alliances changed, wherein the United States. – thanks to its economic, social, military, and cultural preeminence – became the only superpower capable of exercising world leadership. But at the same time, the United States has revealed certain limitations in its domination of international relations. (Nye, 2002). Today, many countries are seeking their place in the new system, where influence can no longer be solely defined in terms of strategic and military power.

It was at the very moment of transformation – the fall of the Berlin Wall – that Joseph Nye coined the term 'soft power' in his book *Bound to Lead: The Changing Nature of American Power,* published in 1990. Later, Nye would go on to develop the term in greater depth, as the effects of globalisation became more evident (Nye, 2004). Soft power – the "second face of power", as is sometimes called – consists of compelling others to aspire to your own aspirations; it is power based on influence, legitimised by its own ability to attract. Thus, the difference between hard and soft power essentially rests on the methods used to achieve the same results: hard power uses active control and force, while soft power employs persuasion and shuns force. For Nye, both are important and must coexist.

Globalisation – meaning the growing interdependence of processes related to communications, financial flows, international trade, migratory movements, etc. – has changed traditional foreign policy in a fundamental way. In the aforementioned paper *Measuring National Power in the Postindustrial Age* (Tellis *et al.*, 2000), the authors argue that "the arrival of postindustrial society has transformed the bases of national power." In the same way, projects of economic and political integration are beginning to emerge or take root, and new threats and political issues of a transnational nature are establishing themselves on the world agenda: issues such as climate change, food and security, organised crime and international terrorism, all of which further blur the lines between the nation-state and its international context.

In this globalised context, in which information and credibility are key factors, and where power tends to disperse and democracy tends to spread, soft power will take on greater and greater importance in foreign policy (Nye and Keohane, 1998). The idea of "public reputation" is now supported by authors such as Keohane and Grant (2005), even though Nye's ideas have been criticized ever since he first presented them.[6] The argument that culture or attraction might wield as much power as money or arms has been challenged by authors like Neal Rosendorf (2000), who calls soft power "a wolf in lambskin". Others like Henrikson (2006) and Hocking (2006) have stated that Nye's distinction between types of power and their resources is overly simplistic. Van Ham (2002), Ferguson (2003), and Mattern (2005) go further, using different reasonings[7] to argue that Nye's theory is wrong.

But even if the underlying bases of the analytic distinction between hard and soft power are debatable, there seems to be agreement that the external actions of states in the globalised world have changed since the 20th century. Thus any attempt to measure that reality must take into account hard elements (chiefly economic and military) as well as soft elements (such as the attractiveness of a country as reflected in, for example, flows of people and information, or scientific and cultural expansion).

Another question altogether is whether attempts at measurement should center directly on power – on how states really shape globalisation – or whether it is more practical, and feasible, to focus on presence – the capacity a given country to shape developments on the basis of its positioning in key areas. For now, let us note briefly that the IEPG opts for the latter.

**6** For a review of these criticisms see Noya (2007).

**7** While Van Ham and Ferguson argue that the dichotomy between hard and soft power is false, since values have traditionally come with military power, Mattern believes that attraction is a kind of constraint, and that soft power is therefore just as hard as hard power.

## 1.2. EXISTING INDEXES

As we have just seen, the academic literature has focused extensively on power or influence and on the definition of those two concepts. Current thinking in the area of international relations around the state of evolution of the globalisation process has triggered an interesting scientific debate. Still, when it comes to transferring the theoretical discussion to actual empirical studies that operationalise and measure the power of nations, practically no work has been done. It is true that, from a narrower perspective, some international organizations, think tanks, and media organizations have devised indexes related to this debate; but these have largely tried to serve as support or tools for policy-making. The simplest is the index that classifies countries according to their Gross Domestic Product (GDP),[8] an indicator used to measure both economic power and development. The first rankings that classified the power of countries were built by combining GDP with military capability. But as we have seen, with the disappearance of traditional blocs and the emergence of new powers, the academic world generally came to agree that such indicators were insufficient, even if economic and military power continued to be fundamental elements in international politics (Cooper, 1997; Tellis *et al.*, 2000; Treverton and Jones, 2005; Pape, 2005).[9] Currently, some studies do exist which are similar to the Index developed here and which seek to measure various aspects of countries' economic, political, and social realities, but these provide only partial sketches of the international situation. Although some of these studies may share the methodology and spirit of the IEGP in some respects, none is strictly comparable, and this is due to three fundamental differences:

First, definition of the dependent variable (what you want to measure). No other index takes a comprehensive approach to the goal of measuring the presence or projection of nations in the globalised world, assessing whether a given country is in a position to shape globalisation, to exert power or influence over it. To achieve this, an index must bring together fields as diverse as the economy, defense, migration, science, culture, and development aid – as the IEPG does.

**8** Such as the C.I.A. - Country Comparison *https://www.cia.gov/library/publications/the-world-factbook/rankorder/2001rank.html*. In 1990, in an effort to move beyond the unwieldiness of the GDP, the first edition of the somewhat more sophisticated Human Development index was published by the United Nations Development Program (UNDP). This index did not aim to classify countries by GDP, but rather includes such factors as life expectancy and education, stressing insufficient per capita income as a measure of society's progress: *www.undp.org*.

**9** Treverton and Jones (2005) refer to an attempt by the C.I.A.'s *Strategic Assessment Group* (SAG) to measure countries' relative power. But except for the vague inclusion of an "innovation" factor, this measurement was essentially made by combining GDP and military spending.

Second, methodology. Almost all of the known indexes similar to the IEPG are based on perceptions, or on perceptions combined with objective data. As we shall later see in detail, the Index developed by the Elcano Royal Institute was constructed solely with objective or tangible data, ignoring positionings based on opinion or perception data – bearing in mind that the very selection of certain indicators (and not others) or the system of weighting (described further on) always involves a particular point of view.

Finally, and perhaps most importantly, the IEPG does not seek to measure a country's level of insertion in the process of globalisation, or its relative degree of openness to it, but rather its total positioning or projection as compared to other countries, and with respect to its own evolution over time.

In this section we discuss the most relevant indexes currently being employed – or at least those which have been identified. This analysis gives us a chance to review in some detail their most notable differences vis-à-vis the Elcano Index, although the features that make up the IEPG will be analysed more thoroughly in the following section. Here, the idea is to point out some elements which these indexes hold in common with the IEPG, but at the same time underlining the differences that make the IEPG a novel tool, equipped to fill the current vacuum in the academic literature in this field.

## Economic indexes

With the emergence of globalisation, many indexes have likewise emerged to measure this phenomenon from an economic standpoint, and in particular to analyse such aspects as protectionism vs. openness, or degrees of competitiveness, or contributions to development. One of the best known is the Globalization Index compiled annually by the consulting firm A.T. Kearney and the journal *Foreign Policy*. This index defines its dependent variable – globalisation – ats openness, but without the exhaustive, multidimensional measurement employed by the IEPG in defining its own dependent variable. For instance, while the Globalization Index includes economic presence, it excludes military and cultural presence, as well as development assistance. This has repercussions for methodology: besides measuring a country's overseas projection, the data also reflect penetration into the country. In other words, the Globalization Index chooses two-way indicators, whereas the IEPG centers on external projection, as we explain later in detail. Moreover, the Globalization Index is a relative index (measuring how globalised or open a country is), while the IEPG is absolute (calculating how much external presence a country has).

The same features can be found in (and the same distinctions drawn with) Measuring Globalisation: OECD Economic Globalisation Indicators[10].

Two other, similar indexes pose different kinds of problems: the KOF Index of Globalization[11] (tabulated by the KOF Swiss Economic Institute), and the Northwest Globalization Index. The KOF Index of Globalization addresses aspects of globalisation other than the economic (i.e. investment inflows and outflows, trade, protectionist measures against movement of capital or goods), instead looking at social factors (flow of ideas and information) and political factors (degrees of cooperation among countries). But here again we find the use of two-way indicators and the fact that the index is a relative one, without the IEPG's goal of a neutral focus on presence. The Northwest Globalization Index,[12] which takes its methodology from the Globalization Index, has issues with the size and scope of its sample (as well as sharing the problems mentioned in regard to the other above-cited indexes). While the IEPG features data from 54 countries from diverse regions, the Northwest Globalization Index[13] addresses only regions of England – and in particular how the northwest of that country is connected to globalisation. This clearly does not allow for a broad perspective or for making comparisons with disparate nations, as the IEPG does.

Within this same group of economic indexes is the Global Competitiveness Index of the World Economic Forum in Davos, which measures competitiveness and defines it as "the set of institutions, policies and other factors that determine a country's level of productivity".[14] Herein lies the main difference: competitiveness is a national economic feature, whereas the IEPG measures presence abroad, regardless of domestic living conditions and the characteristics of a country's domestic economic structure. Another difference in terms of methodology is that, at least to some extent, the Davos Forum's index uses data based on opinion, while the IEPG is based exclusively on hard or objective data.

We have noted that, while the IEPG is based on objective and measurable indicators, other economic indexes of this sort tend to assume certain theories or definitions in describing their dependent variable. One characteristic case of this approach is the Index of Economic Freedom[15] developed by The Heritage Foundation. This index seeks to measure countries' economic success using 10 indicators while embracing theories proposed by Adam Smith in

10 *http://www.oecd.org/document/63/0,3343,en_2649_34409_35794687_1_1_1_1,00.html*

11 *http://www.kof.ethz.ch/globalisation*

12 *http://www.nwriu.co.uk/what_we_do/research_programme/economy/globalisation_index_gi.aspx*

13 *http://www.nwriu.co.uk/what_we_do/research_programme/economy/globalisation_index_gi.aspx*

14 *http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/index.htm*

15 *http://www.heritage.org/index/*

the 18th century to define the concept of economic freedom. More specifically, one can find here methodological similarities with the Commitment to Development Index[16] of the Center for Global Development. With certain theories or assumptions underlying, the index assesses policies from the perspective of what impact they might have on socio-economic conditions in developing countries. Again, as in the earlier case, it is not a neutral index.

### Political indexes

If we turn now to other indexes of global scope that seek to rank countries by their more political features – such as the influence of ideas, or levels of support for peace, diplomacy, or reputation – again we find some conceptual or methodological similarities with the IEPG, but no precedent truly compares to the Index developed in this study.

First, there is the Global Power Barometer,[17] calculated by the Washington Post. This seeks to measure "global thought" by asking "which nations, ideologies and/or movements are most powerful (most successful) in moving global opinion in the directions they desire?" This question clearly sets the index apart from the aim of the IEPG, as the Barometer addresses power seen as influence, and not as presence. What is more, the Global Power Barometer takes into account not just nations but also political trends, ideologies, and personalities. It is actually a barometer of global norms, based (on the one hand) on objective data that is constantly updated, but also on subjective factors involving perception. It is oriented toward communication and is therefore not, strictly speaking, an index of international relations, as the IEPG strives to be.

Another index that gauges power – in this case, the power of cities – is the Global Power City Index[18] of the Mori Memorial Foundation, the goal of which is to compile a ranking of the world's most important cities in terms of their power to attract. The first difference here is clearly the unit of analysis – the individual city rather than the nation. Furthermore, the ability to lure or attract is measured with instrumental variables and not with result variables, assuming a series of cause-and-effect relationships that the IEPG does not. But the main distinction is that the Global Power City Index measures local living conditions, and not the international aspect of cities, as the IEPG does with nations. This index should be viewed as an indicator for measuring the process of concentrating economic, political, and cultural activities, or the creativity of a population, among other tendencies observed in major cities as a result of economic globalisation.

**16** *http://www.cgdev.org/section/initiatives/_active/cdi/*

**17** *http://blog.washingtonpost.com/postglobal/drg/DenverResearchGroup.html*

**18** *http://www.mori-mfoundation.or.jp/english/research/project/6/pdf/GPCI2008_English.pdf*

Other ideas for measuring power include the Chicago Council of Global Affairs project known as Soft Power in Asia: Results of a 2008 Multinational Survey of Public Opinion.[19] This index is designed to measure the soft power of Asian countries through a survey given to specialists in the region. Yet again, this departs from the purpose of the IEPG: this ranking does not attempt to consider a wide range of countries' presence at the global level, but limits itself to one specific part of the world; and it does so on the basis of perceptions rather than results.

An index that has become prominent in recent years is the Global Peace Index[20] generated by the Fund for Peace. This index offers a quantitative measurement of 24 indicators which it identifies as "fundamental" to maintaining peace within a given country's borders. It therefore includes parameters related to levels of democracy, transparency, education, and so on. The index could be compared to the IEPG in its global approach, in the quantitative nature of its variables, and in the nature of the data it employs, most of which derive from international organizations. However, it differs from the IEPG in that it combines measurements of both national and international characteristics of countries, and it also differs in its goal: to determine the motivations of violence rather than to classify countries by the results they achieve.

Likewise, foreign policy indexes fail to fill the vacuum that the IEPG seeks to fill. Such is the case with the Confidence in U.S. Foreign Policy Index,[21] which assesses the foreign policy of nations on the basis not of results but through perceptions held by specialists vis-à-vis the policies propounded by national leaders.

Finally, indexes found in the area of public diplomacy, attempting measurements of a country's image or branding, are also of great interest. For example, the CountryRep index developed by the Reputation Institute analyses the reputations of some 40 countries by polling in the most developed nations as well as in Asia and Latin America.[22] Also, the Country Brand Index[23] sponsored by the consulting firm FutureBrand is carried out for 102 countries, using data and expert opinions on 29 attributes involving image. But yet again, we find that in addition to objective indicators, this index uses subjective data culled from surveys conducted among experts. In other words, hard, objective data are mixed with personal perceptions.

19 *http://www.thechicagocouncil.org/UserFiles/File/POS_Topline%20Reports/Asia%20Soft%20Power%202008/Chicago%20Council%20Soft%20Power%20Report-%20Final%206-11-08.pdf*

20 *http://www.visionofhumanity.org/*

21 *http://www.publicagenda.org/pages/foreign-policy-index-2010*

22 *http://www.reputationinstitute.com/advisory-services/country-rep*

23 *http://www.futurebrand.com/*

The following table summarises the differences between the indexes we have mentioned here and the IEPG. One concludes that, although all have been useful in this study (even fueling debate in some cases among the IEPG working group members tasked with deciding which indicators to include), none has precisely the same goal as the Index proposed by the Elcano Royal Institute.

**Table 1. Indexes measuring globalisation, power, influence, or presence**

| Main differences with IEPG<br><br>Indexes | Dependent variable | Methodology: Quantitative (hard data), Qualitative (perceptions), or a Combination of Both | Indicators: National, International, or Both |
|---|---|---|---|
| Elcano Global Presence Index | Presence | Quantitative | International |
| **Economic indexes** | | | |
| *Globalization Index* | Economic globalisation | Quantitative | Both |
| *Measuring Globalisation: OECD Economic Globalisation Indicators* | Economic globalisation | Quantitative | Both |
| *KOF Index of Globalization* | Economic globalisation | Quantitative | Both |
| *Northwest globalization Index* | Economic globalisation | Quantitative | Both |
| *Global Competitive Index* | Economic Competitiveness | Both | Both |
| *Index of Economic Freedom* | Economic freedom | Both | Both |
| *Commitment to Development Index* | Commitment to development | Both | Both |
| **Other indexes** | | | |
| *The Global Power Barometer* | Global power (trends) | Both | Both |
| *Global Power City Index* | Concentration | Both | National |
| *Soft Power in Asia: Results of a 2008 Multinational Survey of Public Opinion* | Soft power in Asia | Quantitative | Both |
| *Global Peace Index* | Conditions for maintaining peace | Quantitative | Both |
| *Confidence In U.S. Foreign Policy Index* | Foreign policy | Quantitative | National |
| *Country Reputation* | Country image | Qualitative | Both |
| *Country Brand Index* | Country image | Both | National |

SECTION 2.

# What is the Elcano Global Presence Index and what does it measure?

## What is the Elcano Global Presence Index and what does it measure?

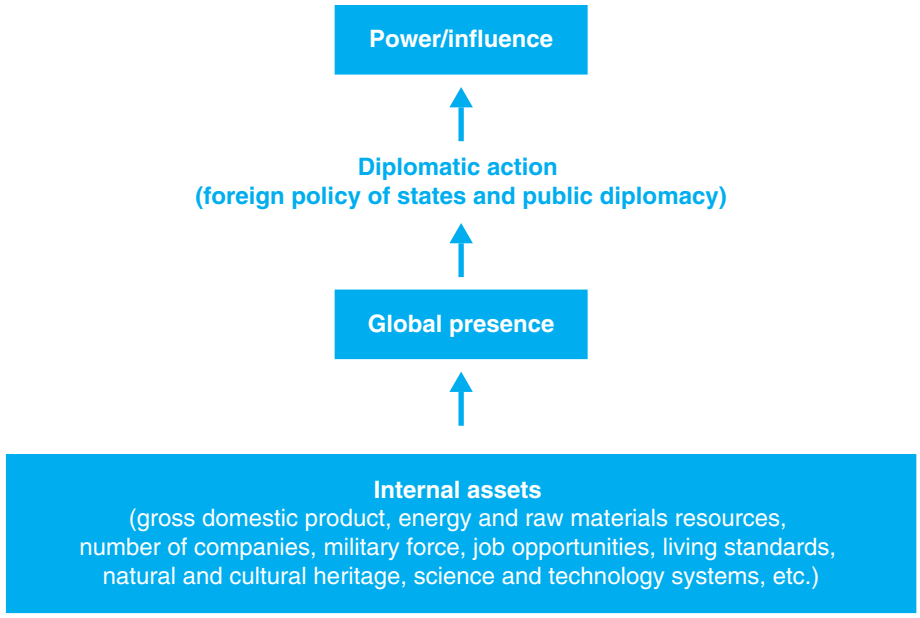
### 2.1. DEFINITION AND OBJECTIVE

The previous section highlighted the broad scientific interest in measuring globalisation, and in analysis of how countries are adapting to it. Also evident is that such measurement could be useful in a more applied sense, looking at how countries behave overseas. We have shown that some efforts to address measurement are already underway, although these attempts are only partial in scope, mainly geared toward the economic realm. Our review of the academic literature has convinced us that, given the complexity of our increasingly globalised world, our own measurement index should comprise a variety of dimensions and not restrict itself to areas like economy or security. In other words, we concluded that, in order to effectively measure interaction among states on the contemporary international scene, factors linked to hard as well as soft power must be taken into account.

As part of the debate around the need to develop such a system of measurement, and the difficulties inherent in doing so, and with no satisfactory study having yet been made of the global presence of nations, this study proposes an index that goes beyond a theoretical framework. Our study takes the academic debate into account, along with contributions from other think tanks and discussions taking place in the news media. Moreover, we have combined elements of these contributions in order to compose a unique definition, in line with our stated goals and based on the concept of *global presence* – a relatively neutral and objective concept compared to power or influence. Of course, the concept of presence is in itself open to debate, but nonetheless it appears to be a tool capable of dodging (or at least providing a basis for avoiding) the insurmountable problems of operationalisation that prevent direct measurement of power or influence. By global presence, we mean a *country's effective positioning, or projection, in absolute terms* – in the economy, in society, in the global political and military realms, and all in the current context of globalisation.

Thus, the IEPG seeks to measure the global presence of individual countries by considering that presence to occupy an intermediate level between available internal assets and their conversion into the relative capacity of a country to effectively shape globalisation. In other words, the Index does not directly measure the power or influence wielded by states on the world stage; rather, it gauges the international positioning of different countries (in both the public and private sectors) across different areas. It is this positioning which then helps a nation to exercise its power or influence. As shown in Figure 1, global presence is a prerequisite for the exercise of influence through diplomacy. Thus does the measure of presence prove doubly interesting in studying the behaviour of countries abroad, both in the initial phase of international promotion and in subsequent foreign policy.

**Figure 1. Conceptualisation of global presence**




Because the IEPG brings together disperse quantitative information on multiple aspects related to external projection, in a consistent way and allowing for comparison among countries and over time, our Index is a useful tool for any analysis involving the international presence of any country (or group of countries) among the 54 included the study.

In the first place, with this Index, assessments can be made of any individual country's foreign policy, and the Index can even help estimate a country's positioning in terms of power or influence. For instance, a rise or decline in presence over time would give some idea of the efficiency of a given foreign policy carried out over a given period. In this regard, future editions of the IEPG promise to be not merely useful rankings, but focused retrospective analyses that sharply illustrate the evolution in international presence of the countries under study.[24]

Secondly, the Index further allows one to observe the main areas where presence manifests, as well as variations in relative weight. An increase in the total presence of a given country

**24** These retrospective analyses aim to employ the IEPG methodology described in this study, although for earlier years (starting around 1990).

over a given period might coincide, for example, with a decline in military presence, or a simultaneous rise in the scientific or economic realms. Such information would also afford analysis of the approach a country has taken in designing its foreign policy.

In the third place, the IEPG makes possible the analysis of global trends in international presence. Thus can one assess, for instance, whether countries in recent decades have increased their presence in the area of development assistance more than they might have, simply as a result of migration. Finally, the IEPG also allows for evaluation of trends in the combined global presence of groups of countries. So, for example, simultaneous analysis of China and the United States could assist in the identification of any trend toward a new bipolarisation (along with what its main features might be). Analysis of the European countries as a whole could likewise allow for the observation of trends in the combined overseas presence of Europe or the European Union.

In addition to the IEPG's explanatory potential, its value can be multiplied by combining the analysis contained within it, and the relative positions of countries as per the Index, with information found in other indexes. Comparative analysis of the IEPG values alongside indexes that measure competitiveness, globalisation, country image, GDP or per capita GDP, population, budgetary expenditure, etc., could facilitate the analysis of foreign policy or international relations, from numerous approaches.

For instance, the Index can help determine when a country's international presence surpasses its potential (understood as economic or demographic weight). In order to do this, one could compare the value for each country and its positioning in the ranking with its corresponding value in rankings of population and Gross Domestic Product. It would be possible for a country to box (in terms of presence) either above or below its weight (in terms of population or GDP), but also to box (in terms of final influence) above or below its weight (in terms of presence). To illustrate: Brazil might exhibit a presence below its potential, as it boasts scant effective internationalisation given the size of its economy. But it has meanwhile done well at the level of influence, cashing in on its identification as an emerging BRIC country (Brazil, Russia, India and China) – classing above its weight in terms of presence. In any case, one should bear in mind that the IEPG is based on objective data that measure a country's effective internationalisation across several areas – not subjective assessments of the importance assigned to certain powers, or the effectiveness of transferring potential into real influence. For this reason, results can sometimes seem counter-intuitive. Such is the current case, for instance, with the relatively low international presence of the BRIC countries, or the relatively high presence of small or mid-size European countries.

However, apart from the fact that the mid-term trend will probably see emerging countries rise on the Index – while the Netherlands, Norway, or Switzerland decline accordingly – the IEPG data provide interesting evidence that, in some cases, there is a significant contrast between great national potential and fledgling internationalisation. And the reverse can apply to small countries with an extraordinarily high level of overseas projection. What is more, seen another way, this can serve to highlight the weak pillars on which some emerging powers are currently building their global projection, or the enormous difficulties that small countries will face in the maintenance of such a prominent global presence.

## 2.2. CRITERIA FOR SELECTING INDICATORS AND VARIABLES

In line with the definition and objectives established for the IEPG, here we spell out eight criteria – assembled into three major categories – which have guided the selection of indicators and variables that constitute areas of global presence and therefore affect the final result of the IEPG for each country.

The first two criteria, the transnational dimension and unidirectionality, are most clearly related to the specificity of an index which seeks to measure global projection. The first means that all indicators used to measure presence will be explicitly international in nature. The second means that this presence will always be measured in just one direction: a single, outward direction, from within a country to without.

The next four criteria – measurement of results, absolute presence, quantity as opposed to nature, and objective data – all stem from the goal of considering only tangible forms of external projection. In other words, they indicate presence achieved in a truly comprehensive, quantitative, and firm fashion. The IEPG does not take into account the means used or efforts made to obtain the final result, or the relative degree of internationalisation of each country; neither does it incorporate data that imply discretionary judgments on the qualitative nature of presence, nor variables based on assessments or opinions.

The remaining two criteria – a minimum number of indicators for a maximum number of cases, and the variability of data – are applicable to any index that is aggregated, comparative, and updated periodically. This is because we seek the greatest possible explanatory capability, applicable to all cases and using the smallest possible number of variables and indicators; also, because the selection of components must allow for sensitivity to short-term variations in results.

## Transnational dimension

Perhaps the most characteristic feature of the IEPG is that it includes only variables that contain specific information about the external or cross-border dimension of each case. For instance, the Index considers trade and financial flows, but not GDP (which, as we have stated, is a mere referent). IEPG includes migration but not population (the other possible referent), and overseas military deployment – or capacity for deployment – but not available military force. The Index does not use data on countries' internal assets, nor assets that could potentially be made international. Rather, it is calculated using only explicit manifestations of achieved international presence. Thus the Index does not feature variables such as a country's biodiversity, gastronomy, oil reserves, or the number of its monuments that have been declared United Nations world heritage sites – all of which might conceivably lead to greater external presence, but not automatically so. However, considering these same examples, global presence in such areas would likely lead to greater tourism inflows, or larger export volumes, and these indicators are in fact included in the IEPG.

## Unidirectionality

A second principle that governs the IEPG is that, in each of the areas analysed, presence is measured in just one of the directions that international relations can take. For instance, as we shall see further on, foreign trade presence is defined as occurring through exports (and not imports); investment presence is seen in terms of capital outflows (and not inflows); human mobility is gauged through the entry (and not the exit) of persons; and in defense, via military deployment abroad (and not foreign troops or materiel present within a nation's territory). There are two reasons for adopting this criterion: on the one hand, the global presence that we seek to analyse comes as the result of a country's international outward projection, and this is the direction we have sought to identify and measure in each of the indicators. Had we included projection in both directions – both from inside outward and from outside inward – difficult additional weightings would have had to be made, to give more weight to the dominant direction; and if we had opted simply to add up both directions, the result would have reflected not so much a country's global presence as its economic size, demography, or degree of development (e.g., depending on the indicators, the sum of imports and exports, or foreign investment made abroad as well as that received at home, or population inflows and outflows).

## Results vs. means

Moving on to the second group of criteria, that of preference for tangible results, we should start by stressing that the measurement of presence is conducted through result indicators, not instrumental ones. Thus, for example, countries' commercial presence is gauged through their exports but not through the means invested in order to boost said presence (such as export credits, participation in trade fairs, trade missions, number of diplomats and officials dedicated to overseas promotion).[25] This selection of variables is consistent with the idea that the IEPG aims to serve as the basis for, among other things, analysis of the foreign policy of those countries chosen for the study. Indexes or analyses that resort to instrumental variables to define the external presence of a country run the risk of invoking a kind of tautology: if a greater effort is made to enhance a country's overseas presence (through measures like those mentioned above), and if the presence is measured through that same effort, it seems obvious that the result will be an increase in overseas presence. But this kind of measurement will tell us nothing about the results of such efforts. Going back to our earlier example, one cannot tell whether export credits or participation in trade fairs (instrumental variables) may have actually contributed to boosting exports (a result variable). Such a determination would be possible only by monitoring how exports evolve (a result variable) and, depending on this result, by analysing the quality and quantity of the efforts carried out to raise said exports.

## Absolute, not relative, presence

The working group tasked with devising the IEPG discussed at length whether it was appropriate to measure countries' external presence in relation to their size (population or GDP). In the end, the group decided to regard presence in absolute terms and not, for instance, per capita, because the goal was to determine the global presence of nations – not how open they are – and because (as stated in the previous section) it is easier to make comparisons with weight or potential.[26]

## Quantity as opposed to nature

In general terms, the components of the Index allow for measuring the global presence of each country in quantitative terms, avoiding excessive discussion of the nature of that presence. In the initial debate around the makeup of the Index, the possibility was raised of measuring

**25** The exception is official development aid. The choice of this instrumental variable stems from the fact that it is impossible to propose a result variable.

**26** This principle also governs the criteria for selecting countries, as we shall see further on.

both quantity and type of presence. Quantity refers to how present a certain country is in each of the areas – for instance, export volume – whereas the kind or nature of the presence would have to be measured by including evaluative elements similar to those necessary for assessing power or influence. For instance, exports of certain products might be considered better indicators than others, because they might reflect a more solid productive model. So, exports of technologically complex products might be more highly regarded than those of labour-intensive ones such as low-cost tourism.

The Index focuses on criteria involving quantity rather than nature or type, for the same reasons that it was decided to measure presence rather than power or influence. In the first place, introducing quality-based criteria forces one to make an assessment of the different kinds of presence in each area. Are exports of more technologically-oriented products better than exports of labour-intensive products? Are peacekeeping missions coordinated by the United Nations preferable to an international military presence that is decided in a bilateral way? This would lead inexorably to the establishment of a subjective position on the nature of an ideal presence, whereas the main goal of the IEPG is to serve as the basis for any kind of analysis of foreign policy or overseas presence, regardless of the approach from which that analysis is made. What is more, were we to start measuring the nature of overseas presence, the Index would run up against a serious limitation, which is scarcity of data. So the Index is composed of indicators which measure presence, regardless of whether it is of a bilateral or multilateral nature. For instance, a shift in a country's foreign policy with regard to military issues – such as the United States' withdrawal of its bilateral military presence in Eastern Europe while increasing its presence by way of NATO – should not produce any variation whatsoever in the Index's result for that country, if the shift does not entail an increase or decrease in its total military presence abroad.[27]

One might argue that a drawback of the Index is its failure to measure the presence that comes with joining or belonging to some kind of international agreement or forum. For, instance, regarding the Defense area, one could say that simply belonging to NATO is (in and of itself) an element of international presence (regardless of whether said membership carries with it the mobilisation of resources in a multilateral way). However, it was decided not to include this kind of presence because, apart from the technical difficulties in measuring such, membership in an international security organization means better protection of a country's strategic interests, but not necessarily greater presence. In fact, for all intents and purposes,

**27** However, one must admit that the very act of including some presence indicators as opposed to others inevitably carries with it a certain perspective on global presence: in the IEPG, this presence is measured through, for instance, science, culture, or development assistance. Another index, devised with another approach, might limit the evaluation of presence to more traditional factors such as the economy and defense.

security organizations work as coalitions in which the only countries with influence are those which have the means and political will to become involved in missions. It is not enough to simply belong; rather, one has to deploy soldiers and weapons, and this is something that the Index does measure.

### Objective data

Closing out the second group of criteria that have guided the selection of indicators and variables is our choice of objective, as opposed to subjective, data. At all times the Index uses hard data on presence (export flows or troops deployed, for instance) and never perception data based on public opinion polls or the criteria of experts.[28] Indicators such as culinary prestige or the number of Nobel prizes awarded, besides being representative variables for just a small group of developed countries, are indicators of perception (of presence of prestige, in this case) more than of objective presence.

### Minimal number of indicators for a maximum number of cases

The IEPG aims to take in as many possible forms of external presence with the smallest possible number of indicators. The idea is to gather maximum information on presence with the minimum possible number of variables, to ensure that the Index will exhibit greater elasticity for each of the indicators that compose it. To this end, the study has attempted at all times to choose available indicators that illustrate in a more all-encompassing fashion the reality that the IEPG wants to depict. And each additional indicator or variable would be justified only if the marginal added value can compensate for the complexity of including it. In the same spirit, we should point out that the goal here is to describe forms of presence that are appropriate for the entire set of countries selected. Possible indicators mentioned above, such as culinary reputation (which can be measured, for instance, through Michelin guide reviews) or the number of Nobel prizes won – aside from their greater or lesser transnational component – are forms of presence that would apply only to a small sub-set of countries like the United States, Japan, France, or Spain. In other words, we have tried to choose indicators that reflect variations in global presence for countries as disparate as the United States, Malaysia, and Bulgaria.

**28** As stated earlier, this does not mean one cannot extract a valuable analysis by comparing the values in the IEPG with those of country image.

### Variability of data

As we have stated, one of the goals of the IEPG is to use an empirical academic and objective base so as to facilitate analysis of the foreign policy of the countries for which the Index is calculated. This analysis will be more precise if the values of the Index are more sensitive to effective changes in presence. Besides using the smallest possible number of indicators, the way to go about achieving this goal is to rely on flow indicators as opposed to stock indicators. In this way, variations in presence will show up quickly in the IEPG values, and this will be further reflected in the annual updates of the Index. Exceptions to this criterion occur in those cases in which the flow variable can be subjected to extreme variations that negate the explanatory capacity for the kind of presence that one wants to demonstrate. Such is the case with indicators on Investments, Troops deployed, Capacity for military deployment, and Immigration.

## 2.3. SELECTION OF COUNTRIES

The IEPG covers the global presence of a selection of 54 nations, including the 42 countries with the largest economies (in current terms, based on World Bank data from 2008[29]) as well as those that are not in this group but that belong to the Organization for Economic Cooperation and Development (OECD) and/or the European Union. All of the G-20 member countries are represented in at least one of these two groups (Appendix 1).

Our team considered the idea of adding to this selection the composite figures of the 27-member European Union, including the activities of European institutions and excluding the intra-European component of the international presence of those countries. However, although such an exercise would be of great interest, one must consider that it would remain hypothetical in character. Information about the European Union would be artificial because it would assume, on the one hand, that the international presence of each of its member states can be ceded to the Union without being transformed and, on the other hand, that it is possible to build up information for the EU in some variables (such as sports) where the 27 countries compete simultaneously. It might be simpler and more interesting to measure the aggregate evolution of the United States and China and the other BRIC countries, in order to gauge the rise in the global presence of the so-called emerging economies.

**29** The ranking of the main economies based on the GDP in current dollars and without adjusting for Purchasing Power Parity (PPP). It was concluded that in order to configure the selection of countries – and in keeping with the idea of measuring presence in absolute rather than relative terms – it is necessary to take the size of the economies in relation to the total world economy, without adjusting for internal living conditions in each country: for the purposes of the IEPG, the important factor is not countries' income level but their weight in world production.

**Table 2. List of countries studied in the IEPG**

| | | |
|---|---|---|
| Argentina | Hungary | Norway |
| Australia | Iceland | Poland |
| Austria | India | Portugal |
| Belgium | Indonesia | Republic of Korea |
| Brazil | Iran | Romania |
| Bulgaria | Ireland | Russian Federation |
| Canada | Israel | Saudi Arabia |
| Chile | Italy | Slovakia |
| China | Japan | Slovenia |
| Colombia | Latvia | South Africa |
| Cyprus | Lithuania | Spain |
| Czech Republic | Luxembourg | Sweden |
| Denmark | Malaysia | Switzerland |
| Estonia | Malta | Thailand |
| Finland | Mexico | Turkey |
| France | Netherlands | United Kingdom |
| Germany | New Zealand | United States of America |
| Greece | Nigeria | Venezuela |

SECTION 3.

# Components of the index

## Components of the index

The areas of external presence featured in the Index are Economy, Defense, Migration and Tourism, Culture and Science, and Development Assistance. For each of these, a list of indicators was chosen that seeks to illustrate the dimensions of the countries' external presence in each of these areas.

The working group that designed the Index debated whether to introduce some kind of environmentally related variable that would measure countries' international presence in climate change, biodiversity, or forest cover, for instance. But in the end this idea was rejected on the following grounds. First of all, environmental variables such as biodiversity or forest cover indicate possession of a resource more than whatever international presence this resource confers. In keeping with the idea that the IEPG seeks to show results in terms of presence, and not the available means – be they natural or man-made – indicators such as oil reserves or kilometers of coastline are ruled out inasmuch as these variables indicate merely the potential for achieving greater presence, such as through greater exports of energy supplies. Under this same line of argument, forest cover or biodiversity are not considered to be indicators of presence.

One could argue that a country's environmental policy does have implications for international presence, to the extent that this policy affects the volume of carbon dioxide emissions. From this point of view one could argue that a country's global presence does indeed rise along with its CO2 emissions, since these affect the environmental quality of the entire planet. But it was decided that, under a strict definition of presence, CO2 emissions (or reductions of same) are in fact contributing to a global public problem (or a global public good) – variables that do not exactly indicate presence. One could conclude that contributions to the creation or maintenance of global public goods – such as the fight against global warming, or international financial stability, or the eradication of poverty and hunger – while certainly including an element of international presence, would at the same time go beyond presence because they likewise feature an element of political decision-making, which the IEPG seeks to exclude.

The working group that developed the Index also tried to include some sort of cybermetric indicator that would reflect countries' presence on the Internet. But for a variety of reasons, keeping track of Internet traffic between countries proved less than feasible. First of all, there are no public indicators on data traffic among countries; data obtainable from neutral points of network interconnection or major international data-banks refer only to traffic generated by each individual country, with no indication of where such traffic is headed. Secondly, measuring the number of users per country will not determine flows of information-consumption among countries, because it is not known whether the information consumed

by the Internet users of a given country is strictly local, or whether it derives from servers outside their home territory. Consider, for example, a country with a huge number of Internet users and laws that ban viewing foreign web sites. Thirdly, measuring the number of servers in a given country would be inadequate to determining that nation's degree of importance in cybermetric terms, although many sources offer precisely this kind of estimate. If a country has a very large number of information servers on the Internet, but these are visited only by people within that same country (a fact that would be impossible to determine anyway), the country's international presence would in effect be low, even if the number of web sites were very high. In the fourth place, there is no way to measure with publicly available statistics the number of web sites per country, or to provide a breakdown of the traffic they generate from countries other than their own. Finally, in the event that the web site of a given company is based in a server located in another country, duplications of data would arise with unexpected frequency.

The Elcano Royal Institute asked Google whether it had estimates of country-by-country consumption of information by users from other countries. The company does not have such data, but in the future, working with Google and other institutions, one might conceivably arrive at an indicator that reflects such activity over networks.

So, in summary, the global presence of the chosen countries is reflected in a total of five areas by 14 indicators, some of which are in turn composed of sub-indicators (as is the case with Capacity for military deployment and with Sports). It should also be noted that, for data which are not estimated, we have resorted in all cases to international databases as sources. In this way the data are comparable from country to country.

Next, we describe the five areas of global presence and the indicators that compose them, along with a discussion of the main debates that occurred around the selection of certain indicators.

## 3.1. ECONOMY

In the area of Economy, external presence is measured through Trade in goods, Trade in services, Energy, and Investments. All of the Economy variables are expressed in monetary units, as are other indicators in other areas. To allow for comparison over time, these variables are translated from current to constant terms. This change is limited, to deflate the variables without eliminating exchange rate variations among the different currencies. So there will be variations in presence that stem in part from exchange rate fluctuations (see for instance the

heavy fluctuations in the dollar with respect to the euro in the first half of the last decade). The deflator, which uses 2005 as a baseline, is the world deflator taken from the International Macroeconomic Data Set devised by the USDA Economic Research Service[30].

### Trade in goods

This variable is made up of exports of primary commodities (excluding energy exports) and manufactured goods. The primary commodities include food, beverages, tobacco, agricultural raw materials, ores, metals, precious stones, and non-monetary gold. The manufactured goods are chemical products, machinery and transport equipment, and other manufactured goods.

### Trade in services

Trade in services comprises exports in transport, travel, communications, construction, insurance, financial services, computer and information, royalties and license fees, personal, cultural and recreational services, other business services, and government services.

### Energy

Energy presence is summed up in exports of fuels, which UNCTAD (the United Nations Conference on Trade and Development) considers to be primary goods treated as a source of energy.

It was decided to separate trade in energy from general trade in raw materials because of the differentiated global presence that energy trade provides, as opposed to trade in any other kind of good or service. We are thus assuming that the global presence of oil-exporting countries is different from that which can manifest through, for example, massive exports of coffee (another raw material) or manufactured goods or banking services. All export data come from UNCTAD, and more precisely from the online database called UNCTADStat.

Summing up, It is understood that international commercial presence is created through exports. It is also understood that breaking down goods and services into these three

**30** International sources such as the World Bank or the IMF, which in turn offer data from other primary sources such as the OECD or the European Union, do not publish complete series which would allow for using the same methodology to deflate the indicators in monetary units for this first edition for 2010, the retrospective analyses, and future editions of the IEPG. For this reason, we have used data supplied by the USDA Economic Research Service. It has a long tradition of research and its data are compiled using rules established by the Office of Management and Budget of the U.S. Government with regard to data quality and scientific rigor.

categories offers relevant information on the production and export pattern of each country, which ultimately determines its external presence.

### Investments

This is the stock of foreign direct investment (FDI). The indicator reflects overseas presence accumulated through this kind of investment. Another option debated by the group was whether to include an indicator that would reflect the number of transnational companies. However, it was decided that this sort of external presence is better reflected through the stock of FDI: the number of transnational companies does not allow for differentiating the volume of investment accumulated by each such company overseas. The FDI data come from the aforementioned UNCTADStat database.

The possibility of including other investments, such as portfolio investment or debt or international loans, was also considered, but this idea was discarded for the following reasons. On one hand, one cannot argue that portfolio investment or liquid financial assets give presence to a country to the same extent that direct investments can. Often, these are anonymous financial transactions and not especially representative of a particular country. A more circumstantial explanation can also be made that if other investments were tabulated here (in addition to FDI), the current global financial crisis would alter the ranking of economies that are top in global presence. If one were to record capital flight and portfolio investment abroad in the same way, one would be mistaking the massive loss of external financing of a given country for an increase in its global presence in this area.

The working group also debated the possibility of including trade balance (exports minus imports) or trade volume (the sum of imports and exports) instead of total exports. It also considered the possibility of measuring presence through investment by adding inflows and outflows of foreign investment. Clearly, including import flows would increase the presence of countries with a strong propensity to import and a high current account deficit (like the United States). In the same way, keeping track of inflows of capital would show the importance of major recipients of direct investment (like China). These possibilities were ruled out, but not only because of the criterion of unidirectionality, mentioned earlier. We believe that an index that took into account all economic flows and stocks in all directions would be assessing the economic importance of each country more than its global presence, which is precisely what the IEPG tries to measure. There is no doubt whatsoever that the United States is one of the world's most important economies. But this importance stems to a large extent from the size of its domestic market, which is a huge lure for exporters and foreign investors, and this should not be confused with external presence.

## 3.2. DEFENSE

The Defense area is made up of two indicators: Troops deployed and Capacity for military deployment. As we have stated before, and although this point was debated at length, in the end we did not include the capability to dissuade (or military force)[31].

### Troops deployed

This is the sum of troops deployed (number of military personnel deployed in international missions) and in military bases in any country except the one being analysed, regardless of the rank or nature of the mission. A better indicator of global presence might have been the number of deployable troops, which for a given year and country can be far greater than those who are actually deployed. However, as this data proved impossible to gather, it was decided to use the second-best figure, that of troops deployed[32].

### Capacity for military deployment

In order to measure deployment capability – a dimension difficult to aggregate empirically into just one indicator – this study follows a working hypothesis that counts the amount of strategic transport systems in four different categories: aircraft carriers, principal amphibious ships, frigates, and heavy transport aircrafts. It is understood that only through various means and weapons that allow for strategic mobility does a country develop the capacity to intervene in international missions, which makes for global presence.

One must determine the weight that each mode (aircraft carriers, principal amphibious ships, frigates, and heavy transport aircrafts) will have in calculating the value of the index of military deployment capabilities. Failure to do so would indicate an assumption that an aircraft carrier affords the same capability as a frigate. The assigning of proportional weights, explained here, assumes that countries are rational actors and that, in distributing the budget for acquiring equipment, they seek to optimize their military deployment capabilities. In order to determine the weight of each mode of transport in calculating the value of the military deployment capability index, we have determined its equivalent on a scale in which the total quantity of the four classes is equal to 1,000, taking into account only the capability of the 54 countries of the IEPG study that possess at least two of the four modes of military deployment

**31** Although the IEPG counts all civil missions and some order-preserving missions as being part of global presence, these are included in the development aid area. This point is addressed further on.

**32** For the specific case of Turkey, we followed the recommendation of the International Institute for Strategic Studies – the source of these data – in not counting the Turkish troops deployed in Cyprus.

under consideration. In this way, the total of aircraft carriers contributes an external presence that is equal to the total of frigates. As there are nearly 10 times as many frigates, each aircraft carrier would account for a presence of approximately 10 frigates. Under this method of calculation, the unit weight (out of 1,000) for each mode is the following: aircraft carrier, 587 units; principal amphibious ship and logistical vessel, 267 units; frigates, 61 units; and heavy transport aircraft, 85 units. Table 1 of Appendix 2 contains information on what availability each of the countries in the study has for each mode of transport as of 2009, the year for which value-in-units assigned to each mode was calculated.

It is clear that, using this methodology, the position of the United States stands above any of the other countries selected. The United States is an outlier that absorbs 49% of overall weight in military capacity. This position is comparable to that of a related indicator, global military spending, where 50% of world expenditure corresponds to the United States. The source of all these data is The Military Balance Report, carried out by the International Institute for Strategic Studies (IISS).

Therefore, in the area of Defense we tally troops that are actually deployed and military resources that can be deployed. The explanation for combining these criteria is not just empirical, as the database of the IISS gives information on troops but not on materiel currently deployed (the operational capability and location of which are usually kept confidential); it is also conceptual. The Index seeks to determine which countries have recourse to such specific equipment, and to what extent, as to permit multiplication of the country's force projection (also reflecting less countable aspects such as political will, military doctrine, and a structured expeditionary force).

## 3.3. MIGRATION AND TOURISM

This area is made up of two indicators: Immigration and Tourism. There was major debate on whether to measure not just the immigrant population, but also emigrants. It was argued that both dimensions – emigration and immigration – have a similar influence when it comes to assessing countries' external presence; consider, for instance, the influence of the Irish diaspora on the United States. Similarly, one could make the case that tourism flows can boost levels of presence in both directions.

The coordinators of the Index decided once again that internal consistency and the criterion of unidirectionality should prevail. What is more, as for emigration, no database was found that offers figures on emigrant populations in a systematic fashion (the International Organization

for Migration does not keep one, nor does the United Nations Population Division). So we had to choose a proxy, such as the flow of international remittances sent by migrants to their home countries (inflows of remittances are indeed measured by the World Bank). But this proxy turned out to be too rough for capturing this dimension of global presence. Other factors already featured in the IEPG – accumulated investment, tourist arrivals, or students mobility – might illustrate indirectly, but perhaps more realistically, the existence of a strong emigrant community in a given country, along with how that community generates external presence for the source country. As far as tourism is concerned, the levels of presence achieved with direction of flow are quite different: the degree of awareness or international presence that, say, Italy achieves by luring tourists is far greater than what it achieves when Italian tourists go to other countries. What is more, one could argue that the outflow of tourists is actually more an indicator of a country's economic development than of its global presence.

### Immigration

In order to measure international presence in terms of immigration, we have chosen the estimated number of international migrants at mid-year, recorded by the United Nations Population Division of each of the countries selected for this Index. This estimate is renewed every five years (i.e. 2000, 2005, 2010).

### Tourism

The Index measures the number of tourist arrivals at borders, as provided by the statistical database of the United Nations World Tourism Organization (UNWTO). In most cases, this information reflects data on "non-resident tourists" in the destination country, but the UNWTO also gives equivalent data on "non-resident visitors", "non-resident tourists staying in hotels or similar establishments", or "non-resident tourists staying in any kind of establishment", depending on the visa regulations imposed by the host country. As in most cases not all of these figures are available for each country, we have taken only the data that is available. Where more than one figure is available for a country, preference is given to that of "non-resident tourists".

In any case, tourism activity is recorded here in its more social or cultural aspect. This avoids the duplication that would come with recording tourism revenue (already featured in the Trade in services indicator, included in the Economy area).

## 3.4. CULTURE AND SCIENCE

The area of Culture and science is composed of five indicators, two that are cultural and three reflecting scientific presence: Cultural outreach, Sports, Technological development, Scientific research, and Educational outreach.

### Cultural outreach

Cultural outreach not involving sports can be summarised in exports of audiovisual services. Although this decision does duplicate information to some extent – see Trade in services – we feel that this indicator reflects a separate, non-economic aspect of this kind of presence. A better indicator might be the number of units of cultural production consumed outside a country's borders, but no international organization keeps track of this.

Initially, movie box-office ticket sales were chosen as the sole indicator of non-sports cultural presence. But in the end it was decided to broaden this to include other factors, in light of the decline in movie theater attendance. To have chosen this as sole indicator of presence in this area would have shown a gradual decline in cultural presence in many of the countries in the sample, due to decline in film exhibition itself – something that does not reflect the reality of cultural presence. For this reason, we have selected an indicator that reflects production, regardless of the distribution channel, as well as other cultural services on the rise, such as television production.

At the same time, the inclusion of several kinds of cultural presence allowed us to do without a variable measuring countries' presence in terms of language. The logic behind this indicator is very simple. While one could argue that countries with a globally shared language (such as Spanish, English, or French) systematically enjoy a greater presence than those which use languages that are less international (such as German or Dutch), it can equally be argued that this is an instrumental indicator, or that it reflects possession of a certain asset. But this factor has been deliberately omitted from the Index because our goal is not to assess a country's assets, but rather the extent to which that country translates its assets into greater global presence. So, in order to make the IEPG more consistent, we excluded the linguistic (instrumental) variable and opted instead for variables indicating countries' external presence in terms of cinema, television, radio, and music (all of which are result variables).

Also considered was the possibility of measuring cultural presence through publishing, including an international outreach variable concerning published products such as books or printed news media. But this was ultimately decided against, because this dimension of

culture is so complex. On the one hand, regarding books, it is often difficult to ascertain which country gains presence through publishing exports when, for instance, a book's author and publisher are in different countries, or given the fact that translations are normally published in the country where the book is sold, and not where the author lives. In other words, this indicator would be more a reflection of the size and extent of internationalisation of a country's publishing industry – an economic reality already featured in the Economy section. As for news media, data on the external reach of newspapers are not indicative of the international presence of the source country. Again, this is for linguistic reasons and also due to the fragmentation of the newspaper market, fundamentally along national lines. One possibility that might better suit the IEPG's goals would be to measure the number of news items that originate from a news agency (France Presse, Reuters, EFE, etc.) and are published in media outlets of countries other than the base country of the agency. In this case, it would not matter whether a news item had been translated or not. The problem is that, as of now, no such data exist.

The source used for audiovisual exports data is the World Trade Organization (WTO), which defines this area of production as movie productions, radio and television programs, and musical recordings. We have drawn data from the most recent edition of International Trade Statistics, with additional data (for instance, the breakdown from the EU countries) supplied specifically for the creation of the IEPG by that same organization. As with all indicators expressed in current monetary units, figures are translated into constant terms.

### Sports

In order to measure international presence by way of sports, we used the performance results of the various countries in men's professional football, the most widely viewed global sport, along with data from the preeminent international sporting event, the summer Olympic Games. Although we considered including other popular sport (tennis, golf, Formula 1 racing, American football, baseball, basketball, etc.), in the end it was decided to exclude these for three reasons: (i) the complexity that this would introduce into this indicator; (ii) the fact that, in some of these sports, competition is clearly more individual than national; and (iii) the fact that none enjoys the homogeneous international relevance that football or the Olympics do, as reflected through world television ratings. It is true that in the United States, men's football is not nearly so important as elsewhere in the world. But that does not affect the validity of the measurement proposed for this indicator, because this circumstance actually reduces the global presence of the United States in the sports world.

Regarding the first argument – the complexity that additional sports would introduce into the design of the Index – again, in building the IEPG, we sought to use a minimum of indicators with the greatest possible explanatory capacity. Under this criterion, we ruled out indicators that would add small variations to the values of the Index compared to other indicators which are more comprehensive. By way of illustrating the powerful explanatory capacity of just these two sports elements (football and the Olympic games), we tested the correlation between this dual indicator and another one comprised of 10 different sports and some 20 sporting events: the Summer Olympics, the Winter Olympics, the world athletics championship, the World Cup, the world basketball championship, the world handball championship, the world rugby championship, the Formula 1 championship, the Motorcycling GP championship, and the Grand Slam tournaments of tennis (the Australian Open, Roland Garros, the US Open, and Wimbledon). The correlation was 90.2% (see Appendix 2).

Returning to the Sports indicator designed for the IEPG, in the case of football we use the points from the world ranking compiled by the Fédération International de Football Association (FIFA), which ranks national men's teams. As this ranking is updated every two months, the IEPG uses the version issued in December of the previous year. Also, the points corresponding to England are assigned to the United Kingdom. For the Olympic Games, we use the results provided by the various national committees, which report total medals won in the most recent edition of the Games.

In order to carry out the combination of football and the Olympic Games, the weighting was made in line with our criterion involving the global relevance of both components as measured by television ratings. According to FIFA and the Nielsen ratings agency, 2 billion viewers watched the opening ceremony of the most recent Olympic Games, while 700 million took in the final game of the last World Cup – peak viewing times for each event. Thus, the football data are weighted at 25% and the Olympics numbers at 75%. Although the Olympics data are updated only every four years, the IEPG sports indicator will still register annual variations through changes in the FIFA rankings, which account for 25% of this variable.

### Technological development

In order to measure a nation's external presence in research and development, we monitor international patents, which reveal the capacity for scientific and technical innovation. We have used data on so-called foreign-oriented patents, which are interrelated patent applications filed in one or more foreign countries to protect the same invention. The country of origin is the residence of the first-named applicant (or assignee). For the purposes of

measuring global presence, we use only patents for scientific-technical production with a clearly transnational component. The source is the statistics database of the World Intellectual Property Organization.

### Scientific research

The previous indicator is complemented by another that reflects university activity in the field of research, because the generation of patents is generally linked to hard science research; research in the social sciences, arts, and humanities is not included in this indicator. The possibility was raised of using one of the several existing university rankings (such as the Shanghai Index) or, for added precision, an indicator within these rankings that looks specifically at research activity, such as Google Scholar. But this indicator uses a methodology in which the top countries in the ranking are not those posting greater academic activity or presence. For instance, Spain is ranked by this index ahead of Germany, which seems counter-intuitive.

There are several options for measuring a country's global presence in terms of academics and research. One possible yardstick is the number of scholarly articles published in well-known scientific journals. A second would be to take from among these journal articles only those which have been cited by at least one author in a foreign country. One could also weight the articles cited from abroad according to the number of times they are quoted. A fourth possibility would be to count the stock or flow of bibliographical citations in academic articles made outside a country.

For any of these options we can use the Thomson Reuters index of academic reviews. Thomson Reuters generates three indexes: Science Citation Index Expanded (SCI-E), Social Science Citation Index (SSCI), and Arts and Humanities Citation Index (A&HCI). These monitor publications in hard sciences, social sciences, and arts and humanities, respectively. In order to attribute scientific production to individual countries, Thomson Reuters uses as a reference the domicile of the author of an article published in a scientific review. The assumption is that this domicile is located in the same country as the university with which that author is affiliated in the institutional sense. In this way, one can attribute scientific production to the various universities, and thus to different countries[33].

**33** In the event of co-authorship, when the authors live in more than one country, one scientific article is attributed to each of the countries associated with the authors.

All of these options have pros and cons. Firstly, one could debate the extent to which the first option – counting articles published over the last year – reflects global presence, while the others, which take into account the system of citations, show international influence. Secondly, there is a limitation to any method that uses the system of citations: as of now, Thomson Reuters cannot provide a breakdown of the origin of the citation for groups of articles that number more than 10,000. Given this fact, the applicability for the IEPG is limited. Finally, for the second and third options, which combine the number of articles with the number of citations, there is a problem with defining the period for collecting data. For instance, the number of articles published and quoted in the same year would give an insignificant result.

For now, in this first edition of the IEPG, we have selected the first option: the number of articles published by journals indexed in the Web of Science. The source for this indicator is Thomson Reuters, which has provided these data specifically for the creation of the IEPG.[34]

### Educational outreach

This indicator gives the total number of foreign students present in each of the chosen countries, counting students in all tertiary education programs (both undergraduate and graduate levels), including colleges, universities, technological institutes, and polytechnic schools. According to the source used, a foreign student is any person enrolled in an institution of higher education in a country or territory where they do not maintain their fixed residence. However, it should be noted that most countries have compiled their statistics on foreign students by adhering to the concept of nationality, and discrepancies stemming from the use of this criterion can be significant in countries where statistics take into account, for example, immigrants who have not obtained citizenship in their host country but who still live there permanently.

The idea behind this indicator is to demonstrate universities' international presence in the area of teaching. While this might appear to duplicate information already included in the indicator for Tourism or Immigration (see Migration and Tourism), it does not seem appropriate to eliminate any of them; besides the differences in quantitative measurement of the three cases, the indicators all illustrate realities that are qualitatively very different for the purposes of the IEPG (the attractiveness of a country for students, as a place to work, and as a tourism destination). We debated the possibility of incorporating the number or flow from a given country of students to study destinations abroad as an indicator of presence, but this was

**34** The coordinators of the Index would like to thank, in particular, Philip Purnell of Thomson Reuters for collecting and sending these data.

discarded in the end because of the unidirectionality criterion. The source for this indicator is the United Nations Educational, Scientific and Cultural Organization (UNESCO Institute for Statistics), except the figure for Canada, which came from the statistical portal iLibrary at the OECD.

### 3.5. DEVELOPMENT ASSISTANCE

In the area of development aid, as it is impossible to include a result indicator, it was necessary to include an instrumental indicator instead. As stated before, given that the IEPG seeks to reflect a country's global presence, regardless of the means used to achieved such presence, the ideal approach would be to encounter data that assesses presence as achieved through development aid (such as participation in Donor Round Tables, in sector-wide development strategies, or in poverty-reduction strategies). But this information is not systematically kept in any international database.

Due to this shortcoming, it was decided to include Official Development Assistance (ODA) as an indicator of global presence in the area of development assistance, even though it carries the disadvantage of considering budgetary spending (an instrumental variable) instead of the result of that spending in terms of presence (a result variable).

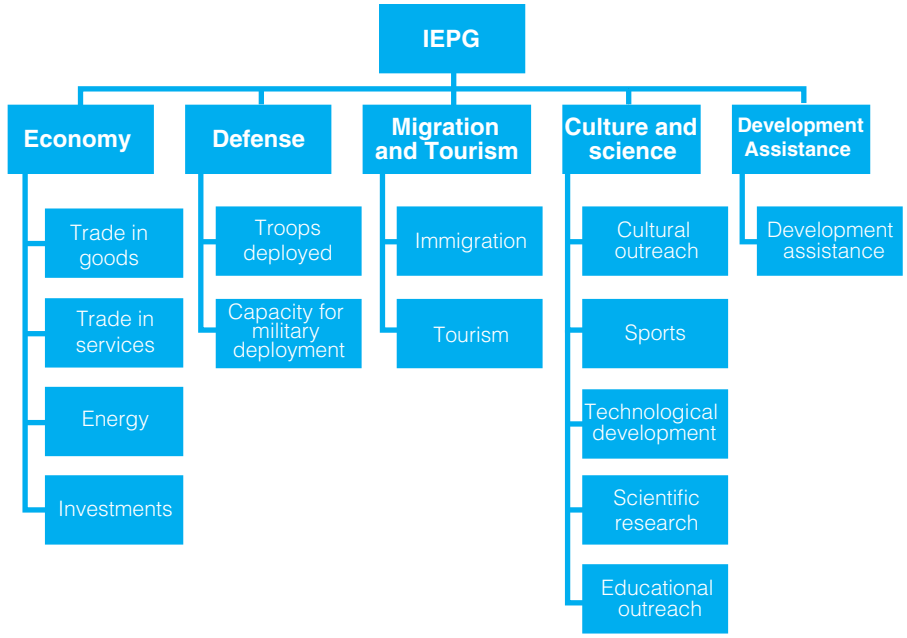
In line with the general IEPG criterion of opting for indicators involving quantity rather than quality, we use gross total official aid provided by each country, not just net ODA. In this way we include both donations and reimbursable assistance, and bilateral as well as multilateral aid. Regardless of current agreements in the international agenda around aid efficiency, we feel that presence (and not necessarily efficacy) is better reflected if any kind of development aid is included. The source for this data is the OECD. Aid data for the so-called DAC donors (donor members of the Development Assistance Committee of the OECD) are accessible through the OECD.Stat database, while data on non-DAC donors is offered by the OECD (2010) in one of its annual publications.

Note that we are taking into account only government development aid, and not assistance from the private sector. While it is true that in some countries, such as the United States, the flow of private aid has reached major proportions in recent years (consider the sub-Saharan Africa projects sponsored by the Bill and Melinda Gates Foundation), it is not clear that private aid gives greater presence to a nation as a whole, which is the unit of analysis in this Index.

In our discussions of which methodology the IEPG would use, some advocated a differentiation between multilateral and bilateral aid. The argument was that the latter affords the donor country more visibility, and therefore more global presence. But one could also argue that, while bilateral aid might be associated with greater donor visibility, that notoriety would extend only to the government and local communities of the countries receiving assistance. Alternatively, multilateral aid conceivably provides greater prominence for the donor within the aid-providing community, both at the headquarters of aid organizations and on the ground; but it would be difficult to determine the net balance of such notoriety in terms of global presence. Second, although it is accepted that donors have traditionally stressed bilateral aid to gain visibility, the debate around whether such a strategy actually works remains open. Certain analyses and arguments back the idea that still greater visibility comes of the donor taking part in multilateral organizations and global fora. In this way, the aid-giving process is less cumbersome, making it easier for a donor to be present in more sectors and more countries, which in turn means a greater presence for the donor, both among other aid-givers and among recipients of assistance. For these reasons, it was decided to use a single indicator – total gross official aid – without making any distinctions as to how the aid is channeled.

It should be noted that this government development aid includes the cost of all overseas civilian missions, so long as they are carried out in countries receiving aid (and so long as they are reported by the authorities), thus allowing this kind of presence to be featured in the IEPG. An example of these missions would be the training of judges, or technical assistance to municipalities. As for non-civilian missions, the OECD establishes a series of criteria for tabulating Official Development Assistance. These criteria are detailed further down and can be summarised thusly: work done in developing countries by security forces can be considered development assistance so long as it does not have a military component. So military assistance is explicitly ruled out – still being to some extent included in the Defense category – while the supply of military equipment and services, and the forgiveness of debts incurred for military purposes, cannot be classified as ODA. At the same time, the additional costs incurred when military forces of a donor country deliver humanitarian aid or provide development services can be considered ODA. Peacekeeping operations are not included in this area of the IEPG because they cannot be considered ODA; but when they involve deployment of troops, they are tallied in the Defense area. What is more, ODA does include the net bilateral costs to donors for carrying out the following activities as part of peacekeeping operations run or approved by the United Nations: human rights; election oversight; rehabilitation of demobilised soldiers and national infrastructure; supervision and training of administrators, including customs agents and police; consulting on economic stabilisation; repatriation and demobilisation of soldiers; withdrawal of weapons; and mine

**Figure 2. Structure of the IEPG**




removal operations. Activities carried out for reasons other than development, such as the clearing of land mines to allow for military training, cannot be considered ODA. Finally, as regards the work of civilian police, costs for training police officers do count as ODA, unless the training has to do with paramilitary functions such as counter-insurgency operations.

SECTION 4.

# Aggregating the components of the índex

## 4.1. WHAT TO DO WHEN DATA ARE MISSING

As is the case with any index that aggregates data for numerous cases and various dimensions (here 54 countries, for which 21 indicators are measured), it may occur that certain data are not available for some countries. In the IEPG, data are missing for some countries in just three variables: Cultural outreach, Educational outreach, and Development assistance. In order to determine the values for these instances of missing data, a variety of methods exist. We chose to calculate the best correlation between the available data for each of these variables with the rest of the variables in the IEPG, so as to estimate with a linear regression.

The highest correlation with the dependent variable Cultural outreach was found with the Troops deployed variable, with an R squared of 0.972, which rises to 0.986 in the case of the Investments variable (Table 3).

**Table 3. Summary of the model for estimating the Cultural outreach variable[35]**

| Model | R | R squared (a) | R squared corrected | Standard estimation error |
|---|---|---|---|---|
| 1 | .986(b) | .972 | .971 | 344,793 |
| 2 | .993(c) | .986 | .985 | 247,410 |

a. For regression through the origin (model without term of intersection), R squared measures the proportion of the variability of the dependent variable that is explained by the regression through the origin. One cannot compare the aforementioned with the R squared figure for models that include an intersection.

b. Predicting variables: Troops deployed

c. Predicting variables: Troops deployed, Investments

d. Dependent variable: Cultural outreach

e. Linear regression through origin

The military component has turned out to be ideal for estimating missing cases of Cultural outreach data, because it gives a ranking of developed and emerging countries that is generally similar to that arising from the analysis carried out by UNCTAD in its report on the creative industry (UNCTAD, 2008).

**35** The complete model and the resulting estimates can be found in Appendix 3.

Next, the highest correlation for the Educational outreach dependent variable was found with the Sports and Investments variables. In this case, R squared is 0.903 as seen in Table 4.

**Table 4. Summary of the model for estimating the Educational outreach variable**

| Model | R | R squared (a) | R squared corrected | Standard estimation error |
|---|---|---|---|---|
| 1 | .937(b) | .877 | .875 | 42065.201 |
| 2 | .949(c) | .903 | .899 | 37737.605 |

a. For regression through the origin (model without term of intersection), R squared measures the proportion of the variability of the dependent variable that is explained by the regression through the origin. One cannot compare the aforementioned with the R squared figure for models that include an intersection.

b. Predicting variables: Troops deployed

c. Predicting variables: Troops deployed, Investments

d. Dependent variable: Cultural outreach

e. Linear regression through origin

For Development assistance, the highest correlation was found with the variables Investments and Technological development. R squared is 0.941, as seen in Table 5.

**Table 5. Summary of the model for estimating the Development assistance variable**

| Model | R | R squared (a) | R squared corrected | Standard estimation error |
|---|---|---|---|---|
| 1 | .930(b) | .865 | .862 | 2172.987 |
| 2 | .964(c) | .930 | .927 | 1584.166 |

a. For the regression via origin (model without term of intersection), R squared measures the proportion of variability of the dependent variable that can be explained by the regression through the origin. One cannot compare the aforementioned with R squared for models that include an intersection.

b. Predicting variables: Investments

c. Predicting variables: Investments, Technological development

d. Dependent variable: Official Development Assistance

e. Linear regression through origin

As is evident, and as one can deduce from the high degree of linear fit among the models, the values predicted by the three models are very close to the values observed in the database. This increases our confidence that the values attributed to the missing cases cannot not be far from their true values.

## 4.2. LINEARITY OF THE VARIABLES

The working group discussed at several meetings whether it would be better to assign a linear or non-linear behavior to IEPG variables. It is true that certain variables measuring power, influence, or presence can exhibit non-linear behavior in the sense that an increase of x% in the value of the variable does not contribute an equivalent increase of x% (or a.x%) in the amount of presence, power, or influence of that country. One example would be possession of nuclear weapons: the increase in power involved in going from zero to one is substantially greater than that of going from 200 to 300.

Given that the IEPG measures presence and not influence or power, a linear behavior in each indicator was assumed. Therefore, an x% increase in the value recorded by each of these indicators implies a proportional (x% or a.x%) increase in global presence.

## 4.3. LIMITS OF SCALE

Another technical question that arose in devising the IEPG had to do with the limits of the scoring scales. Should they be fixed limits, or mobile limits that depend on the data of each given year? After analysing both alternatives, the methodology group chose a set-limit definition for the scales in all of the time series, mainly to guarantee that results could be compared over the years. Indeed, one of the main features of the Index is its usefulness in analysing values across an entire course of time series. The use of mobile limits each year, depending on the year's minimum and maximum values, would have a positive effect on the Index's ability to appropriately rank countries in the year in question. However, on the down side, it does not allow comparison of the value for one year with that of the next, due to changes in the reference points with which these values were calculated.

With this in mind, it was decided that the scales of the IEPG would run from 0 to 1,000, with the following set minimum and maximum limits:

- Minimum limits: 0 points are assigned to the value 0 of each indicator. For instance, 0 points in Economy would mean that the sum of the export and investment indicators equals zero dollars for the country in question. In Defense, 0 points means a country with no troops deployed and no capacity for military deployment. And so on, for the rest of the areas and indicators featured in the Index.

- Maximum limits: 1,000 points are assigned to the maximum value of the indicator in the year 2010 for the selection of countries analysed. In other words, if in 2010 the maximum value for the technological development indicator corresponds to Japan, with 59,003 patents, this number of patents is assigned 1,000 points on the scale. And so on, for the rest of the indicators featured in the Index.

The formula for transferring each value to this scale is the following:

$$Y1000\ \frac{X}{MaxX}$$

where Y is the value transferred to scale, X is the value of the indicator in its original unit of measurement, and MaxX is the maximum value registered for the indicator X.

The values that result from the aggregation of the indicators by area will also be transformed to the 0-to-1,000 scale. If this second transformation to the 0-to-1,000 scale were not carried out, the real contribution of each area to the final value of the IEPG would be determined to a large extent by the spread of the values within each area (see the following section).

This definition of minimum and maximum limits for the IEPG scales means that the Index will have 2010 as its base year. This in turn means that, in practical terms, the value of the Index in later years will always be referenced to the 2010 values of the indicators. This will allow for a comparison over time to verify the intrinsic evolution of each country, in addition to a transversal comparison among countries.

Meanwhile, this also means that in years to come, the value of the IEPG for certain countries might surpass 1,000 points. This definition is similar to that of stock market indexes, which

start with a certain year as a base figure and rise or fall depending on how the market behaves. Such is the case of the IBEX 35, the main stock market index in Spain. Its 3,000-point base refers to 29 December 1989, and it is now at about 10,000 points.

### 4.4. HOW TO ASSIGN WEIGHTINGS?

The four possible methods for weighting considered by the methodology group were:

a) assign weightings in an open fashion, based on the criteria of experts;
b) resort to factorial analysis that would base the weightings on the correlations among variables;
c) employ a technique mixing these two approaches, such as using factorial analysis among areas and arbitrarily assigning the same weighting to each indicator within each area;
d) take a dependent variable that is measured independently from the Index –even on the basis of a poll of experts – and analyse the behavior of each one of the indicators with respect to said variable.

Factorial analysis is useful when one suspects there is an underlying dimension that cannot be measured directly, but which is behind the variation observed in the chosen indicators. The main drawback with this technique is that, if one uses factorial analysis within each dimension, this will yield higher weightings for any measures which are correlated with other measures within each dimension. What is more, there would be systematic penalization of those measures which are not closely correlated with others, but which were included in the Index because they capture dimensions which are in fact considered important. Something similar would happen with option d), in which the weightings are established depending on the behavior of each of the variables with respect to the dependent variable. For this reason it was decided to go with the first option, assigning a weighting to each variable depending on expert criteria. However, this method offers advantages only so long as the weightings chosen are simple, and as aseptic and non-theoretically-biased as possible.

One might say that there are two levels of weighting in the IEPG.[36] There was a good degree of consensus in the working group on the weighting of indicators within each area. It was concluded that for each of the five areas, each indicator would carry the same weight. In

**36** One could even say there is a third level in establishing a weighted sum to measure overseas presence in Sports (Olympic Games 75% and football 25%) and in Capacity for military deployment.

other words, external presence in terms of the Economy would be considered as occurring to the same extent in Trade in goods, Trade in services, Energy, and Investments; presence in the Defense area depends equally on Troops deployed and Capacity for military deployment; presence in Migration is based equally on Immigration and Tourism, etc.

Apart from weighting of indicators, there is another level of weightings (of areas) on which there was not the same degree of consensus. Although there is broad agreement that each of the five areas – Economy, Defense, Migration and Tourism, Culture and Science, and Development Assistance – do not contribute in the same way to countries' global presence, the discord emerged when it came to assigning a weight to each of the areas. It was for this reason that, in order to define a second level of weightings, it was decided to resort to a panel of experts in international relations, comprising the members of the Scientific Council[37] and researchers at the Elcano Royal Institute (excluding the coordinators of this study)[38] as well as outside members of the methodology working group created for the IEPG project.

**Table 6. Weightings by area**

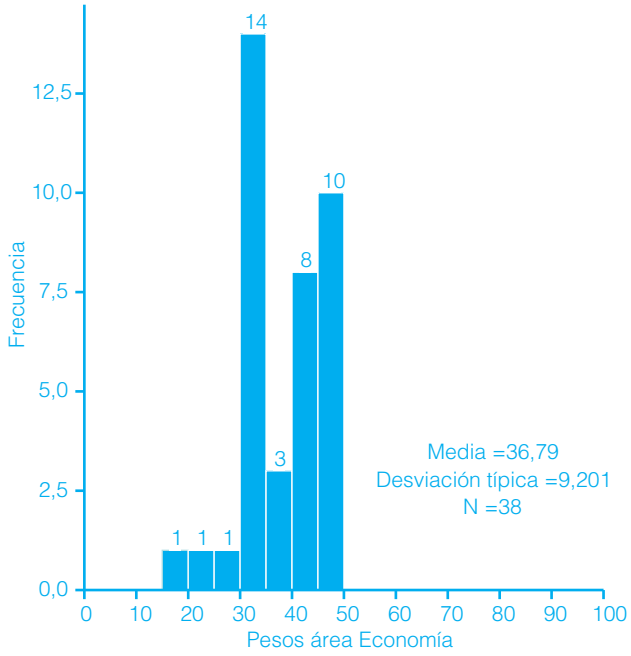
| Área | Weighting |
|---|---|
| Economy | 37,3 |
| Defense | 17,7 |
| Migration and tourism | 11,5 |
| Culture and science | 21,5 |
| Development assistance | 12,0 |

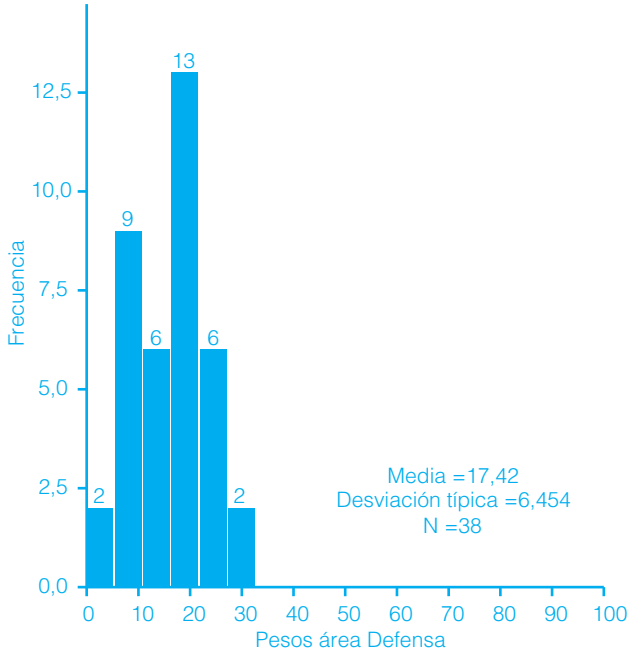
This panel was polled as to the specific weight to be assigned to each area, and this survey served as the basis for establishing the weighting in the second level of the IEPG (Appendix 4). The 38 answers received made for the distribution of weightings seen in Table 6 and which have been applied for the overall IEPG formula.

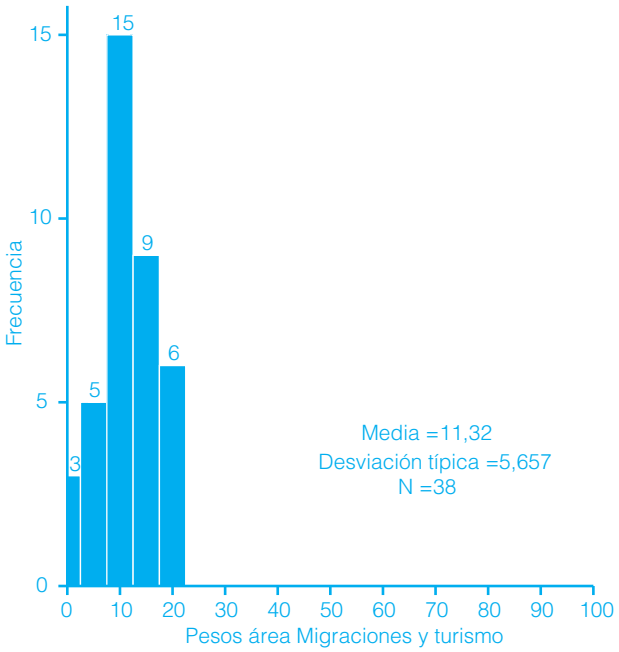
**37** See the entire list of members of the Scientific Council at: *http://www.realinstitutoelcano.org/wps/portal/rielcano/quienesSomos/Organizacion/ConsejoCientifico/*

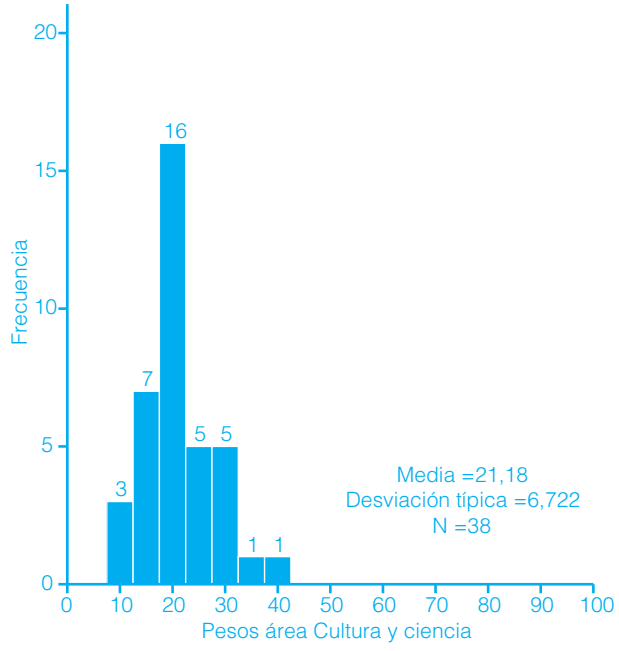
**38** See the complete list of researchers at the Elcano Royal Institute at: *http://www.realinstitutoelcano.org/wps/portal/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3jjYB8fnxBnR19TE2e_kECjAF8DKADKR5rFG1gY-Zp5-bkGuhp4GrmEOImaweWJ0I0u7-dEpG4_j_zcVP2C3NCIckdFRQCdVygr/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfM1NMTExUQ0FNNTRDTlRRMlRNMDAwMDAwMDA!/*

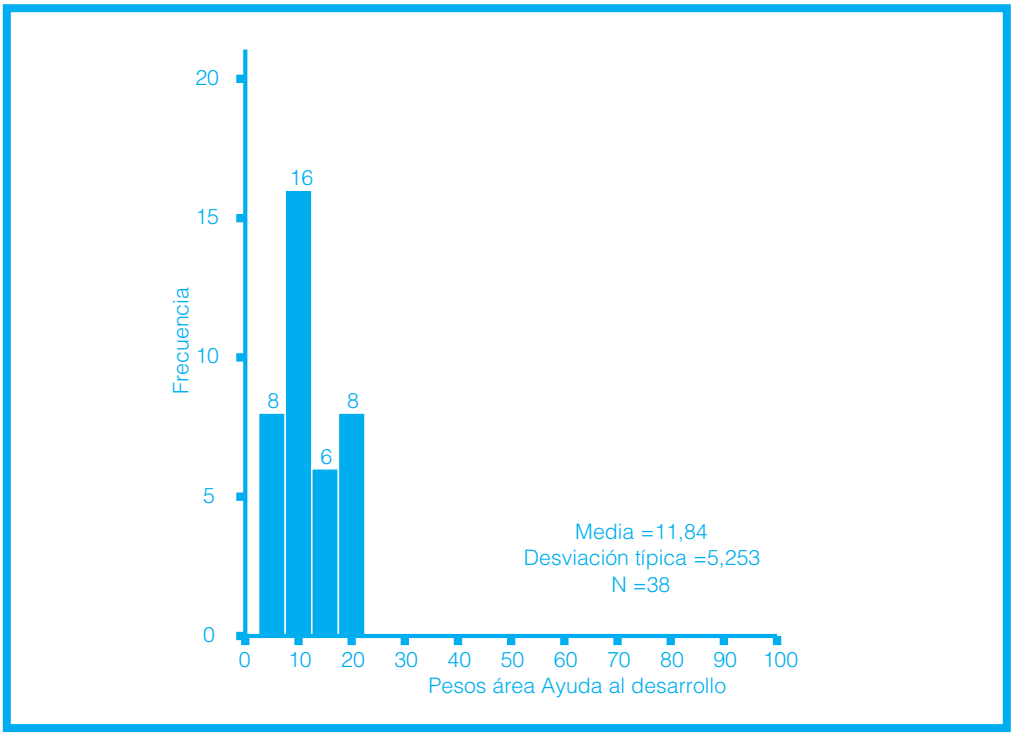
**Figures 3a to 3e. Histograms of the weightings**




15
10
5
0
Frecuencia
3
5
15
9
6
0 10 20 30 40 50 60 70 80 90 100
Pesos área Migraciones y turismo
Media =11,32
Desviación típica =5,657
N =38


20
15
10
5
0
Frecuencia
3
7
16
5 5
1 1
0 10 20 30 40 50 60 70 80 90 100
Pesos área Cultura y ciencia
Media =21,18
Desviación típica =6,722
N =38




The following histograms (figures 3a to 3e) show the responses of the 38 people polled. One observes great homogeneity among the answers despite the diversity of those who took part in the survey in terms of their field of research, gender, origin, or age.

The weighting used in future IEPG calculations might differ from the weight currently assigned to each area, and to each indicator within each area, if it is decided to repeat and broaden the survey to a wider panel of experts – perhaps to include international specialists – or if new indicators (such as cybermetrics) are eventually incorporated. In any case, this would amount to a change in the values with which the different parts of the Index are aggregated, but not to a rethinking of the methodology explained here, which will remain valid despite adjustments made to fine-tune specific weighting values.

The weighting of each area and indicator is not the only factor that determines the final contribution of each variable to the final result. Another source of influence is the dispersion or variance within each indicator, and the correlation among them. For instance, the Defense indicators' final contribution to the IEPG in 2010 is less than its theoretical weighting, because it serves to differentiate the United States from the rest of the countries but scarcely

differentiates among the others. On the other hand, the area of Migration and tourism has greater dispersion among the entire set of countries, which causes its real weight to be greater than that of Defense. The correlation among variables also has an effect on the final weight. The lesser its correlation with other parameters, the greater the weight of each entry parameter (area or indicator). For this reason, Migration and tourism has a greater real contribution to the IEPG than its theoretical weighting, because its correlation with the other areas is lesser.

With an eye to quantifying real contribution, and since the model is linear, two linear regression analyses have been carried out: one with just the five areas, and another with the 14 indicators. The standardised Beta coefficients of the linear regression with origin at zero are a measure of each variable's real contribution to the IEPG. They have been converted to add up to 100, so as to facilitate their interpretation. In the same way, we have carried out the same analyses with data from 1995, in order to evaluate the consistency of the model over time. The real contribution of each indicator in years other than 2010 (the maximums for that year being the base for transforming to the 0-to-1,000 scale) depends not just on the factors already pointed out – variance of each indicator and correlation among them – but also on how each factor evolves over time. In 1995, the weight of the economy, especially Energy and Investments, was less than in 2010. On the other hand, the weight of Defense was much greater, especially because of deployment capabilities: this factor has not grown as much from 1995 to 2010 as Energy and Investments have.

**Table 7. Theoretical and real contributions in each area to the IEPG**

| | Theoretical contributions and weights | Real contribution standardised coefficients 2010 | Real contribution standardised coefficients 1995 |
|---|---|---|---|
| Trade in goods | 9,32 | 13,7 | 13,6 |
| Trade in services | 9,32 | 10,7 | 9,1 |
| Energy | 9,32 | 12,1 | 5,8 |
| Investments | 9,32 | 9,6 | 5,4 |
| Economy | 37,3 | 43,0 | 32,0 |
| Troops deployed | 8,85 | 5,5 | 6,0 |
| Capacity for military deployment | 8,85 | 5,7 | 14,1 |
| Defense | 17,7 | 12,4 | 21,3 |
| Immigration | 5,75 | 4,8 | 4,9 |
| Tourism | 5,75 | 7,9 | 7,8 |
| Migration and tourism | 11,5 | 13,0 | 12,5 |
| Cultural outreach | 4,3 | 2,8 | 2,0 |
| Sports | 4,3 | 5,1 | 7,5 |
| Technological development | 4,3 | 4,1 | 3,7 |
| Scientific research | 4,3 | 3,1 | 3,4 |
| Educational outreach | 4,3 | 3,6 | 2,0 |
| Culture and science | 21,5 | 19,0 | 19,9 |
| Development assistance | 12,0 | 12,6 | 14,3 |
| **IEPG** | **100** | **100** | **100** |

SECCIÓN 5.

# Results for 2010

## Results for 2010

The results for the 2010 IEPG are below, ordered by country in Table 8 and by ranking in the graphs, grouped by areas. All of the data that make up the indicators (and the resulting IEPG for 2010) are data that were available from the aforementioned sources as of 31 December 2010. This criterion will govern future editions of the IEPG: the data used in the Index will always be data available as of the previous 31 December. It is also worthwhile to clarify a few points about the data used in each of the indicators in the IEPG for 2010.

All data in the areas of Economy and Defense are from 2009. The data for the Immigration indicator (which are updated every five years) are from 2010. As for the Tourism indicator, the data are from 2009 except for nine countries (Canada, Denmark, Estonia, France, Iran, Nigeria, Poland, Russian Federation, and Turkey), for which 2008 data were used, and Portugal, using data from 2007.

With the Cultural outreach indicator, due to the absence of data for 15 countries, we resorted to the estimation technique explained earlier. These countries are Chile, Iceland, India, Indonesia, Iran, Israel, Luxembourg, Malaysia, Nigeria, New Zealand, South Africa, Saudi Arabia, Switzerland, Thailand, and Turkey. The rest of the countries draw on data for 2009, except five for which we used 2008 data: Australia, Austria, Denmark, Finland, and Sweden. The information on Sports is updated every four years in the case of the Olympic Games (for this 2010 edition, data from the 2008 games were used), and annually for the football ranking. For the patents indicator, all data are from 2007, and all data for Scientific research are from 2009. Most of the figures on Educational outreach are from 2008, albeit with exceptions: Iran, Saudi Arabia, Thailand (data from 2009); Greece, Malaysia (2007); Canada, India, Luxembourg (2006); Brazil (2004); Mexico (2002); and Argentina (2000). As with the case of the Cultural outreach indicator, here it was necessary to estimate data for three countries: Colombia, Israel, and Nigeria.

The Development assistance indicator of the IEPG for 2010 features data from 2008 for the most part. In 14 cases data are from 2009: Austria, Belgium, Denmark, Germany, India, Ireland, Italy, Luxembourg, Norway, the Netherlands, New Zealand, Portugal, Republic of Korea, and Sweden. Four figures corresponded to 2007 (Brazil, China, Russian Federation, and South Africa) while the remaining 12 are estimates (Argentina, Bulgaria, Chile, Colombia, Cyprus, Indonesia, Iran, Malaysia, Malta, Mexico, Nigeria, and Venezuela). For non-CAD donors, the figure given might be net rather than gross assistance.

So, out of a total of 1,134 figures, values were estimated in 30 cases in which data were missing – representing little more than 2.6% of the complete base.

## Table 8. Summary of results

| Country | Economy | | | | | Defense | | |
|---|---|---|---|---|---|---|---|---|
| | Trade in goods | Trade in services | Energy | Investments | Economy area | Troops deployed | Capacity for military deploy-ment | Defense area |
| Argentina | 43.456 | 9.686 | 5.002 | 26.023 | 32,7 | 863 | 549 | 8,4 |
| Australia | 89.054 | 36.584 | 39.960 | 303.878 | 158,6 | 2.677 | 1873 | 28,4 |
| Austria | 107.850 | 46.998 | 3.998 | 147.777 | 89,0 | 1.090 | 0 | 1,6 |
| Belgium | 296.673 | 71.611 | 22.991 | 591.647 | 241,7 | 1.042 | 122 | 3,2 |
| Brazil | 120.742 | 24.520 | 12.077 | 139.426 | 91,5 | 1.336 | 1.464 | 21,1 |
| Bulgaria | 12.462 | 6.049 | 1.836 | 1.158 | 12,0 | 637 | 244 | 4,1 |
| Canada | 203.810 | 52.243 | 63.718 | 501.294 | 269,4 | 3.554 | 732 | 14,9 |
| Chile | 45.512 | 7.523 | 360 | 36.436 | 23,7 | 527 | 755 | 10,6 |
| China | 1.043.165 | 114.518 | 18.025 | 203.038 | 465,0 | 37 | 3.439 | 44,8 |
| Colombia | 15.090 | 3.706 | 13.955 | 14.330 | 35,8 | 354 | 0 | 0,5 |
| Cyprus | 1.028 | 8.740 | 166 | 15.732 | 8,4 | 2 | 0 | 0,0 |
| Czech Republic | 94.200 | 17.964 | 3.573 | 12.266 | 50,8 | 878 | 0 | 1,3 |
| Denmark | 71.435 | 48.673 | 6.335 | 191.167 | 87,1 | 966 | 0 | 1,5 |
| Estonia | 7.259 | 3.903 | 1.521 | 5.852 | 8,6 | 192 | 0 | 0,3 |
| Finland | 51.175 | 22.093 | 3.550 | 111.294 | 48,8 | 675 | 0 | 1,0 |
| France | 385.706 | 126.876 | 14.493 | 1.520.747 | 374,0 | 14.921 | 3.462 | 67,6 |
| Germany | 902.613 | 204.508 | 20.469 | 1.219.006 | 579,4 | 7.986 | 915 | 24,0 |
| Greece | 16.231 | 33.417 | 1.406 | 35.767 | 35,5 | 1.741 | 854 | 13,7 |
| Hungary | 71.978 | 16.126 | 1.876 | 154.702 | 51,5 | 908 | 0 | 1,4 |
| Iceland | 3.534 | 1.996 | 36 | 6.229 | 3,2 | 0 | 0 | 0,0 |
| India | 128.211 | 80.566 | 21.238 | 68.275 | 146,7 | 8.551 | 3.626 | 60,1 |
| Indonesia | 73.897 | 12.185 | 29.134 | 26.691 | 91,0 | 1.454 | 1.228 | 18,2 |
| Iran | 7.968 | 7.644 | 42.790 | 1.953 | 91,3 | 2 | 244 | 3,2 |
| Ireland | 97.790 | 85.597 | 732 | 170.178 | 109,8 | 747 | 0 | 1,1 |
| Israel | 42.205 | 19.179 | 19 | 49.637 | 31,7 | 0 | 0 | 0,0 |
| Italy | 335.851 | 90.763 | 12.784 | 511.241 | 241,4 | 7.886 | 2.440 | 43,7 |
| Japan | 473.928 | 113.491 | 9.312 | 655.213 | 307,2 | 39 | 488 | 6,4 |
| Lietuva | 5.757 | 3.377 | 321 | 890 | 5,0 | 176 | 61 | 1,1 |
| Lithuania | 11.239 | 3.353 | 3.109 | 2.043 | 12,2 | 293 | 0 | 0,4 |
| Luxembourg | 10.763 | 54.076 | 139 | 68.641 | 49,4 | 35 | 0 | 0,1 |

| Immigration | | | Culture and science | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Immigration | Tourism | Migration and tourism area | Cultural outreach | Sports | Technological development | Scientific research | Educational outreach | Culture and science area | Development assistance (indicator) | Development assistance area | IEPG |
| 1.449 | 4.329 | 52,3 | 299 | 14.707 | 117 | 7.844 | 3.255 | 36,1 | 150 | 6,0 | 28,2 |
| 4.711 | 5.584 | 106,6 | 173 | 50.473 | 1.459 | 46.568 | 230.635 | 193,2 | 2.637 | 106,2 | 130,7 |
| 1.310 | 21.355 | 177,3 | 76 | 6.694 | 1.567 | 13.863 | 53.396 | 42,0 | 1.021 | 41,1 | 67,9 |
| 975 | 6.815 | 64,3 | 449 | 5.430 | 1.180 | 19.886 | 29.844 | 39,6 | 2.377 | 95,7 | 118,1 |
| 688 | 4.802 | 45,3 | 23 | 24.243 | 363 | 35.069 | 1.117 | 60,7 | 408 | 16,4 | 58,1 |
| 107 | 5.739 | 44,3 | 22 | 8.562 | 22 | 2.471 | 9.268 | 19,8 | 9 | 0,4 | 14,6 |
| 7.202 | 17.142 | 227,2 | 1.457 | 20.358 | 3.272 | 67.697 | 68.520 | 123,8 | 4.315 | 173,8 | 176,7 |
| 320 | 2.750 | 24,9 | 37 | 7.246 | 98 | 5.119 | 12.159 | 20,1 | 200 | 8,1 | 18,9 |
| 686 | 50.875 | 388,8 | 86 | 100.605 | 5.570 | 128.969 | 51.038 | 273,5 | 1.307 | 52,6 | 291,2 |
| 110 | 2.147 | 17,5 | 19 | 5.641 | 32 | 2.507 | 7.362 | 14,0 | 78 | 3,1 | 18,8 |
| 154 | 2.141 | 18,1 | 13 | 2.420 | 52 | 673 | 7.176 | 7,3 | 88 | 3,5 | 7,2 |
| 453 | 6.032 | 51,2 | 74 | 10.835 | 160 | 10.070 | 27.907 | 34,6 | 222 | 9,0 | 33,6 |
| 484 | 4.503 | 40,3 | 257 | 12.073 | 1.178 | 13.154 | 6.389 | 37,7 | 2.516 | 101,3 | 57,6 |
| 182 | 1.970 | 17,2 | 7 | 4.770 | 23 | 1.369 | 1.032 | 9,6 | 20 | 0,8 | 7,4 |
| 226 | 3.423 | 28,6 | 4 | 6.685 | 1.836 | 10.834 | 11.303 | 26,7 | 1.042 | 42,0 | 32,5 |
| 6.685 | 79.218 | 683,0 | 876 | 44.934 | 8.619 | 75.057 | 243.436 | 236,3 | 11.194 | 450,8 | 334,9 |
| 10.758 | 24.220 | 329,0 | 1.072 | 49.990 | 35.172 | 108.277 | 189.347 | 336,8 | 11.799 | 475,1 | 387,6 |
| 1.133 | 14.915 | 126,9 | 119 | 10.622 | 91 | 13.024 | 21.160 | 33,8 | 628 | 25,3 | 40,6 |
| 368 | 9.058 | 72,6 | 853 | 13.972 | 125 | 6.400 | 15.459 | 47,3 | 95 | 3,8 | 38,4 |
| 37 | 1.235 | 9,7 | 4 | 2.702 | 29 | 803 | 720 | 5,6 | 43 | 1,7 | 3,7 |
| 5.436 | 5.109 | 113,1 | 298 | 3.812 | 1.474 | 42.804 | 12.374 | 39,7 | 539 | 21,7 | 89,5 |
| 123 | 6.324 | 48,9 | 60 | 6.294 | 12 | 1.073 | 3.023 | 13,7 | 137 | 5,5 | 46,4 |
| 2.129 | 2.034 | 44,5 | 1 | 5.225 | 29 | 15.933 | 1.451 | 17,0 | 14 | 0,6 | 43,4 |
| 899 | 7.189 | 66,0 | 238 | 7.433 | 514 | 7.427 | 12.794 | 26,4 | 889 | 35,8 | 58,7 |
| 2.940 | 2.321 | 57,9 | 29 | 4.614 | 1.196 | 13.686 | 10.959 | 22,4 | 123 | 5,0 | 23,9 |
| 4.463 | 43.239 | 384,0 | 381 | 33.815 | 4.821 | 63.039 | 68.306 | 133,2 | 4.339 | 174,7 | 191,5 |
| 2.176 | 6.790 | 80,7 | 99 | 29.628 | 59.003 | 90.491 | 126.568 | 337,9 | 15.599 | 628,1 | 273,0 |
| 335 | 1.323 | 14,5 | 3 | 5.843 | 16 | 521 | 1.475 | 11,2 | 20 | 0,8 | 6,2 |
| 129 | 1.341 | 11,8 | 2 | 8.411 | 14 | 2.133 | 2.955 | 17,0 | 43 | 1,7 | 9,8 |
| 173 | 849 | 8,7 | 41 | 1.187 | 212 | 495 | 1.137 | 4,1 | 367 | 14,8 | 22,1 |

**Table 8. Summary of results *(continue)***

| Country | Economy | | | | | Defense | | |
|---|---|---|---|---|---|---|---|---|
| | Trade in goods | Trade in services | Energy | Investments | Economy area | Troops deployed | Capacity for military deploy-ment | Defense area |
| Malaysia | 117.906 | 25.409 | 20.523 | 66.870 | 101,4 | 832 | 122 | 2,8 |
| Malta | 1.963 | 2.985 | 31 | 1.326 | 3,0 | 1 | 0 | 0,0 |
| Mexico | 174.959 | 13.639 | 26.948 | 47.274 | 121,4 | 0 | 366 | 4,8 |
| Netherlands | 344.114 | 82.538 | 33.050 | 752.154 | 298,0 | 2.575 | 656 | 12,4 |
| New Zealand | 20.232 | 6.705 | 1.052 | 13.332 | 14,5 | 538 | 122 | 2,4 |
| Nigeria | 2.618 | 1.970 | 41.344 | 5.693 | 82,9 | 5.037 | 61 | 8,4 |
| Norway | 33.690 | 33.778 | 67.595 | 145.640 | 179,1 | 708 | 183 | 3,5 |
| Poland | 114.498 | 25.596 | 5.383 | 23.179 | 67,3 | 3.449 | 183 | 7,6 |
| Portugal | 33.700 | 20.139 | 1.947 | 59.466 | 34,3 | 674 | 305 | 5,0 |
| Republic of Korea | 300.400 | 51.744 | 21.034 | 102.244 | 182,2 | 0 | 183 | 2,4 |
| Romania | 33.004 | 8.626 | 2.117 | 1.531 | 21,0 | 1.288 | 183 | 4,3 |
| Russian Federation | 86.317 | 36.895 | 169.325 | 220.100 | 401,6 | 8.878 | 8.451 | 123,3 |
| Saudi Arabia | 20.318 | 8.539 | 147.516 | 35.650 | 301,8 | 0 | 427 | 5,6 |
| Slovakia | 46.833 | 5.551 | 1.985 | 2.426 | 22,9 | 624 | 0 | 0,9 |
| Slovenia | 19.026 | 5.336 | 683 | 7.734 | 11,9 | 564 | 0 | 0,9 |
| South Africa | 42.300 | 10.620 | 5.326 | 56.870 | 36,4 | 2.335 | 0 | 3,5 |
| Spain | 186.217 | 108.715 | 5.450 | 571.193 | 198,4 | 2.512 | 2.059 | 30,6 |
| Sweden | 102.873 | 54.228 | 7.127 | 324.858 | 114,1 | 709 | 0 | 1,1 |
| Switzerland | 148.330 | 62.319 | 4.191 | 711.676 | 162,1 | 252 | 0 | 0,4 |
| Thailand | 127.967 | 26.704 | 6.887 | 14.417 | 74,5 | 31 | 610 | 8,0 |
| Turkey | 85.752 | 29.376 | 3.450 | 13.079 | 56,4 | 1.890 | 2.738 | 38,5 |
| United Kingdom | 255.260 | 209.241 | 34.459 | 1.460.641 | 427,1 | 35.835 | 3.352 | 97,8 |
| United States of America | 792.774 | 446.370 | 48.390 | 3.805.060 | 1000,0 | 330.640 | 38.455 | 1000,0 |
| Venezuela | 10.547 | 1.773 | 31.628 | 15.626 | 67,3 | 0 | 366 | 4,8 |

Los datos de Comercio de bienes, Comercio de servicios, Energía, Inversiones, Difusión cultural y Ayuda al desarrollo se expresan en millones de dólares constantes. Las Tropas desplegadas y la Difusión educativa se contabilizan en

| Immigration | | | Culture and science | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Immigration | Tourism | Migration and tourism area | Cultural outreach | Sports | Technological development | Scientific research | Educational outreach | Culture and science area | Development assistance (indicator) | Development assistance area | IEPG |
| 2.358 | 23.646 | 208,9 | 64 | 1.825 | 192 | 4.677 | 30.581 | 17,0 | 369 | 14,9 | 67,8 |
| 15 | 1.183 | 9,0 | 10 | 501 | 33 | 130 | 437 | 1,4 | 12 | 0,5 | 2,5 |
| 726 | 21.454 | 170,0 | 71 | 8.184 | 121 | 10.147 | 1.892 | 21,3 | 258 | 10,4 | 71,5 |
| 1.753 | 9.921 | 98,2 | 499 | 27.050 | 2.373 | 36.417 | 30.052 | 90,5 | 5.824 | 234,5 | 172,2 |
| 962 | 2.422 | 31,3 | 24 | 12.161 | 360 | 7.910 | 31.565 | 37,0 | 273 | 11,0 | 18,7 |
| 1.128 | 1.313 | 25,4 | 155 | 8.703 | 9 | 2.381 | 9.222 | 22,2 | 30 | 1,2 | 40,2 |
| 485 | 4.346 | 39,1 | 232 | 16.366 | 549 | 10.170 | 16.104 | 44,6 | 3.613 | 145,5 | 99,0 |
| 827 | 12.960 | 108,1 | 34 | 12.765 | 166 | 20.824 | 14.965 | 37,9 | 337 | 13,6 | 48,7 |
| 919 | 12.321 | 104,6 | 79 | 9.150 | 120 | 9.845 | 8.102 | 25,0 | 485 | 19,5 | 33,4 |
| 535 | 7.818 | 65,7 | 172 | 34.659 | 17.624 | 42.469 | 40.322 | 156,9 | 752 | 30,3 | 113,3 |
| 133 | 7.575 | 58,3 | 34 | 11.345 | 38 | 6.977 | 13.857 | 28,5 | 110 | 4,4 | 21,9 |
| 12.270 | 23.676 | 345,9 | 229 | 77.065 | 423 | 29.149 | 136.791 | 199,8 | 196 | 7,9 | 255,3 |
| 7.289 | 10.897 | 181,8 | 21 | 2.816 | 50 | 2.375 | 19.906 | 13,0 | 4.967 | 200,0 | 161,3 |
| 131 | 1.298 | 11,5 | 5 | 11.515 | 40 | 3.042 | 5.197 | 23,8 | 82 | 3,3 | 15,5 |
| 164 | 1.824 | 15,9 | 9 | 10.818 | 91 | 3.504 | 1.361 | 21,7 | 61 | 2,4 | 11,4 |
| 1.863 | 9.934 | 99,8 | 104 | 4.608 | 383 | 8.487 | 63.964 | 35,7 | 57 | 2,3 | 33,6 |
| 6.378 | 52.231 | 477,5 | 689 | 30.092 | 1.217 | 51.988 | 37.726 | 104,5 | 6.675 | 268,8 | 189,0 |
| 1.306 | 4.855 | 54,2 | 198 | 9.598 | 3.037 | 21.900 | 22.653 | 47,8 | 4.026 | 162,1 | 78,7 |
| 1.763 | 8.294 | 86,2 | 427 | 11.429 | 3.752 | 26.468 | 31.706 | 62,3 | 1.829 | 73,7 | 92,7 |
| 1.157 | 14.150 | 121,5 | 9 | 5.498 | 64 | 5.795 | 16.361 | 18,0 | 159 | 6,4 | 47,8 |
| 1.411 | 24.994 | 205,8 | 65 | 12.730 | 382 | 24.798 | 20.219 | 42,6 | 697 | 28,1 | 64,0 |
| 6.452 | 28.199 | 299,3 | 1.938 | 53.960 | 5.064 | 124.652 | 341.791 | 311,6 | 10.691 | 430,5 | 329,7 |
| 42.813 | 54.884 | 1000,0 | 12.211 | 113.561 | 55.532 | 457.158 | 624.474 | 1000,0 | 24.833 | 1000,0 | 1000,0 |
| 1.007 | 615 | 18,5 | 4 | 4.377 | 8 | 1.424 | 1.913 | 9,2 | 80 | 3,2 | 30,4 |

número de personas y la Inmigración y el Turismo en miles de personas. El resto de indicadores se registra en otras unidades de medida.

## 5.1. ECONOMY

**Fig. 4. Trade in goods**

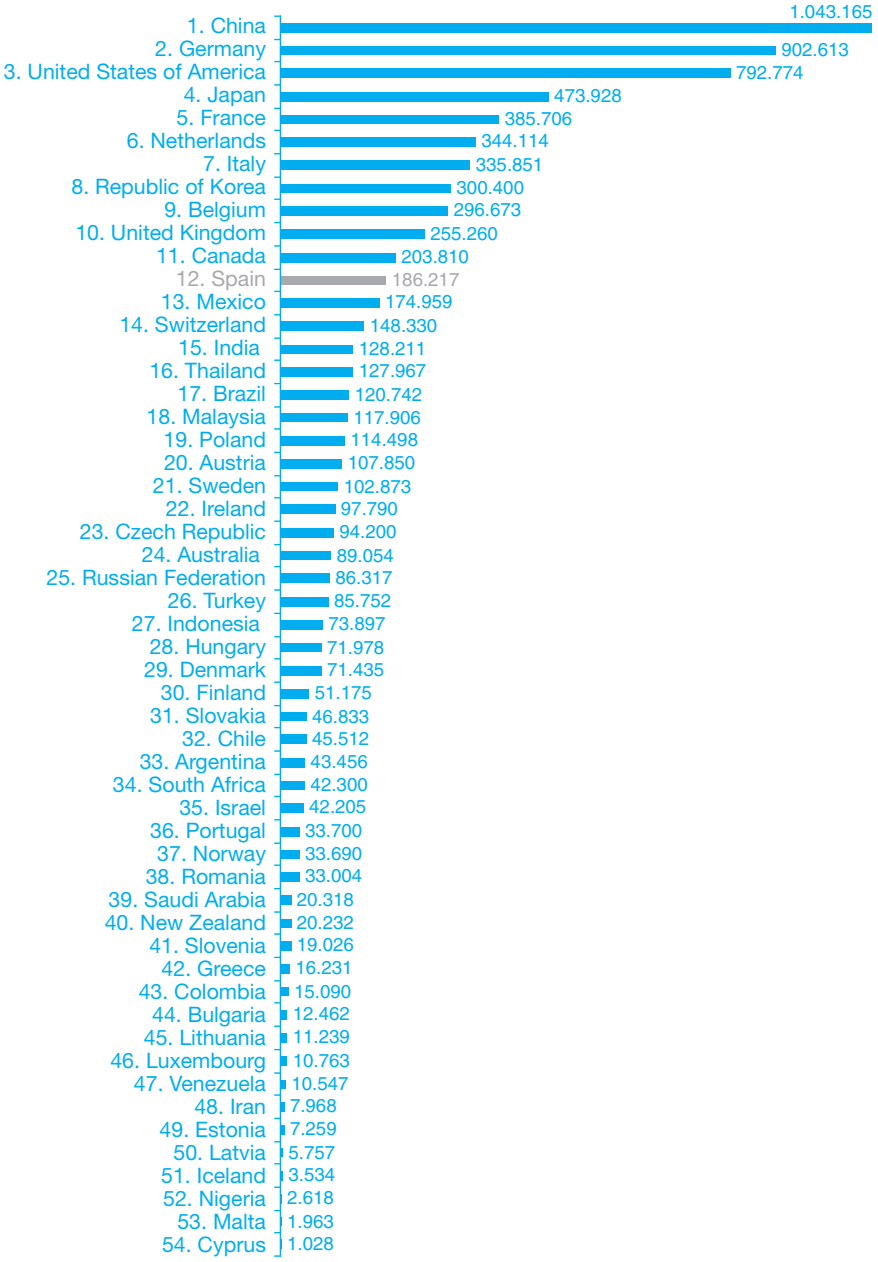


**Fig. 5. Trade in services**

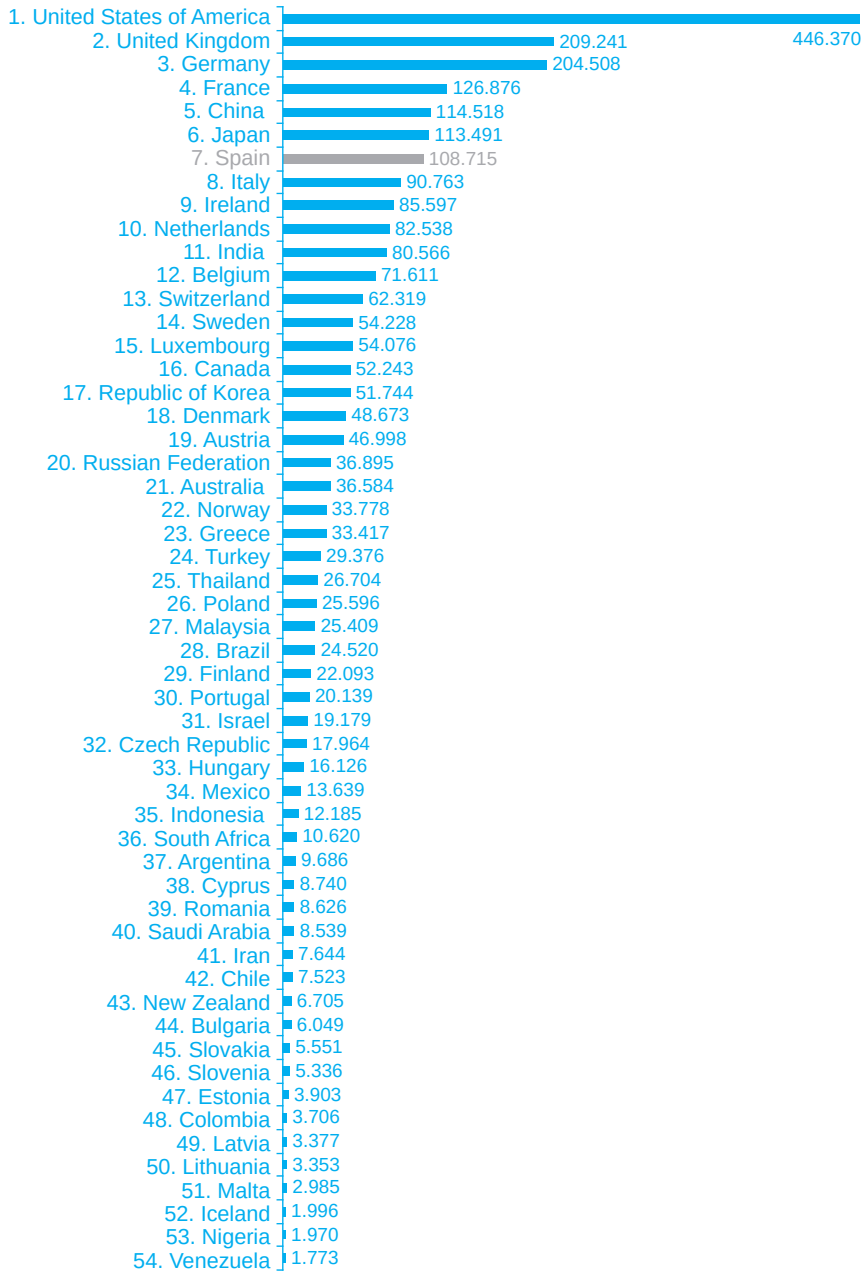


**Fig. 6. Energy**

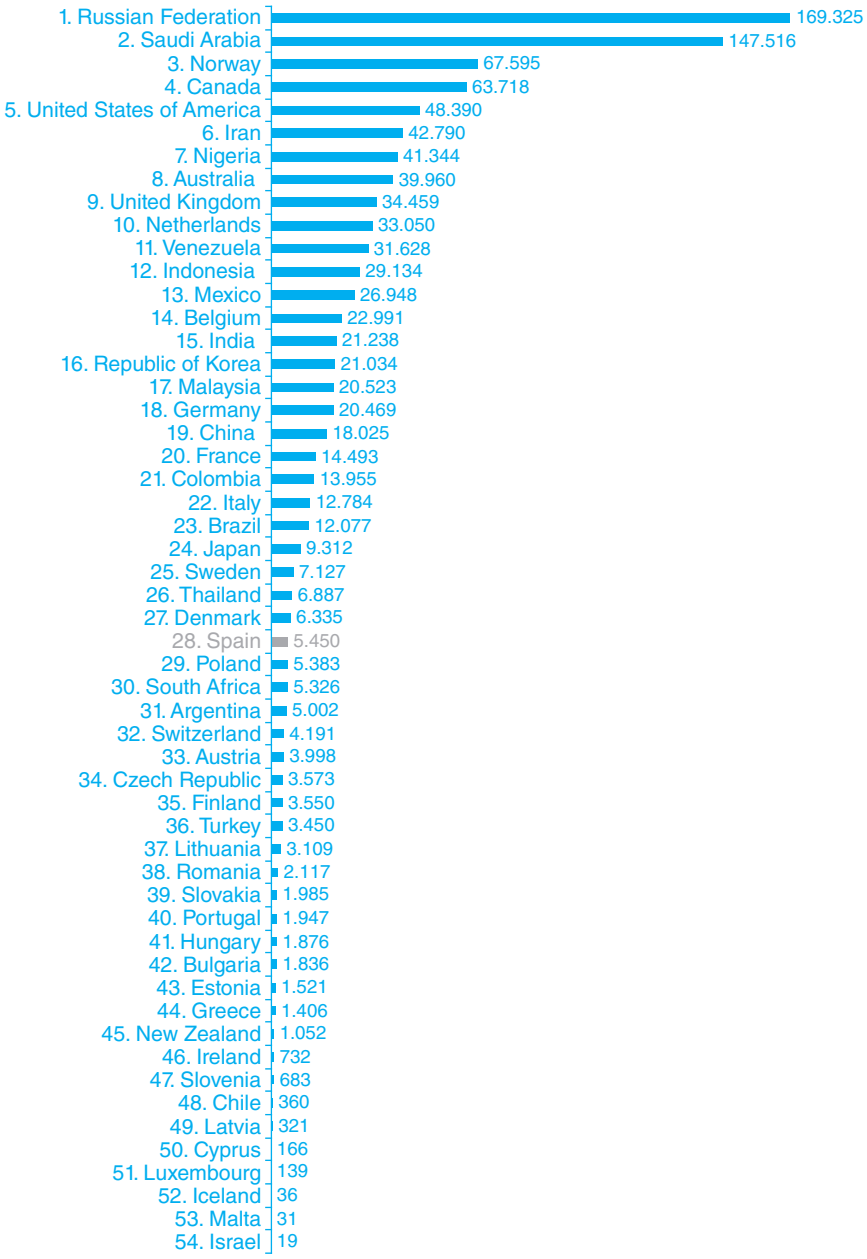

1. Russian Federation 169.325
2. Saudi Arabia 147.516
3. Norway 67.595
4. Canada 63.718
5. United States of America 48.390
6. Iran 42.790
7. Nigeria 41.344
8. Australia 39.960
9. United Kingdom 34.459
10. Netherlands 33.050
11. Venezuela 31.628
12. Indonesia 29.134
13. Mexico 26.948
14. Belgium 22.991
15. India 21.238
16. Republic of Korea 21.034
17. Malaysia 20.523
18. Germany 20.469
19. China 18.025
20. France 14.493
21. Colombia 13.955
22. Italy 12.784
23. Brazil 12.077
24. Japan 9.312
25. Sweden 7.127
26. Thailand 6.887
27. Denmark 6.335
28. Spain 5.450
29. Poland 5.383
30. South Africa 5.326
31. Argentina 5.002
32. Switzerland 4.191
33. Austria 3.998
34. Czech Republic 3.573
35. Finland 3.550
36. Turkey 3.450
37. Lithuania 3.109
38. Romania 2.117
39. Slovakia 1.985
40. Portugal 1.947
41. Hungary 1.876
42. Bulgaria 1.836
43. Estonia 1.521
44. Greece 1.406
45. New Zealand 1.052
46. Ireland 732
47. Slovenia 683
48. Chile 360
49. Latvia 321
50. Cyprus 166
51. Luxembourg 139
52. Iceland 36
53. Malta 31
54. Israel 19

**Fig. 7. Investments**

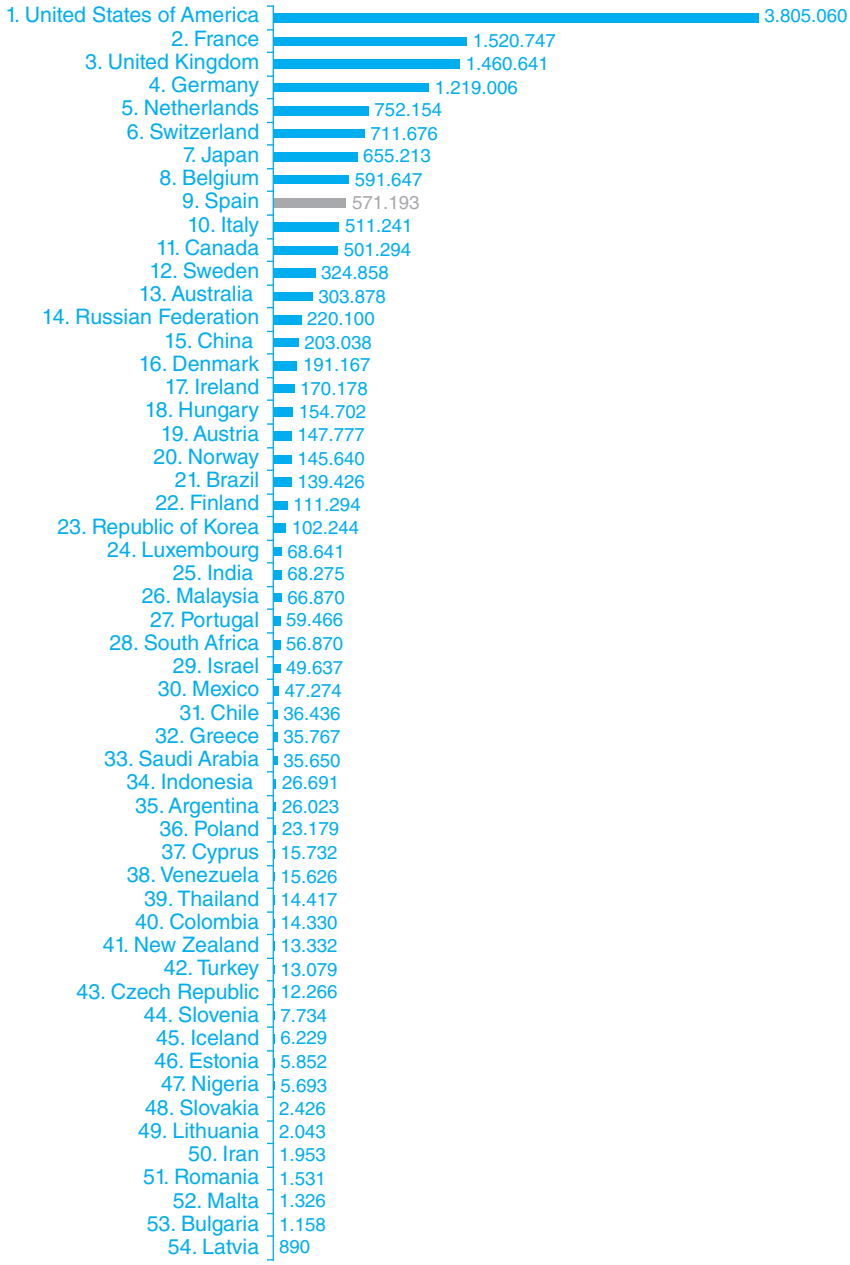
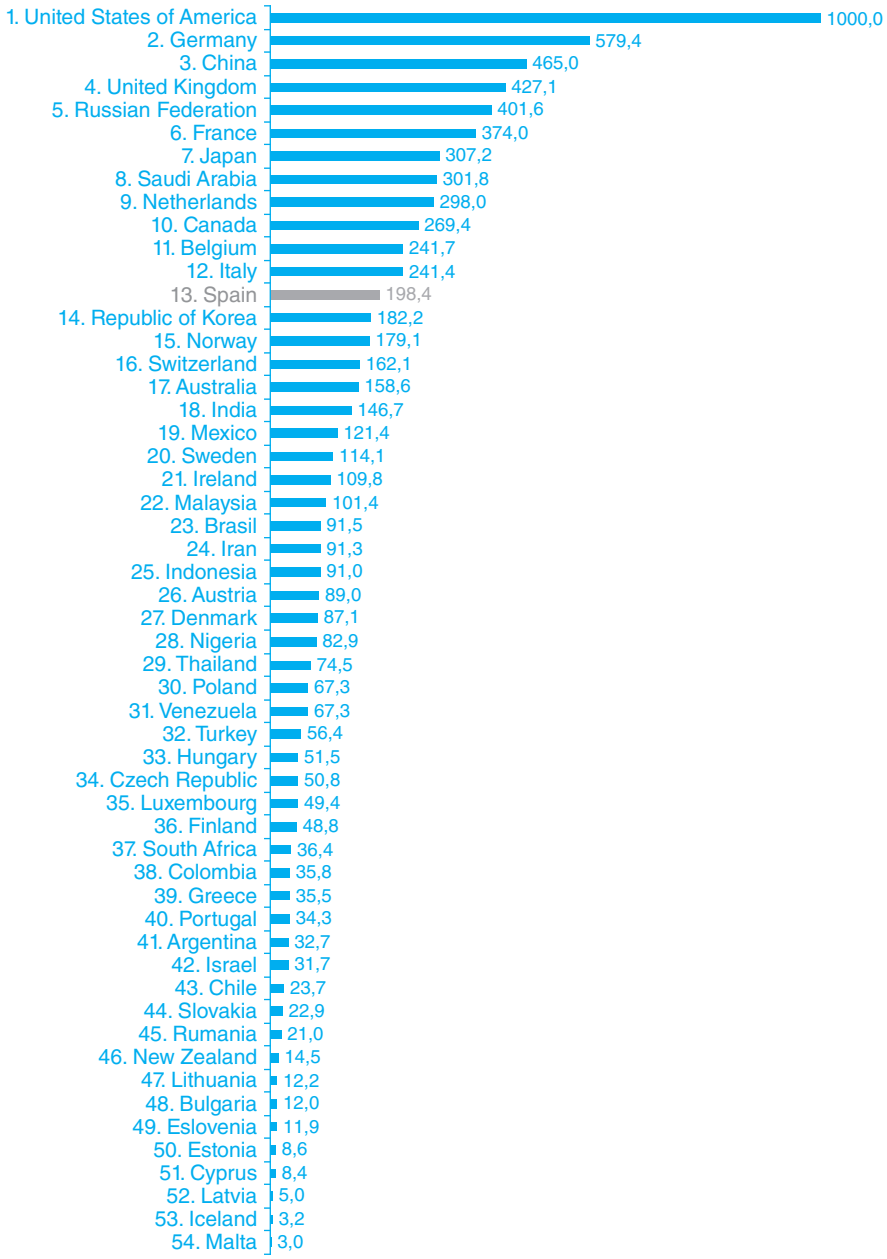


**Fig. 8. Economy**



## 5.2. DEFENSE

**Fig. 9. Troops deployed**

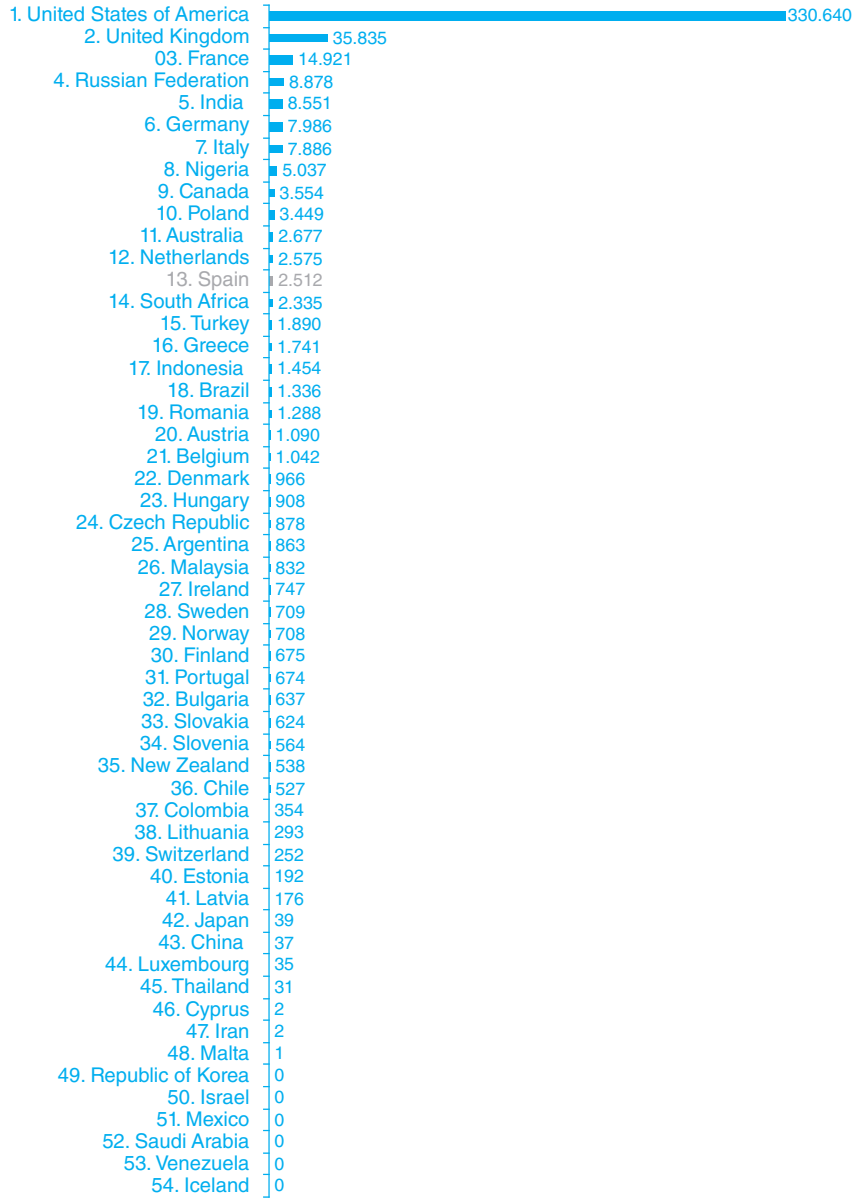


**Fig. 10. Capacity for military deployment**

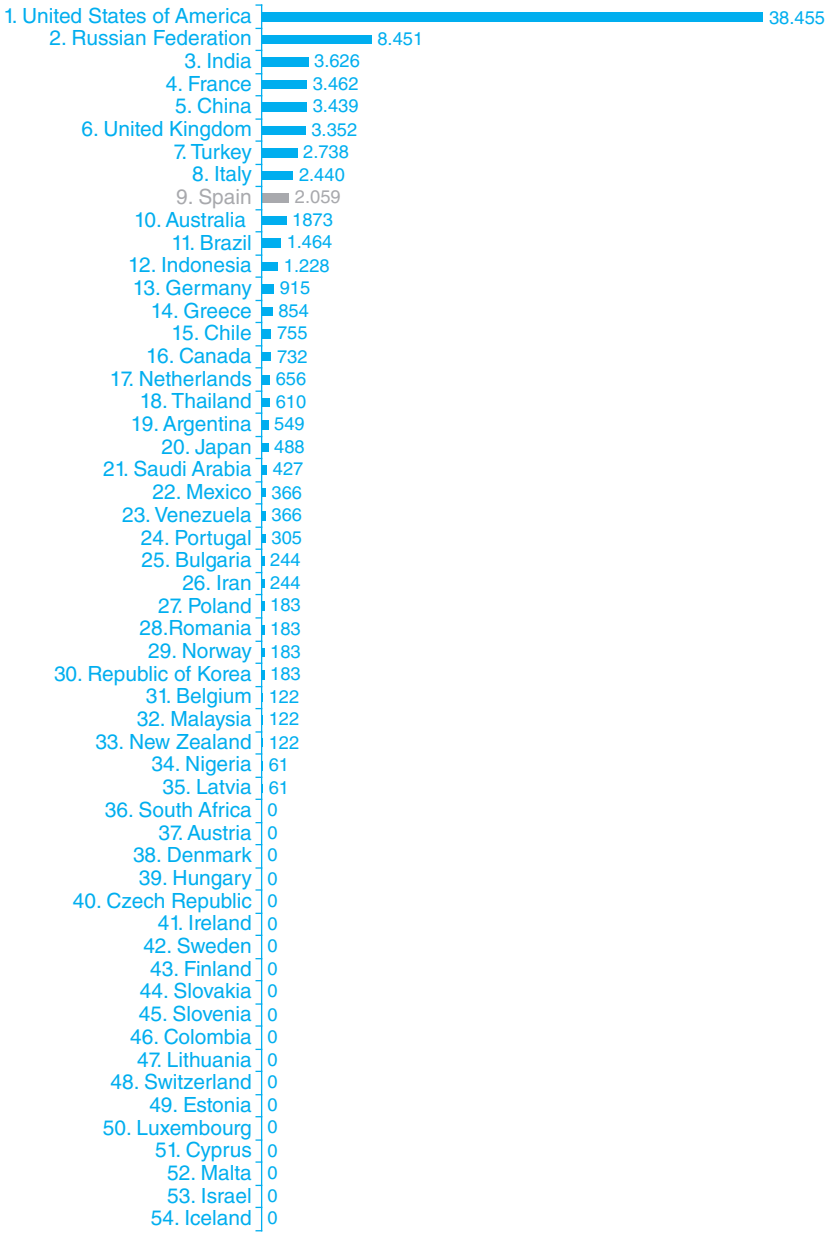
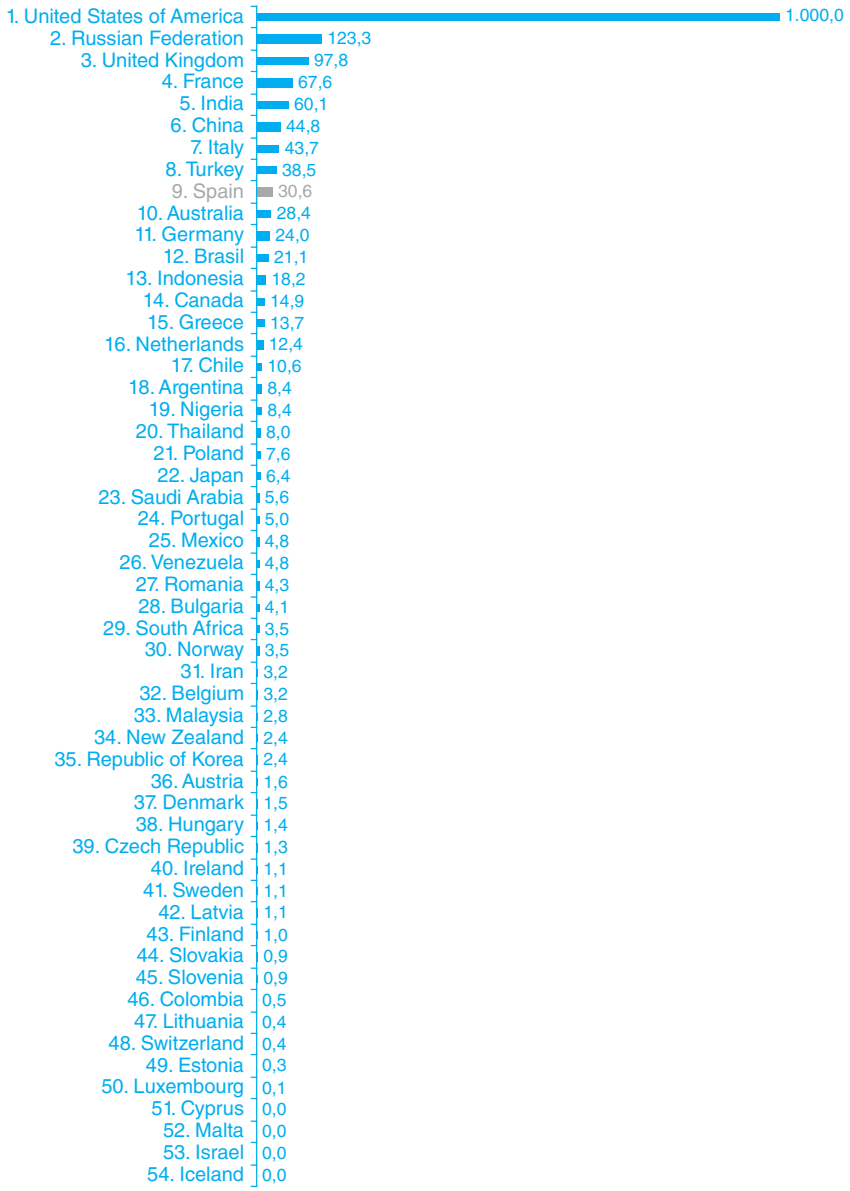


**Fig. 11. Defense**



## 5.3. MIGRATION AND TOURISM

**Fig. 12. Immigration**

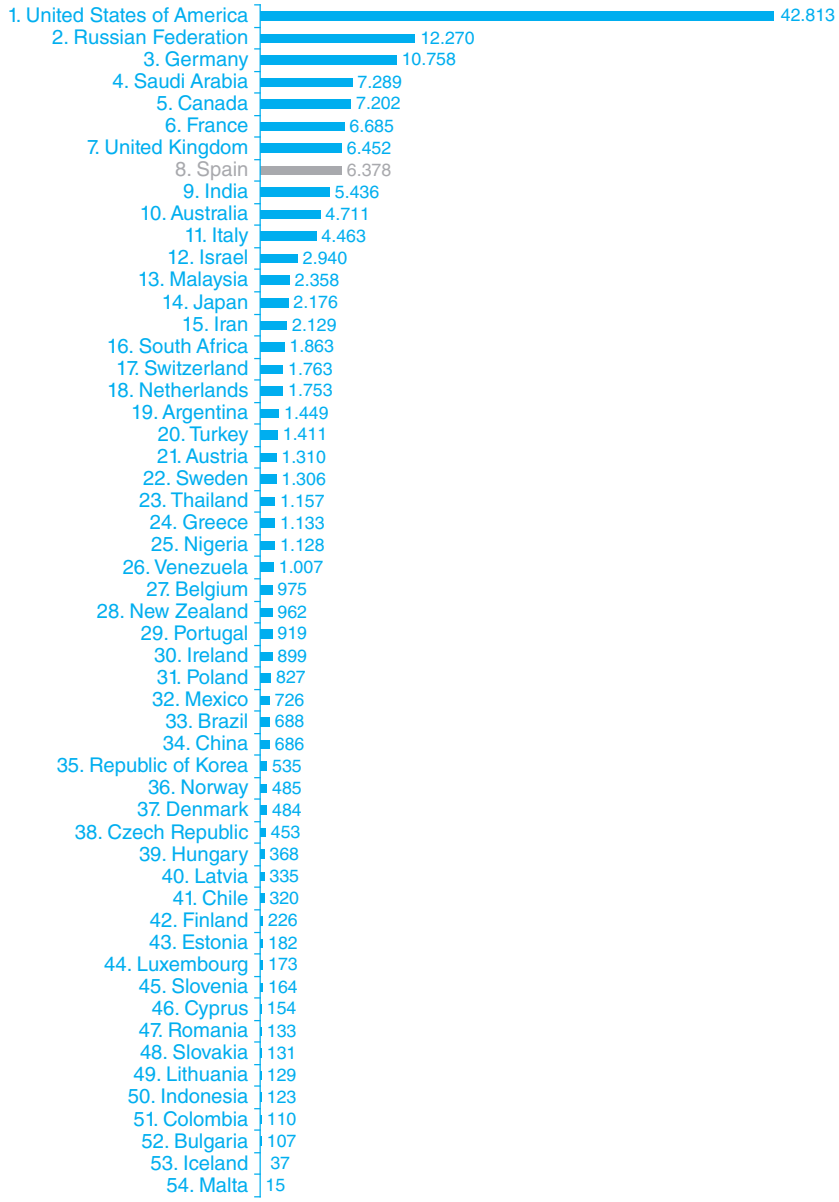


**Fig. 13. Tourism**

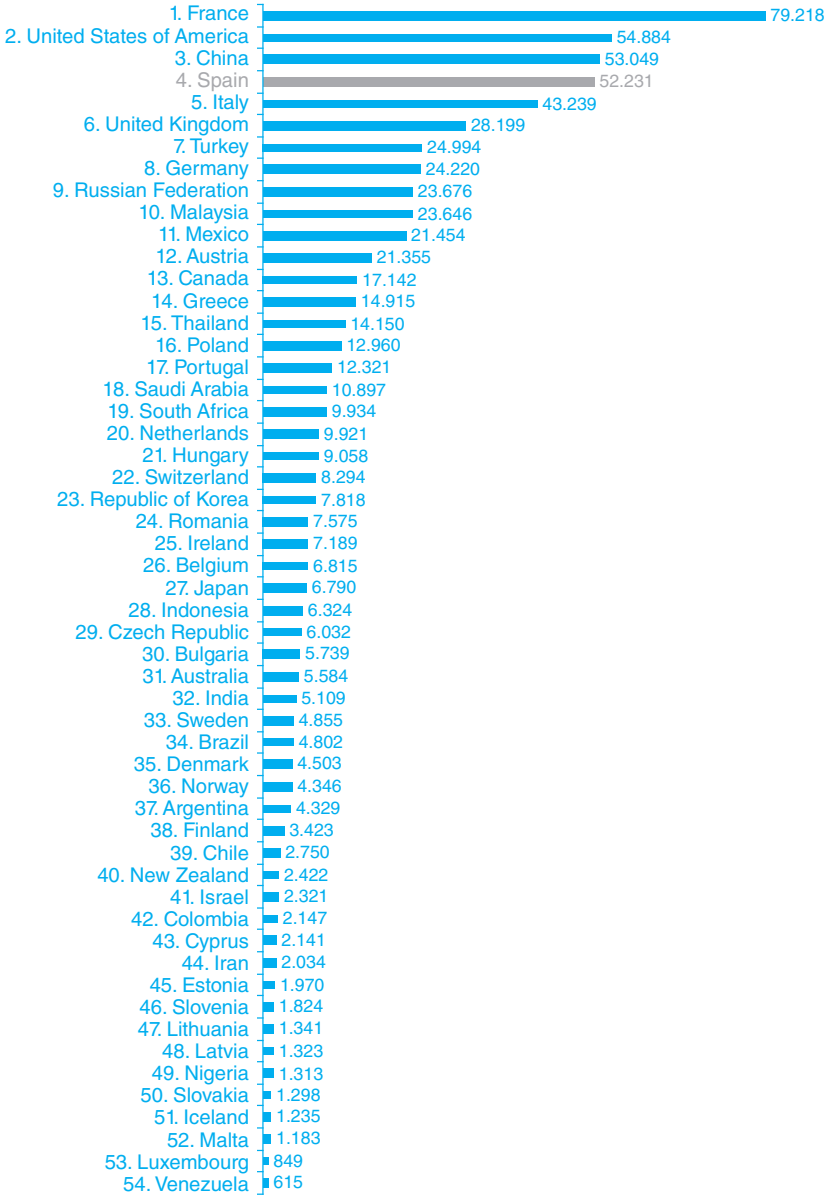
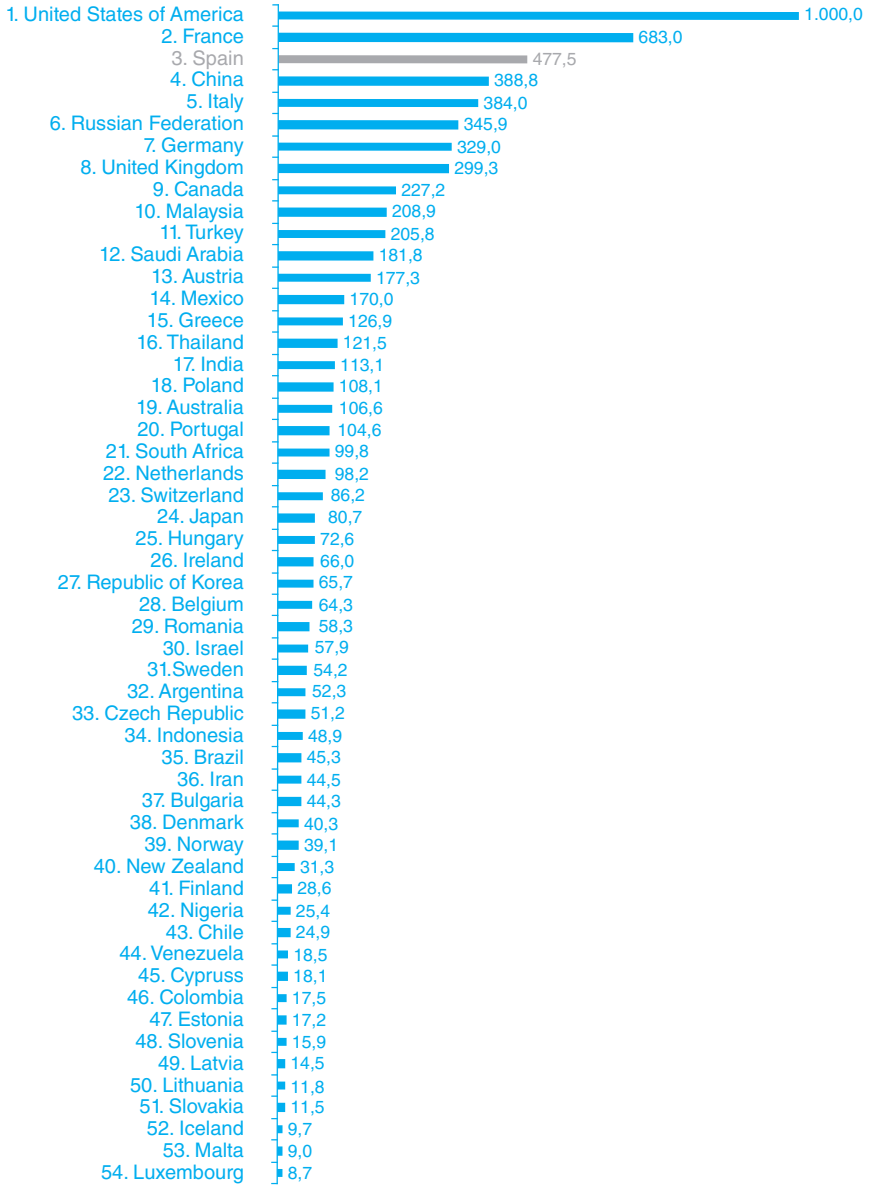


**Fig. 14. Migration and tourism**



## 5.4. CULTURE AND SCIENCE

**Fig. 15. Cultural outreach**

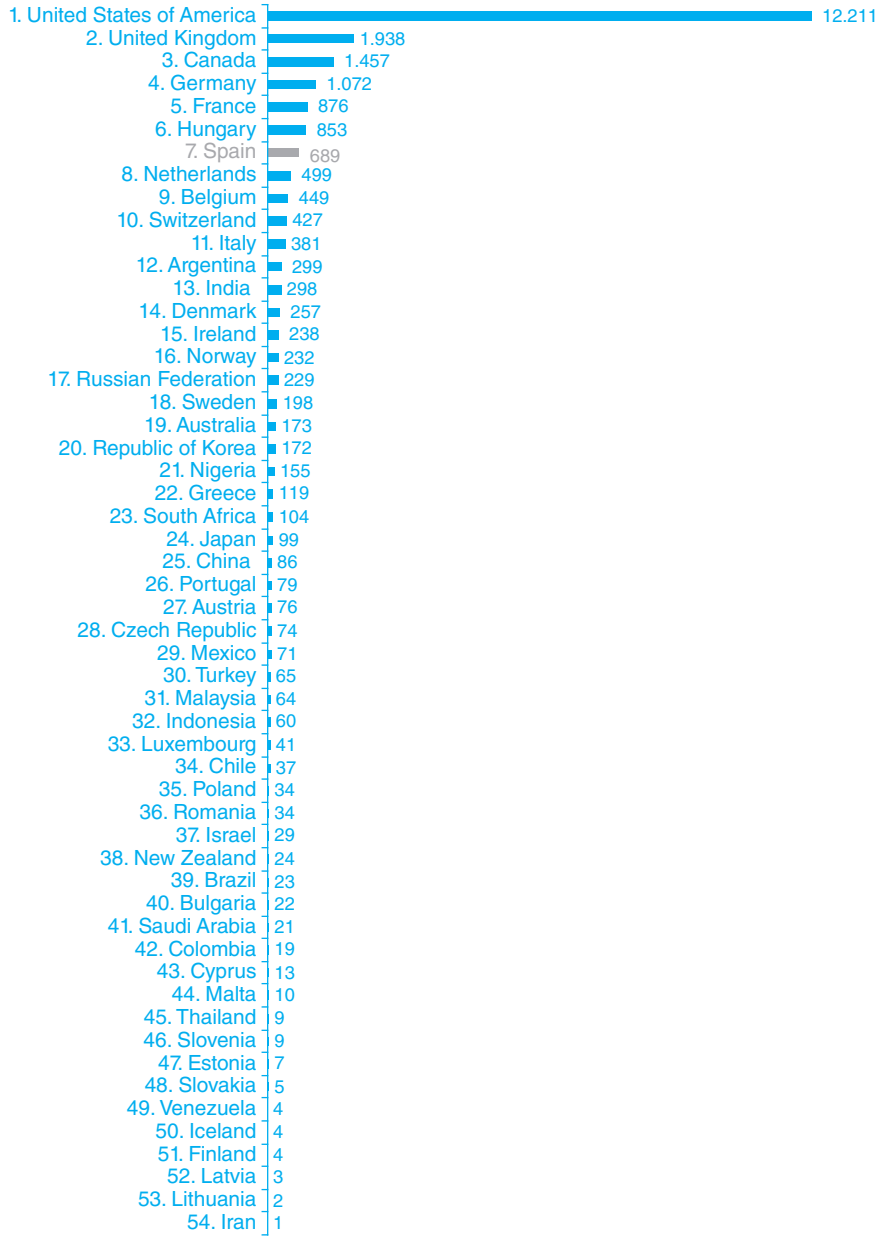


**Fig.16. Sports**

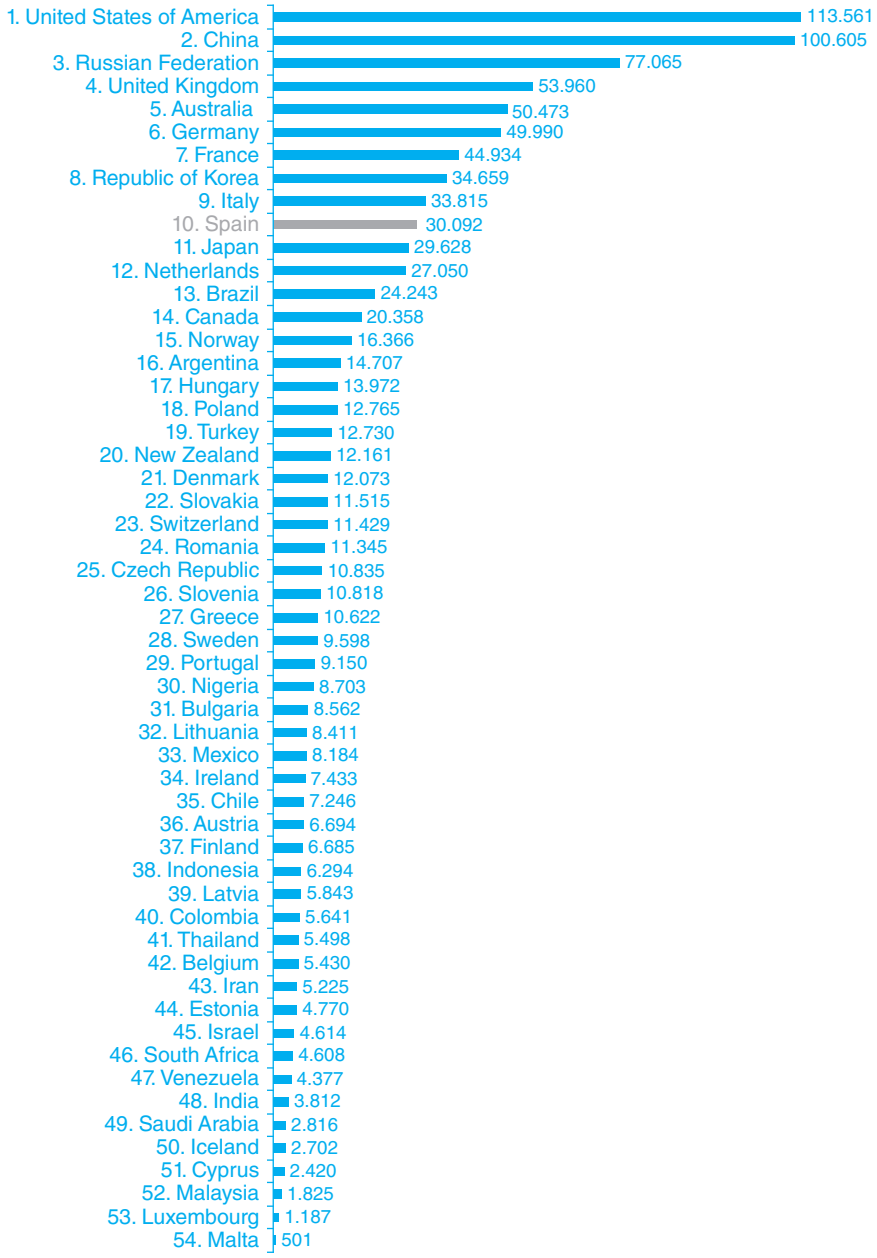


**Fig. 17. Technological development**

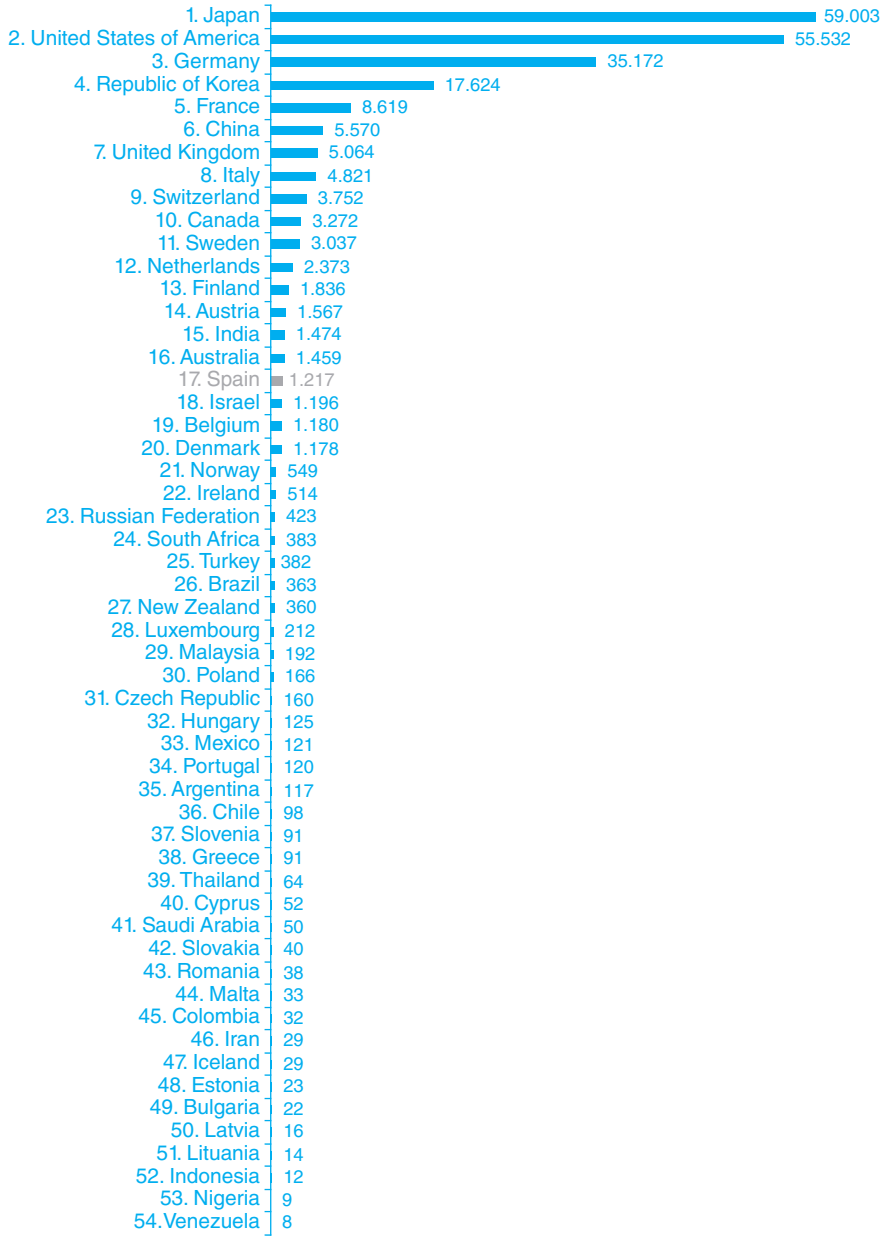


**Fig. 18. Scientific research**

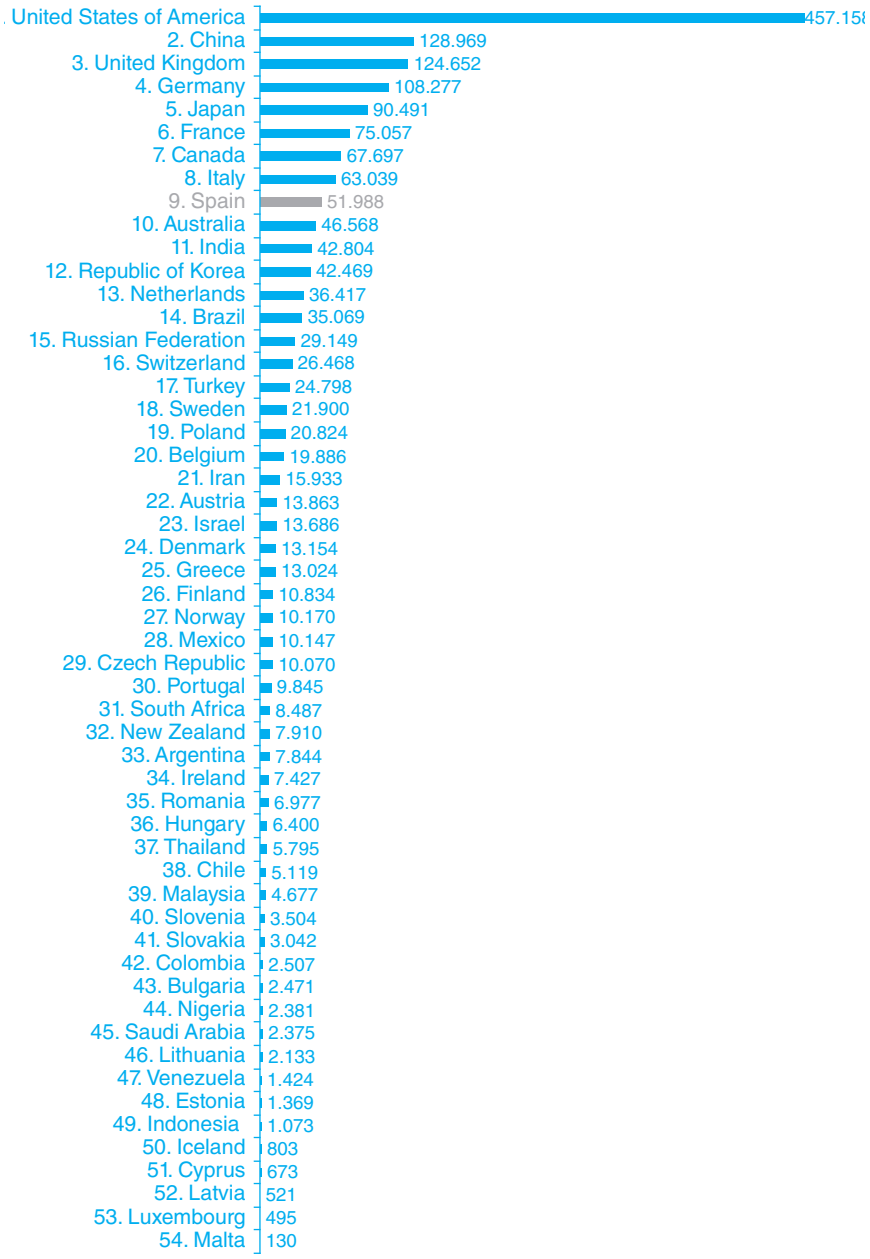


**Fig. 19. Educational outreach**

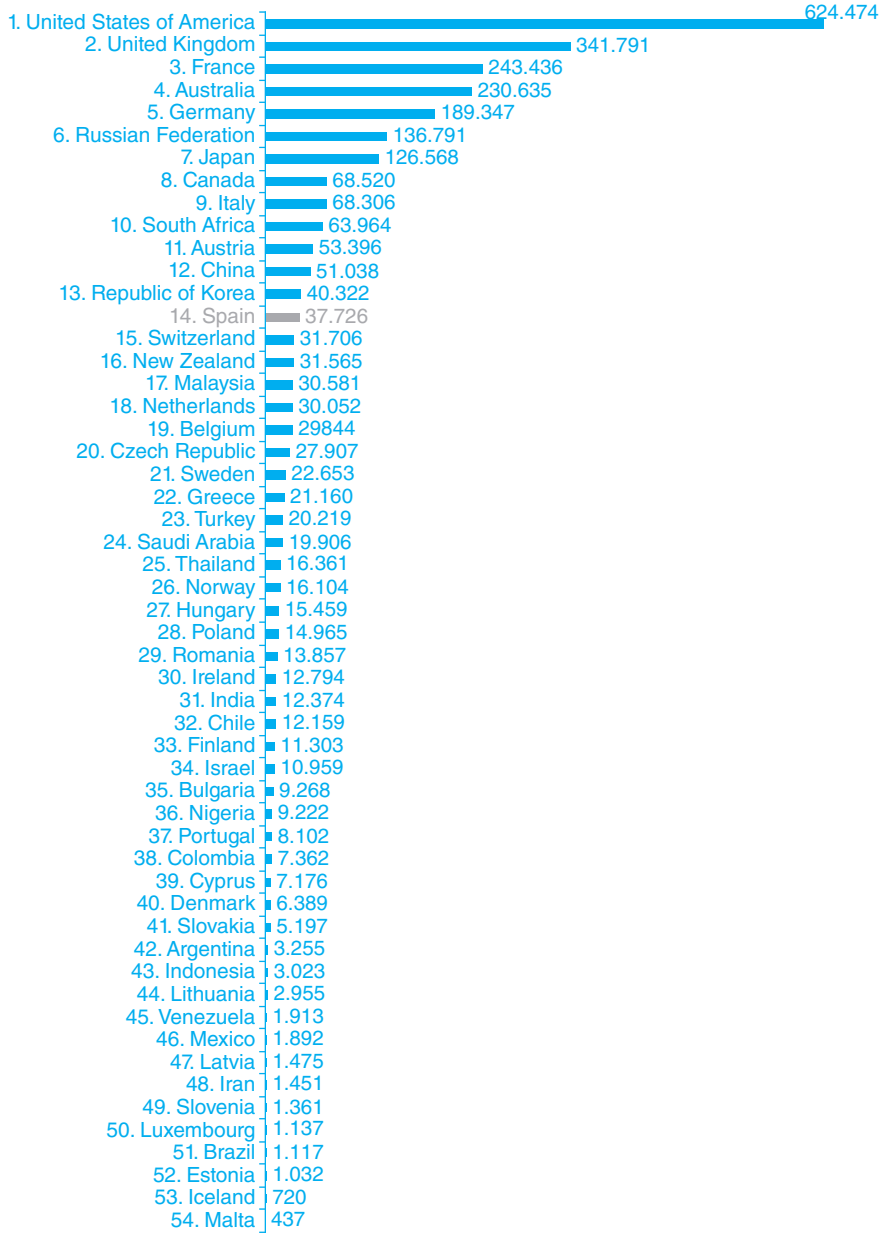
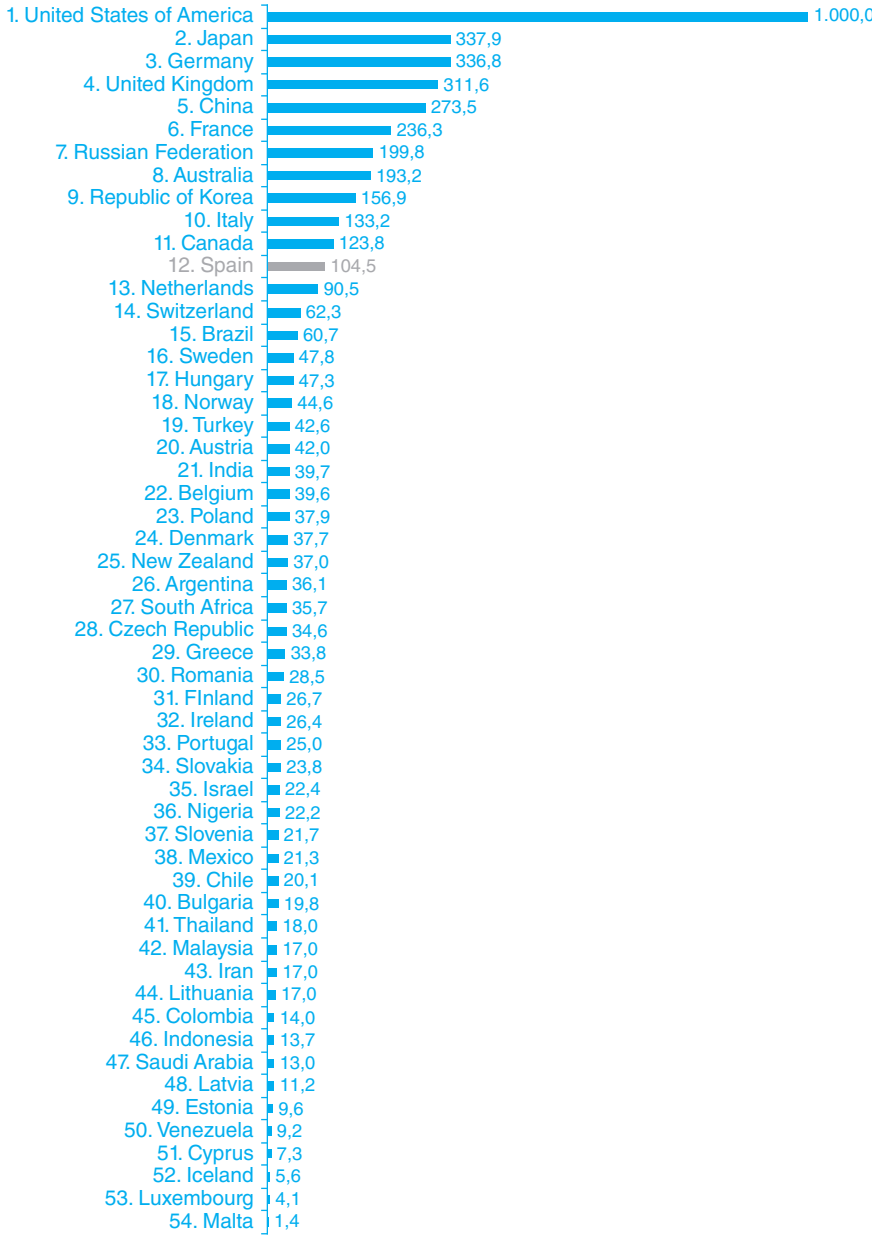


**Fig. 20. Culture and science**



## 5.5. DEVELOPMENT ASSISTANCE

**Fig. 21. Development assistance**

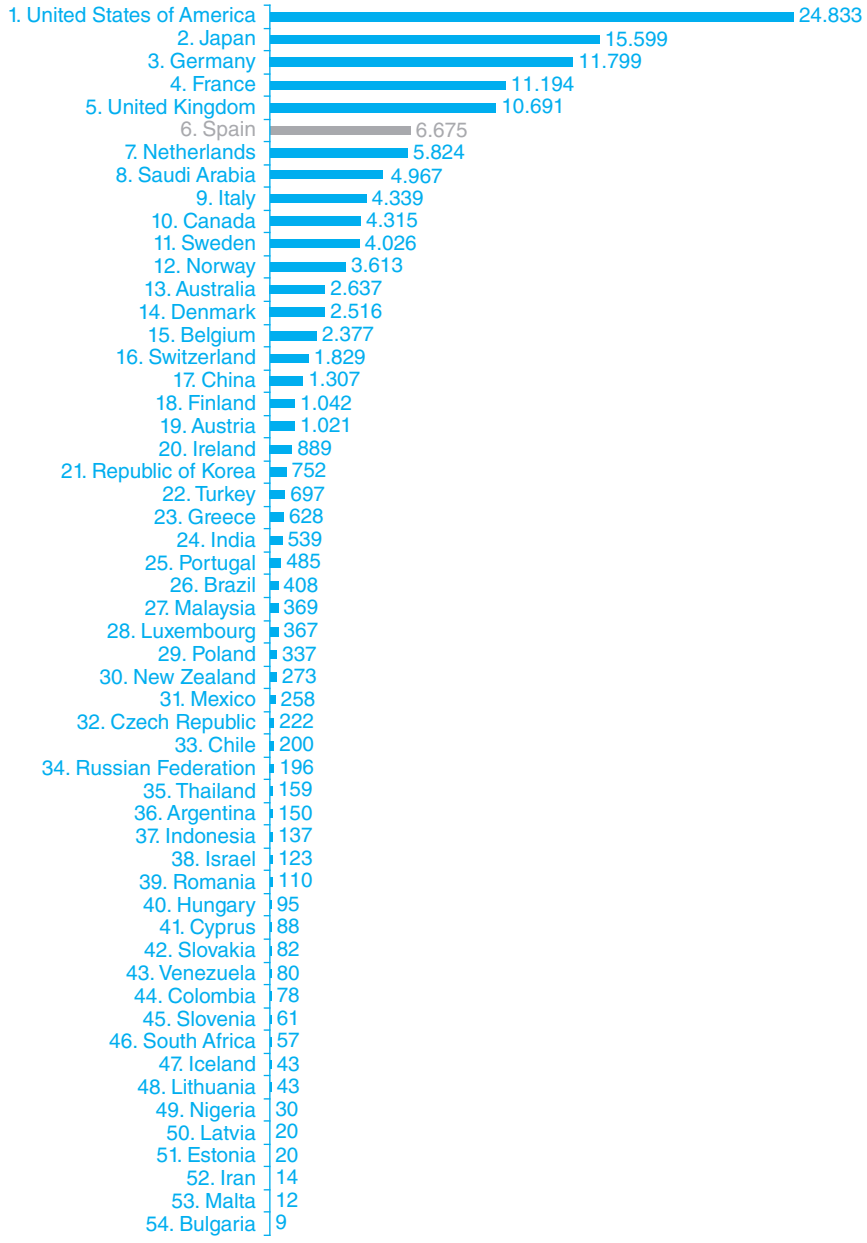
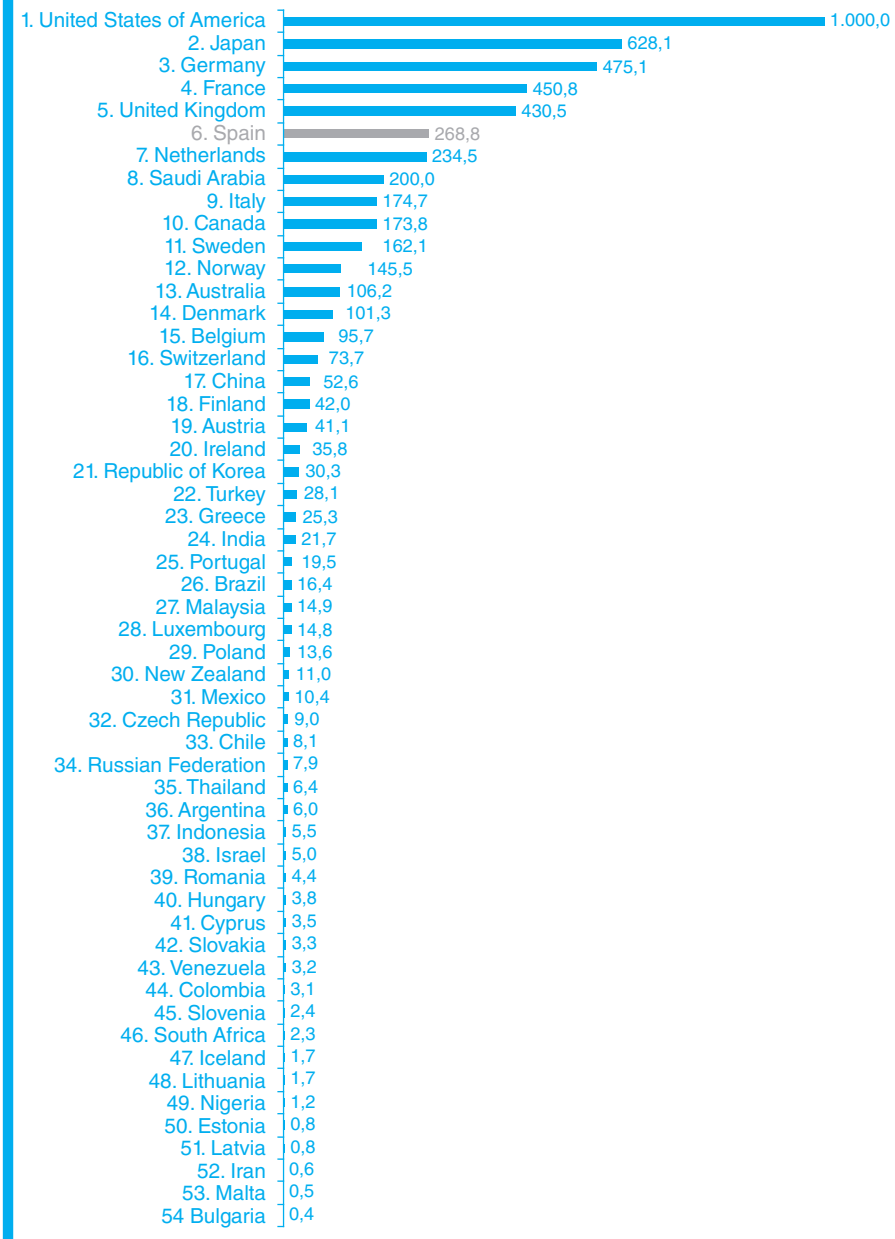
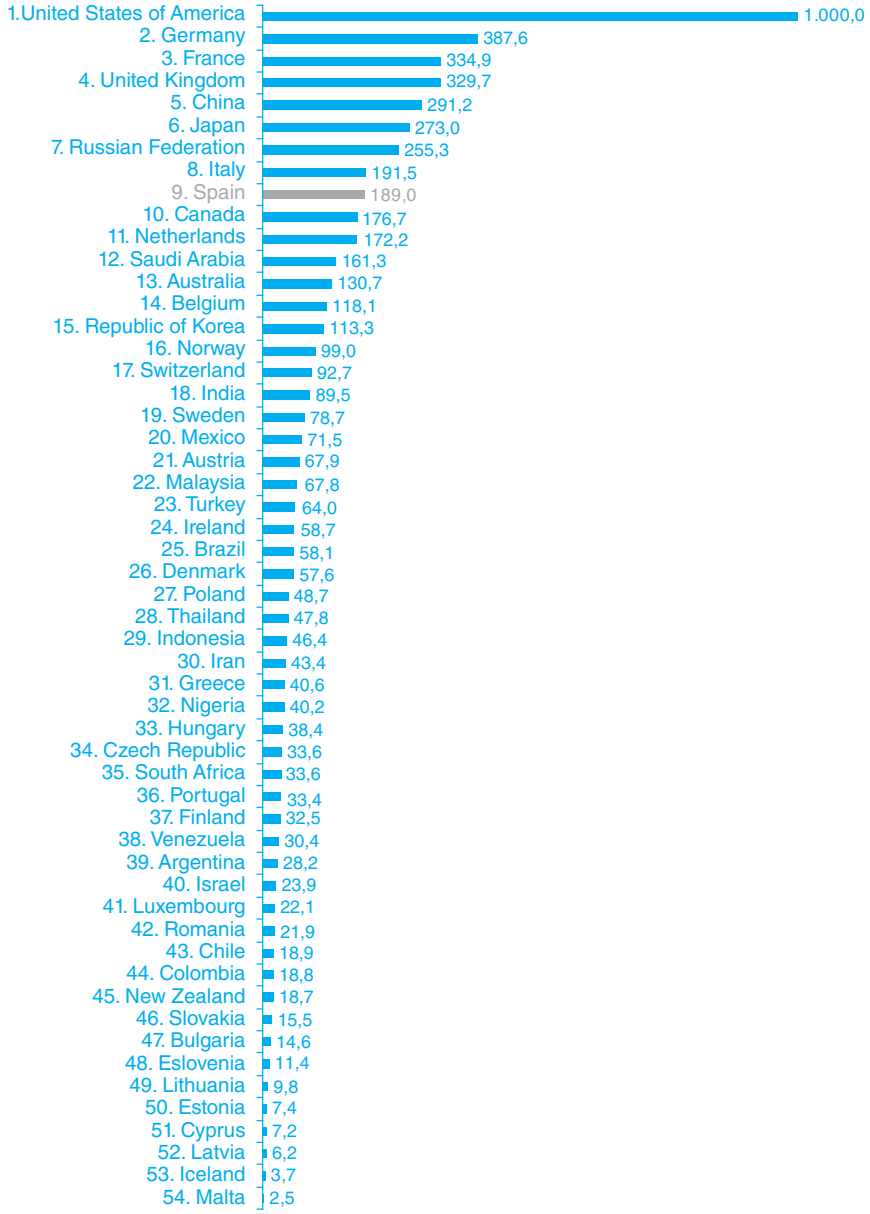


**Figura 22. Área de Ayuda al desarrollo**



## 5.6. IEPG 2010

**Figura 23. Índice Elcano de Presencia Global 2010**



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# Appendix

# Appendix 1

## GROUPS OF BASE COUNTRIES FOR THE SELECTION

**Table A. The 42 leading world economies (data from 2008, GDP in current dollars)**

| | | |
|---|---|---|
| Argentina | Greece | Portugal |
| Australia | India | Republic of Korea |
| Austria | Indonesia | Romania |
| Belgium | Iran | Russia |
| Brazil | Ireland | Saudi Arabia |
| Canada | Israel | South Africa |
| Chile | Italy | Spain |
| China | Japan | Sweden |
| Colombia | Malaysia | Switzerland |
| Czech Republic | Mexico | Thailand |
| Denmark | Netherlands | Turkey |
| Finland | Nigeria | United Kingdom |
| France | Norway | United States of America |
| Germany | Poland | Venezuela |

Source: World Bank

**Table B. Members of the OECD**

| | | |
|---|---|---|
| Australia | Hungary | Portugal |
| Austria | Iceland | Republic of Korea |
| Belgium | Ireland | Slovakia |
| Canada | Italy | Slovenia |
| Chile | Japan | Spain |
| Czech Republic | Luxembourg | Sweden |
| Denmark | Mexico | Switzerland |
| Finland | Norway | Turkey |
| France | Netherlands | United Kingdom |
| Germany | New Zealand | United States of America |
| Greece | Poland | |

Source: *http://www.oecd.org/document/58/0,3343,en_2649_201185_1889402_1_1_1_1,00.html*

**Table C. Members of the European Union**

| | | |
|---|---|---|
| Austria | Greece | Portugal |
| Belgium | Hungary | Romania |
| Bulgaria | Ireland | Slovakia |
| Cyprus | Italy | Slovenia |
| Czech Republic | Latvia | Spain |
| Denmark | Lithuania | Sweden |
| Estonia | Luxembourg | United Kingdom |
| Finland | Malta | |
| France | Netherlands | |
| Germany | Poland | |

Source: *http://europa.eu/abc/european_countries/index_es.htm*

**Table D. Members of the G-20**

| | | |
|---|---|---|
| Argentina | India | Saudi Arabia |
| Australia | Indonesia | South Africa |
| Brazil | Italy | Turkey |
| Canada | Japan | United Kingdom |
| China | Mexico | United States of America |
| France | Republic of Korea | |
| Germany | Russian Federation | |

Source: *http://www.g20.org/about_what_is_g20.aspx*

# Appendix 2

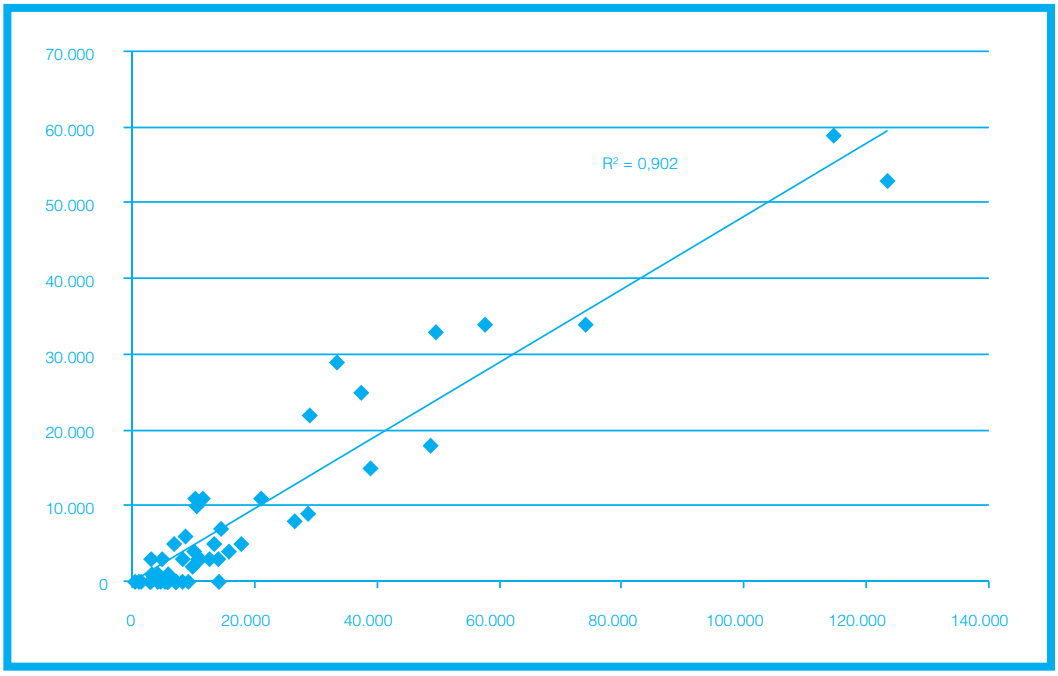
## CALCULATION OF SYNTHETIC INDICATORS

**Cuadro A. Cálculo del peso de los medios para la capacidad de despliegue militar**

| País | Porta-aviones | Buques anfibios | Fragatas | Aviones de transporte estratégico | Suma | Total |
|---|---|---|---|---|---|---|
| Estados Unidos | 11 | 19 | 22 | 237 | 289 | 33.126 |
| Rusia | 1 | 1 | 17 | 33 | 52 | 4.705 |
| Reino Unido | 2 | 3 | 17 | 6 | 28 | 3.518 |
| Francia | 2 | 4 | 20 | | 26 | 3.453 |
| China | | 1 | 50 | | 51 | 3.296 |
| Italia | 2 | 3 | 12 | | 17 | 2.702 |
| España | 1 | 3 | 11 | | 15 | 2.504 |
| India | 1 | 1 | 14 | | 16 | 1.702 |
| Turquía | | | 23 | | 23 | 1.393 |
| Indonesia | | 3 | 7 | | 10 | 1.225 |
| Brasil | 1 | | 10 | | 11 | 1.193 |
| Tailandia | 1 | | 10 | | 11 | 1.193 |
| Cánada | | | 12 | 4 | 16 | 1.069 |
| Alemania | | | 15 | | 15 | 909 |
| Grecia | | | 14 | | 14 | 848 |
| Corea del Sur | | 1 | 9 | | 10 | 812 |
| Portugal | | | 11 | | 11 | 666 |
| Países Bajos | | 2 | 2 | | 4 | 655 |
| Australia | | | 4 | 4 | 8 | 584 |
| Argentina | | | 9 | | 9 | 545 |
| Japón | | | 8 | | 8 | 485 |
| México | | | 6 | | 6 | 363 |
| Noruega | | | 3 | | 3 | 182 |
| Polonia | | | 3 | | 3 | 182 |
| Rumanía | | | 3 | | 3 | 182 |
| Bélgica | | | 2 | | 2 | 121 |
| Nueva Zelanda | | | 2 | | 2 | 121 |
| Nigeria | | | 1 | | 1 | 61 |
| Austria | | | | | 0 | 0 |
| Colombia | | | | | 0 | 0 |
| Dinamarca | | | | | 0 | 0 |
| Eslovaquia | | | | | 0 | 0 |
| Finlandia | | | | | 0 | 0 |
| Hungria | | | | | 0 | 0 |
| Irlanda | | | | | 0 | 0 |
| Islandia | | | | | 0 | 0 |
| Israel | | | | | 0 | 0 |
| Luxemburgo | | | | | 0 | 0 |
| República Checa | | | | | 0 | 0 |
| Sudáfrica | | | | | 0 | 0 |
| Suecia | | | | | 0 | 0 |
| Suiza | | | | | 0 | 0 |
| Venezuela | | | | | 0 | 0 |

Fuente: Instituto Internacional de Estudios Estratégicos, 2009

**Figura A. Correlación en índices de deportes**



# Appendix 3

## PREDICTED VALUES FOR MISSING CASES

**Cuadro A. Difusión cultural**

### A.1. ANOVA (d,e)

| Modelo | | Suma de cuadrados | gl | Media cuadrática | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regresión | 154664825,721 | 1 | 154664825,721 | 1300,993 | ,000(a) |
| | Residual | 4517521,733 | 38 | 118882,151 | | |
| | Total | 159182347,454(b) | 39 | | | |
| 2 | Regresión | 156917521,118 | 2 | 78458760,559 | 1281,765 | ,000(c) |
| | Residual | 2264826,336 | 37 | 61211,523 | | |
| | Total | 159182347,454(b) | 39 | | | |

a Variables predictoras: Tro
b Esta suma de cuadrados total no se ha corregido para la constante porque la constante es cero para la regresión a través del origen.
c Variables predictoras: Tro, Inv
d Variable dependiente: Dif
e Regresión lineal a través del origen

### A.2. Coeficientes (a,b)

| Modelo | | Coeficientes no estandarizados | | Coeficientes estandarizados | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Error típ. | Beta | | |
| 1 | Tro | ,037 | ,001 | ,986 | 36,069 | **,000** |
| 2 | Tro | ,030 | ,001 | ,796 | 21,527 | ,000 |
| | Inv | ,001 | ,000 | ,224 | 6,066 | ,000 |

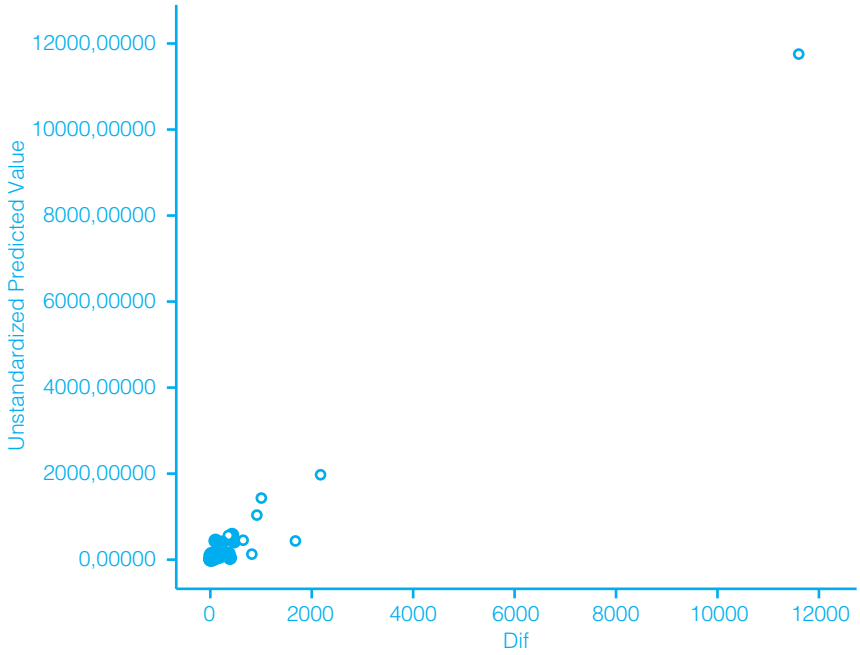
a Variable dependiente: Dif
b Regresión lineal a través del origen

### A.3. Estadísticos sobre los residuos (a,b)

| | Mínimo | Máximo | Media | Desviación típ. | N |
|---|---|---|---|---|---|
| Valor pronosticado | ,81 | 12199,38 | 550,41 | 1954,096 | **39** |
| Residuo bruto | -469,359 | 1054,633 | 39,722 | 240,793 | 39 |
| Valor pronosticado tip. | -,281 | 5,961 | ,000 | 1,000 | 39 |
| Residuo tip. | -1,897 | 4,263 | ,161 | ,973 | 39 |

a Variable dependiente: Dif
b Regresión lineal a través del origen

**Figura A**


12000,00000
10000,00000
8000,00000
6000,00000
4000,00000
2000,00000
0,00000
Unstandardized Predicted Value
0
2000
4000
6000
8000
10000
12000
Dif

**A.4. Resúmenes de casos (a)**

| | País | Unstandardized Predicted Value | Dif |
|---|---|---|---|
| 1 | Alemania | 959 | 1072 |
| 2 | Arabia Saudí | 21 | . |
| 3 | Argentina | 41 | 299 |
| 4 | Australia | 260 | 173 |
| 5 | Austria | 120 | 76 |
| 6 | Bélgica | 380 | 449 |
| 7 | Brasil | 122 | 23 |
| 8 | Bulgaria | 20 | 22 |
| 9 | Canadá | 402 | 1457 |
| 10 | Chile | 37 | . |
| 11 | China | 121 | 86 |
| 12 | Chipre | 9 | 13 |
| 13 | Colombia | 19 | 19 |
| 14 | Corea del Sur | 60 | 172 |
| 15 | Dinamarca | 142 | 257 |
| 16 | Estados Unidos | 12199 | 12211 |
| 17 | Eslovaquia | 20 | 5 |
| 18 | Eslovenia | 22 | 9 |
| 19 | España | 412 | 689 |
| 20 | Estonia | 9 | 7 |
| 21 | Finlandia | 86 | 4 |
| 22 | Francia | 1345 | 876 |
| 23 | Grecia | 74 | 119 |
| 24 | Hungría | 118 | 853 |
| 25 | India | 298 | . |
| 26 | Indonesia | 60 | . |
| 27 | Irán | 1 | . |

| | | | |
|---|---|---|---|
| 28 | Irlanda | 123 | 238 |
| 29 | Islandia | 4 | . |
| 30 | Israel | 29 | . |
| 31 | Italia | 539 | 381 |
| 32 | Japón | 387 | 99 |
| 33 | Letonia | 6 | 3 |
| 34 | Lituania | 10 | 2 |
| 35 | Luxemburgo | 41 | . |
| 36 | Malasia | 64 | . |
| 37 | Malta | 1 | 10 |
| 38 | México | 28 | 71 |
| 39 | Nigeria | 155 | . |
| 40 | Noruega | 107 | 232 |
| 41 | Nueva Zelanda | 24 | . |
| 42 | Países Bajos | 521 | 499 |
| 43 | Polonia | 118 | 34 |
| 44 | Portugal | 55 | 79 |
| 45 | Reino Unido | 1940 | 1938 |
| 46 | República Checa | 34 | 74 |
| 47 | Rumanía | 40 | 34 |
| 48 | Rusia | 397 | 229 |
| 49 | Sudáfrica | 104 | . |
| 50 | Suecia | 213 | 198 |
| 51 | Suiza | 427 | . |
| 52 | Tailandia | 9 | . |
| 53 | Turquía | 65 | . |
| 54 | Venezuela | 9 | 4 |
| **Total N** | **54** | **54** | **39** |

a Limitado a los primeros 100 casos.

## Cuadro B. Difusión educativa

### B.1. ANOVA (d,e)

| Modelo | | Suma de cuadrados | gl | Media cuadrática | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regresión | 632675887594,629 | 1 | 632675887594,629 | 357,549 | ,000(a) |
| | Residual | 88474058104,372 | 50 | 1769481162,088 | | |
| | Total | 721149945699,000(b) | 51 | | | |
| 2 | Regresión | 651367730337,161 | 2 | 325683865168,581 | 228,690 | ,000(c) |
| | Residual | 69782215361,840 | 49 | 1424126844,120 | | |
| | Total | 721149945699,000(b) | 51 | | | |

a Variables predictoras: Inv
b Esta suma de cuadrados total no se ha corregido para la constante porque la constante es cero para la regresión a través del origen.
c Variables predictoras: Inv, Dep
d Variable dependiente: Est
e Regresión lineal a través del origen

### B.2. Coeficientes (a,b)

| Modelo | | Coeficientes no estandarizados | | Coeficientes estandarizados | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Error típ. | Beta | | |
| 1 | Inv | ,164 | ,009 | ,937 | 18,909 | **,000** |
| 2 | Inv | ,130 | ,012 | ,745 | 10,767 | ,000 |
| | Dep | ,974 | ,269 | ,251 | 3,623 | ,001 |

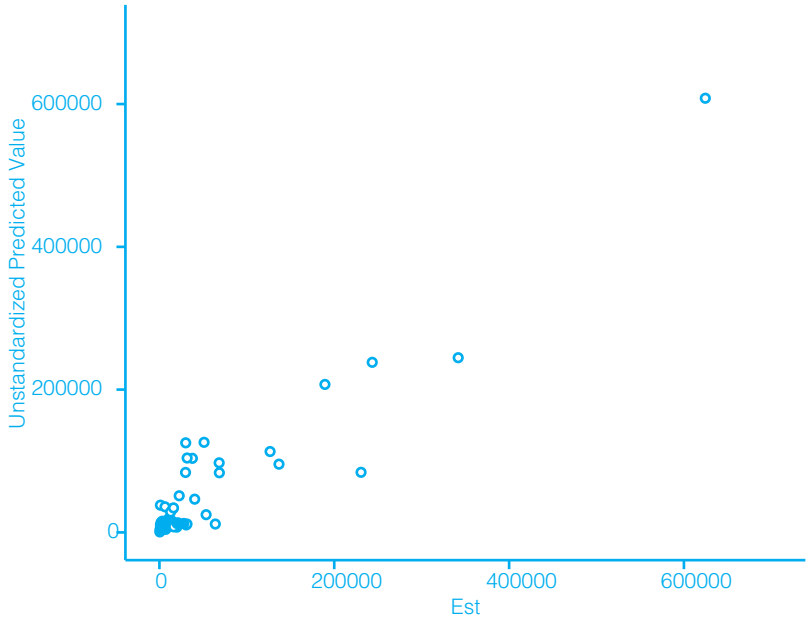
a Variable dependiente: Est
b Regresión lineal a través del origen

### B.3. Estadísticos sobre los residuos (a,b)

| | Mínimo | Máximo | Media | Desviación típ. | N |
|---|---|---|---|---|---|
| Valor pronosticado | 661,07 | 606036,81 | 57496,94 | 98261,580 | **51** |
| Residuo bruto | -94228,836 | 141891,359 | -4061,984 | 37132,393 | 51 |
| Valor pronosticado tip. | -,578 | 5,582 | ,000 | 1,000 | 51 |
| Residuo tip. | -2,497 | 3,760 | -,108 | ,984 | 51 |

a Variable dependiente: Est
b Regresión lineal a través del origen

**Figura B**


600000
400000
200000
0
Unstandardized Predicted Value
0
200000
400000
600000
Est

**B.4. Resúmenes de casos (a)**

| | País | Unstandardized Predicted Value | Est |
|---|---|---|---|
| 1 | Alemania | 207413 | 189347 |
| 2 | Arabia Saudí | 7385 | 19906 |
| 3 | Argentina | 17718 | 3255 |
| 4 | Australia | 88744 | 230635 |
| 5 | Austria | 25762 | 53396 |
| 6 | Bélgica | 82318 | 29844 |
| 7 | Brasil | 41774 | 1117 |
| 8 | Bulgaria | 8494 | 9268 |
| 9 | Canadá | 85100 | 68520 |
| 10 | Chile | 11804 | 12159 |
| 11 | China | 124464 | 51038 |
| 12 | Chipre | 4407 | 7176 |
| 13 | Colombia | 7362 | . |
| 14 | Corea del Sur | 47084 | 40322 |
| 15 | Dinamarca | 36652 | 6389 |
| 16 | Estados Unidos | 606037 | 624474 |
| 17 | Eslovaquia | 11536 | 5197 |
| 18 | Eslovenia | 11548 | 1361 |
| 19 | España | 103686 | 37726 |
| 20 | Estonia | 5410 | 1032 |
| 21 | Finlandia | 21003 | 11303 |
| 22 | Francia | 241770 | 243436 |
| 23 | Grecia | 15007 | 21160 |
| 24 | Hungría | 33755 | 15459 |
| 25 | India | 12603 | 12374 |
| 26 | Indonesia | 9607 | 3023 |
| 27 | Irán | 5346 | 1451 |

| | | | |
|---|---|---|---|
| 28 | Irlanda | 29398 | 12794 |
| 29 | Islandia | 3444 | 720 |
| 30 | Israel | 10959 | . |
| 31 | Italia | 99509 | 68306 |
| 32 | Japón | 114172 | 126568 |
| 33 | Letonia | 5809 | 1475 |
| 34 | Lituania | 8461 | 2955 |
| 35 | Luxemburgo | 10093 | 1137 |
| 36 | Malasia | 10484 | 30581 |
| 37 | Malta | 661 | 437 |
| 38 | México | 14130 | 1892 |
| 39 | Nigeria | 9222 | . |
| 40 | Noruega | 34908 | 16104 |
| 41 | Nueva Zelanda | 13585 | 31565 |
| 42 | Países Bajos | 124281 | 30052 |
| 43 | Polonia | 15456 | 14965 |
| 44 | Portugal | 16657 | 8102 |
| 45 | Reino Unido | 242740 | 341791 |
| 46 | República Checa | 12155 | 27907 |
| 47 | Rumanía | 11254 | 13857 |
| 48 | Rusia | 103748 | 136791 |
| 49 | Sudáfrica | 11894 | 63964 |
| 50 | Suecia | 51646 | 22653 |
| 51 | Suiza | 103790 | 31706 |
| 52 | Tailandia | 7234 | 16361 |
| 53 | Turquía | 14107 | 20219 |
| 54 | Venezuela | 6299 | 1913 |
| **Total N** | **54** | **54** | **51** |

a Limitado a los primeros 100 casos.

## Cuadro C. Ayuda al desarrollo

### C.1. ANOVA (d,e)

| Modelo | | Suma de cuadrados | gl | Media cuadrática | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regresión | 1244617945,890 | 1 | 1244617945,890 | 263,586 | ,000(a) |
| | Residual | 193596834,111 | 41 | 4721874,003 | | |
| | Total | 1438214780,000(b) | 42 | | | |
| 2 | Regresión | 1337831534,713 | 2 | 668915767,357 | 266,545 | ,000(c) |
| | Residual | 100383245,288 | 40 | 2509581,132 | | |
| | Total | 1438214780,000(b) | 42 | | | |

a Variables predictoras: Inv
b Esta suma de cuadrados total no se ha corregido para la constante porque la constante es cero para la regresión a través del origen.
c Variables predictoras: Inv, Pat
d Variable dependiente: AOD
e Regresión lineal a través del origen

### C.2. Coeficientes (a,b)

| Modelo | | Coeficientes no estandarizados | | Coeficientes estandarizados | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Error típ. | Beta | | |
| 1 | Inv | ,007 | ,000 | ,930 | 16,235 | **,000** |
| 2 | Inv | ,005 | ,000 | ,648 | 10,400 | ,000 |
| | Dep | ,158 | ,026 | ,380 | 6,095 | ,000 |

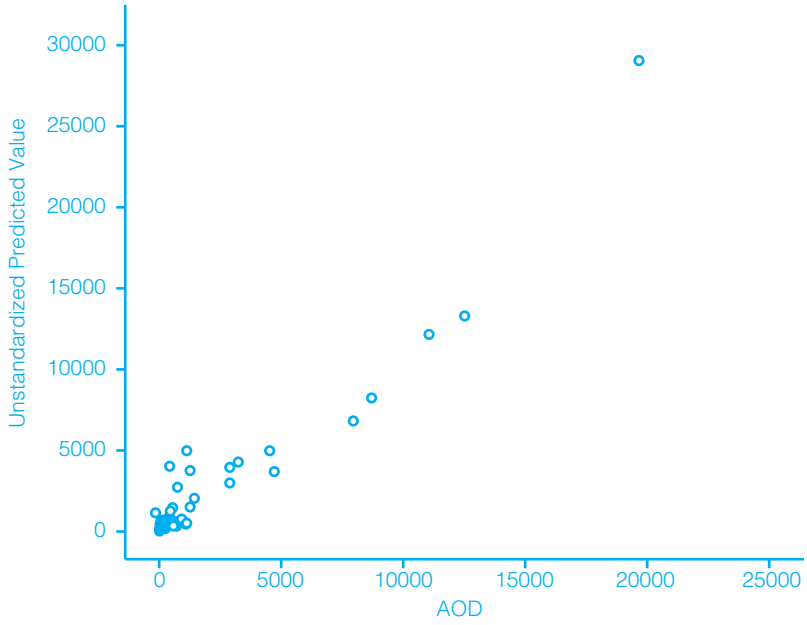
a Variable dependiente: AOD
b Regresión lineal a través del origen

### C.3. Estadísticos sobre los residuos (a,b)

| | Mínimo | Máximo | Media | Desviación típ. | N |
|---|---|---|---|---|---|
| Valor pronosticado | 7,03 | 28031,84 | 2630,96 | 5053,638 | **42** |
| Residuo bruto | -3198,842 | 4778,629 | 397,849 | 1512,028 | 42 |
| Valor pronosticado tip. | -,519 | 5,026 | ,000 | 1,000 | 42 |
| Residuo tip. | -2,019 | 3,016 | ,251 | ,954 | 42 |

a Variable dependiente: AOD
b Regresión lineal a través del origen

**Figura C**


Unstandardized Predicted Value
30000
25000
20000
15000
10000
5000
0
0
5000
10000
15000
20000
25000
AOD

**C.4. Resúmenes de casos (a)**

| | País | Unstandardized Predicted Value | AOD |
|---|---|---|---|
| 1 | Alemania | 11725 | 11799 |
| 2 | Arabia Saudí | 188 | 4967 |
| 3 | Argentina | 150 | . |
| 4 | Australia | 1769 | 2637 |
| 5 | Austria | 996 | 1021 |
| 6 | Bélgica | 3181 | 2377 |
| 7 | Brasil | 763 | 408 |
| 8 | Bulgaria | 9 | . |
| 9 | Canadá | 3054 | 4315 |
| 10 | Chile | 200 | . |
| 11 | China | 1907 | 1307 |
| 12 | Chipre | 88 | . |
| 13 | Colombia | 78 | . |
| 14 | Corea del Sur | 3301 | 752 |
| 15 | Dinamarca | 1154 | 2516 |
| 16 | Estados Unidos | 28032 | 24833 |
| 17 | Eslovaquia | 19 | 82 |
| 18 | Eslovenia | 54 | 61 |
| 19 | España | 3084 | 6675 |
| 20 | Estonia | 33 | 20 |
| 21 | Finlandia | 853 | 1042 |
| 22 | Francia | 9060 | 11194 |
| 23 | Grecia | 195 | 628 |
| 24 | Hungría | 803 | 95 |
| 25 | India | 578 | 539 |
| 26 | Indonesia | 137 | . |
| 27 | Irán | 14 | . |

| | | | |
|---|---|---|---|
| 28 | Irlanda | 943 | 889 |
| 29 | Islandia | 36 | 43 |
| 30 | Israel | 440 | 123 |
| 31 | Italia | 3349 | 4339 |
| 32 | Japón | 12634 | 15599 |
| 33 | Letonia | 7 | 20 |
| 34 | Lituania | 13 | 43 |
| 35 | Luxemburgo | 381 | 367 |
| 36 | Malasia | 369 | . |
| 37 | Malta | 12 | . |
| 38 | México | 258 | . |
| 39 | Nigeria | 30 | . |
| 40 | Noruega | 824 | 3613 |
| 41 | Nueva Zelanda | 124 | 273 |
| 42 | Países Bajos | 4182 | 5824 |
| 43 | Polonia | 144 | 337 |
| 44 | Portugal | 320 | 485 |
| 45 | Reino Unido | 8194 | 10691 |
| 46 | República Checa | 87 | 222 |
| 47 | Rumanía | 14 | 110 |
| 48 | Rusia | 1181 | 196 |
| 49 | Sudáfrica | 348 | 57 |
| 50 | Suecia | 2124 | 4026 |
| 51 | Suiza | 4195 | 1829 |
| 52 | Tailandia | 83 | 159 |
| 53 | Turquía | 127 | 697 |
| 54 | Venezuela | 80 | . |
| **Total N** | **54** | **54** | **42** |

a Limitado a los primeros 100 casos.

# Appendix 4

## QUESTIONNAIRE FOR SECOND-LEVEL WEIGHTING

For some time now, the Elcano Royal Institute has been working on a line of research aimed at analysing Spain's influence abroad. It was decided that the first step in this ambitious and complex task would be to develop an empirical foundation that would allow for a comparative and diachronic measurement of Spain's overseas presence alongside that of the world's other major economies. Many measurements and some partial efforts have been carried out, but data on presence is disperse and difficult to analyse and aggregate.

As announced by the Scientific Council in 2009, a working group coordinated by the Elcano Royal Institute has devised an index that aggregates and quantifies the economic, social, and military positioning of countries in our globalised world: the Elcano Global Presence Index (IEPG).

The areas of overseas presence that have been singled out for measurement are the following:

1) Economy
2) Defense
3) Migration and tourism
4) Culture and science
5) Development assistance

In order to determine the weighting that each of these areas should receive in the IEPG, it was decided to consult an international panel of experts, including yourself as a member of the Scientific Council. To this end, we ask that you answer the following two questions:

1) ¿WHICH OF THESE ALTERNATIVE MODELS DO YOU THINK SHOULD GUIDE THE OVERSEAS PRESENCE STRATEGY OF A COUNTRY SUCH AS SPAIN?

| | Models | Choice |
|---|---|---|
| 1) | A country with growing overseas ambitions which, like other mid-size or emerging players, must join the group of leaders that shape world policy on the fundamental basis of its economic or business-sector weight and its becoming part of major security structures. | |
| 2) | A country characterised mainly by its soft power and admired abroad for its commitment to human rights, the environment, development, or peace, and by its diplomatic skill for reconciling different global sensitivities. | |
| 3) | A mid-size power of a regional nature but with global projection, which, besides promoting certain values and principles, has important economic and political interests to defend overseas. | |
| 4) | It is not necessary to bind one's overseas presence strategy to a final goal and it is better to improvise as you go along. | |

2) WHAT RELATIVE WEIGHT WOULD YOU ASSIGN TO EACH OF THESE AREAS IN ORDER TO DEFINE 100% OF COUNTRIES' OVERSEAS OR GLOBAL PRESENCE?

| | AREAS | % |
|---|---|---|
| 1) | Economy | |
| 2) | Defense | |
| 3) | Migration and tourism | |
| 4) | Culture and science | |
| 5) | Development assistance | |
| Others (please specify):_____ | | |
| **TOTAL:** | | **100%** |

You may return responses, which are anonymous, in a sealed envelope during the Scientific Council meeting or send them by regular mail no later than 9, July 2010 to the address […].

# Appendix 5

## SUMMARY OF INDICATORS AND SOURCES

| Indicator | Description | Source |
|---|---|---|
| **Economy** | | |
| Trade in goods | Flow of exports of:<br>–primary commodities not including energy (food, beverages, tobacco, agricultural raw materials, ores, metals, precious stones, and non-monetary gold).<br>–manufactured goods (chemical products, machinery and transport equipment, and other manufactured goods). | |
| Trade in services | Flow of exports of services (transport, travel, communications, construction, insurance, financial services, computer and information, royalties and license fees, personal, cultural and recreational services, other business services, and government services). | UNCTAD |
| Energy | Flow of exports of energy products (fuels). | |
| Investments | Stock of foreign direct investment overseas | |
| **Defense** | | |
| Troops deployed | Number of troops deployed in international missions. | IISS |
| Capacity for military deployment | Suma ponderada de sistemas de transporte estratégico de portaaviones, buques anfibios de asalto y logísticos, fragatas y aviones de transporte estratégico de largo alcance. | |
| **Migration and tourism** | | |
| Immigration | Estimated number of international migrants at mid-year. | United Nations Population Division. |
| Tourism | Thousands of arrivals of tourists at borders. | UNWTO |

**(CONTINUE) ▶**

| Indicator | Description | Source |
|---|---|---|
| **Culture and science** | | |
| Cultural outreach | Exports of audiovisual services | WTO and authors' estimates |
| Sports | Weighted sum of points in world men's football ranking and medals won in summer Olympic Games | FIFA and IOC |
| Technological development | Foreign-oriented patents: interrelated patent applications filed in one or more foreign countries to protect the same invention | WIPO |
| Scientific research | Number of articles published in the areas of arts and humanities, social sciences, and sciences | *Thomson Reuters* |
| Educational outreach | Number of foreign students taking tertiary education | UNESCO,OECD, and authors' estimates |
| **Development assistance** | | |
| Development assistance | Total gross flows of official development assistance. | OECD and authors' estimates |

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