© 2021 Pareto Economics and its applicable group undertakings. The Pareto Economics includes (1) Global Power Index ("GPI"), (2) Active Consumer Market Index ("ACMI"), (3) Military Balance Index ("MBI"), (4) Technological Leadership Index ("TLI"), (5) Geo-Strategic Positioning Index ("GSPI"), (6) Systemically Important Commodities Index ("SICI") and (7) Financial Strength Index ("FSI"). All rights reserved. Pareto Economics® is a trading name of Pareto Economics Limited and all other trademarks and service marks used herein (whether registered or unregistered) are trademarks and/or service marks owned or licensed by the applicable member of the Pareto Economics or their respective licensors and are owned, or used under licence, by Pareto Economics.

All information is provided for information purposes only. All information and data contained in this publication is obtained by the Pareto Economics, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical error as well as other factors, however, such information and data are provided “as is” without warranty of any kind. No member of the Pareto Economics nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the accuracy, timeliness, completeness, merchantability of any information or of results to be obtained from the use of Pareto Economics products, including but not limited to indexes, data and analytics, or the fitness or suitability of the Global Power Index products for any particular purpose to which they might be put.

Any representation of historical data accessible through Pareto Economics products is provided for information purposes only and is not a reliable indicator of future performance. No responsibility or liability can be accepted by any member of the Pareto Economics nor their respective directors, officers, employees, partners or licensors for (a) any loss or damage in whole or in part caused by, resulting from, or relating to any error (negligent or otherwise) or other circumstance involved in procuring, collecting, compiling, interpreting, analysing, editing, transcribing, transmitting, communicating or delivering any such information or data or from use of this document or links to this document or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if any member of the Pareto Economics is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, such information.

No member of the Pareto Economics nor their respective directors, officers, employees, partners or licensors provide investment advice and nothing contained herein or accessible through Pareto Economics products, including statistical data and industry reports, should be taken as constituting financial or investment advice or a financial promotion.
Contents

Acronyms .......................................................................................................................... 4
What Is the GLOBAL POWER INDEX? .............................................................................. 5
Why Is It Useful? .................................................................................................................. 5
How Is It Different? ............................................................................................................. 5
Conceptual Framework ....................................................................................................... 6
Nations We Ranked ............................................................................................................. 7
GLOBAL POWER INDEX .................................................................................................. 8
2021 RANKING ................................................................................................................... 8
  Overview .......................................................................................................................... 11
  China Vs. USA ............................................................................................................... 11
  Other Notable Entries ...................................................................................................... 12
ACTIVE CONSUMER MARKET INDEX (ACMI) ............................................................. 13
  Overview ........................................................................................................................ 15
  ACMI Insights ............................................................................................................... 15
MILITARY BALANCE INDEX (MBI) ................................................................................ 16
  Overview ........................................................................................................................ 18
  Investing and Defence ..................................................................................................... 18
  Strength in Unity ............................................................................................................. 18
TECHNOLOGICAL LEADERSHIP INDEX (TLI) ............................................................ 19
  Overview ........................................................................................................................ 21
  Equal Playing Field ....................................................................................................... 21
GEO-STRATEGIC POSITIONING INDEX (GSPI) .......................................................... 22
  Overview ........................................................................................................................ 24
  Limits of a Nation ........................................................................................................... 24
  Foreign Policy Winners and Losers ............................................................................... 24
SYSTEMICALLY IMPORTANT COMMODITIES INDEX (SICI) ........................................ 25
  Overview ........................................................................................................................ 27
  Market Dynamics .......................................................................................................... 27
FINANCIAL STRENGTH INDEX (FSI) .............................................................................. 29
  Overview ........................................................................................................................ 31
  FSI Insights ..................................................................................................................... 31
Services ............................................................................................................................... 32
Acronyms

GPI – Global Power Index
CoP – Centres of Power
OECD - Organisation for Economic Co-operation and Development
UNSC – United Nations Security Council
GDP – Gross Domestic Product
ACMI – Active Consumer Market Index
EU – European Union
NATO - North Atlantic Treaty Organisation
R&D – Research and Development
MBI – Military Balance Index
FDI – Foreign Direct Investment
ESG – Environmental, Social, Governance
SRI – Socially Responsible Investment
TLI – Technological Leadership Index
GSPI – Geo-Strategic Positioning Index
SICI – Systemically Important Commodities Index
FSI – Financial Strength Index
What Is the GLOBAL POWER INDEX?

The Global Power Index (GPI) is the most comprehensive analysis and measurement of a nation's globalised power to date. It measures and evaluates countries on our leading Centres of Power (CoP) methodology and conceptual framework to assess their relative power and influence. It is a super-index made up of 6 sub-indices which correspond to the 6 Centres of Power (CoP) we have created as a fundamental starting point when analysing globalised power and the trends in world affairs that are produced by them. It is the world’s first index of its kind that uses a blend of propriety and open-sourced forecasting indicators allowing users to assess past, present and future power dynamics which are beneficial for investing, policy, military/defence, business, research, and journalism purposes.

Why Is It Useful?

This tool is useful for two primary reasons. Firstly, it can be used as a risk management tool for global operators when assessing the relative risk(s) a nation brings to their investments and operations within a country. Secondly, it can be used as an opportunity discovery tool for global operators when comparing the relative robustness, power, defence and business opportunities between nations.

How Is It Different?

The GPI is different to other indices in two main ways. Firstly, it is a two-sided index. Which is to say, it can be used by both governments who are ranked to help them understand where they rank and why, and global operators who can use these rankings and the insights to better prepare them for ongoing and new risk and opportunities. These benefits are compounded with the availability of our ranking advisory services.

Secondly, the GPI is an amalgamation of 6 sub-indices which correspond to the 6 Centres of Power. This gives the added benefit of further dissecting and analysing the increasingly complex nature of power in 6 fundamental and easy to understand “themes” which have the ability to be standalone indices which can be used again by governments and global operators to investigate where a nation ranks and why.
Conceptual Framework

The GPI is constructed following our world-leading Centres of Power methodology and conceptual framework, this is constructed using an aggregate of six themes or sub-indices spanning a country’s 1) Active Consumer Market 2) Military Balance 3) Technological Leadership 4) Geo-Strategic Positioning 5) Systemically Important Commodities, and 6) Financial Strength. Each theme/sub-index is calculated as an aggregate of 62 proprietary and open-source variables/indicators in total.

The CoP methodology and conceptual framework was developed as an explanation for the rising phenomena of globalised power. Globalised power is described as the phenomena of global power shifts and increasing geopolitical tensions brought about by the gradual and compounding nature of state power. The CoP methodology and conceptual framework allows the user to more accurately understand world affairs by distilling the increasingly complex and interrelated nature of world affairs into six themes from which national power is derived.

This has the added benefit of not only streamlining complex global processes and interactions but also allows for a specific and isolated methodological examination of a nation’s past, present and future power potential through one or more of the 6 themes. This approach is especially important for an increasing number of global operators including investors, researchers, policy makers, central banks, sovereign wealth funds, defence and security professionals, and governments themselves.

The robustness of this methodology is further demonstrated by not only its ability to provide an explanation for current world affairs issues, but also its ability to provide more insightful and specific insights to historical expressions of sovereign power, be they nation states, kingdoms, empires or principalities of the past, as power has always been an expression of these CoPs.

This index is a result of the systemic application of the CoP which has the ability to provide practical and actionable insights for the user no matter what industry they are in.
It is a living breathing indicator of how globalised power looked yesterday, looks today and how it will look tomorrow.

The rest of this document will be dedicated to diving deeper into this wholly unique understanding of the state of globalised power today.

For further insights into a particular theme and/or nation please email Pareto Economics – info@pareto-economics.com

Nations We Ranked

We have chosen 26 nations for the 2021 iteration of this index. More nations will be added throughout the year as data is collected and analysed. These 26 nations are highlighted below in blue.
GLOBAL POWER INDEX
2021 RANKING
Global Power Index

The Global Power Index (GPI) is a super index made up of 6 sub-indices produced by the Pangaea Wire Group. It uses our world-leading Centers of Power (CoP) methodology and conceptual framework as the foundation for its analysis.

(Ranging from 0 to 1, 1 represents the best performance)
TOP 10 AT A GLANCE

1. CHINA
2. USA
3. RUSSIA
4. BRAZIL
5. INDIA
6. CANADA
7. MEXICO
8. KAZAKHSTAN
9. SOUTH AFRICA
10. UNITED KINGDOM

1/2 REPRESENT EURASIAN NATIONS
2/3 ARE EMERGING MARKETS

1/2 USE ENGLISH AS OFFICIAL LANGUAGE
30% ARE OECD MEMBERS

AVARAGE GDP: $4.8 TRILLION
4/5 INCLUDES UNSC NATIONS
Overview

The 2021 GPI rankings present a very interesting and perhaps unexpected overview of globalised power. The methodology we employed highlights not only traditional hard power variables like military prowess in the form of nuclear weapons spending and military space assets etc but often underexamined but equally important variables such oil and gas pipeline status, friend/foe radius ratios, landmass to coastline ratios and more. Some of these variables are wholly unique in their construction, whilst others are open-sourced data points. They are combined and applied to each nation and weighted evenly to produce a ranking which on one level gives a clear indication of the true nature of power and where a particular nation ranks against another, but when diving in deeper, allows the user to extract vital insights into the strategic health of a nation and its globalised power.

China Vs. USA

What’s perhaps the most striking is where China and the USA rank on the index. Naturally, when looking at the arc of globalised power since the end of the cold war in the early 1990s the USA has had a clear and unchallenged lead in world affairs, this was gradually challenged by China making real developments on all six CoPs since their accession into the World Trade Organisation in 2001. Now in 2021 they are ranked in first place on the Global Power Index. On the macro level they seem to dominate, the picture however is even more interesting when you look into it deeper.

<table>
<thead>
<tr>
<th>CoP Themes</th>
<th>USA</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Consumer Market</td>
<td>0.93</td>
<td>1</td>
</tr>
<tr>
<td>Military Balance</td>
<td>1</td>
<td>0.45</td>
</tr>
<tr>
<td>Technological Leadership</td>
<td>1</td>
<td>0.62</td>
</tr>
<tr>
<td>Geo-Strategic Positioning</td>
<td>0.75</td>
<td>0.15</td>
</tr>
<tr>
<td>Systemically Important</td>
<td>0.78</td>
<td>1</td>
</tr>
<tr>
<td>Commodities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Strength</td>
<td>0.93</td>
<td>1</td>
</tr>
</tbody>
</table>

(Ranging from 0-1, 1 represents the best performance)

The graphic on the left is a visual representation of how both China and the USA rank on all six themes, whereas the spreadsheet on the right shows both China and the USA in numbers. What is the most interesting to observe is that China ranks in top position in 3 out of the 6 CoP themes, including; Active Consumer Market, Systemically Important Resources and Financial Strength. USA in comparison ranks top in only 2 out of the 6, including Military Balance and technological leadership. However, where China ranks number one, it is always the USA who ranks very closely second, but when looking where the USA ranks number one, China is by comparison far down the ranking, they are on average 9 rankings below the USA. It also happens to be that the CoPs where China is ranked behind the USA are some of the hardest of CoPs to move up in.
For example, when looking at the Geo-Strategic Positioning Index (GSPI), the USA is ranked third behind the UK and Denmark whereas China is ranked in 21st position. Given the nature, China’s outlook and the nature of the Geo-Strategic Positioning measurement it will be harder for China to move up in this particular index. This is because this particular index is made up of 6 variables that measure things that require a more collaborative and cooperative foreign policy, it also measures aspects of a nation which are to do with the physical geography and topography which are very difficult but not impossible to change/improve. The first is relatively easier to change and improve as opposed to the second, however given China’s unbroken political leadership it seems that their foreign policy activities will not be conducive to an improvement in their ranking on this measure.

The Military Balance CoP is also worth looking at. Military balance is defined as the strength, size and capabilities of a nations offensive and defensive weaponry and resources. For this measure USA ranks number one whereas China ranks third, but with China’s score being 0.45 this means they are more than half separated from USA in terms of military balance. Although the gap is closing, there is still a very long way to go for China to reach parity with the USA. Furthermore, it must be understood that a nations military balance does not grow in a vacuum, meaning China’s military rise will disrupt and be challenged by the USA and number two ranking country Russia. This will inevitably change the geopolitical landscape of globalised power, which in turn will have a knock-on effect for industry, investing, and society as a whole.

---

For deeper and more varied insights on country comparisons, users can take advantage of our Ranking Advisory Services and Country Risk Reports. Email: info@pareto-economics.com for more information.

---

Other Notable Entries
Other notable entries into the top 10 include South Africa and Kazakhstan. South Africa is the only African nation to rank in the GPI top 10, ranking higher than even the United Kingdom. Our analysis shows that South Africa is well positioned with the CoP matrix to be a central power in Africa due to its promising geo-strategic positioning and its commodity exporter status. With rising commodity prices, increase demand for exports as well as reliable and stable relations with its neighbours, South Africa is a central power in Africa. Our in-depth country risk reports using the CoP framework uncovers surprising developments and an enhanced risk profile for South Africa as well as vital horizon scanning insights that are essential for anyone looking at South Africa as a FDI destination.

Kazakhstan has also ranked well (8/10) on the GPI. Positioned geographically in a very important part of the world, Kazakhstan has taken advantage of its abundance of natural resources and healthy trade surplus to be a leading central Asian economy. Kazakhstan are actively perusing FDI projects including major investments from the Netherlands, the USA and Russia. Its position in the index is indicative of future potential as a geopolitical safe heaven which sees its two largest neighbours, Russia and China engaged in complex global operations. More insights are available regarding the robustness and future potential of Kazakhstan in Kazakhstan’s country risk report.
ACTIVE CONSUMER MARKET INDEX (ACMI)
Active Consumer Market Index

The Active Consumer Market Index (ACMI) is a sub-index created by the Pangaea Wire Group. It ranks nations on the strength and size of its consumer market and is based on our Centers of Power (CoP) methodology and conceptual framework of globalised power.

(Ranging from 0-1, 1 represents the best performance)
Overview

The first of our CoP sub-indices is the Active Consumer Market Index or ACMI. We define a nation’s active consumer market as the compound strength, size, and growth of a nation’s populace to consume goods and services.

This measure was constructed and included into the CoP framework as it presents an aspect of globalised power that has not been a vital focus for many global operators but has shown to be and will continue to be a vital aspect of a nation’s globalised power going into the future. Truly understanding the width, depth and breadth of a nation’s active consumer market is essential for a nation to understand, as this not only indicates future government revenue but also indicates what supply chain vulnerabilities governments need to help secure as well as describing the leverage strategy that can be employed by a government when negotiating more favourable trade tariffs and non-trade concessions from other nations.

The ACMI is also a vitally important resource for users in the business/investing space. Like the GPI the ACMI can be used as a country comparison tool for investors when comparing the active consumer market trends between nations as well as deep diving into a specific nation and extrapolating insights. This can be done via our country risk reports, commissioned country comparison reports or with our ranking advisory services.

ACMI Insights

The ACMI encapsulates 6 separate unique variables, which combined, give a more reliable and holistic view of a nation’s active consumer market. Additionally, when observed over time, this measure gives valuable and actionable insights into future consumer trends which investors, businesses, and governments can use when constructing a market entry strategy, developing their point of view of future consumer trends for their particular industry as well shaping government policy.

What’s particularly interesting is that half of the GPI top 10 also appear in the top 10 in the ACMI. The five notable new entries include Germany, Ireland, Israel, Spain and Denmark. Four of them represent EU member nations which shows encouraging data to the continuing importance of Europe as an active consumer market and target hub for exporters. Israel notably comes in at number 7. This is due to Israel having one of highest Purchasing Power Per Capita numbers in the Middle East as well as exhibiting favourable demand for professional services and commodities.
**Military Balance Index**

The Military Balance Index (MBI) is a sub-index created by the Pangaea Wire Group. It ranks nations on the strength and resources of their military and is based on our Centers of Power (CoP) methodology and conceptual framework.

(Ranging from 0-1, 1 represents the best performance)
Overview

The second of our sub-indices is the Military Balance Index or MBI. We define a nation's military balance as the strength, size and capabilities of a nation's offensive and defensive weaponry and resources. Unlike other indices which catalogue the entire military apparatus of a nation, we have approached this index in a much more streamlined and valuable way which allows the user to assess how the current and future military capabilities of a nation impact their globalised power. We use 11 core indicators for this index, which allow us to evaluate where nations rank on the MBI.

Investing and Defence

Upon first glance the association between investing and defence may not seem so obvious. Beyond the most apparent insight that investors can gauge the military appetite of a nation and can capitalise on this by investing in the defence/cyber security sector, the presence of a strong military can signal two things to an investor. The first being, that a nation is strong, well defended and a leader in its regional and international affairs, making it a more secure place to invest. The second takes the diametrically opposite view by signalling that this nation feels threatened, and its geopolitical neighbourhood requires high spending on defence as a hedge for conflict, thus making it particularly risky for FDI.

Also, in relation to the first point, it is very important to realise that as hybrid warfare continues to develop and transform in its application and affects, the investment categories increase in their bluriness. In other words, the “defence sector” no longer means guns, bullets and nuclear weapons but has also encapsulated dual use applications which include sectors such as chemicals, cyber, tech and communications. This matters to investors for a number of reasons. Primarily, it matters especially to investors/funds who have an ESG/SRI angle who make a point not to invest in “vice industries”. If the applicability and effect of the defence industry is no longer contained to recognisable firms and industries it makes it harder and harder for investors to remain committed to their values. Due to what we call the great convergence\(^1\) one can more easily make the argument that social media companies for example can and should not be included in an ESG/SRI fund as they can facilitate the promotion of terrorist recruitment.

Strength in Unity

The most interesting conclusion that is drawn from the 2021 MBI comes from the most striking aspect of the index, that being the undisputed position of the USA as the leading global military power. Although this was expected, the lesson that is drawn from this pareto distribution is the natural need for military alliances to ensure collective security. 80% of the nations ranked fall between the 0-0.2 score which is the lowest ranking tranche. As individual nations, this leaves them exposed due to their relevantly weak military balance, however as a military union like NATO or as partners in bi-lateral security agreements, this allows for collective security which can enhance their globalised power by virtue of compounded military strength.

---

\(^1\) The change brought about by the interaction and interplay of the Global 4 (Globalisation, Geopolitics, Transformative Technology & Societal Change) as a result of globalised power dynamics.
TECHNOLOGICAL LEADERSHIP INDEX (TLI)
Technological Leadership Index

The Technological Leadership Index (TLI) is a sub-index created by the Pangaea Wire Group. It ranks nations on key innovation capability indicators and is based on our Centers of Power (CoP) methodology and conceptual framework of globalised power.

(Ranging from 0-1, 1 represents the best performance)
Overview

The third of our sub-indices is the Technological Leadership Index or TLI. We define a nation’s technological leadership as the capabilities and influence nations have in developing and exporting their technological innovations. This measure is important to include as a fundamental feature of globalised power because technology is becoming increasingly important in the rise of globalised power. The global marketplace is becoming more competitive as new markets become realised and as new players from rising nations establish their foothold in a number of markets. The engine that is driving this change is technological innovation, which is why it is important to understand which nations are leading and which nations are lagging in this global technological transformation.

This index is an aggregate of six unique measures that provide a holistic and streamline analysis and evaluation of a nation’s technological leadership which can help users better understand and take advantage of the changing tech leadership landscape.

Equal Playing Field

The TLI presents an interesting picture for users for several reasons. As we can see from the chart, nations are more evenly matched compared with the MBI. The USA is again a leader in this index but unlike military balance, its number two, Germany, is closely followed with only a .17 score gap. Furthermore, the top 10 falls between 0.6-1 score which is composed of the two top tranches. This displays a more equal distribution of tech leadership in the top 10.

This even distribution also exists in the bottom 14 where nations fall between 0-0.4, representing the bottom two lowest scoring tranches. If compared over time, one can expect to see a steady growth of technological leadership from all nations, albeit at different rates or what we call their developmental differential.

A compounding effect occurs when two important developments occur over time. The first being the rise of internet penetration. Internet penetration levels can be directly associated with technological innovation. As a facilitative technology the internet forms the backbone of modern-day communications and as a stage of technological evolution that has been innovated upon, examples include 5G, blockchain, the internet of things etc. A nation requires high internet penetration for technological innovation to occur. This has been rising across the board which has resulted in the TLI distribution we see above.

The second development is growing R&D government budgets. This is a function of government policy and signals to investors that a target country is serious about the role it wants to play as a technology leader. We have seen a steady rise in total research and development (R&D) expenditure as a percentage of GDP globally which helps to explain the TLI distribution.

For deeper and more varied insights on country comparisons, users can take advantage of our Ranking Advisory Services and CoP Country Risk Reports. Email: info@pareto-economics.com for more information.

---

2 The relative difference of growth/reduction of a nation’s Centres of Power as compared to other nations.

3 Learn more about facilitative technologies from our whitepaper “An investor’s guide to debunking disruptive technology”
GEO-STRATEGIC POSITIONING INDEX (GSPI)
Geo-Strategic Positioning Index

The Geo-Strategic Positioning Index (GSPI) is a sub-index created by the Pangaea Wire Group. It ranks nations on their geographical advantages and is based on our Centers of Power (CoP) methodology and conceptual framework of globalised power.

(Ranging from 0-1, 1 represents the best performance)
Overview

The fourth of our sub-indices is the Geo-Strategic Positioning Index or GSPI. We define a nation’s Geo-Strategic Positioning as the natural advantage’s nations enjoy by virtue of their physical location in the world as well as the activities of a nations leadership that make it valuable/important to its geopolitical effectiveness in its region. Essentially, how a nation takes advantage of its geo-location and how it cultivates relations with its neighbours and those further afield.

Although from first glance this measure may sound simplistic, it is an essential measure because it lays the groundwork for the geopolitical games it can and cannot play. Physical barriers and passages as well as control/influence over choke points, access to the sea and the state of its foreign policy are just some of the variables used to determine a nation’s globalised power as it relates to this CoP. This index uses a total of six variables to evaluate and assess a nation’s Geo-Strategic Positioning.

Limits of a Nation

Unlike other CoPs such as military balance, or active consumer market where a nation can improve its standing overtime, a nations Geo-strategic Positioning is harder to improve due to the physical realities of a nation’s location. Aside from extreme and costly actions like annexing, invading, or physically altering its terrain like digging canals, there is little a nation can do without dramatically altering the geopolitical order. The one area however it can have full and malleable influence over is regarding its foreign policy and its status as a pipeline originator, receiver or transiter.

Here is where a nation can have its most important influence. We have devised a wholly unique measure of the condition of a nation’s foreign policy, measured by the degree to which the nation in question is an ally or foe to its neighbours and further afield. This measure is perhaps the most active in regards to its volatility in this sub-index and can be a great indicator of future geopolitical turbulence which is useful for an investor/security and defence audience in particular.

Foreign Policy Winners and Losers

As it currently stands, Egypt scores the highest on this particular variable and Argentina scores the lowest. This perhaps explains the central role Egypt plays in the Middle East and gives credit to their ability to formulate an advantages foreign policy within the region despite the geopolitical active climate the Middle East has seen over the past 20 years. On the other hand, this variable result shows that Argentina is in a more vulnerable position than first thought. Although in relative terms South America has not faced the same level of regional turmoil as has the Middle East, Argentina’s relations with its neighbours although cordial, bar historical animosity with the UK over the Falkland Islands and remain untested in times of regional geopolitical upheaval.
SYSTEMICALLY IMPORTANT COMMODITIES INDEX (SICI)
Systemically Important Commodities Index

The Systemically Important Commodities Index (SICI) is a sub-index created by the Pangaea Wire Group. It ranks nations on the quantity and diversity of the top 24 most consumed commodities/natural resources, and is based on our Centers of Power (CoP) methodology and conceptual framework of globalised power.

1. China
2. USA
3. Russia
4. Brazil
5. India
6. Mexico
7. Canada
8. South Africa
9. Kazakhstan
10. Argentina
11. Nigeria
12. Japan
13. Turkey
14. Ecuador
15. France
16. Germany
17. Pakistan
18. Spain
19. Italy
20. UK
21. Egypt
22. Ireland
23. Denmark
24. Belgium
25. El Salvador
26. Israel

(Ranging from 0-1, 1 represents the best performance)
Overview
The fifth of our sub-indices is the Systemically Important Commodities Index or SICI. We define Systemically Important Resources as the most consumed hard and soft commodities which are produced by nations. A country’s positioning is based on its combined share in the production of hard and soft commodities. We included a total of 19 hard commodities, and seven soft commodities in the construction of this index.

Hard commodities included Oil, Gold, Iron, Copper, Silver, Aluminium, Manganese, Uranium, Lithium, Palladium, Platinum, Titanium, Zinc, Lead, Nickel, Graphite, Tin, Rare Earths, and Molybdenum. Data for these commodities is derived from a number of publicly available databases such as the World Mining Database and the U. S Geological Survey (USGS). The framework further acknowledges the idea that some hard commodities hold a greater importance within the pool of commodities. This is based on their level of global utility and consumption. We have weighted these variables accordingly.

Soft commodities included Sugar, Corn (Maize), Soybeans, Coffee, Cocoa, Cotton and Wheat. Data for these commodities is based on the Food and Agricultural Organisation of the United Nations (FAO). The soft commodities in comparison have all been weighted equally.

Market Dynamics
Commodities trade forms the backbone of global commerce and as such understanding the architecture of commodity spreads across nations is essential to our understanding of globalised power. An important place to begin is in realising that a nations commodity mix, the types of commodities it produces is limited to a considerable amount by the commodities which are found within their borders. This is at least the case for hard commodities, where like in the GSPI, the only way to expand your commodity portfolio is by taking land from other nations. This restriction is found less so in soft commodities where theoretically all a nation needs to do is plant and harvest soft commodities. However, even this is restricted by factors like climate and terrain etc.

This then leads us to ask, if a nations commodity mix is fixed, how can a nation improve its globalised power? Four ways exist, these include:

**Level of Supply:** A nations share of the global supply of a specific commodity can contribute to its share of globalised power. Take for example Russia who produces 12.1% of global oil supply. This sizable quantity especially for such an important commodity allows Russia to exert sizable globalised power.

**Coordinated market:** For smaller producers, just like in the MBI where the rise of security unions like NATO were driven by the need for collective security, commodity unions like OPEC for example allow relatively smaller producers to compound their globalised power when acting in unison with other market participants.

**Demand effects:** A nations globalised power can also increase by a rise in demand for a specific commodity, putting the nation(s) that produce it in a very strong position to capitalise. This has been seen time and time again especially as global innovation continues to drive forward, requiring the production of a variety of commodities to meet demand.

**Natural disasters/Policy:** Supply chain disruptions that are brought about by natural disasters/policy changes can both help and hinder a nation’s globalised power. They share a commonality due to producing the same effects, that being supply deflection. A natural disaster/bad weather to one producer can see an increased demand for a commodity from another producer.
This also applies to trade policies which restrict the trade of one commodity from one producer, due to tariffs for example, to another producer. For example, with the US-China trade war, we saw soybean orders increase dramatically for Brazil when soybeans coming from the USA were targeted by Chinese tariffs.

For deeper and more varied insights on country comparisons, users can take advantage of our Ranking Advisory Services and Country Risk Reports. Email: info@pareto-economics.com for more information.
FINANCIAL STRENGTH INDEX (FSI)
Financial Strength Index

The Financial Strength Index (FSI) is a sub-index created by the Pangaea Wire Group. It ranks nations on their strength and robustness and is based on our Centers of Power (CoP) methodology and conceptual framework.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Ireland</td>
<td>0.93</td>
</tr>
<tr>
<td>3</td>
<td>USA</td>
<td>0.93</td>
</tr>
<tr>
<td>4</td>
<td>UK</td>
<td>0.77</td>
</tr>
<tr>
<td>5</td>
<td>Israel</td>
<td>0.68</td>
</tr>
<tr>
<td>6</td>
<td>Canada</td>
<td>0.62</td>
</tr>
<tr>
<td>7</td>
<td>Denmark</td>
<td>0.6</td>
</tr>
<tr>
<td>8</td>
<td>Belgium</td>
<td>0.59</td>
</tr>
<tr>
<td>9</td>
<td>Germany</td>
<td>0.59</td>
</tr>
<tr>
<td>10</td>
<td>France</td>
<td>0.54</td>
</tr>
<tr>
<td>11</td>
<td>Japan</td>
<td>0.48</td>
</tr>
<tr>
<td>12</td>
<td>Kazakhstan</td>
<td>0.45</td>
</tr>
<tr>
<td>13</td>
<td>India</td>
<td>0.44</td>
</tr>
<tr>
<td>14</td>
<td>Russia</td>
<td>0.42</td>
</tr>
<tr>
<td>15</td>
<td>Mexico</td>
<td>0.38</td>
</tr>
<tr>
<td>16</td>
<td>Italy</td>
<td>0.37</td>
</tr>
<tr>
<td>17</td>
<td>Spain</td>
<td>0.36</td>
</tr>
<tr>
<td>18</td>
<td>Brazil</td>
<td>0.31</td>
</tr>
<tr>
<td>19</td>
<td>Egypt</td>
<td>0.26</td>
</tr>
<tr>
<td>20</td>
<td>Turkey</td>
<td>0.18</td>
</tr>
<tr>
<td>21</td>
<td>El Salvador</td>
<td>0.18</td>
</tr>
<tr>
<td>22</td>
<td>Pakistan</td>
<td>0.15</td>
</tr>
<tr>
<td>23</td>
<td>Nigeria</td>
<td>0.14</td>
</tr>
<tr>
<td>24</td>
<td>Ecuador</td>
<td>0.14</td>
</tr>
<tr>
<td>25</td>
<td>Argentina</td>
<td>0.02</td>
</tr>
<tr>
<td>26</td>
<td>South Africa</td>
<td>0</td>
</tr>
</tbody>
</table>

(Ranging from 0-1, 1 represents the best performance)
Overview
The sixth and final of our sub-indices is the Financial Strength Index or FSI. We define a nation’s financial strength as the growth rate and financial resilience of a country. A nation’s ranking is calculated and assessed using 7 important variables. This measure has been created and included as part of the CoP conceptual framework due to its fundamental importance as the fuel to a nation’s growth. More specifically, unlike the GSPI which relies on the natural advantages of a state as it relates to their topography or the SICI which relies on the intrinsic value of the commodities found within the land of a nation, a nation’s FSI score is perhaps the most reliant on fiscal and monetary policy than any of the other sub-indices. It is the index which measures the actions taken by government and central banks and translates it into a nation’s globalised power.

FSI Insights
A number of interesting and useful insights can be extrapolated from our 2021 ranking. Two in particular are worth mentioning. The first being there is no clear leader in the index. Albeit China takes the number one spot, Ireland and the US closely follow. The top 5 average score is .86 which is placed in the top tranche of the index showing the clear relative globalised power of nations in this particular sub-index. This trend of ranking homogeneity is present throughout the index. This is diametrically opposite to, for example, the SICI and MBI which follow a more classical pareto distribution. Observations like these are important to highlight as they explain why the current power structures/institutions exist today. We find that in instances of relative low scores political/security institutions are developed to ensure collective security and in instances of relative equal score distribution higher degrees of global competition occur.

Secondly, when looking at the top ten nations, five of them are EU nations and are under the monetary authority of the European Central Bank. Looking deeper, these nations are also five of the wealthiest in the EU as measured by GDP Per Capita. The UK would also fall into this categorisation pre-BREXIT. What’s more these nations also hold high positions in this index and compete competitively against other prominent powers like the US, China, Canada and Israel. Furthermore, 9 out of the bottom 10 nations are nations in the “global south”. Albeit, in terms of this index they rank low as it pertains to their fiscal and monetary strengths, the picture changes substantially when looking at where these nations rank on the SICI.

An in-depth comparison for a nation on the different indices would be a valuable pursuit for any user who is looking to more deeply understand the nature of globalised power and how they can most take advantage of each nation’s unique characteristics.

For deeper and more varied insights on country comparisons, users can take advantage of our Ranking Advisory Services and Country Risk Reports. Email: info@pareto-economics.com for more information.
Services

The CoP Index provides a fundamentally new way of looking at world affairs and globalised power which is useful for an array of different users including for investors, researchers, educators, security and defence, foreign policy/government affairs etc.

As part of our vision to help global players better understand their world, Pareto Economics offers a range of products and services to help develop a more useful and in depth understanding of world affairs and globalised power for clients.

Below is a high-level view of the products and services we can offer as an extension to our Global Power Index.

<table>
<thead>
<tr>
<th>Public Speaking/Roundtables</th>
<th>Commissioned Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>This service is offered to organisations who are curious to learn more about the thinking behind the global power index and want to introduce the CoP concept to their teams. We deliver bespoke keynotes and interactive roundtables to the C-suit who want a more focused and exclusive discussion of how the GPI can help them and their organisations mission.</td>
<td>This offering helps to satisfy clients need for insights into a specific issue. Research can be commissioned by clients to typically answer one specific question or a range of questions. We first get a better understanding of the client’s knowledge gap and can also help formulate the research question with them.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CoP Country Risk Reports</th>
<th>Executive Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently available for 26 nations, our country reports provide a deep dive exploration of a specific nation and their unique CoP ranking. Using our CoP methodology, we explore where each nation ranks as well as the historical and contemporary conditions that have created their globalised power influence. We are also working on a series of country comparison and other thematic reports which we will be announcing in the future.</td>
<td>Our Executive Education programs are delivered for both executive, management and up and coming leaders to cater to the needs of the organisation and responsibilities of the group. These educational programs are usually delivered in a series of interactive seminars and workshops part of in-house training which give the opportunity for structured analysis and the free exploration of issues of related interest to clients.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CoP Strategic Advisory/Consulting</th>
<th>CoP Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>This service is offered to clients who want to develop a longer term and integrated relationship with us. Typically, our strategic advisory/consulting services are for clients who are going through a period of transformation of some kind and are looking to better understand how to effectively navigate unchartered or difficult to understand territory.</td>
<td>Our CoP Membership offers access to range of unique and original insights before anyone else, as well as access to our international experts, a mix of online and face to face engagements and the ability to learn from and engage with your contemporaries in the issues and topics that will most impact your business and industry.</td>
</tr>
</tbody>
</table>

We understand each client has different needs, which is why our insights are tailored, we do this to assemble the most unique and relevant insight for you and your teams so you can make more informed and confident decisions.

To contact our team please email: info@pareto-economics.com or visit https://pareto-economics.com