The Great Powers Index: 2024

How the Leading 24 Countries Are Doing and Their Prospects for the Next 10 Years

RAY DALIO

This report shows past and current levels of strength, health, and happiness, and projected 10-year real future growth rates for the 24 major countries.

Part 1 provides summaries of these findings for all 24 countries, Part 2 focuses on the highlights, and Part 3 provides summary descriptions of each of the 24 countries' circumstances. The appendix provides more granular measures.

[As of July 31, 2024.]

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PART 1: OVERVIEW

In this report I show, for each of 24 major countries, their 1) levels of strength as measured by a number of indicators showing different types of strength (e.g., GDP, share of world trade, education levels, military strength), **2) levels of health**, as measured by bodily health indices (e.g., life expectancy, child mortality rates, chronic diseases), **3) levels of happiness**, as measured by several measures (e.g., surveyed happiness and satisfaction with life, suicide rates, reported daily enjoyment), **and 4) projected economic growth prospects** as measured by real growth rates over the next 10 years. These indices are based on 21 gauges showing the types of measures, with each gauge being made up of several hundred indicators. **Besides being measures of well-being, these measures are also effective KPIs for measuring how well governments are doing to improve conditions.**

By showing and separating strength, health, and happiness, I hope to prompt thinking about their relative importance as well as to convey a richer picture than would otherwise be conveyed. I hope that will prompt people and their leaders to think about what they are going after (e.g., what mix of strength, health, happiness, and real economic growth) and how to get those things. The differences between them are often striking and pursuing one or some of these can be at the expense of others. For example, the United States, by our measure the strongest country, has only the 14th strongest projected growth rate based on long-term leading indicators of growth and ranks 10th and 14th in terms of happiness and health, respectively. While India has the highest projected real growth rate, it ranks 23rd in terms of health, and ranks last in terms of happiness. The United Kingdom, which ranks best on happiness, is the 8th strongest, the 6th healthiest, and the 15th best for expected growth. **The table below shows the total strength, health, happiness, and projected growth rates for the 24 major countries that I measure. The numbers speak for themselves, so I suggest you spend a couple of minutes scanning them.**

	Strength Gauge		Health Gauge	Happiness Gauge	Future Real Growth Estimate		Average
	Total	Per Capita			Total	Per Capita	
United States	0.89	0.71	1.33	0.98	1.4%	1.2%	1.12
China	0.80	0.30	1.27	1.20	4.0%	4.3%	1.28
Eurozone	0.56	0.43	2.15	0.88	0.2%	0.9%	0.80
Germany	0.38	0.54	2.06	0.85	-0.5%	0.6%	0.46
Japan	0.33	0.40	2.42	0.56	1.2%	1.9%	0.57
Korea	0.32	0.54	2.30	-0.16	1.8%	3.0%	0.40
India	0.30	0.07	-1.41	-0.55	6.3%	5.3%	-0.25
United Kingdom	0.29	0.46	2.29	1.65	1.3%	0.9%	0.77
France	0.27	0.45	2.19	0.98	0.9%	1.0%	0.51
Russia	0.26	0.28	0.04	0.00	2.9%	3.1%	-0.10
Singapore	0.24	0.89	2.45	0.48	2.6%	2.8%	0.58
Australia	0.23	0.56	2.27	1.27	2.1%	1.5%	0.67
Turkey	0.21	0.28	0.66	-0.06	4.0%	3.6%	0.08
Canada	0.21	0.50	2.21	1.21	1.2%	0.9%	0.53
Switzerland	0.19	0.66	2.34	1.30	0.2%	0.5%	0.48
Brazil	0.18	0.14	0.29	1.06	1.7%	1.6%	0.02
Netherlands	0.17	0.55	2.13	1.50	1.2%	1.4%	0.54
Indonesia	0.17	0.13	-0.36	1.58	5.5%	4.8%	0.32
Italy	0.17	0.31	2.22	0.83	-0.5%	0.6%	0.23
Spain	0.17	0.34	2.31	0.76	0.3%	1.0%	0.31
Saudi Arabia	0.15	0.45	1.14	0.54	4.6%	3.0%	0.32
Mexico	0.14	0.15	0.04	1.41	2.5%	1.7%	0.08
South Africa	0.10	0.12	-1.73	0.13	2.9%	1.9%	-0.72
Argentina	0.07	0.14	0.88	0.94	2.0%	1.2%	0.03

The strength gauge is reported as an index from 0 to 1 (higher = stronger power), the happiness/health gauges are reported as Z scores (higher = better), and the future real growth estimates are reported as annualized growth rates. The average columns shows an equal average of Z scores for strength, health, happiness, and expected growth.

These four gauges are aggregate indices made up of several sub-gauges, which are each based on many measures. They can be disaggregated to provide a more granular picture. For example, the strength gauge includes several measures of the size of the economy, the strength of its currency as a reserve currency, the strength of its capital markets, several measures of military strength, measures of internal and external order, levels of education, innovation and trade competitiveness, geographic advantages such as natural resources, investment in infrastructure, character and civility, and prevalence of the rule of law. Under each of these sub-categories that make up the aggregate, more granular pictures are gained by looking at the more granular measures, of which there are an average of 150 per country. **You can see the most important of these underlying elements in more detail on the next few pages. In the appendix, you can see the most important individual indicators across countries to see how they compare.** While there are a lot of numbers that one can choose to try to digest to get both big and detailed pictures of these 24 countries and their relationships with each other, in "Part 2: The Most Important Facts and Charts" and "Part 3: Country Summaries," you can get the highlights.

To be clear, these indices are broadly indicative rather than precise measures of the country as a whole. As I am constantly improving them, I expect to make them increasingly precise and to create an increasingly

granular picture geographically and by people's characteristics (e.g., by income quintile, education level, etc.). **I am constantly learning and incorporating my learnings into the updated versions of this report.** I first shared my computerized assessments of 11 major powers in my book, *Principles for Dealing with the Changing World Order*, and as promised in the book, I have been sharing my latest learnings each year. Building this system is a never-ending work in progress. I hope that you will join me in this process of learning, by evaluating my readings and giving me feedback when they sound inaccurate to you. I also hope that these objective measures will lead people to objectively assess policy makers' moves and that that will lead either to better policies or to better policy makers who will make better policies.

Next, I lay out how I am reading conditions in each major country today and then summarize notable shifts in recent years. The rest of this report goes into computer-generated summaries of each country and then much more detail on how each measure is constructed.

THE MAJOR DETERMINANTS ACROSS THE WORLD

The table below shows the major sub-categories as well as the aggregate gauge shown on the prior page. The arrows to the right of the numbers show whether it is improving or weakening. For example, at the top of the table is the total strength reading and the trend over the last 3 and 20 years, and below the top line numbers are gauges that show the major types of strength. The next major section of the table shows the projected next 10-year growth estimate, the numbers below it show the determinants of these estimates, and the arrows next to it show the trends. We finish with the well-being gauges and gauges showing where countries are in the "Three Big Cycles." While the table below might look like a bunch of numbers and arrows at first glance, when you get into it a clearer picture will emerge. **If you have questions and thoughts, you can drop them into the comments box, which will help us answer your questions and improve.**

In these measures of strength, I considered both quantity (i.e., total size) and quality (i.e., per capita). Because the data quality of the gauges measuring these factors varies, to convey that I indicate whether it's reliable or so-so. For each determinant below, the first column shows the determinant being measured. There are other determinants that aren't shown because they are either too subjective or too difficult to quantify (e.g., leadership). The rest of the columns show each country's score on each determinant, as well as the recent trend in that score. Where we do not have enough data to make a gauge or enough history to display an arrow, we show dashes to indicate no reading. I suggest that you take a few minutes to scan these tables, which paint a broad picture of what each of these countries and the world looks like. I know that there's a lot here to wade through so, if you prefer to skip, you can jump directly to "Part 2: The Most Important Facts and Charts" and then go to the country summaries that interest you in Part 3.

THE MAJOR DETERMINANTS ACROSS THE WORLD

CURRENT READINGS ACROSS MAJOR POWERS (Z-SCORE, 3YR AND 20YR CHANGE)

	Gauge Quality	Chg: Δ 3y Δ 20y United States	Δ 3y Δ 20y China	Δ 3y Δ 20y Eurozone	Δ 3y Δ 20y Germany	Δ 3y Δ 20y Japan	Δ 3y Δ 20y Korea	Δ 3y Δ 20y India	Δ 3y Δ 20y United Kingdom	Δ 3y Δ 20y France	Δ 3y Δ 20y Russia	Δ 3y Δ 20y Singapore	Δ 3y Δ 20y Australia
Strength Gauge (0-1)		**0.89**	**0.80**	**0.56**	**0.38**	**0.33**	**0.32**	**0.30**	**0.29**	**0.27**	**0.26**	**0.24**	**0.23**
Key Eight Measures of Power													
Education	Reliable	2.0	1.6	0.5	-0.3	0.1	0.2	-0.8	-0.1	-0.6	-0.7	-0.5	-0.3
Innovation and Technology	Reliable	1.9	1.8	0.2	-0.2	0.0	0.3	-1.1	-0.3	-0.4	-0.7	-0.5	-0.6
Competitiveness	Reliable	-0.4	1.0	-0.6	-0.8	0.0	0.1	2.4	-0.5	-0.7	0.9	0.1	-0.4
Military	Reliable	2.1	0.9	-0.1	-0.7	-0.4	-0.3	0.4	-0.1	-0.2	0.6	-1.1	-0.7
Trade	Reliable	1.3	1.7	1.2	0.5	-0.6	-0.7	-0.7	-0.5	-0.5	-1.0	-0.6	-1.1
Economic Output	Reliable	1.7	1.6	1.0	-0.2	-0.2	-0.9	0.1	-0.6	-0.6	-0.5	-1.5	-1.3
Financial Center	Reliable	2.7	0.2	0.4	-0.1	-0.1	-0.3	-0.6	0.0	-0.2	-1.3	-0.3	-0.3
Reserve Currency Status[3]	Reliable	1.9	-0.6	0.2	---	-0.4	-0.7	-0.7	-0.4	---	-0.7	-0.7	-0.6
Additional Measures of Power													
Geology	Reliable	1.6	0.6	-0.8	-0.6	-0.9	-0.8	0.2	-0.8	-0.5	2.0	-0.5	1.9
Resource Allocation Efficiency	So-So	2.0	0.7	-0.8	0.6	0.6	-0.1	0.2	-0.4	-1.3	-0.2	2.1	-0.4
Acts of Nature	So-So	-0.2	0.0	0.1	1.2	1.4	1.7	-2.4	0.4	-0.1	-0.1	-0.2	1.5
Infrastructure & Investment	Reliable	0.9	2.5	0.5	-0.4	-0.1	0.0	-0.4	-0.6	-0.3	-1.2	-0.2	-0.7
Character/Determination/Civility	So-So	1.1	1.4	-1.0	-0.5	0.2	0.9	1.4	-0.3	-1.5	0.3	2.7	0.2
Governance/Rule of Law	Reliable	0.7	-0.4	-0.5	0.7	0.8	-0.1	-1.2	1.0	0.4	-2.0	2.4	0.9
Future Growth Estimate	**Reliable**	**1.4%**	**4.0%**	**0.2%**	**-0.5%**	**1.2%**	**1.8%**	**6.3%**	**1.3%**	**0.9%**	**2.9%**	**2.6%**	**2.1%**
Working-Age Pop. Growth	**Reliable**	**0.2%**	**-0.4%**	**-0.7%**	**-1.1%**	**-0.8%**	**-1.2%**	**0.9%**	**0.4%**	**-0.1%**	**-0.3%**	**-0.2%**	**0.6%**
Growth Per Worker Estimate	**Reliable**	**1.2%**	**4.3%**	**0.9%**	**0.6%**	**1.9%**	**3.0%**	**5.3%**	**0.9%**	**1.0%**	**3.1%**	**2.8%**	**1.5%**
Productivity (income adjusted)	**Reliable**	**-0.2**	**2.3**	**-1.2**	**-1.0**	**0.4**	**0.9**	**4.5**	**-0.5**	**-1.2**	**1.2**	**1.4**	**-0.6**
What You Pay vs. What You Get	**Reliable**	**-0.5**	**1.6**	**-0.8**	**-1.0**	**0.1**	**0.2**	**3.5**	**-0.6**	**-0.8**	**1.4**	**0.2**	**-0.5**
Education	Reliable	-0.2	1.5	-0.9	-0.9	0.8	1.1	1.6	0.0	-1.4	1.4	0.9	-0.3
Labor Productivity	Reliable	-0.2	1.2	0.1	0.1	0.7	1.0	1.5	0.1	-0.2	1.4	1.0	-0.2
Working Hard	Reliable	-1.6	0.2	-2.0	-2.2	-1.3	-1.3	2.2	-1.5	-1.9	-0.3	-0.9	-1.6
Investing	Reliable	-0.6	1.6	-0.6	-0.7	0.0	-0.1	3.6	-0.9	-0.5	0.5	-0.2	-0.5
Culture	**Reliable**	**0.6**	**1.4**	**-0.6**	**0.0**	**0.5**	**1.3**	**2.0**	**0.2**	**-0.8**	**-0.2**	**2.2**	**-0.2**
Corruption	Reliable	-0.7	0.9	0.0	0.6	1.1	-0.8	3.8	0.6	0.1	-0.9	0.8	0.1
Bureaucracy	Reliable	1.4	3.0	0.5	1.3	1.6	1.3	3.9	1.9	0.7	1.8	3.0	0.9
Rule of Law	Reliable	0.5	1.4	-0.2	0.2	1.2	0.9	1.8	1.1	0.4	-0.3	2.4	0.6
Savoring Life vs. Achieving	Reliable	0.6	0.7	-1.6	-1.2	-0.5	0.3	0.9	-1.4	-2.5	-0.8	2.1	-0.7
Innovation	Reliable	2.1	2.0	0.2	1.5	1.1	6.0	1.2	0.7	0.0	-0.5	2.3	-1.0
Self Sufficiency	Reliable	0.0	0.6	-2.8	-2.3	-1.1	-0.2	0.4	-1.5	-3.6	-0.7	2.5	-1.2
Indebtedness	**Reliable**	**-1.3**	**-0.7**	**-1.1**	**-1.7**	**-1.3**	**-1.0**	**1.0**	**-1.9**	**-1.0**	**0.5**	**-0.9**	**0.0**
Wellbeing													
Happiness Index	Reliable	1.0	1.2	0.9	0.9	0.6	-0.2	-0.5	1.7	1.0	0.0	0.5	1.3
Health Index	So-So	1.3	1.3	2.2	2.1	2.4	2.3	-1.4	2.3	2.2	0.0	2.4	2.3
Three Big Cycles													
Economic/Financial Position	Reliable	-1.6	0.1	-0.9	-0.3	-0.9	0.1	1.0	-1.6	-1.1	0.0	0.2	-0.4
Debt Burden	Reliable	-1.9	-0.2	-0.4	0.8	-0.9	0.6	0.3	-1.9	-1.0	0.0	0.4	-0.4
Expected Growth	Reliable	-0.6	0.3	-1.0	-1.3	-0.7	-0.5	1.1	-0.7	-0.8	-0.1	-0.2	-0.4
Internal Order	So-So	-1.5	0.4	0.2	0.5	1.3	---	---	-0.6	0.4	-1.8	---	---
Wealth/Values Gap	So-So	-1.8	0.4	0.0	0.5	0.9	0.7	0.0	-0.1	0.8	-2.0	-2.1	0.6
Internal Conflict[1]	Reliable	-1.1	0.4	0.3	0.5	1.7	---	---	-1.1	0.0	-1.6	---	---
External Order[2]	So-So	-1.0	-1.0	0.2	---	0.3	---	---	0.3	---	-1.2	---	---

	Gauge Quality	Δ 3y Δ 20y Turkey	Δ 3y Δ 20y Canada	Δ 3y Δ 20y Switzerland	Δ 3y Δ 20y Brazil	Δ 3y Δ 20y Netherlands	Δ 3y Δ 20y Indonesia	Δ 3y Δ 20y Italy	Δ 3y Δ 20y Spain	Δ 3y Δ 20y Saudi Arabia	Δ 3y Δ 20y Mexico	Δ 3y Δ 20y South Africa	Δ 3y Δ 20y Argentina
Strength Gauge (0-1)		**0.21**	**0.21**	**0.19**	**0.18**	**0.17**	**0.17**	**0.17**	**0.17**	**0.15**	**0.14**	**0.10**	**0.07**
Key Eight Measures of Power													
Education	Reliable	-1.8	-0.3	-0.5	-1.3	-0.8	-1.8	-1.0	-0.9	-1.2	-1.5	-1.7	-1.8
Innovation and Technology	Reliable	-0.9	-0.7	-0.3	-1.0	-0.4	-1.2	-0.8	-0.9	-1.2	-1.3	-1.2	-1.2
Competitiveness	Reliable	1.1	-0.5	-1.2	0.7	-0.8	1.6	-0.6	-0.5	0.5	0.7	0.8	0.6
Military	Reliable	-0.5	-1.0	-2.0	-0.5	-1.7	-0.6	-0.5	-0.8	-0.7	-1.1	-1.2	-1.0
Trade	Reliable	-1.1	-0.8	-0.8	-1.1	-0.6	-1.2	-0.7	-0.9	-1.1	-0.8	-1.3	-1.3
Economic Output	Reliable	-0.7	-1.1	-1.4	-0.7	-1.4	-0.8	-0.8	-1.0	-1.2	-0.8	-1.2	-1.2
Financial Center	Reliable	-1.1	-0.3	-0.3	-0.8	-0.4	-1.0	-0.6	-0.6	-0.8	-1.1	-0.8	-1.2
Reserve Currency Status[3]	Reliable	-0.7	-0.6	-0.7	-0.7	---	-0.7	---	---	-0.7	-0.7	-0.7	-0.7
Additional Measures of Power													
Geology	Reliable	-0.6	0.7	-0.4	1.9	-0.4	0.4	-0.7	-0.5	0.3	-0.3	-0.2	-0.3
Resource Allocation Efficiency	So-So	-0.4	0.3	-0.4	-1.4	0.1	0.5	-2.2	-1.4	0.2	-0.4	-0.6	-2.2
Acts of Nature	So-So	-0.1	1.3	1.3	-2.4	0.5	-2.2	-1.0	-0.7	-1.8	-1.2	-2.1	-2.1
Infrastructure & Investment	Reliable	-0.4	-0.7	-0.2	-1.1	-0.4	-0.5	-0.7	-0.5	-0.6	-1.1	-1.0	-1.5
Character/Determination/Civility	So-So	-0.1	0.1	0.3	-0.9	-0.3	1.4	-1.4	-1.0	2.3	1.6	-0.5	-0.2
Governance/Rule of Law	Reliable	-1.2	0.6	1.2	-2.4	1.1	-1.4	-1.8	-0.7	0.5	-2.3	-1.5	-2.4
Future Growth Estimate	**Reliable**	**4.0%**	**1.2%**	**0.2%**	**1.7%**	**1.2%**	**5.5%**	**-0.5%**	**0.3%**	**4.6%**	**2.5%**	**2.9%**	**2.0%**
Working-Age Pop. Growth	**Reliable**	**0.4%**	**0.3%**	**-0.3%**	**0.1%**	**-0.2%**	**0.7%**	**-1.1%**	**-0.7%**	**1.6%**	**0.8%**	**1.0%**	**0.8%**
Growth Per Worker Estimate	**Reliable**	**3.6%**	**0.9%**	**0.5%**	**1.6%**	**1.4%**	**4.8%**	**0.6%**	**1.0%**	**3.0%**	**1.7%**	**1.9%**	**1.2%**
Productivity (income adjusted)	**Reliable**	**1.7**	**-0.8**	**-1.2**	**0.5**	**-0.7**	**3.1**	**-1.8**	**-1.3**	**1.2**	**0.8**	**1.1**	**0.4**
What You Pay vs. What You Get	**Reliable**	**1.7**	**-0.6**	**-1.6**	**1.1**	**-1.0**	**2.4**	**-0.7**	**-0.5**	**0.8**	**1.1**	**1.3**	**0.9**
Education	Reliable	1.1	0.1	-2.1	1.3	-1.5	1.5	-0.3	-0.1	0.7	1.3	---	1.2
Labor Productivity	Reliable	1.6	0.2	-1.6	1.3	-0.2	1.4	0.3	0.5	1.3	1.3	1.4	1.2
Working Hard	Reliable	-0.6	-1.6	-2.0	-0.8	-2.0	1.2	-2.0	-1.9	0.0	0.4	-0.7	0.1
Investing	Reliable	0.9	-0.9	-0.8	1.0	-0.6	2.6	-0.5	-0.4	0.3	0.0	1.4	0.0
Culture	**Reliable**	**0.1**	**-0.3**	**0.7**	**-1.2**	**0.5**	**1.3**	**-2.2**	**-1.4**	**0.7**	**-0.5**	**-0.3**	**-1.0**
Corruption	Reliable	0.3	0.2	0.1	-0.5	0.9	1.8	-1.5	-0.8	0.1	-1.3	0.5	0.0
Bureaucracy	Reliable	1.9	1.1	0.9	-1.5	1.1	2.5	-1.2	-0.1	2.4	0.6	1.3	-0.1
Rule of Law	Reliable	0.7	0.4	0.0	-0.6	0.2	1.1	-2.1	0.1	1.6	-0.5	1.5	-0.7
Savoring Life vs. Achieving	Reliable	-1.0	-0.9	-1.3	-2.2	-1.5	0.5	-2.0	-1.5	2.0	0.4	-1.5	-1.7
Innovation	Reliable	0.0	-1.4	4.5	-0.4	3.8	1.0	-2.6	-2.8	-3.4	-3.5	-1.7	-2.1
Self Sufficiency	Reliable	-1.4	-1.1	-0.2	-2.2	-1.5	0.9	-3.8	-3.3	1.6	1.2	-2.0	-1.2
Indebtedness	**Reliable**	**-0.3**	**-0.8**	**-1.0**	**-0.2**	**-0.9**	**1.6**	**-0.8**	**-0.7**	**0.8**	**0.3**	**0.4**	**-1.0**
Wellbeing													
Happiness Index	Reliable	-0.1	1.2	1.3	1.1	1.5	1.6	0.8	0.8	0.5	1.4	0.1	0.9
Health Index	So-So	0.7	2.2	2.3	0.3	2.1	-0.4	2.2	2.3	1.1	0.0	-1.7	0.9
Three Big Cycles													
Economic/Financial Position	Reliable	0.3	-0.6	-0.5	-0.5	-0.4	1.1	-1.1	-1.1	1.5	0.1	0.1	-0.7
Debt Burden	Reliable	0.2	-0.3	0.2	-0.3	0.0	0.7	-0.5	-0.9	1.7	0.4	0.2	-0.8
Expected Growth	Reliable	0.3	-0.7	-1.0	-0.5	-0.7	0.9	-1.3	-1.0	0.5	-0.2	-0.1	-0.4
Internal Order	So-So	---	---	---	---	0.8	---	---	0.3	---	---	---	---
Wealth/Values Gap	So-So	-1.1	0.5	-0.5	-1.8	0.7	0.6	0.5	0.6	-2.9	-2.4	-2.7	0.6
Internal Conflict[1]	Reliable	---	---	---	---	0.9	---	---	-0.1	---	---	---	---
External Order[2]	So-So	---	---	---	---	---	---	---	---	---	---	---	---

[1] *We are still working to expand our internal and external conflict determinants across all countries.*

[2] *External order based on external conflict gauge vs the global hegemon (USA) or rising power (CHN) as of Jan 2024.*

[3] *We did not give individual European countries reserve status scores.*

PER CAPITA READING ACROSS MAJOR POWER (SCORE, 3YR AND 20YR CHANGE)

	Gauge Quality	Chg: Δ 3y Δ 20y United States	Δ 3y Δ 20y China	Δ 3y Δ 20y Eurozone	Δ 3y Δ 20y Germany	Δ 3y Δ 20y Japan	Δ 3y Δ 20y Korea	Δ 3y Δ 20y India	Δ 3y Δ 20y United Kingdom	Δ 3y Δ 20y France	Δ 3y Δ 20y Russia	Δ 3y Δ 20y Singapore	Δ 3y Δ 20y Australia
Strength Gauge (0-1)		0.71	0.30	0.43	0.54	0.40	0.54	0.07	0.46	0.45	0.28	0.89	0.56
Key Eight Measures of Power (0-1)													
Education	Reliable	96%	56%	80%	82%	82%	89%	5%	89%	81%	61%	71%	89%
Innovation and Technology	Reliable	70%	54%	43%	60%	55%	70%	16%	43%	47%	24%	59%	51%
Competitiveness	Reliable	42%	56%	46%	57%	68%	81%	66%	50%	28%	78%	86%	47%
Military	Reliable	84%	6%	25%	21%	11%	56%	1%	26%	34%	41%	92%	37%
Trade	Reliable	32%	8%	37%	100%	29%	59%	0%	58%	59%	14%	100%	31%
Economic Output	Reliable	61%	16%	45%	52%	40%	42%	6%	44%	43%	26%	100%	48%
Financial Center	Reliable	100%	39%	34%	36%	49%	29%	5%	39%	45%	1%	39%	47%
Reserve Currency Status[3]	Reliable	83%	1%	33%	---	23%	1%	0%	41%	---	0%	7%	37%
Growth Per Worker Estimate	**Reliable**	**1.2%**	**4.3%**	**0.9%**	**0.6%**	**1.9%**	**3.0%**	**5.3%**	**0.9%**	**1.0%**	**3.1%**	**2.8%**	**1.5%**
Productivity (income adjusted)	**Reliable**	**-0.2**	**2.3**	**-1.2**	**-1.0**	**0.4**	**0.9**	**4.5**	**-0.5**	**-1.2**	**1.2**	**1.4**	**-0.6**
What You Pay vs. What You Get	**Reliable**	**-0.5**	**1.6**	**-0.8**	**-1.0**	**0.1**	**0.2**	**3.5**	**-0.6**	**-0.8**	**1.4**	**0.2**	**-0.5**
Education	Reliable	-0.2	1.5	-0.9	-0.9	0.8	1.1	1.6	0.0	-1.4	1.4	0.9	-0.3
Labor Productivity	Reliable	-0.2	1.2	0.1	0.1	0.7	1.0	1.5	0.1	-0.2	1.4	1.0	-0.2
Working Hard	Reliable	-1.6	0.2	-2.0	-2.2	-1.3	-1.3	2.2	-1.5	-1.9	-0.3	-0.9	-1.6
Investing	Reliable	-0.6	1.6	-0.6	-0.7	0.0	-0.1	3.6	-0.9	-0.5	0.5	-0.2	-0.5
Culture	**Reliable**	**0.6**	**1.4**	**-0.6**	**0.0**	**0.5**	**1.3**	**2.0**	**0.2**	**-0.8**	**-0.2**	**2.2**	**-0.2**
Corruption	Reliable	-0.7	0.9	0.0	0.6	1.1	-0.8	3.8	0.6	0.1	-0.9	0.8	0.1
Bureaucracy	Reliable	1.4	3.0	0.5	1.3	1.6	1.3	3.9	1.9	0.7	1.8	3.0	0.9
Rule of Law	Reliable	0.5	1.4	-0.2	0.2	1.2	0.9	1.8	1.1	0.4	-0.3	2.4	0.6
Savoring Life vs. Achieving	Reliable	0.6	0.7	-1.6	-1.2	-0.5	0.3	0.9	-1.4	-2.5	-0.8	2.1	-0.7
Innovation	Reliable	2.1	2.0	0.2	1.5	1.1	6.0	1.2	0.7	0.0	-0.5	2.3	-1.0
Self Sufficiency	Reliable	0.0	0.6	-2.8	-2.3	-1.1	-0.2	0.4	-1.5	-3.6	-0.7	2.5	-1.2
Indebtedness	**Reliable**	**-1.3**	**-0.7**	**-1.1**	**-1.7**	**-1.3**	**-1.0**	**1.0**	**-1.9**	**-1.0**	**0.5**	**-0.9**	**0.0**
Wellbeing													
Happiness Index	Reliable	1.0	1.2	0.9	0.9	0.6	-0.2	-0.5	1.7	1.0	0.0	0.5	1.3
Health Index	So-So	1.3	1.3	2.2	2.1	2.4	2.3	-1.4	2.3	2.2	0.0	2.4	2.3
Three Big Cycles													
Economic/Financial Position	Reliable	-1.6	0.1	-0.9	-0.3	-0.9	0.1	1.0	-1.6	-1.1	0.0	0.2	-0.4
Debt Burden	Reliable	-1.9	-0.2	-0.4	0.8	-0.9	0.6	0.3	-1.9	-1.0	0.0	0.4	-0.4
Expected Growth	Reliable	-0.6	0.3	-1.0	-1.3	-0.7	-0.5	1.1	-0.7	-0.8	-0.1	-0.2	-0.4
Internal Order	So-So	-1.5	0.4	0.2	0.5	1.3	---	---	-0.6	0.4	-1.8	---	---
Wealth/Values Gap	So-So	-1.8	0.4	0.0	0.5	0.9	0.7	0.0	-0.1	0.8	-2.0	-2.1	0.6
Internal Conflict[1]	Reliable	-1.1	0.4	0.3	0.5	1.7	---	---	-1.1	0.0	-1.6	---	---
External Order[2]	So-So	-1.0	-1.0	0.2	---	0.3	---	---	0.3	---	-1.2	---	---

	Gauge Quality	Δ 3y Δ 20y Turkey	Δ 3y Δ 20y Canada	Δ 3y Δ 20y Switzerland	Δ 3y Δ 20y Brazil	Δ 3y Δ 20y Netherlands	Δ 3y Δ 20y Indonesia	Δ 3y Δ 20y Italy	Δ 3y Δ 20y Spain	Δ 3y Δ 20y Saudi Arabia	Δ 3y Δ 20y Mexico	Δ 3y Δ 20y South Africa	Δ 3y Δ 20y Argentina
Strength Gauge (0-1)		0.28	0.50	0.66	0.14	0.55	0.13	0.31	0.34	0.45	0.15	0.12	0.14
Key Eight Measures of Power (0-1)													
Education	Reliable	37%	89%	83%	25%	76%	13%	63%	65%	45%	38%	30%	24%
Innovation and Technology	Reliable	37%	45%	69%	25%	65%	20%	31%	23%	26%	11%	17%	16%
Competitiveness	Reliable	75%	50%	38%	58%	53%	60%	49%	57%	56%	76%	56%	58%
Military	Reliable	16%	21%	18%	6%	25%	0%	28%	19%	100%	2%	0%	2%
Trade	Reliable	12%	68%	100%	4%	100%	2%	48%	46%	38%	17%	6%	6%
Economic Output	Reliable	29%	47%	68%	13%	55%	11%	40%	38%	45%	19%	12%	20%
Financial Center	Reliable	0%	52%	84%	2%	50%	0%	28%	31%	5%	1%	1%	0%
Reserve Currency Status[3]	Reliable	0%	28%	9%	0%	---	0%	---	---	1%	0%	0%	0%
Growth Per Worker Estimate	**Reliable**	**3.6%**	**0.9%**	**0.5%**	**1.6%**	**1.4%**	**4.8%**	**0.6%**	**1.0%**	**3.0%**	**1.7%**	**1.9%**	**1.2%**
Productivity (income adjusted)	**Reliable**	**1.7**	**-0.8**	**-1.2**	**0.5**	**-0.7**	**3.1**	**-1.8**	**-1.3**	**1.2**	**0.8**	**1.1**	**0.4**
What You Pay vs. What You Get	**Reliable**	**1.7**	**-0.6**	**-1.6**	**1.1**	**-1.0**	**2.4**	**-0.7**	**-0.5**	**0.8**	**1.1**	**1.3**	**0.9**
Education	Reliable	1.1	0.1	-2.1	1.3	-1.5	1.5	-0.3	-0.1	0.7	1.3	---	1.2
Labor Productivity	Reliable	1.6	0.2	-1.6	1.3	-0.2	1.4	0.3	0.5	1.3	1.3	1.4	1.2
Working Hard	Reliable	-0.6	-1.6	-2.0	-0.8	-2.0	1.2	-2.0	-1.9	0.0	0.4	-0.7	0.1
Investing	Reliable	0.9	-0.9	-0.8	1.0	-0.6	2.6	-0.5	-0.4	0.3	0.0	1.4	0.0
Culture	**Reliable**	**0.1**	**-0.3**	**0.7**	**-1.2**	**0.5**	**1.3**	**-2.2**	**-1.4**	**0.7**	**-0.5**	**-0.3**	**-1.0**
Corruption	Reliable	0.3	0.2	0.1	-0.5	0.9	1.8	-1.5	-0.8	0.1	-1.3	0.5	0.0
Bureaucracy	Reliable	1.9	1.1	0.9	-1.5	1.1	2.5	-1.2	-0.1	2.4	0.6	1.3	-0.1
Rule of Law	Reliable	0.7	0.4	0.0	-0.6	0.2	1.1	-2.1	0.1	1.6	-0.5	1.5	-0.7
Savoring Life vs. Achieving	Reliable	-1.0	-0.9	-1.3	-2.2	-1.5	0.5	-2.0	-1.5	2.0	0.4	-1.5	-1.7
Innovation	Reliable	0.0	-1.4	4.5	-0.4	3.8	1.0	-2.6	-2.8	-3.4	-3.5	-1.7	-2.1
Self Sufficiency	Reliable	-1.4	-1.1	-0.2	-2.2	-1.5	0.9	-3.8	-3.3	1.6	1.2	-2.0	-1.2
Indebtedness	**Reliable**	**-0.3**	**-0.8**	**-1.0**	**-0.2**	**-0.9**	**1.6**	**-0.8**	**-0.7**	**0.8**	**0.3**	**0.4**	**-1.0**
Wellbeing													
Happiness Index	Reliable	-0.1	1.2	1.3	1.1	1.5	1.6	0.8	0.8	0.5	1.4	0.1	0.9
Health Index	So-So	0.7	2.2	2.3	0.3	2.1	-0.4	2.2	2.3	1.1	0.0	-1.7	0.9
Three Big Cycles													
Economic/Financial Position	Reliable	0.3	-0.6	-0.5	-0.5	-0.4	1.1	-1.1	-1.1	1.5	0.1	0.1	-0.7
Debt Burden	Reliable	0.2	-0.3	0.2	-0.3	0.0	0.7	-0.5	-0.9	1.7	0.4	0.2	-0.8
Expected Growth	Reliable	0.3	-0.7	-1.0	-0.5	-0.7	0.9	-1.3	-1.0	0.5	-0.2	-0.1	-0.4
Internal Order	So-So	---	---	---	---	0.8	---	---	0.3	---	---	---	---
Wealth/Values Gap	So-So	-1.1	0.5	-0.5	-1.8	0.7	0.6	0.5	0.6	-2.9	-2.4	-2.7	0.6
Internal Conflict[1]	Reliable	---	---	---	---	0.9	---	---	-0.1	---	---	---	---
External Order[2]	So-So	---	---	---	---	---	---	---	---	---	---	---	---

Productivity (income adjusted), Culture, Wellbeing, and Three Big Cycles are inherently per capita concepts and are unchanged from the previous exhibit.

[1] *We are still working to expand our internal and external conflict determinants across all countries.*
[2] *External order based on external conflict gauge vs the global hegemon (USA) or rising power (CHN) as of Jan 2024.*
[3] *We did not give individual European countries reserve status scores.*

PART 2: THE MOST IMPORTANT FACTS AND CHARTS

There is an enormous amount of information in this study that allows you to go from granular pictures within each country up to an aggregate picture of each country and the relationships between countries. My aspiration is to put the whole dynamic thing online to allow for open-source exploration and contributions to what's here, but for various reasons I won't digress into I can't do that now. That leaves me with the challenge of trying to show you the highlights. To do that well, I will summarize the biggest forces and most important pictures as I see them.

To reiterate, my study of history has shown me that there are five big, interrelated influences that are driving the changing world order and that they tend to evolve in big cycles. In order of most concerning over the near term, they are:

1. how well the **internal order (system)** works within countries, especially the United States, to influence how well people within them work together,

2. how well the **world order (system)** works to influence how well countries work with one another,

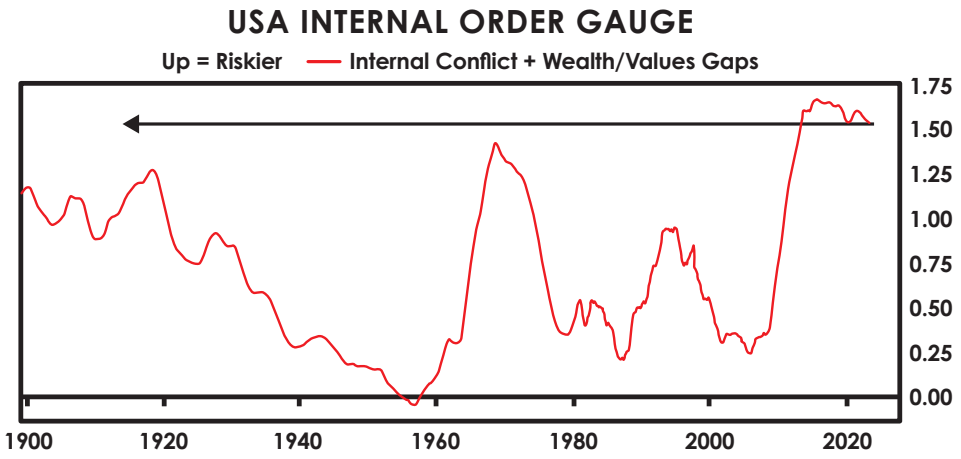
3. how well the **debt/money/economic system** works,

4. the force of **nature**, and

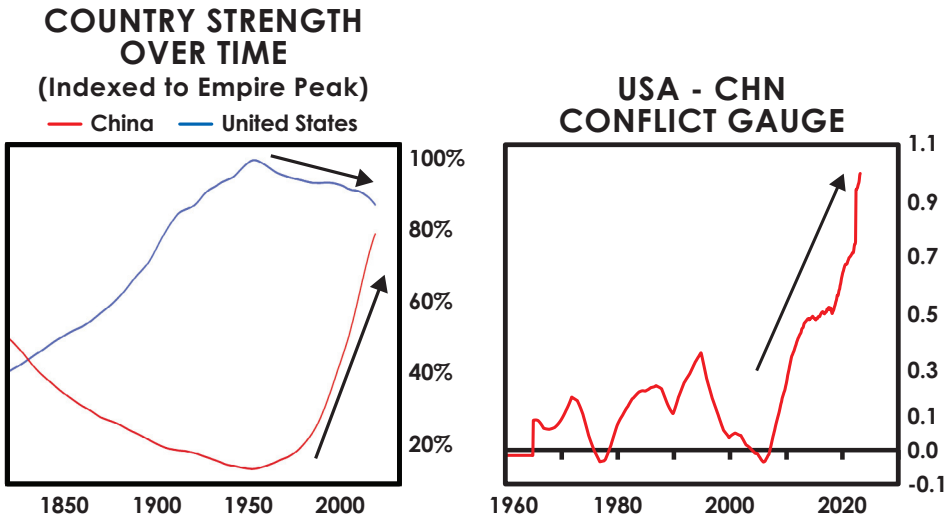
5. **how well humankind invents** and decides to use new and better approaches and technologies.

How these five forces work and interact with each other shapes what happens. In this study, I look at these forces through hundreds of individual indicators to build up a picture for the world and across each major country. **Before getting into the detailed assessment of each country, I will lay out how I'm seeing the big forces and how they've shifted in recent years.**

1. **I put the level of internal order first because it appears to be the biggest immediate risk. A few countries, most importantly the US, are experiencing classic big internal conflicts over wealth, values, and power, and those conflicts are increasing.** The chart below shows the US internal order gauge, which shows the highest level of internal conflict since the beginning of our data series in 1900. It appears that this will be the greatest near-term risk, which will come to a head over the next year with and after the election. For that reason, in a year from now we will know a lot more about how disruptive this risk will be.



2. **The international great power conflict risk appears to be the second greatest risk so I put it second. My measures show that the United States and China continue to be the two most powerful countries with high levels of conflict between them.** As shown in the chart to the left, the United States is measured as a bit stronger with China rising fast, and the chart on the right shows that the conflict between them is the highest on record.



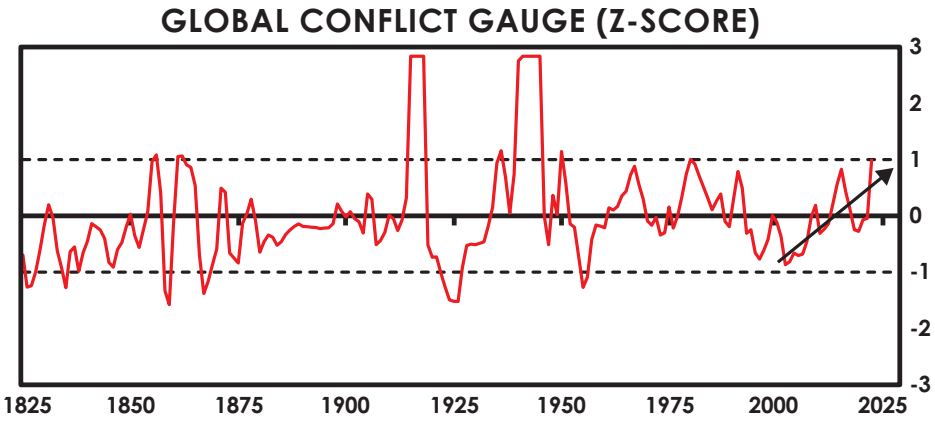
There are notable differences in the ways they are strong:

a. The United States has much bigger and more developed capital markets than any other country, the leading reserve currency, the strongest military, and the highest aggregate education rating because of its excellent universities. It is also the most innovative country and has the largest economy in the world. It also has large wealth gaps, high domestic conflict risks (shown below), high external conflict risks, and an unfavorable economic/financial position (high debts and low expected growth).

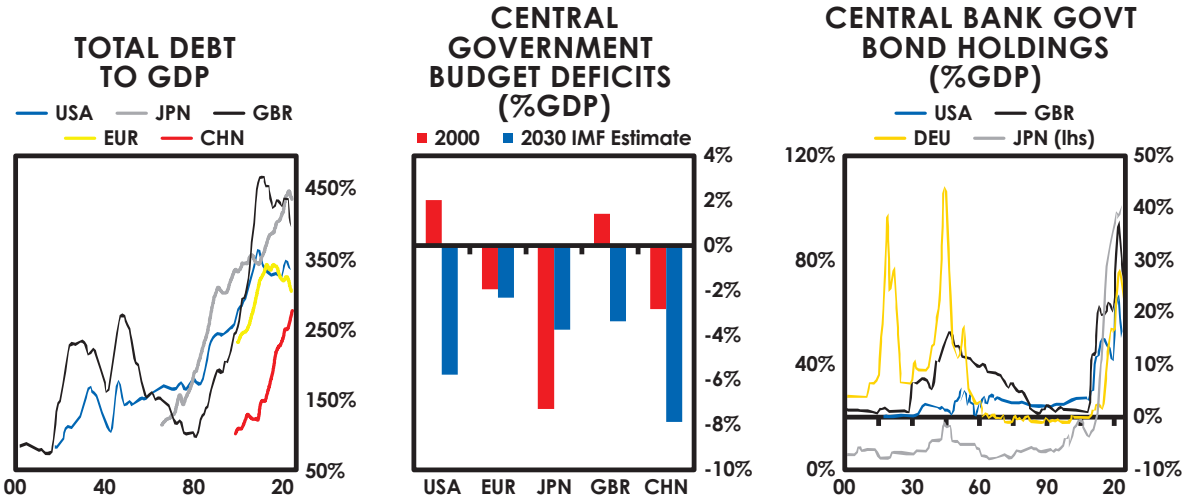
b. China has relatively high projected growth (we project 4.0% over the next 10 years compared to the US's 1.4%), the second largest economy, which is nearly as strong as the US economy, a nearly comparable military in Asia though it is much weaker globally, the highest rating on infrastructure, and it is

the largest exporter and trading partner of more countries than any other country and is excellent on innovation and education. China's main weaknesses are its relatively high risk of external conflict and high debt levels (netting high corporate and local government debts against low household debts and a favorable international investment position).

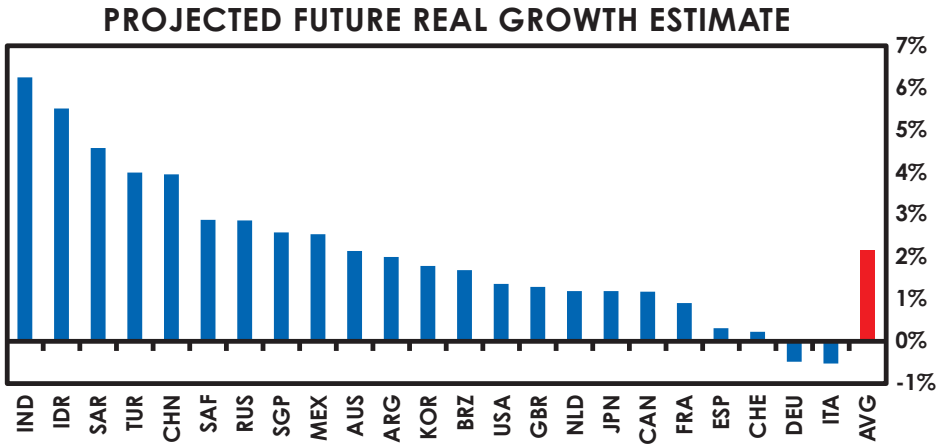
The US-China conflict is only a part of the growing world conflict that is reflected in the sides lining up in allied and axis powers. The next chart shows our global conflict gauge. It includes all countries and goes back to 1825. As shown, it is at moderately high levels versus history, comparable to the highest levels outside of World Wars I and II. It reflects both a high death toll and the flow of refugees from ongoing conflicts in Ukraine and Gaza, and increased military spending.



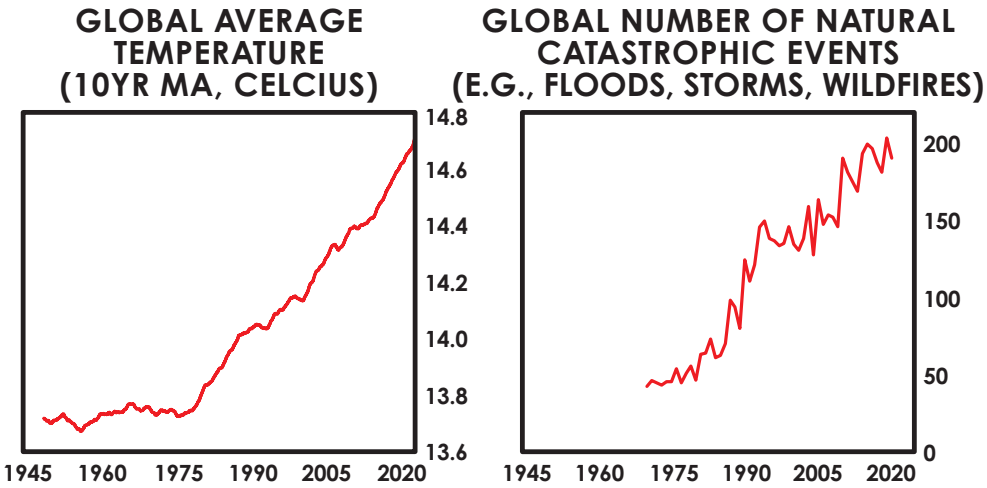
3. **In terms of the debt/money/economic force, all major governments are today more indebted than at any time since the end of World War II**, with large deficits and projected debt increases ahead, and central banks holding the greatest amount of government debt since World War II, due to inadequate private sector demand for government debt. See the chart on the left for debt levels. See the chart in the middle for projected budget deficits. Thus far, much of the debt has been absorbed by the central banks of each country (see chart on the right), with significant increases following the global financial crisis and the COVID crash.



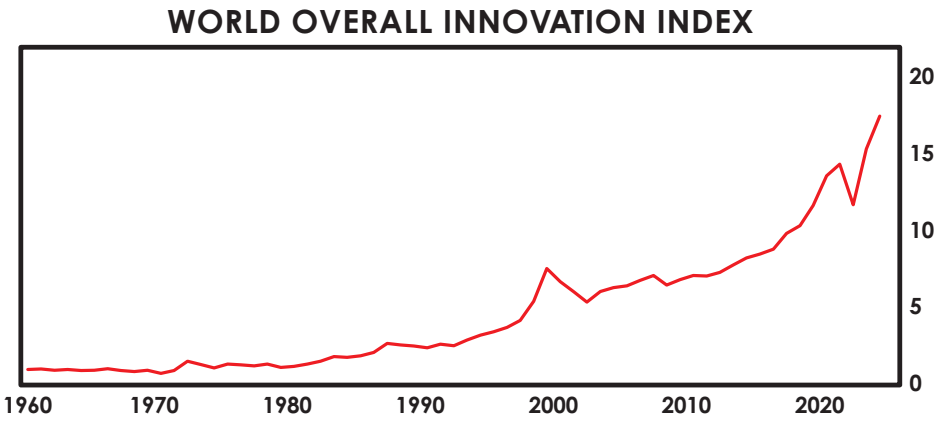
As for economic growth prospects, based on my leading indicators India is projected to see the strongest real growth over the next 10 years (about 6%), reflecting modest workforce growth (0.7-0.9%), competitive labor, high rates of investment, and favorable culture, **with Indonesia, Turkey, China, and Saudi Arabia following as the fastest growing of the major economies. The chart below shows my projected growth rates for these 24 countries. These estimates are based on the leading measures of growth shown in this report.**



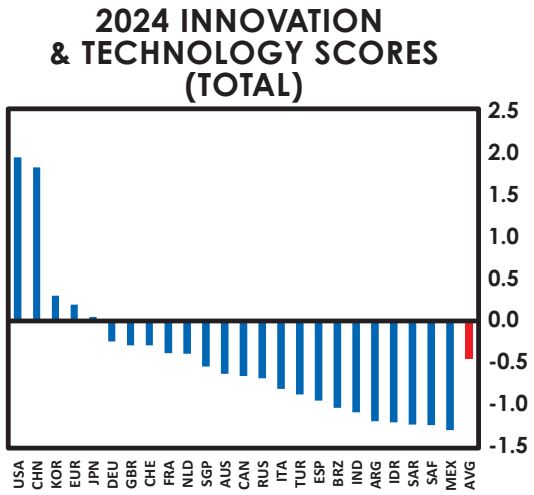
4. **Regarding the forces of nature (droughts, floods, and pandemics), clearly conditions are worsening. The world faces a rising trend of average temperatures and more natural disasters arising from them.**

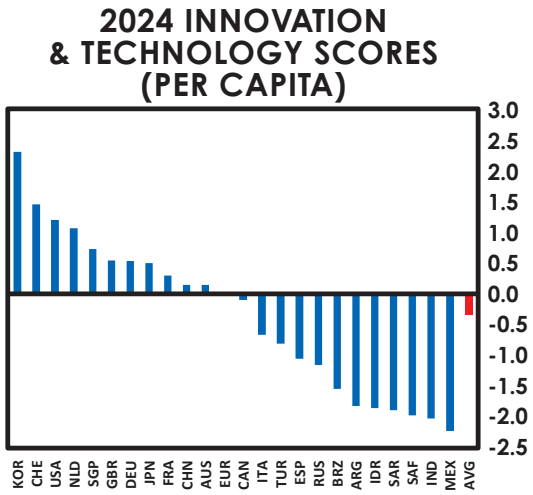


5. **As for the fifth force, inventiveness (especially of technological advancements to raise productivity and living standards) is the greatest force of humanity.** Revolutionary new technologies like AI have the potential to greatly raise understanding and productivity in virtually every activity or damage humankind if not handled well. My measure of that force of innovation is shown in the chart below. As shown and as one can clearly see in developments such as AI, it is accelerating.



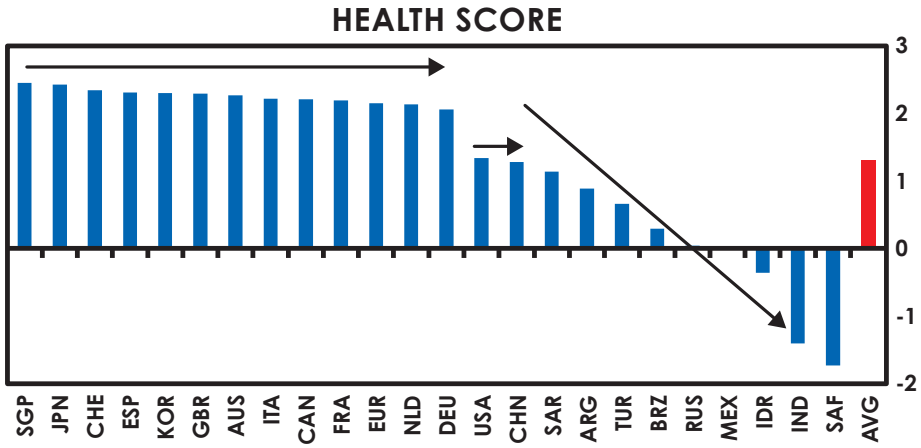
The charts below show where these innovations are happening, both on a total country basis (on the left) and on a per capita basis (on the right). As shown, while the United States and China dominate, several countries matter.



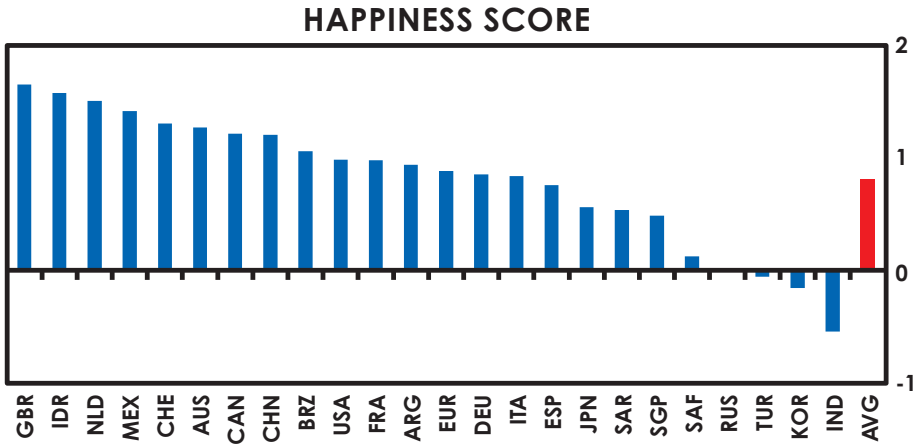


THE HEALTH AND HAPPINESS SCORES

My health scores are shown below for all 24 major countries. As shown, most of the developed countries except the United States have similar health scores (e.g., most have life expectancies of 83-85 years). **The United States (with an average life expectancy of 78) falls off, and other countries have significantly worse scores. Singapore, Japan, Switzerland, Spain, and Korea score highest on my measure of average health**, which considers factors including life expectancy, exposure to pollution, and homicide rates. **Notably, China is now about as healthy as the US, having closed the gap in the last decade.**



The happiness readings are shown below for all 24 major countries. The UK, Indonesia, Netherlands, Mexico, and Switzerland score highest on happiness, which includes measures like surveyed happiness and low suicide rates. China rates as happier than the US.



PART 3: COUNTRY SUMMARIES

What follows in Part 3 are brief reports on each of the 24 countries. These pages were created by "autotext," which is a computer-generated analysis. The information was reviewed to quality control it.

THE POWERS AND PROSPECTS OF THE UNITED STATES

This is our computer generated reading for the United States as of July 2024.

Based on the latest readings of key indicators, **the United States appears to be a strong power (#1 among major countries today) in gradual decline. As shown in the table below, the key strengths of the United States that put it in this position are its strong capital markets and financial center, its strong military, its high level of education, its reserve currency status, its innovation/technology, its high economic output, its importance to global trade, its effective allocation of labor and capital, and its wealth of natural resources. Its weaknesses are its unfavorable economic/financial position and its large domestic conflicts.** The eight major measures of power are very strong today but have, in aggregate, fallen slowly over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For the United States, **the big cycles look mostly unfavorable**.

The United States is in an unfavorable position in its economic and financial cycles, with a high debt burden and relatively low expected real growth over the next 10 years (1.4% per year). In the last 3 years, real growth has been 3.1% per year, above our longer-term expectations. Over the same time, the stock market in the United States has returned 20.6% above cash, outperforming the rest of the world (17.1%). Debt levels are high (265% of GDP across non-financial sectors). Breaking this down, government debt levels are high (123% of GDP); household debt levels are modest (67% of GDP); and non-financial corporate debt levels are modest (75% of GDP). The bulk (99%) of these debts are in its own currency, which mitigates its debt risks. The United States has significantly more foreign debts than foreign assets (net international investment position is -72% of GDP). The ability to use interest rate cuts to stimulate the economy is high (short rates at 5.4%). That said, being the world's leading reserve currency is a large benefit to the US. If this were to change, it would significantly weaken the US position.

Internal disorder is a high risk. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in the United States capture 20% and 47% of income (respectively the 6th and 8th highest share across major countries) and 35% and 71% of wealth (respectively the 7th and 6th highest share across major countries). Over the last decade, incomes for the top 10% grew 25% while incomes for the bottom 60% grew 30%. The relatively high income growth for the bottom 60% reduces the risks from inequality. Our internal conflict gauge is high and getting worse. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

External disorder is a risk. Most importantly, the United States and China, which is fast-rising and the #2 power (all things considered), are having significant conflict. One example of this is that 83% of Americans today have an unfavorable view of China (up from 45% in 2018).

Looking in more detail at the eight key measures of power—the United States has the largest capital markets and the strongest financial center among major countries. Its equity markets are a majority of the world total (64% of free-float market cap and 73% of volume), and a majority of global transactions happen in USD (62%). **In addition, the United States has the strongest military among major countries.** A large share (40%) of global military spending is by the United States, and it has a moderate share (7%) of the world's military personnel. **The United States also has the strongest position in education among major countries.** The United States has a large share of the world's bachelor's degrees (16%) and a large share of the world's doctorate degrees (26%). On years of education, the United States is good—students have on average 14.1 years of education vs 11.7 in the average major country. PISA scores, which measure the proficiency of 15-year-old students across countries, are around average—489 vs 479 in the average major country. On technology, 73.6% of the world's technology companies by value are listed in the United States while it comprises only 50.3% of the total global equity market cap. The United States also has a mix of other strengths, detailed in the table below.

Finally, we also assess broader well-being by looking at measures of happiness and health/safety. The United States scores modestly high on our happiness index (1.0z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores modestly high on our health index (1.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in the United States is 78 compared to a global average of 75.

UNITED STATES—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.89		Rank: 1	Getting Worse	Getting Worse
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Unfavorable	-1.6	24	Getting Worse	Flat
Debt Burden	High Debt	-1.9	24	Getting Worse	Getting Worse
Expected Growth	1.4%	-0.6	14	Getting Worse	Flat
Internal Order	High Risk	-1.5	9	Getting Worse	Getting Better
Wealth/Values Gap	Large	-1.8	19	Getting Worse	Getting Worse
Internal Conflict	High	-1.1	8	Getting Worse	Getting Better
External Order	At Risk	-1.0	-	Getting Worse	Getting Worse
Key Eight Measures of Power					
Financial Center	Very Strong	2.7	1	Flat	Getting Better
Military	Very Strong	2.1	1	Flat	Flat
Education	Very Strong	2.0	1	Getting Worse	Getting Worse
Reserve Currency Status	Very Strong	1.9	1	Flat	Flat
Innovation and Technology	Very Strong	1.9	1	Flat	Flat
Economic Output	Strong	1.7	1	Flat	Flat
Trade	Strong	1.3	2	Flat	Getting Better
Competitiveness	Average	-0.4	14	Flat	Getting Worse
Additional Measures of Power					
Infrastructure & Investment	Strong	0.9	2	Getting Worse	Getting Worse
Resource Allocation Efficiency	Very Strong	2.0	4	Flat	Getting Better
Geology	Strong	1.6	4	Flat	Flat
Character/Determination/Civility	Strong	1.1	7	Flat	Flat
Governance/Rule of Law	Strong	0.7	7	Flat	Flat
Acts of Nature	Average	-0.2	14	-	Getting Worse
Wellbeing					
Happiness Gauge	Moderate	1.0	10	-	Flat
Health Gauge	Good	1.3	14	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for the United States.

This computer-generated report is our best attempt to synthesize conditions in the United States. If anything sounds off, we'd love your comments.

THE UNITED STATES' PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that the United States's real growth rate over the next 10 years will be in the vicinity of 1.4%. This growth rate is somewhat below the global average, ranked 22nd out of 35 major economies, and 4th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In the United States's case, our growth estimate comes from combining our expectation of a 1.2% growth rate per worker, which is somewhat below the global average, and a labor force growth rate of 0.2%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect the United States's productivity growth to be about average compared to most major countries (implying a growth rate of 1.6% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 0.4% on its own). As shown below, the United States's biggest relative strengths are its level of innovation/commercialism and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and its monetary policy. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

UNITED STATES—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.4%**		**22**
Working-Age Population Growth	**0.2%**		**15**
Growth Per Worker Estimate	**1.2%**		**24**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**20**
What You Pay vs. What You Get	**45%**		**24**
Education	11%		25
Labor Productivity	11%		31
Working Hard	11%		26
Investing	11%		28
Culture	**20%**		**10**
Corruption	3%		28
Bureaucracy	3%		13
Rule of Law	3%		17
Savoring Life vs. Achieving	3%		6
Innovation	3%		6
Self Sufficiency	3%		8
Indebtedness	**35%**		**33**
Debt Levels and Flow	**18%**		**25**
Monetary Policy	**18%**		**29**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the United States

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

The United States offers somewhat worse than average value, ranked 24th of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing the United States's high levels of education (according to tertiary education rates) and about average quality of education (according to PISA test scores). Further, people in the United States don't work long hours relative to the cost of their labor—the average person of working age works 22.4 hours per week (15th out of 35 countries, and 22nd out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given the United States's very high per capita income levels, with investment at about 18% of GDP (22nd out of 35 countries). The United States's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 2.4% per year (vs. an average of +1% across the developed world). Investment in the United States is more productive than investment in other countries with similar levels of economic development, ranked 3rd out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

US culture appears to be a somewhat better than average contributor to growth in coming years, ranked 10th among the countries we measure. Note that our culture measures compare the United States to countries of similar levels of economic development. Starting with self-sufficiency, the United States is rated pretty well on this measure, weighing that its workers have a somewhat weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 40% of GDP and transfer payments to households of 22% of GDP), and its labor markets are very flexible. The United States also seems to value achieving a bit more than savoring —again, its work ethic is somewhat weak, but surveys suggest that its people highly value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat strong in the United States relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, the United States has somewhat low bureaucracy and red tape, somewhat high corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. The United States's indebtedness position is worse than other countries, ranked 33rd out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 337% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF CHINA

This is our computer generated reading for China as of July 2024.

Based on the latest readings of key indicators, **China appears to be a strong power (#2 among major countries today) in rapid ascent although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strengths of China that put it in this position are its infrastructure and investment, its importance to global trade, its innovation/technology, its high level of education, its high economic output, its people's self-sufficiency and strong work ethic, and its strong military.** The eight major measures of power are somewhat strong today and have, in aggregate, risen rapidly over the last 20 years. In particular, relative to its standing in the world 20 years ago, China's innovation and technology, its relative position in education, and its importance to global trade are strengthening. However, China's relative power over the last 3 years has been flat, most notably its status as a financial center declined and its importance to global trade and its reserve currency status are flat.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For China, **the big cycles look somewhat favorable in level terms though the economic and financial position has deteriorated over the last three years.**

China is in a somewhat favorable position in its economic and financial cycles, with a moderately high debt burden and moderate expected real growth over the next 10 years (4.0% per year). In the last 3 years, real growth has been 4.3% per year, around our longer-term expectations. Over the same time, the stock market in China has returned -41.8% below cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are high (281% of GDP across non-financial sectors). Breaking this down, central government debt levels are low (24% of GDP); local government debt levels are modest (57% of GDP); household debt levels are low (45% of GDP); and non-financial corporate debt levels (including local government financing vehicles) are high (155% of GDP). The bulk (98%) of these debts are in its own currency, which mitigates its debt risks. China has slightly more foreign assets than foreign debts (net international investment position is 16% of GDP). The ability to use interest rate cuts to stimulate the economy is low (short rates at 1.4%).

Internal disorder is a low risk as far as we can tell. However, our read of internal order is muddied by the fact that people have limited freedom of speech and ability to express their oppositions relative to most other countries. Wealth, income and values gaps are typical (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in China capture 15% and 43% of income (respectively the 10th and 12th highest share across major countries) and 32% and 68% of wealth (respectively the 9th and 7th highest share across major countries). Over the last decade, incomes for the top 10% grew 70% while incomes for the bottom 60% grew 84%. The relatively high income growth for the bottom 60% reduces the risks from inequality. Our internal conflict gauge is average (low conf. read) and getting better. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

External disorder is a risk. Most importantly, China and the United States, which is declining but remains the #1 power (all things considered), are having significant conflict. One example of this is that 83% of Americans today have an unfavorable view of China (up from 45% in 2018).

Looking in more detail at the eight key measures of power—China is the largest exporter among major countries. It exports 14% of global exports. **In addition, China has the second strongest reading on our measures of technology and innovation among major countries.** A majority (61%) of global patent applications, a large share (24%) of global R&D spending and a large share (24%) of global researchers are in China. **China also has the second strongest position in education among major countries.** China has a large share of the world's bachelor's degrees (16%) and a large share of the world's doctorate degrees (25%). These strengths in technology and education mean China is the most credible competition to the US in developing large-scale new technologies. China also has a mix of other strengths, detailed in the table below.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. China scores modestly high on our happiness index (1.2z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores modestly high on our health index (1.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in China is 79 compared to a global average of 75.

CHINA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.80		Rank: 2	Getting Better	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Somewhat Favorable	0.1	8	Getting Worse	Getting Worse
Debt Burden	Moderately High Debt	-0.2	13	Getting Worse	Getting Worse
Expected Growth	4.0%	0.3	5	Getting Worse	Getting Worse
Internal Order	Low Risk	0.4	5	Flat	Getting Better
Wealth/Values Gap	Typical	0.4	12	Flat	Flat
Internal Conflict	Average (low conf. read)	0.4	4	Getting Better	Getting Better
External Order	At Risk	-1.0	-	Getting Worse	Getting Worse
Key Eight Measures of Power					
Trade	Very Strong	1.7	1	Getting Better	Flat
Innovation and Technology	Very Strong	1.8	2	Getting Better	Getting Better
Education	Strong	1.6	2	Getting Better	Getting Better
Economic Output	Strong	1.6	2	Getting Better	Getting Better
Military	Strong	0.9	2	Getting Better	Flat
Financial Center	Average	0.2	3	Getting Better	Getting Worse
Competitiveness	Strong	1.0	4	Getting Worse	Flat
Reserve Currency Status	Weak	-0.6	6	Flat	Flat
Additional Measures of Power					
Infrastructure & Investment	Very Strong	2.5	1	Getting Better	Getting Better
Resource Allocation Efficiency	Strong	0.7	1	Flat	Getting Worse
Character/Determination/Civility	Strong	1.4	6	Flat	Flat
Geology	Strong	0.6	6	Flat	Flat
Governance/Rule of Law	Average	-0.4	13	Getting Better	Getting Better
Acts of Nature	Average	0.0	10	-	Getting Better
Wellbeing					
Happiness Gauge	Good	1.2	8	-	Getting Better
Health Gauge	Good	1.3	15	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for China.

This computer-generated report is our best attempt to synthesize conditions in China. If anything sounds off, we'd love your comments.

CHINA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that China's real growth rate over the next 10 years will be in the vicinity of 4.0%. This growth rate is well above the global average, ranked 6th out of 35 major economies, and 6th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In China's case, our growth estimate comes from combining our expectation of a 4.3% growth rate per worker, which is well above the global average, and a labor force growth rate of -0.4%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect China's productivity growth to be much better than most major countries (implying a growth rate of 5.0% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 3.1% on its own). As shown below, China's biggest relative strengths are its levels of investment and the value its workers provide relative to education levels, and its biggest relative problems are its debt and debt service levels and its monetary policy. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

CHINA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**4.0%**		**6**
Working-Age Population Growth	**-0.4%**		**25**
Growth Per Worker Estimate	**4.3%**		**4**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**3**
What You Pay vs. What You Get	**45%**		**5**
Education	11%		3
Labor Productivity	11%		16
Working Hard	11%		4
Investing	11%		3
Culture	**20%**		**4**
Corruption	3%		7
Bureaucracy	3%		4
Rule of Law	3%		7
Savoring Life vs. Achieving	3%		5
Innovation	3%		7
Self Sufficiency	3%		6
Indebtedness	**35%**		**18**
Debt Levels and Flow	**18%**		**21**
Monetary Policy	**18%**		**15**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on China

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

China offers much better than average value, ranked 5th of 35 countries we measure. Its workers are somewhat inexpensive, weighing China's low levels of education (according to tertiary education rates) and very good quality of education (according to PISA test scores). Further, people in China work very long hours relative to the cost of their labor—the average person of working age works 30.9 hours per week (7th out of 35 countries, and 5th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are high given China's low per capita income levels, with investment at about 32% of GDP (1st out of 35 countries). China's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a relatively fast rate of 6.9% per year (vs. an average of +1% across the emerging world). Investment in China is less productive as investment in other countries with similar levels of economic development, ranked 16th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Chinese culture appears to be a significant contributor to growth in coming years, ranked 4th among the countries we measure. Note that our culture measures compare China to countries of similar levels of economic development. Starting with self-sufficiency, China is rated pretty well on this measure, weighing that its workers have a roughly average work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 34% of GDP and transfer payments to households of 8% of GDP), and its labor markets are very flexible. China also seems to value savoring about the same as it values achieving—again, its work ethic is roughly average, but surveys suggest that its people value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat strong in China relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, China has very low bureaucracy and red tape, somewhat low corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. China's indebtedness position is about average compared to other countries, ranked 18th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 297% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was supported by high credit creation, which is restrictive for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF EUROZONE

This is our computer generated reading for Eurozone as of July 2024.

Based on the latest readings of key indicators, **Eurozone appears to be a strong power (#3 among major countries today) in gradual decline, although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strengths of Eurozone are its strong capital markets and financial center, its reserve currency status, its importance to global trade, its high economic output, its infrastructure and investment, and its high level of education. Its weaknesses are its people's lower than average work ethic and low self-sufficiency, its relative lack of natural resources, and its relatively expensive labor (on a quality-adjusted basis).** The eight major measures of power are somewhat strong today but have, in aggregate, fallen slowly over the past 20 years. In particular, the Eurozone's share of global output, its importance as a financial center, and its importance to global trade are declining.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Eurozone, **the big cycles look somewhat unfavorable**.

The Eurozone is in a moderately unfavorable position in its economic and financial cycles, with a moderately high debt burden and very low expected real growth over the next 10 years (0.3% per year). In the last 3 years, real growth has been 2.5% per year, above our longer-term expectations. Over the same time, the stock market in Eurozone has returned 26.2% above cash, outperforming the rest of the world (17.1%). Debt levels are high (252% of GDP across non-financial sectors). Breaking this down, government debt levels are high (106% of GDP); household debt levels are modest (53% of GDP); and non-financial corporate debt levels are modest (93% of GDP). The Eurozone has similar levels of foreign debts and foreign assets (net international investment position is 3% of GDP). The ability to use interest rate cuts to stimulate the economy is modest (short rates at 3.6%).

Internal disorder is a low risk. Wealth, income and values gaps are relatively large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in the Eurozone capture 12% and 36% of income (both the 16th highest share across major countries). Over the last decade, incomes for the top 10% grew 11% while incomes for the bottom 60% grew 13%. The relatively low income growth for the bottom 60% increases the risks from inequality. Our internal conflict gauge is average. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

Looking in more detail at the eight key measures of power—the Eurozone has the second largest capital markets and the second strongest financial center among major countries. Its equity markets are a moderate share of the world total (7% of free-float market cap and 4% of volume), and a large share of global transactions happen in EUR (18%). **In addition, the Eurozone has the second strongest reserve currency among major countries.** A large share of global currency reserves are in EUR (20%), and a large share of global debt is denominated in EUR (15%). **The Eurozone also is a relatively large exporter among major countries.** It exports 12% of global exports. The Eurozone also has a mix of other strengths, detailed in the table below.

We net this against its relatively expensive labor (on a quality-adjusted basis). Adjusted for worker quality, labor is somewhat more expensive than the global average. On technology, only 4.5% of the world's technology companies by value are listed in the Eurozone even though it comprises 8.9% of the total global equity market cap.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Eurozone scores modestly high on our happiness index (0.9z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.2z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Eurozone is 83 compared to a global average of 75.

This page reflects our estimate of the power of the Eurozone in aggregate. For most stats, we're using an aggregate across the eight major countries in the Eurozone. You can see how we get to our future growth read by referencing our detailed estimate pages for each of these countries.

EUROZONE—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.56		Rank: 3	Getting Worse	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	-0.9	18	Flat	Flat
Debt Burden	Moderately High Debt	-0.4	16	Getting Better	Getting Better
Expected Growth	0.3%	-1.0	21	Flat	Getting Worse
Internal Order	Low Risk	0.2	7	Getting Better	Getting Better
Wealth/Values Gap	Relatively Large	0.0	13	Getting Better	Getting Better
Internal Conflict	Average	0.3	5	Flat	Getting Better
External Order	-	0.2	-	Flat	Getting Worse
Key Eight Measures of Power					
Financial Center	Average	0.4	2	Flat	Getting Worse
Reserve Currency Status	Average	0.2	2	Flat	Getting Worse
Trade	Strong	1.2	3	Flat	Flat
Economic Output	Strong	1.0	3	Getting Worse	Getting Worse
Education	Average	0.5	3	Flat	Flat
Innovation and Technology	Average	0.2	4	Flat	Flat
Military	Average	-0.1	6	Flat	Flat
Competitiveness	Weak	-0.6	20	Flat	Flat
Additional Measures of Power					
Infrastructure & Investment	Strong	0.5	3	Flat	Flat
Governance/Rule of Law	Average	-0.5	14	-	Flat
Resource Allocation Efficiency	Weak	-0.8	18	Flat	Getting Better
Geology	Weak	-0.8	22	Flat	Getting Worse
Character/Determination/Civility	Weak	-1.0	22	Flat	Flat
Acts of Nature	Average	0.1	9	-	Getting Worse
Wellbeing					
Happiness Gauge	Moderate	0.9	13	-	Flat
Health Gauge	Excellent	2.2	11	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Eurozone.

This computer-generated report is our best attempt to synthesize conditions in the Eurozone. If anything sounds off, we'd love your comments.

THE POWERS AND PROSPECTS OF GERMANY

This is our computer generated reading for Germany as of July 2024.

Based on the latest readings of key indicators, **Germany appears to be a middle of the pack power (#4 among major countries today) on a flat trajectory. As shown in the table below, the key strength of Germany is its effective allocation of labor and capital. Its weaknesses are its relatively expensive labor (on a quality-adjusted basis), its relative lack of natural resources, and its relatively weak military.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Germany, **the big cycles look mixed**.

Germany is in a moderately unfavorable position in its economic and financial cycles, with a low debt burden but very low expected real growth over the next 10 years (-0.5% per year). In the last 3 years, real growth has been 0.8% per year, above our longer-term expectations. Over the same time, the stock market in Germany has returned 12.2% above cash, underperforming the rest of the world (17.1%). Debt levels are modest (188% of GDP across non-financial sectors). Breaking this down, government debt levels are modest (67% of GDP); household debt levels are modest (51% of GDP); and non-financial corporate debt levels are modest (69% of GDP). Germany's debts are largely in euros, which increases Germany's debt risks, since this is not a currency that Germany directly controls. Germany has significantly more foreign assets than foreign debts (net international investment position is 69% of GDP). The ability to use interest rate cuts to stimulate the economy is modest for the Eurozone (short rates are at 3.6%).

Internal disorder is a low risk. Wealth, income and values gaps are typical (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Germany capture 12% and 37% of income (respectively the 14th and 15th highest share across major countries) and 28% and 59% of wealth (respectively the 13th and 15th highest share across major countries). Over the last decade, incomes for the top 10% grew 13% while incomes for the bottom 60% grew 10%. The relatively low income growth for the bottom 60% increases the risks from inequality. Our internal conflict gauge is average. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

Looking in more detail at the eight key measures of power, we would call out its relatively expensive labor (on a quality-adjusted basis) and its relatively weak military. With labor cost, once we adjust for worker quality, labor is somewhat more expensive than the global average. A small share (3%) of global military spending is by Germany, and it has a small share (less than 1%) of the world's military personnel.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Germany scores modestly high on our happiness index (0.9z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.1z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Germany is 81 compared to a global average of 75.

GERMANY—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.38		Rank: 4	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	-0.3	11	Getting Better	Getting Worse
Debt Burden	Low Debt	0.8	2	Getting Better	Getting Better
Expected Growth	-0.5%	-1.3	23	Getting Worse	Getting Worse
Internal Order	Low Risk	0.5	3	Getting Worse	Flat
Wealth/Values Gap	Typical	0.5	11	Getting Worse	Flat
Internal Conflict	Average	0.5	3	Flat	Getting Worse
External Order	-	-	-	-	-
Key Eight Measures of Power					
Trade	Average	0.5	4	Getting Worse	Getting Worse
Economic Output	Average	-0.2	5	Getting Worse	Getting Worse
Financial Center	Average	-0.1	6	Flat	Flat
Innovation and Technology	Average	-0.2	6	Getting Worse	Getting Worse
Education	Average	-0.3	8	Flat	Flat
Military	Weak	-0.7	16	Flat	Flat
Competitiveness	Weak	-0.8	23	Flat	Getting Worse
Reserve Currency Status	-	-	-	-	-
Additional Measures of Power					
Resource Allocation Efficiency	Strong	0.6	2	Getting Better	Flat
Governance/Rule of Law	Strong	0.7	8	Flat	Flat
Infrastructure & Investment	Average	-0.4	11	Flat	Flat
Character/Determination/Civility	Average	-0.5	18	Flat	Getting Worse
Geology	Weak	-0.6	18	Flat	Getting Better
Acts of Nature	Strong	1.2	6	-	Getting Better
Wellbeing					
Happiness Gauge	Moderate	0.9	14	-	Flat
Health Gauge	Excellent	2.1	13	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Germany.

This computer-generated report is our best attempt to synthesize conditions in Germany. If anything sounds off, we'd love your comments.

GERMANY'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Germany's real growth rate over the next 10 years will be in the vicinity of -0.5%. This growth rate is well below the global average, ranked 34th out of 35 major economies, and 16th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Germany's case, our growth estimate comes from combining our expectation of a 0.6% growth rate per worker, which is well below the global average, and a labor force growth rate of -1.1%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Germany's productivity growth to be somewhat worse than most major countries (implying a growth rate of 1.1% on its own), and indebtedness conditions to be worse than other countries (implying a growth rate of -0.3% on its own). As shown below, Germany's biggest relative strengths are its level of innovation/commercialism and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

GERMANY—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**-0.5%**		**34**
Working-Age Population Growth	**-1.1%**		**33**
Growth Per Worker Estimate	**0.6%**		**34**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**29**
What You Pay vs. What You Get	**45%**		**33**
Education	11%		29
Labor Productivity	11%		27
Working Hard	11%		35
Investing	11%		30
Culture	**20%**		**17**
Corruption	3%		11
Bureaucracy	3%		16
Rule of Law	3%		21
Savoring Life vs. Achieving	3%		17
Innovation	3%		8
Self Sufficiency	3%		29
Indebtedness	**35%**		**34**
Debt Levels and Flow	**18%**		**27**
Monetary Policy	**18%**		**31**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Germany

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Germany offers much worse than average value, ranked 33rd of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing Germany's low levels of education (according to tertiary education rates) and about average quality of education (according to PISA test scores). Further, people in Germany don't work long hours relative to the cost of their labor—the average person of working age works 16.7 hours per week (32nd out of 35 countries, and 33rd out of 35 countries after adjusting for income), and the demographics of the workforce are very unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given Germany's high per capita income levels, with investment at about 16% of GDP (27th out of 35 countries). Germany's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 0.7% per year (vs. an average of +1% across the developed world). Investment in Germany is about as productive as investment in other countries with similar levels of economic development, ranked 14th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

German culture appears to be an around average contributor to growth in coming years, ranked 17th among the countries we measure. Note that our culture measures compare Germany to countries of similar levels of economic development. Starting with self-sufficiency, Germany is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 49% of GDP and transfer payments to households of 26% of GDP), and its labor markets are moderately flexible. Germany also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, but surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat strong in Germany relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, Germany has somewhat low bureaucracy and red tape, somewhat low corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Germany's indebtedness position is worse than other countries, ranked 34th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 245% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF JAPAN

This is our computer generated reading for Japan as of July 2024.

Based on the latest readings of key indicators, **Japan appears to be a middle of the pack power (#5 among major countries today) in decline although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strengths of Japan are its high internal order, its effective allocation of labor and capital, and its reserve currency status. Its key weakness is its relative lack of natural resources.** The eight major measures of power are mixed today and have, in aggregate, fallen over the last 20 years. In particular, relative to its standing in the world 20 years ago, Japan's share of global output, its importance to global trade, and its innovation and technology are declining. However, Japan's relative power over the last 3 years has been flat, most notably its competitiveness improved.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Japan, **the big cycles look mixed**.

Japan is in a moderately unfavorable position in its economic and financial cycles, with a moderately high debt burden and relatively low expected real growth over the next 10 years (1.2% per year). In the last 3 years, real growth has been 1.2% per year, around our longer-term expectations. Over the same time, the stock market in Japan has returned 51.2% above cash, meaningfully outperforming the rest of the world (17.1%). Debt levels are high (403% of GDP across non-financial sectors). Breaking this down, government debt levels are high (227% of GDP); household debt levels are modest (61% of GDP); and non-financial corporate debt levels are high (115% of GDP). The bulk (99%) of these debts are in its own currency, which mitigates its debt risks. Japan has significantly more foreign assets than foreign debts (net international investment position is 82% of GDP). The ability to use interest rate cuts to stimulate the economy is low (short rates at 0.1%).

Internal disorder is a low risk. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Japan capture 13% and 44% of income (respectively the 12th and 11th highest share across major countries) and 25% and 59% of wealth (both the 17th highest share across major countries). Over the last decade, incomes for the top 10% grew 3% while incomes for the bottom 60% grew 3%. The relatively low income growth for the bottom 60% increases the risks from inequality. Our internal conflict gauge is very low and getting better. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

Looking in more detail at the eight key measures of power—Japan has a relatively strong reserve currency. A moderate share of global currency reserves are in JPY (6%), and a moderately large share of global debt is denominated in JPY (10%).

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Japan scores modestly high on our happiness index (0.6z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.4z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Japan is 85 compared to a global average of 75.

JAPAN—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.33		Rank: 5	Getting Worse	Flat

The Big Cycles	Level	Z-Score	Rank	20y Trajectory	3y Trajectory
Economic/Financial Position	Moderately Unfavorable	-0.9	19	Flat	Getting Better
Debt Burden	Moderately High Debt	-0.9	20	Flat	Getting Better
Expected Growth	1.2%	-0.7	17	Getting Better	Getting Better
Internal Order	Low Risk	1.3	1	Getting Better	Flat
Wealth/Values Gap	Narrow	0.9	1	Getting Better	Flat
Internal Conflict	Very Low	1.7	1	Getting Better	Getting Worse
External Order	-	0.3	-	Flat	Getting Worse
Key Eight Measures of Power					
Reserve Currency Status	Average	-0.4	3	Flat	Flat
Education	Average	0.1	5	Flat	Flat
Innovation and Technology	Average	0.0	5	Getting Worse	Getting Worse
Financial Center	Average	-0.1	5	Getting Worse	Getting Worse
Economic Output	Average	-0.2	6	Getting Worse	Getting Worse
Trade	Weak	-0.6	7	Getting Worse	Getting Worse
Military	Average	-0.4	9	Flat	Flat
Competitiveness	Average	0.0	13	Getting Better	Getting Better
Additional Measures of Power					
Resource Allocation Efficiency	Strong	0.6	3	Flat	Getting Better
Infrastructure & Investment	Average	-0.1	5	Getting Worse	Flat
Governance/Rule of Law	Strong	0.8	6	Flat	Flat
Character/Determination/Civility	Average	0.2	11	Getting Worse	Getting Worse
Geology	Weak	-0.9	24	Flat	Getting Better
Acts of Nature	Strong	1.4	3	-	Getting Better
Wellbeing					
Happiness Gauge	Moderate	0.6	17	-	Flat
Health Gauge	Excellent	2.4	2	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Japan.

This computer-generated report is our best attempt to synthesize conditions in Japan. If anything sounds off, we'd love your comments.

JAPAN'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Japan's real growth rate over the next 10 years will be in the vicinity of 1.2%. This growth rate is somewhat below the global average, ranked 25th out of 35 major economies, and 7th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Japan's case, our growth estimate comes from combining our expectation of a 1.9% growth rate per worker, which is roughly in line with the global average, and a labor force growth rate of -0.8%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Japan's productivity growth to be about average compared to most major countries (implying a growth rate of 2.6% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 0.7% on its own). As shown below, Japan's biggest relative strengths are the value its workers provide relative to education levels and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

JAPAN—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.2%**		**25**
Working-Age Population Growth	**-0.8%**		**30**
Growth Per Worker Estimate	**1.9%**		**15**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**17**
What You Pay vs. What You Get	**45%**		**20**
Education	11%		17
Labor Productivity	11%		21
Working Hard	11%		19
Investing	11%		15
Culture	**20%**		**11**
Corruption	3%		4
Bureaucracy	3%		11
Rule of Law	3%		8
Savoring Life vs. Achieving	3%		10
Innovation	3%		10
Self Sufficiency	3%		15
Indebtedness	**35%**		**32**
Debt Levels and Flow	**18%**		**28**
Monetary Policy	**18%**		**28**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Japan

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Japan offers around average value, ranked 20th of 35 countries we measure. Its workers are somewhat inexpensive, especially taking into consideration Japan's somewhat high levels of education (according to tertiary education rates) and very good quality of education (according to PISA test scores). Further, people in Japan work an average number of hours relative to the cost of their labor—the average person of working age works 21.4 hours per week (19th out of 35 countries, and 20th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Japan's high per capita income levels, with investment at about 21% of GDP (14th out of 35 countries). Japan's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a relatively slow rate of 0.4% per year (vs. an average of +1% across the developed world). Investment in Japan is more productive than investment in other countries with similar levels of economic development, ranked 2nd out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Japanese culture appears to be a somewhat better than average contributor to growth in coming years, ranked 11th among the countries we measure. Note that our culture measures compare Japan to countries of similar levels of economic development. Starting with self-sufficiency, Japan is rated about average on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 42% of GDP and transfer payments to households of 24% of GDP), and its labor markets are moderately flexible. Japan also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, but surveys suggest that its people value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat strong in Japan relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, Japan has very low bureaucracy and red tape, somewhat low corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Japan's indebtedness position is worse than other countries, ranked 32nd out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 441% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, monetary policy in Japan is constrained.

THE POWERS AND PROSPECTS OF KOREA

This is our computer generated reading for Korea as of July 2024.

Based on the latest readings of key indicators, **Korea appears to be a middle of the pack power (#6 among major countries today) in gradual ascent, although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strength of Korea is its innovation/technology. Its weaknesses are its relative lack of natural resources, its relatively small economy, and its lack of reserve currency status**. The eight major measures of power are somewhat weak today but have, in aggregate, risen slowly over the last 20 years. In particular, Korea's share of global output, its innovation and technology, and its importance as a financial center are strengthening.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Korea, **the big cycles look mixed**.

Korea is in a somewhat favorable position in its economic and financial cycles, with a low debt burden but moderate expected real growth over the next 10 years (1.8% per year). In the last 3 years, real growth has been 2.7% per year, above our longer-term expectations. Over the same time, the stock market in Korea has returned -15.0% below cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are high (269% of GDP across non-financial sectors). Breaking this down, government debt levels are low (47% of GDP); household debt levels are modest (99% of GDP); and non-financial corporate debt levels are high (123% of GDP). The bulk (97%) of these debts are in its own currency, which mitigates its debt risks. Korea has modestly more foreign assets than foreign debts (net international investment position is 44% of GDP). The ability to use interest rate cuts to stimulate the economy is modest (short rates at 3.4%).

At this time, we do not have a read on internal disorder for Korea because we lack sufficient reliable data. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Korea capture 11% and 33% of income (both the 20th highest share across major countries) and 26% and 59% of wealth (respectively the 15th and 13th highest share across major countries).

Looking in more detail at the eight key measures of power—Korea has a relatively strong reading on our measures of technology and innovation. A moderate share (8%) of global patent applications, a moderate share (5%) of global R&D spending and a moderate share (5%) of global researchers are in Korea. On technology, 2.3% of the world's technology companies by value are listed in Korea while it comprises only 1.7% of the total global equity market cap.

We net this against its relatively small economy and its lack of reserve currency status. A small share of global currency reserves are in KRW (less than 1%), and a small share of global debt is denominated in KRW (less than 1%).

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Korea scores neutral on our happiness index (-0.2z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Korea is 84 compared to a global average of 75.

KOREA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.32		Rank: 6	Getting Better	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Somewhat Favorable	0.1	7	Getting Worse	Getting Worse
Debt Burden	Low Debt	0.6	4	Flat	Flat
Expected Growth	1.8%	-0.5	12	Getting Worse	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Narrow	0.7	4	Flat	Getting Better
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Innovation and Technology	Average	0.3	3	Getting Better	Getting Better
Education	Average	0.2	4	Flat	Flat
Military	Average	-0.3	8	Flat	Flat
Financial Center	Average	-0.3	10	Flat	Getting Better
Competitiveness	Average	0.1	12	Flat	Getting Better
Trade	Weak	-0.7	12	Flat	Getting Worse
Reserve Currency Status	Weak	-0.7	15	-	Flat
Economic Output	Weak	-0.9	15	Getting Better	Getting Better
Additional Measures of Power					
Infrastructure & Investment	Average	0.0	4	Flat	Flat
Character/Determination/Civility	Strong	0.9	8	Getting Worse	Getting Worse
Resource Allocation Efficiency	Average	-0.1	10	Getting Worse	Getting Worse
Governance/Rule of Law	Average	-0.1	12	Getting Better	Getting Better
Geology	Weak	-0.8	23	Flat	Getting Worse
Acts of Nature	Very Strong	1.7	1	-	Getting Better
Wellbeing					
Happiness Gauge	Moderate	-0.2	23	-	Flat
Health Gauge	Excellent	2.3	5	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Korea.

This computer-generated report is our best attempt to synthesize conditions in Korea. If anything sounds off, we'd love your comments.

SOUTH KOREA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that South Korea's real growth rate over the next 10 years will be in the vicinity of 1.8%. This growth rate is roughly at the global average, ranked 20th out of 35 major economies, and 3rd out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In South Korea's case, our growth estimate comes from combining our expectation of a 3.0% growth rate per worker, which is somewhat above the global average, and a labor force growth rate of -1.2%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect South Korea's productivity growth to be somewhat better than most major countries (implying a growth rate of 3.6% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.8% on its own). As shown below, South Korea's biggest relative strengths are its level of innovation/commercialism and the value its workers provide relative to education levels, and its biggest relative problems are its debt and debt service levels and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

SOUTH KOREA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.8%**		**20**
Working-Age Population Growth	**-1.2%**		**35**
Growth Per Worker Estimate	**3.0%**		**9**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**12**
What You Pay vs. What You Get	**45%**		**18**
Education	11%		13
Labor Productivity	11%		18
Working Hard	11%		20
Investing	11%		19
Culture	**20%**		**6**
Corruption	3%		29
Bureaucracy	3%		15
Rule of Law	3%		11
Savoring Life vs. Achieving	3%		9
Innovation	3%		1
Self Sufficiency	3%		10
Indebtedness	**35%**		**31**
Debt Levels and Flow	**18%**		**19**
Monetary Policy	**18%**		**26**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on South Korea

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

South Korea offers around average value, ranked 18th of 35 countries we measure. Its workers are somewhat inexpensive, especially taking into consideration South Korea's high levels of education (according to tertiary education rates) and very good quality of education (according to PISA test scores). Further, people in South Korea work an average number of hours relative to the cost of their labor—the average person of working age works 25.7 hours per week (8th out of 35 countries, and 15th out of 35 countries after adjusting for income), although the demographics of the workforce are very unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given South Korea's high per capita income levels, with investment at about 29% of GDP (2nd out of 35 countries). South Korea's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 3.2% per year (vs. an average of +1% across the developed world). Investment in Korea is about as productive as investment in other countries with similar levels of economic development, ranked 10th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

South Korean culture appears to be a significant contributor to growth in coming years, ranked 6th among the countries we measure. Note that our culture measures compare South Korea to countries of similar levels of economic development. Starting with self-sufficiency, South Korea is rated about average on this measure, weighing that its workers have a somewhat weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is low (with government outlays of 26% of GDP and transfer payments to households of 14% of GDP), and its labor markets are moderately flexible. South Korea also seems to value savoring about the same as it values achieving—again, its work ethic is somewhat weak, but surveys suggest that its people value accomplishment and achievement. Furthermore, innovation and commercialism are very strong in South Korea relative to income. We see the country investing very heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, South Korea has somewhat low bureaucracy and red tape, somewhat high corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. South Korea's indebtedness position is worse than other countries, ranked 31st out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 266% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF INDIA

This is our computer generated reading for India as of July 2024.

Based on the latest readings of key indicators, **India appears to be a middle of the pack power (#7 among major countries today) in ascent, although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strengths of India are its strong economic and financial position, its cost-competitive labor (on a quality-adjusted basis), and its people's self-sufficiency and strong work ethic. Its weaknesses are its bad reading on innovation and technology, its corruption and inconsistent rule of law, and its lack of reserve currency status.** The eight major measures of power are mixed today but have, in aggregate, risen over the last 20 years. In particular, India's innovation and technology, its importance as a financial center, and its relative military strength are strengthening.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For India, **the big cycles look somewhat favorable, though we have a limited read.**

India is in a highly favorable position in its economic and financial cycles, with a low debt burden and high expected real growth over the next 10 years (6.3% per year). In the last 3 years, real growth has been 6.0% per year, around our longer-term expectations. Over the same time, the stock market in India has returned 36.0% above cash, meaningfully outperforming the rest of the world (17.1%). Debt levels are modest (178% of GDP across non-financial sectors). Breaking this down, government debt levels are modest (84% of GDP); household debt levels are low (38% of GDP); and non-financial corporate debt levels are modest (56% of GDP). The bulk (95%) of these debts are in its own currency, which mitigates its debt risks. India has slightly more foreign debts than foreign assets (net international investment position is -11% of GDP).

At this time, we do not have a read on internal disorder for India because we lack sufficient reliable data. Wealth, income and values gaps are relatively large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in India capture 22% and 57% of income (respectively the 3th and 4th highest share across major countries) and 32% and 64% of wealth (respectively the 8th and 9th highest share across major countries). Over the last decade, incomes for the top 10% grew 52% while incomes for the bottom 60% grew 83%. The relatively high income growth for the bottom 60% reduces the risks from inequality. A wide wealth gap is less concerning in a fast growing country like India because the fast growth can create rising prosperity for all.

Looking in more detail at the eight key measures of power—India has the cheapest labor among major countries. Adjusted for worker quality, labor is significantly cheaper than the global average.

We net this against its bad reading on innovation and technology and its lack of reserve currency status. With innovation and technology—a small share (less than 1%) of global patent applications, a small share (2%) of global R&D spending and a moderate share (2%) of global researchers are in India. A small share of global currency reserves are in INR (less than 1%), and a small share of global debt is denominated in INR (2%). On technology, only 0.8% of the world's technology companies by value are listed in India even though it comprises 4.9% of the total global equity market cap.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. India scores modestly low on our happiness index (-0.5z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores modestly low on our health index (-1.4z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in India is 68 compared to a global average of 75.

INDIA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.30		Rank: 7	Getting Better	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Highly Favorable	1.0	3	Getting Worse	Getting Worse
Debt Burden	Low Debt	0.3	7	Flat	Getting Worse
Expected Growth	6.3%	1.1	1	Getting Worse	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Relatively Large	0.0	14	Getting Worse	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Very Strong	2.4	1	Flat	Getting Worse
Military	Average	0.4	4	Getting Better	Flat
Economic Output	Average	0.1	4	Flat	Flat
Trade	Weak	-0.7	11	Flat	Getting Better
Financial Center	Weak	-0.6	15	Getting Better	Getting Better
Education	Weak	-0.8	15	Flat	Getting Better
Reserve Currency Status	Weak	-0.7	19	Flat	Flat
Innovation and Technology	Weak	-1.1	19	Getting Better	Getting Better
Additional Measures of Power					
Character/Determination/Civility	Strong	1.4	5	Getting Better	Getting Better
Resource Allocation Efficiency	Average	0.2	7	Getting Better	Getting Worse
Geology	Average	0.2	9	Flat	Getting Worse
Infrastructure & Investment	Average	-0.4	9	Getting Better	Flat
Governance/Rule of Law	Weak	-1.2	16	Flat	Getting Worse
Acts of Nature	Very Weak	-2.4	23	-	Getting Better
Wellbeing					
Happiness Gauge	Low	-0.5	24	-	Flat
Health Gauge	Low	-1.4	23	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for India.

This computer-generated report is our best attempt to synthesize conditions in India. If anything sounds off, we'd love your comments.

INDIA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that India's real growth rate over the next 10 years will be in the vicinity of 6.3%. This growth rate is well above the global average, ranked 1st out of 35 major economies, and 1st out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In India's case, our growth estimate comes from combining our expectation of a 5.3% growth rate per worker, which is well above the global average, and a labor force growth rate of 0.9%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect India's productivity growth to be much better than most major countries (implying a growth rate of 6.1% on its own), and indebtedness conditions to be slightly better than other countries (implying a growth rate of 3.8% on its own). As shown below, India's biggest relative strengths are its levels of investment and how hard its people work, and its biggest relative problems are its debt and debt service levels and its reliance on credit flows for growth (though compared to other countries it doesn't rate especially poorly on these measures). The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

INDIA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**6.3%**		**1**
Working-Age Population Growth	**0.9%**		**3**
Growth Per Worker Estimate	**5.3%**		**1**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**1**
What You Pay vs. What You Get	**45%**		**1**
Education	11%		1
Labor Productivity	11%		2
Working Hard	11%		1
Investing	11%		1
Culture	**20%**		**2**
Corruption	3%		1
Bureaucracy	3%		1
Rule of Law	3%		3
Savoring Life vs. Achieving	3%		4
Innovation	3%		9
Self Sufficiency	3%		7
Indebtedness	**35%**		**4**
Debt Levels and Flow	**18%**		**9**
Monetary Policy	**18%**		**2**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on India

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

India offers much better than average value, ranked 1st of 35 countries we measure. Its workers are very inexpensive, even taking into consideration India's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in India work very long hours relative to the cost of their labor—the average person of working age works 32.5 hours per week (4th out of 35 countries, and 1st out of 35 countries after adjusting for income), and the demographics of the workforce are favorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are high given India's very low per capita income levels, with investment at about 16% of GDP (24th out of 35 countries). India's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a relatively fast rate of 5.6% per year (vs. an average of +1% across the emerging world). Investment in India is more productive than investment in other countries with similar levels of economic development, ranked 8th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Indian culture appears to be a significant contributor to growth in coming years, ranked 2nd among the countries we measure. Note that our culture measures compare India to countries of similar levels of economic development. Starting with self-sufficiency, India is rated pretty well on this measure, weighing that its workers have a somewhat weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 29% of GDP and transfer payments to households of 5% of GDP), and its labor markets are very flexible. India also seems to value savoring about the same as it values achieving—again, its work ethic is somewhat weak, but surveys suggest that its people highly value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat strong in India relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, India has very low bureaucracy and red tape, very low corruption, and very strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. India's indebtedness position is better than other countries, ranked 4th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a bit of room to lever up in the future. The total debt burden is around 136% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally neutral.

THE POWERS AND PROSPECTS OF UNITED KINGDOM

This is our computer generated reading for United Kingdom as of July 2024.

Based on the latest readings of key indicators, **United Kingdom appears to be a middle of the pack power (#8 among major countries today) on a flat trajectory. As shown in the table below, the key weaknesses of United Kingdom are its unfavorable economic/financial position, its relative lack of natural resources, its relatively expensive labor (on a quality-adjusted basis), and its poor infrastructure and low investment.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For United Kingdom, **the big cycles look mostly unfavorable**.

The UK is in an unfavorable position in its economic and financial cycles, with a high debt burden and relatively low expected real growth over the next 10 years (1.3% per year). In the last 3 years, real growth has been 3.3% per year, above our longer-term expectations. Over the same time, the stock market in United Kingdom has returned 21.8% above cash, in line with the rest of the world (17.1%). Debt levels are high (244% of GDP across non-financial sectors). Breaking this down, government debt levels are high (103% of GDP); household debt levels are modest (78% of GDP); and non-financial corporate debt levels are modest (63% of GDP). The bulk (92%) of these debts are in its own currency, which mitigates its debt risks. The UK has modestly more foreign debts than foreign assets (net international investment position is -27% of GDP). The ability to use interest rate cuts to stimulate the economy is high (short rates at 5.1%).

Internal disorder is a moderate risk. Wealth, income and values gaps are relatively large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in United Kingdom capture 12% and 36% of income (respectively the 15th and 17th highest share across major countries) and 21% and 57% of wealth (respectively the 22nd and 20th highest share across major countries). Our internal conflict gauge is high and getting worse. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

Looking in more detail at the eight key measures of power, we would call out its relatively expensive labor (on a quality-adjusted basis). Adjusted for worker quality, labor is somewhat more expensive than the global average.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. The United Kingdom scores high on our happiness index (1.7z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in the United Kingdom is 82 compared to a global average of 75.

UNITED KINGDOM—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.29		Rank: 8	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Unfavorable	-1.6	23	Getting Worse	Getting Worse
Debt Burden	High Debt	-1.9	23	Getting Worse	Getting Worse
Expected Growth	1.3%	-0.7	15	Flat	Getting Worse
Internal Order	Moderate Risk	-0.6	8	Getting Worse	Getting Worse
Wealth/Values Gap	Relatively Large	-0.1	15	Getting Worse	Flat
Internal Conflict	High	-1.1	9	Getting Worse	Getting Worse
External Order	-	0.3	-	Flat	Getting Worse
Key Eight Measures of Power					
Financial Center	Average	0.0	4	Getting Worse	Flat
Reserve Currency Status	Average	-0.4	4	Flat	Flat
Military	Average	-0.1	5	Flat	Flat
Trade	Average	-0.5	5	Flat	Flat
Education	Average	-0.1	6	Flat	Flat
Innovation and Technology	Average	-0.3	7	Flat	Getting Better
Economic Output	Weak	-0.6	8	Flat	Flat
Competitiveness	Weak	-0.5	18	Flat	Getting Worse
Additional Measures of Power					
Governance/Rule of Law	Strong	1.0	4	Flat	Getting Worse
Resource Allocation Efficiency	Average	-0.4	12	Flat	Getting Worse
Character/Determination/Civility	Average	-0.3	16	Flat	Flat
Infrastructure & Investment	Weak	-0.6	16	Flat	Getting Better
Geology	Weak	-0.8	21	Flat	Flat
Acts of Nature	Average	0.4	8	-	Getting Worse
Wellbeing					
Happiness Gauge	Good	1.7	1	-	Flat
Health Gauge	Excellent	2.3	6	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for the United Kingdom.

This computer-generated report is our best attempt to synthesize conditions in the United Kingdom. If anything sounds off, we'd love your comments.

THE UNITED KINGDOM'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that the United Kingdom's real growth rate over the next 10 years will be in the vicinity of 1.3%. This growth rate is somewhat below the global average, ranked 23rd out of 35 major economies, and 5th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In the United Kingdom's case, our growth estimate comes from combining our expectation of a 0.9% growth rate per worker, which is well below the global average, and a labor force growth rate of 0.4%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect the United Kingdom's productivity growth to be somewhat worse than most major countries (implying a growth rate of 1.6% on its own), and indebtedness conditions to be worse than other countries (implying a growth rate of -0.4% on its own). As shown below, the United Kingdom's biggest relative strengths are its level of bureaucracy and its rule of law, and its biggest relative problems are its debt and debt service levels and its monetary policy. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

UNITED KINGDOM—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**1.3%**		**23**
Working-Age Population Growth	**0.4%**		**10**
Growth Per Worker Estimate	**0.9%**		**29**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score -4.00 0 4.00**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**23**
What You Pay vs. What You Get	**45%**		**28**
Education	11%		23
Labor Productivity	11%		28
Working Hard	11%		21
Investing	11%		34
Culture	**20%**		**14**
Corruption	3%		10
Bureaucracy	3%		9
Rule of Law	3%		9
Savoring Life vs. Achieving	3%		23
Innovation	3%		13
Self Sufficiency	3%		23
Indebtedness	**35%**		**35**
Debt Levels and Flow	**18%**		**31**
Monetary Policy	**18%**		**32**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on United Kingdom

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

The United Kingdom offers somewhat worse than average value, ranked 28th of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing the United Kingdom's about average levels of education (according to tertiary education rates) and good quality of education (according to PISA test scores). Further, people in the United Kingdom don't work long hours relative to the cost of their labor—the average person of working age works 20.3 hours per week (23rd out of 35 countries, and 25th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given the United Kingdom's high per capita income levels, with investment at about 19% of GDP (18th out of 35 countries). The United Kingdom's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.2% per year (vs. an average of +1% across the developed world). Investment in the United Kingdom is less productive than investment in other countries with similar levels of economic development, ranked 16th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

UK culture appears to be a somewhat better than average contributor to growth in coming years, ranked 14th among the countries we measure. Note that our culture measures compare the United Kingdom to countries of similar levels of economic development. Starting with self-sufficiency, the United Kingdom is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 45% of GDP and transfer payments to households of 22% of GDP), and its labor markets are very flexible. The United Kingdom also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't especially value accomplishment and achievement. Furthermore, innovation and commercialism are about average in the United Kingdom relative to income. We see the country investing lightly in research and innovation, though its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, the United Kingdom has very low bureaucracy and red tape, somewhat low corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. The United Kingdom's indebtedness position is worse than other countries, ranked 35th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 401% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally tight.

THE POWERS AND PROSPECTS OF FRANCE

This is our computer generated reading for France as of July 2024.

Based on the latest readings of key indicators, **France appears to be a modest power (in the middle third of countries we rank) on a flat trajectory. As shown in the table below, the key weaknesses of France are its unfavorable economic/financial position, its people's lower than average work ethic and low self-sufficiency, its relatively poor allocation of labor and capital, and its relatively expensive labor (on a quality-adjusted basis)**. The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For France, **the big cycles look mixed**.

France is in an unfavorable position in its economic and financial cycles, with a high debt burden and relatively low expected real growth over the next 10 years (0.9% per year). In the last 3 years, real growth has been 2.4% per year, above our longer-term expectations. Over the same time, the stock market in France has returned 20.6% above cash, somewhat above the rest of the world (17.1%). Debt levels are high (311% of GDP across non-financial sectors). Breaking this down, government debt levels are high (107% of GDP); household debt levels are modest (56% of GDP); and non-financial corporate debt levels are high (148% of GDP). France's debts are largely in euros, which increases France's debt risks, since this is not a currency that France directly controls. France has slightly more foreign debts than foreign assets (net international investment position is -25% of GDP). The ability to use interest rate cuts to stimulate the economy is modest for the Eurozone (short rates are at 3.6%).

Internal disorder is a low risk. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in France capture 12% and 34% of income (respectively the 17th and 19th highest share across major countries) and 26% and 59% of wealth (both the 14th highest share across major countries). Over the last decade, incomes for the top 10% grew 6% while incomes for the bottom 60% grew 14%. The relatively low income growth for the bottom 60% increases the risks from inequality. Our internal conflict gauge is average. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

Looking in more detail at the eight key measures of power, we would call out its relatively expensive labor (on a quality-adjusted basis). Adjusted for worker quality, labor is somewhat more expensive than the global average.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. France scores modestly high on our happiness index (1.0z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.2z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in France is 83 compared to a global average of 75.

FRANCE—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.27		Rank: 9	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Unfavorable	-1.1	21	Getting Worse	Getting Worse
Debt Burden	High Debt	-1.0	22	Getting Worse	Getting Worse
Expected Growth	0.9%	-0.8	19	Flat	Getting Better
Internal Order	Low Risk	0.4	4	Flat	Flat
Wealth/Values Gap	Narrow	0.8	2	Flat	Getting Worse
Internal Conflict	Average	0.0	6	Flat	Flat
External Order	-	-	-	-	-
Key Eight Measures of Power					
Trade	Average	-0.5	6	Flat	Flat
Financial Center	Average	-0.2	7	Flat	Flat
Military	Average	-0.2	7	Flat	Flat
Innovation and Technology	Average	-0.4	9	Flat	Getting Better
Economic Output	Weak	-0.6	9	Getting Worse	Getting Worse
Education	Weak	-0.6	12	Flat	Flat
Competitiveness	Weak	-0.7	21	Flat	Getting Better
Reserve Currency Status	-	-	-	-	-
Additional Measures of Power					
Infrastructure & Investment	Average	-0.3	8	Getting Better	Getting Better
Governance/Rule of Law	Average	0.4	11	Flat	Flat
Geology	Average	-0.5	15	Getting Worse	Getting Worse
Resource Allocation Efficiency	Weak	-1.3	19	Getting Worse	Getting Worse
Character/Determination/Civility	Weak	-1.5	24	Flat	Flat
Acts of Nature	Average	-0.1	12	-	Getting Worse
Wellbeing					
Happiness Gauge	Moderate	1.0	11	-	Flat
Health Gauge	Excellent	2.2	10	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for France.

This computer-generated report is our best attempt to synthesize conditions in France. If anything sounds off, we'd love your comments.

FRANCE'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that France's real growth rate over the next 10 years will be in the vicinity of 0.9%. This growth rate is well below the global average, ranked 29th out of 35 major economies, and 11th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In France's case, our growth estimate comes from combining our expectation of a 1.0% growth rate per worker, which is somewhat below the global average, and a labor force growth rate of -0.1%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect France's productivity growth to be somewhat worse than most major countries (implying a growth rate of 1.1% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 0.9% on its own). As shown below, France's biggest relative strengths are its level of bureaucracy and its rule of law, and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

FRANCE—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**0.9%**		**29**
Working-Age Population Growth	**-0.1%**		**19**
Growth Per Worker Estimate	**1.0%**		**27**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**30**
What You Pay vs. What You Get	**45%**		**30**
Education	11%		31
Labor Productivity	11%		30
Working Hard	11%		29
Investing	11%		26
Culture	**20%**		**27**
Corruption	3%		20
Bureaucracy	3%		24
Rule of Law	3%		19
Savoring Life vs. Achieving	3%		33
Innovation	3%		16
Self Sufficiency	3%		34
Indebtedness	**35%**		**30**
Debt Levels and Flow	**18%**		**34**
Monetary Policy	**18%**		**17**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on France

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

France offers much worse than average value, ranked 30th of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing France's low levels of education (according to tertiary education rates) and poor quality of education (according to PISA test scores). Further, people in France don't work long hours relative to the cost of their labor—the average person of working age works 15.9 hours per week (35th out of 35 countries, and 35th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given France's high per capita income levels, with investment at about 21% of GDP (12th out of 35 countries). France's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.4% per year (vs. an average of +1% across the developed world). Investment in France is about as productive as investment in other countries with similar levels of economic development, ranked 13th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

French culture appears to be a somewhat worse than average contributor to growth in coming years, ranked 27th among the countries we measure. Note that our culture measures compare France to countries of similar levels of economic development. Starting with self-sufficiency, France is rated very poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is very high (with government outlays of 58% of GDP and transfer payments to households of 31% of GDP), and its labor markets are moderately rigid. France also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't value accomplishment and achievement. Furthermore, innovation and commercialism are about average in France relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, France has somewhat low bureaucracy and red tape, average levels of corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. France's indebtedness position is worse than other countries, ranked 30th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 356% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF RUSSIA

This is our computer generated reading for Russia as of July 2024. Note we have lower confidence in our reading of Russia given it is at war with Ukraine, which increases the chances that Russia's readings may change in the future and that some of the stats shown below may be misleading or incomplete.

Based on the latest readings of key indicators, **Russia appears to be a modest power (in the middle third of countries we rank) on a flat trajectory. As shown in the table below, the key strengths of Russia are its wealth of natural resources and its strong military. Its weaknesses are its large domestic conflicts, its relative unimportance as a global financial center, its corruption and inconsistent rule of law, and its poor infrastructure and low investment**. The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Russia, **the big cycles look somewhat unfavorable**.

Russia is in a moderately unfavorable position in its economic and financial cycles, with a moderately high debt burden and moderate expected real growth over the next 10 years (2.9% per year). In the last 3 years, real growth has been 2.7% per year, at our longer-term expectations. Over the same time, the stock market in Russia has returned -88.2% below cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are low (121% of GDP across non-financial sectors). Breaking this down, government debt levels are low (21% of GDP); household debt levels are low (22% of GDP); and non-financial corporate debt levels are modest (78% of GDP). The bulk (81%) of these debts are in its own currency, which mitigates its debt risks. Russia has modestly more foreign assets than foreign debts (net international investment position is 25% of GDP).

Internal disorder is a high risk as far as we can tell. However, our read of internal order is muddied by the fact that people have limited freedom of speech and ability to express their oppositions relative to most other countries. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Russia capture 22% and 49% of income (respectively the 2th and 7th highest share across major countries) and 48% and 74% of wealth (respectively the 3th and 4th highest share across major countries). Our internal conflict gauge is very high (low conf. read). This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys); of course, Russia's current war has an enormous impact on its economy and global geopolitical standing.

Looking in more detail at the eight key measures of power—Russia has a relatively strong military. A moderate share (5%) of global military spending is by Russia, and it has a moderate share (8%) of the world's military personnel.

We net this against its relative unimportance as a global financial center. Its equity markets are a small share of the world total (less than 1% of free-float market cap and less than 1% of volume), and a small share of global transactions happen in RUB (1%).

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Russia scores neutral on our happiness index (-0.0z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores neutral on our health index (0.0z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators).

RUSSIA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.26		Rank: 10	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	0.0	10	-	Getting Worse
Debt Burden	Moderately High Debt	0.0	12	Getting Worse	Getting Worse
Expected Growth	2.9%	-0.1	7	-	Getting Better
Internal Order	High Risk	-1.8	10	Flat	Getting Worse
Wealth/Values Gap	Large	-2.0	20	Getting Worse	Flat
Internal Conflict	Very High (low conf. read)	-1.6	10	Flat	Getting Worse
External Order	-	-1.2	-	Getting Worse	Getting Worse
Key Eight Measures of Power					
Military	Strong	0.6	3	Flat	Flat
Competitiveness	Strong	0.9	5	Flat	Getting Better
Economic Output	Average	-0.5	7	Flat	Flat
Reserve Currency Status	Weak	-0.7	8	-	Getting Better
Education	Weak	-0.7	13	Flat	Flat
Innovation and Technology	Weak	-0.7	14	Flat	Getting Worse
Trade	Weak	-1.0	17	Flat	Flat
Financial Center	Weak	-1.3	24	Getting Worse	Getting Worse
Additional Measures of Power					
Geology	Very Strong	2.0	1	Getting Better	Getting Better
Character/Determination/Civility	Average	0.3	10	Flat	Getting Better
Resource Allocation Efficiency	Average	-0.2	11	-	Flat
Governance/Rule of Law	Very Weak	-2.0	21	Flat	Getting Worse
Infrastructure & Investment	Weak	-1.2	23	Getting Worse	Flat
Acts of Nature	Average	-0.1	11	-	Getting Better
Wellbeing					
Happiness Gauge	Moderate	0.0	21	-	Flat
Health Gauge	Moderate	0.0	20	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Russia.

This computer-generated report is our best attempt to synthesize conditions in Russia. If anything sounds off, we'd love your comments.

RUSSIA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Russia's real growth rate over the next 10 years will be in the vicinity of 2.9%. This growth rate is somewhat above the global average, ranked 9th out of 35 major economies, and 9th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that Russia is a very large net exporter of commodities (net commodity exports are ~24% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In Russia's case, our growth estimate comes from combining our expectation of a 3.1% growth rate per worker, which is well above the global average, and a labor force growth rate of -0.3%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Russia's productivity growth to be somewhat better than most major countries (implying a growth rate of 3.2% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 2.7% on its own). As shown below, Russia's biggest relative strengths are the value its workers provide relative to education levels and its level of bureaucracy, and its biggest relative problems are its monetary policy and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

RUSSIA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**2.9%**		**9**
Working-Age Population Growth	**-0.3%**		**23**
Growth Per Worker Estimate	**3.1%**		**7**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**9**
What You Pay vs. What You Get	**45%**		**6**
Education	11%		5
Labor Productivity	11%		5
Working Hard	11%		10
Investing	11%		9
Culture	**20%**		**19**
Corruption	3%		31
Bureaucracy	3%		10
Rule of Law	3%		25
Savoring Life vs. Achieving	3%		13
Innovation	3%		21
Self Sufficiency	3%		12
Indebtedness	**35%**		**6**
Debt Levels and Flow	**18%**		**6**
Monetary Policy	**18%**		**27**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Russia

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Russia offers much better than average value, ranked 6th of 35 countries we measure. Its workers are somewhat inexpensive, weighing Russia's somewhat high levels of education (according to tertiary education rates) and about average quality of education (according to PISA test scores). Further, people in Russia work long hours relative to the cost of their labor—the average person of working age works 25.0 hours per week (10th out of 35 countries, and 11th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Russia's low per capita income levels, with investment at about 14% of GDP (30th out of 35 countries). Russia's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.5% per year (vs. an average of +1% across the emerging world). Investment in Russia is more productive than investment in other countries with similar levels of economic development, ranked 1st out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Russian culture appears to be an around average contributor to growth in coming years, ranked 19th among the countries we measure. Note that our culture measures compare Russia to countries of similar levels of economic development. Starting with self-sufficiency, Russia is rated about average on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 36% of GDP and transfer payments to households of 19% of GDP), and its labor markets are very flexible. Russia also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't especially value accomplishment and achievement. Furthermore, innovation and commercialism are about average in Russia relative to income. We see the country investing lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, Russia has very low bureaucracy and red tape, somewhat high corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Russia's indebtedness position is better than other countries, ranked 6th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a bit of room to lever up in the future. The total debt burden is around 121% of GDP, compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF SINGAPORE

This is our computer generated reading for Singapore as of July 2024.

Based on the latest readings of key indicators, **Singapore appears to be a modest power (in the middle third of countries we rank) in gradual ascent, although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strengths of Singapore are its people's self-sufficiency and strong work ethic, its strong rule of law/low corruption, and its effective allocation of labor and capital. Its weaknesses are its relatively weak military, its relatively small economy, and its relative lack of natural resources.** The eight major measures of power are somewhat weak today but have, in aggregate, risen slowly over the last 20 years. Note that Singapore generally scores well on our measures of quality but less well on quantity given its small size. You can see more detail on our per capita scores at the end of the overall report.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Singapore, **the big cycles look mixed**.

Singapore is in a somewhat favorable position in its economic and financial cycles, with a low debt burden and moderate expected real growth over the next 10 years (2.6% per year). In the last 3 years, real growth has been 4.1% per year, above our longer-term expectations. Over the same time, the stock market in Singapore has returned -4.8% below cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are high (345% of GDP across non-financial sectors). Breaking this down, government debt levels are high (172% of GDP), which we net against 379% of GDP in sovereign wealth and FX reserves; household debt levels are low (46% of GDP); and non-financial corporate debt levels are high (127% of GDP), but as Singapore is a financial center, this includes debts of foreigners that are issued in Singapore. A significant share (39%) of Singapore's debt is denominated in foreign currencies, which increases debt risks. Singapore has significantly more foreign assets than foreign debts (net international investment position is 171% of GDP). The ability to use interest rate cuts to stimulate the economy is modest (short rates at 3.8%).

At this time, we do not have a read on internal disorder for Singapore because we lack sufficient reliable data. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Singapore capture 12% and 38% of income (respectively the 18th and 13th highest share across major countries) and 30% and 62% of wealth (both the 11th highest share across major countries).

Looking in more detail at the eight key measures of power, we would call out its relatively weak military and its relatively small economy. A small share (less than 1%) of global military spending is by Singapore, and it has a small share (less than 1%) of the world's military personnel.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Singapore scores neutral on our happiness index (0.5z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.4z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Singapore is 84 compared to a global average of 75.

SINGAPORE—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.24		Rank: 11	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Somewhat Favorable	0.2	5	Getting Worse	Getting Worse
Debt Burden	Low Debt	0.4	5	Getting Worse	Getting Worse
Expected Growth	2.6%	-0.2	8	Getting Worse	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Large	-2.1	21	Getting Worse	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Trade	Weak	-0.6	8	Getting Better	Getting Better
Financial Center	Average	-0.3	9	Flat	Flat
Reserve Currency Status	Weak	-0.7	10	-	Flat
Competitiveness	Average	0.1	11	Flat	Flat
Education	Average	-0.5	11	Flat	Flat
Innovation and Technology	Weak	-0.5	11	Flat	Getting Worse
Military	Weak	-1.1	20	Flat	Getting Worse
Economic Output	Weak	-1.5	24	Getting Better	Getting Better
Additional Measures of Power					
Character/Determination/Civility	Very Strong	2.7	1	Flat	Getting Better
Governance/Rule of Law	Very Strong	2.4	1	Getting Better	Getting Better
Resource Allocation Efficiency	Very Strong	2.1	5	Getting Better	Getting Better
Infrastructure & Investment	Average	-0.2	6	Flat	Flat
Geology	Weak	-0.5	17	Flat	Flat
Acts of Nature	Average	-0.2	15	-	Getting Better
Wellbeing					
Happiness Gauge	Moderate	0.5	19	-	Flat
Health Gauge	Excellent	2.4	1	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Singapore.

This computer-generated report is our best attempt to synthesize conditions in Singapore. If anything sounds off, we'd love your comments.

SINGAPORE'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Singapore's real growth rate over the next 10 years will be in the vicinity of 2.6%. This growth rate is somewhat above the global average, ranked 11th out of 35 major economies, and 11th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Singapore's case, our growth estimate comes from combining our expectation of a 2.8% growth rate per worker, which is somewhat above the global average, and a labor force growth rate of -0.2%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Singapore's productivity growth to be somewhat better than most major countries (implying a growth rate of 3.7% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.2% on its own). As shown below, Singapore's biggest relative strengths are its level of bureaucracy and the value its workers provide relative to education levels, and its biggest relative problems are its debt and debt service levels and its monetary policy. However, we put less stock in our assessment of Singapore's indebtedness given its significant stock of assets (e.g., FX reserves and/or sovereign wealth fund assets) that are not considered in this measurement. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

SINGAPORE—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**2.6%**		**11**
Working-Age Population Growth	**-0.2%**		**22**
Growth Per Worker Estimate	**2.8%**		**10**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**8**
What You Pay vs. What You Get	**45%**		**17**
Education	11%		16
Labor Productivity	11%		17
Working Hard	11%		16
Investing	11%		21
Culture	**20%**		**1**
Corruption	3%		9
Bureaucracy	3%		3
Rule of Law	3%		1
Savoring Life vs. Achieving	3%		2
Innovation	3%		5
Self Sufficiency	3%		2
Indebtedness	**35%**		**22**
Debt Levels and Flow	**18%**		**17**
Monetary Policy	**18%**		**24**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Singapore

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Singapore offers around average value, ranked 17th of 35 countries we measure. Its workers are somewhat inexpensive, especially taking into consideration Singapore's high levels of education (according to tertiary education rates) and very good quality of education (according to PISA test scores). Further, people in Singapore work long hours relative to the cost of their labor—the average person of working age works 34.1 hours per week (3rd out of 35 countries, and 9th out of 35 countries after adjusting for income), although the demographics of the workforce are very unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Singapore's very high per capita income levels, with investment at about 21% of GDP (15th out of 35 countries). Singapore's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 2.9% per year (vs. an average of +1% across the emerging world). Investment in Singapore is about as productive as investment in other countries with similar levels of economic development, ranked 10th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Singaporean culture appears to be a significant contributor to growth in coming years, ranked 1st among the countries we measure. Note that our culture measures compare Singapore to countries of similar levels of economic development. Starting with self-sufficiency, Singapore is rated very well on this measure, weighing that its workers have a somewhat strong work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is very low (with government outlays of 17% of GDP and transfer payments to households of 5% of GDP), and its labor markets are very flexible. Singapore also seems to value achieving much more than savoring—again, its work ethic is somewhat strong, and surveys suggest that its people highly value accomplishment and achievement. Furthermore, innovation and commercialism are very strong in Singapore relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, Singapore has very low bureaucracy and red tape, somewhat low corruption, and very strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Singapore's indebtedness position is slightly worse than other countries, ranked 22nd out of the 35 countries we look at. However, we put less stock in our assessment of Singapore's indebtedness given its significant stock of assets (e.g., FX reserves and/or sovereign wealth fund assets) that are not considered in this measurement. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF AUSTRALIA

This is our computer generated reading for Australia as of July 2024.

Based on the latest readings of key indicators, **Australia appears to be a modest power (in the middle third of countries we rank) on a flat trajectory. As shown in the table below, the key strength of Australia is its wealth of natural resources. Its weaknesses are its relatively small economy, its relative unimportance to global trade, and its poor infrastructure and low investment.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Australia, **the big cycles look somewhat unfavorable, though we have a limited read**.

Australia is in a moderately unfavorable position in its economic and financial cycles, with a moderately high debt burden and moderate expected real growth over the next 10 years (2.1% per year). In the last 3 years, real growth has been 3.1% per year, above our longer-term expectations. Over the same time, the stock market in Australia has returned 16.2% above cash, somewhat below the rest of the world (17.1%). Debt levels are high (223% of GDP across non-financial sectors). Breaking this down, government debt levels are modest (54% of GDP); household debt levels are high (109% of GDP); and non-financial corporate debt levels are modest (59% of GDP). The bulk (95%) of these debts are in its own currency, which mitigates its debt risks. Australia has modestly more foreign debts than foreign assets (net international investment position is -32% of GDP). The ability to use interest rate cuts to stimulate the economy is modest (short rates at 4.4%).

At this time, we do not have a read on internal disorder for Australia because we lack sufficient reliable data. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Australia capture 10% and 33% of income (respectively the 23rd and 22nd highest share across major countries) and 23% and 57% of wealth (respectively the 20th and 21st highest share across major countries).

Looking in more detail at the eight key measures of power, we would call out its relatively small economy and its relative unimportance to global trade. Australia exports just 2% of global exports.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Australia scores modestly high on our happiness index (1.3z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Australia is 84 compared to a global average of 75.

AUSTRALIA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.23		Rank: 12	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	-0.4	13	Flat	Getting Better
Debt Burden	Moderately High Debt	-0.4	17	Flat	Getting Better
Expected Growth	2.1%	-0.4	10	Flat	Getting Better
Internal Order	-	-	-	-	-
Wealth/Values Gap	Narrow	0.6	6	Getting Better	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Reserve Currency Status	Weak	-0.6	7	-	Flat
Education	Average	-0.3	9	Flat	Flat
Financial Center	Average	-0.3	12	Flat	Flat
Innovation and Technology	Weak	-0.6	12	Getting Worse	Getting Worse
Competitiveness	Average	-0.4	15	Flat	Getting Better
Military	Weak	-0.7	15	Flat	Flat
Trade	Weak	-1.1	21	Getting Better	Getting Better
Economic Output	Weak	-1.3	21	Flat	Flat
Additional Measures of Power					
Geology	Very Strong	1.9	2	Getting Better	Getting Better
Governance/Rule of Law	Strong	0.9	5	Flat	Getting Better
Character/Determination/Civility	Average	0.2	12	Flat	Getting Better
Resource Allocation Efficiency	Average	-0.4	13	Getting Worse	Flat
Infrastructure & Investment	Weak	-0.7	19	Getting Worse	Getting Worse
Acts of Nature	Strong	1.5	2	-	Getting Better
Wellbeing					
Happiness Gauge	Good	1.3	6	-	Flat
Health Gauge	Excellent	2.3	7	-	Getting Worse

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Australia.

This computer-generated report is our best attempt to synthesize conditions in Australia. If anything sounds off, we'd love your comments.

AUSTRALIA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Australia's real growth rate over the next 10 years will be in the vicinity of 2.1%. This growth rate is roughly at the global average, ranked 15th out of 35 major economies, and 2nd out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that Australia is a large net exporter of commodities (net commodity exports are ~13% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In Australia's case, our growth estimate comes from combining our expectation of a 1.5% growth rate per worker, which is somewhat below the global average, and a labor force growth rate of 0.6%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Australia's productivity growth to be somewhat worse than most major countries (implying a growth rate of 1.0% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 2.5% on its own). As shown below, Australia's biggest relative strengths are its monetary policy and its low reliance on credit flows for growth (though compared to other countries it doesn't rate especially well on these measures), and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

AUSTRALIA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**2.1%**		**15**
Working-Age Population Growth	**0.6%**		**8**
Growth Per Worker Estimate	**1.5%**		**22**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**25**
What You Pay vs. What You Get	**45%**		**25**
Education	11%		26
Labor Productivity	11%		32
Working Hard	11%		25
Investing	11%		25
Culture	**20%**		**18**
Corruption	3%		19
Bureaucracy	3%		22
Rule of Law	3%		15
Savoring Life vs. Achieving	3%		12
Innovation	3%		25
Self Sufficiency	3%		16
Indebtedness	**35%**		**12**
Debt Levels and Flow	**18%**		**18**
Monetary Policy	**18%**		**3**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Australia

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Australia offers somewhat worse than average value, ranked 25th of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing Australia's somewhat low levels of education (according to tertiary education rates) and good quality of education (according to PISA test scores). Further, people in Australia don't work long hours relative to the cost of their labor—the average person of working age works 21.5 hours per week (18th out of 35 countries, and 23rd out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given Australia's very high per capita income levels, with investment at about 17% of GDP (23rd out of 35 countries). Australia's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a relatively slow rate of 0.4% per year (vs. an average of +1% across the developed world). Investment in Australia is more productive than investment in other countries with similar levels of economic development, ranked 1st out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Australian culture appears to be an around average contributor to growth in coming years, ranked 18th among the countries we measure. Note that our culture measures compare Australia to countries of similar levels of economic development. Starting with self-sufficiency, Australia is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 40% of GDP and transfer payments to households of 20% of GDP), and its labor markets are neither rigid nor flexible. Australia also seems to value savoring about the same as it values achieving—again, its work ethic is relatively weak, and surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat weak in Australia relative to income. We see the country investing lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, Australia has somewhat low bureaucracy and red tape, average levels of corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Australia's indebtedness position is slightly better than other countries, ranked 12th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 289% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was depressed by low credit creation, which is supportive for growth going forward. Lastly, the stance of monetary policy is generally neutral.

THE POWERS AND PROSPECTS OF TURKEY

This is our computer generated reading for Turkey as of July 2024.

Based on the latest readings of key indicators, **Turkey appears to be a modest power (in the middle third of countries we rank) in gradual ascent, although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strength of Turkey is its cost-competitive labor (on a quality-adjusted basis). Its weaknesses are its relative unimportance as a global financial center, its weak relative position in education, its relative unimportance to global trade, and its corruption and inconsistent rule of law.** The eight major measures of power are somewhat weak today but have, in aggregate, risen slowly over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Turkey, **the big cycles look somewhat favorable, though we have a limited read.**

Turkey is in a somewhat favorable position in its economic and financial cycles, with a moderately low debt burden and moderate expected real growth over the next 10 years (4.0% per year). In the last 3 years, real growth has been 5.8% per year, above our longer-term expectations. Debt levels are low (93% of GDP across non-financial sectors). Breaking this down, government debt levels are low (34% of GDP); household debt levels are low (11% of GDP); and non-financial corporate debt levels are low (47% of GDP). A significant share (43%) of Turkey's debt is denominated in foreign currencies, which increases debt risks. Turkey has slightly more foreign debts than foreign assets (net international investment position is -25% of GDP).

At this time, we do not have a read on internal disorder for Turkey because we lack sufficient reliable data. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Turkey capture 19% and 52% of income (respectively the 7th and 6th highest share across major countries) and 37% and 68% of wealth (respectively the 6th and 8th highest share across major countries).

Looking in more detail at the eight key measures of power—Turkey has relatively cheap labor. Adjusted for worker quality, labor is somewhat cheaper than the global average.

We net this against its relative unimportance as a global financial center, its weak relative position in education, and its relative unimportance to global trade. Turkey's equity markets are a small share of the world total (less than 1% of free-float market cap and less than 1% of volume), and a small share of global transactions happen in TRY (less than 1%). With education—Turkey has a small share of the world's bachelor's degrees (1%) and a small share of the world's doctorate degrees (less than 1%). On years of education, Turkey is poor—students have on average 8.4 years of education vs 11.7 in the average major country. PISA scores, which measure the proficiency of 15-year-old students across countries, are around average—462 vs 479 in the average major country. Turkey exports just 1% of global exports.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Turkey scores neutral on our happiness index (-0.1z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores modestly high on our health index (0.7z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators).

TURKEY—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.21		Rank: 13	Getting Better	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Somewhat Favorable	0.3	4	Flat	Getting Better
Debt Burden	Moderately Low Debt	0.2	10	Getting Better	Getting Better
Expected Growth	4.0%	0.3	4	Flat	Flat
Internal Order	-	-	-	-	-
Wealth/Values Gap	Large	-1.1	17	Getting Better	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Strong	1.1	3	Getting Better	Getting Better
Military	Average	-0.5	10	Flat	Getting Worse
Economic Output	Weak	-0.7	10	Getting Better	Flat
Innovation and Technology	Weak	-0.9	16	Getting Better	Getting Better
Reserve Currency Status	Weak	-0.7	18	-	Flat
Trade	Weak	-1.1	20	Getting Better	Getting Better
Financial Center	Weak	-1.1	22	Getting Worse	Flat
Education	Very Weak	-1.8	23	Flat	Flat
Additional Measures of Power					
Infrastructure & Investment	Average	-0.4	12	Getting Better	Getting Better
Character/Determination/Civility	Average	-0.1	14	Flat	Flat
Resource Allocation Efficiency	Average	-0.4	15	Getting Worse	Getting Worse
Governance/Rule of Law	Weak	-1.2	17	Flat	Flat
Geology	Weak	-0.6	19	Flat	Getting Worse
Acts of Nature	Average	-0.1	13	-	Getting Better
Wellbeing					
Happiness Gauge	Moderate	-0.1	22	-	Flat
Health Gauge	Moderate	0.7	18	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Turkey.

This computer-generated report is our best attempt to synthesize conditions in Turkey. If anything sounds off, we'd love your comments.

TURKEY'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Turkey's real growth rate over the next 10 years will be in the vicinity of 4.0%. This growth rate is well above the global average, ranked 5th out of 35 major economies, and 5th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Turkey's case, our growth estimate comes from combining our expectation of a 3.6% growth rate per worker, which is well above the global average, and a labor force growth rate of 0.4%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Turkey's productivity growth to be much better than most major countries (implying a growth rate of 4.5% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 2.0% on its own). As shown below, Turkey's biggest relative strengths are the value its workers provide relative to education levels and its levels of investment, and its biggest relative problems are its monetary policy and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

TURKEY—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**4.0%**		**5**
Working-Age Population Growth	**0.4%**		**11**
Growth Per Worker Estimate	**3.6%**		**5**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**5**
What You Pay vs. What You Get	**45%**		**3**
Education	11%		11
Labor Productivity	11%		1
Working Hard	11%		11
Investing	11%		7
Culture	**20%**		**16**
Corruption	3%		15
Bureaucracy	3%		8
Rule of Law	3%		14
Savoring Life vs. Achieving	3%		16
Innovation	3%		15
Self Sufficiency	3%		20
Indebtedness	**35%**		**14**
Debt Levels and Flow	**18%**		**5**
Monetary Policy	**18%**		**34**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Turkey

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Turkey offers much better than average value, ranked 3rd of 35 countries we measure. Its workers are very inexpensive, even taking into consideration Turkey's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Turkey work long hours relative to the cost of their labor—the average person of working age works 22.1 hours per week (17th out of 35 countries, and 14th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat high given Turkey's low per capita income levels, with investment at about 26% of GDP (4th out of 35 countries). Turkey's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 3.9% per year (vs. an average of +1% across the emerging world). Investment in Turkey is about as productive as investment in other countries with similar levels of economic development, ranked 11th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Turkish culture appears to be an around average contributor to growth in coming years, ranked 16th among the countries we measure. Note that our culture measures compare Turkey to countries of similar levels of economic development. Starting with self-sufficiency, Turkey is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 32% of GDP and transfer payments to households of 11% of GDP), and its labor markets are moderately flexible. Turkey also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are about average in Turkey relative to income. We see the country investing heavily in research and innovation, though its outputs from innovation, including inventions and earnings, are low. Finally, relative to its income, Turkey has very low bureaucracy and red tape, average levels of corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Turkey's indebtedness position is slightly better than other countries, ranked 14th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a moderate amount of room to lever up in the future. The total debt burden is around 89% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally tight.

THE POWERS AND PROSPECTS OF CANADA

This is our computer generated reading for Canada as of July 2024.

Based on the latest readings of key indicators, **Canada appears to be a modest power (in the middle third of countries we rank) on a flat trajectory. As shown in the table below, the key weaknesses of Canada that put it in this position are its relatively small economy, its relatively weak military, and its poor infrastructure and low investment.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Canada, **the big cycles look somewhat unfavorable, though we have a limited read**.

Canada is in a moderately unfavorable position in its economic and financial cycles, with a moderately high debt burden and relatively low expected real growth over the next 10 years (1.2% per year). In the last 3 years, real growth has been 2.5% per year, above our longer-term expectations. Over the same time, the stock market in Canada has returned 14.9% above cash, somewhat below the rest of the world (17.1%). Debt levels are high (307% of GDP across non-financial sectors). Breaking this down, government debt levels are modest (94% of GDP); household debt levels are modest (96% of GDP); and non-financial corporate debt levels are high (118% of GDP). The bulk (89%) of these debts are in its own currency, which mitigates its debt risks. Canada has significantly more foreign assets than foreign debts (net international investment position is 58% of GDP). The ability to use interest rate cuts to stimulate the economy is modest (short rates at 4.5%).

At this time, we do not have a read on internal disorder for Canada because we lack sufficient reliable data. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Canada capture 11% and 35% of income (respectively the 21st and 18th highest share across major countries) and 25% and 58% of wealth (both the 18th highest share across major countries).

Looking in more detail at the eight key measures of power, we would call out its relatively small economy and its relatively weak military. A small share (1%) of global military spending is by Canada, and it has a small share (less than 1%) of the world's military personnel.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Canada scores modestly high on our happiness index (1.2z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.2z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Canada is 83 compared to a global average of 75.

CANADA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.21		Rank: 14	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	-0.6	16	Flat	Flat
Debt Burden	Moderately High Debt	-0.3	15	Flat	Getting Better
Expected Growth	1.2%	-0.7	18	Getting Worse	Flat
Internal Order	-	-	-	-	-
Wealth/Values Gap	Narrow	0.5	10	Getting Better	Getting Better
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Reserve Currency Status	Weak	-0.6	5	-	Getting Better
Education	Average	-0.3	7	Flat	Flat
Financial Center	Average	-0.3	11	Flat	Getting Better
Innovation and Technology	Weak	-0.7	13	Getting Worse	Flat
Trade	Weak	-0.8	13	Flat	Getting Better
Competitiveness	Weak	-0.5	17	Flat	Flat
Economic Output	Weak	-1.1	17	Flat	Flat
Military	Weak	-1.0	18	Flat	Flat
Additional Measures of Power					
Geology	Strong	0.7	5	Getting Worse	Getting Worse
Resource Allocation Efficiency	Average	0.3	6	Getting Worse	Getting Worse
Governance/Rule of Law	Strong	0.6	9	Getting Worse	Flat
Character/Determination/Civility	Average	0.1	13	Flat	Flat
Infrastructure & Investment	Weak	-0.7	17	Getting Worse	Getting Worse
Acts of Nature	Strong	1.3	4	-	Getting Better
Wellbeing					
Happiness Gauge	Good	1.2	7	-	Flat
Health Gauge	Excellent	2.2	9	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Canada.

This computer-generated report is our best attempt to synthesize conditions in Canada. If anything sounds off, we'd love your comments.

CANADA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Canada's real growth rate over the next 10 years will be in the vicinity of 1.2%. This growth rate is somewhat below the global average, ranked 26th out of 35 major economies, and 8th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Canada's case, our growth estimate comes from combining our expectation of a 0.9% growth rate per worker, which is well below the global average, and a labor force growth rate of 0.3%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Canada's productivity growth to be somewhat worse than most major countries (implying a growth rate of 0.8% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.0% on its own). As shown below, Canada's biggest relative strengths are its level of bureaucracy and the value its workers provide relative to education levels, and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

CANADA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**1.2%**		**26**
Working-Age Population Growth	**0.3%**		**13**
Growth Per Worker Estimate	**0.9%**		**31**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**27**
What You Pay vs. What You Get	**45%**		**27**
Education	11%		21
Labor Productivity	11%		25
Working Hard	11%		27
Investing	11%		33
Culture	**20%**		**20**
Corruption	3%		17
Bureaucracy	3%		18
Rule of Law	3%		18
Savoring Life vs. Achieving	3%		15
Innovation	3%		27
Self Sufficiency	3%		14
Indebtedness	**35%**		**20**
Debt Levels and Flow	**18%**		**26**
Monetary Policy	**18%**		**10**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Canada

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Canada offers somewhat worse than average value, ranked 27th of 35 countries we measure. Its workers are neither expensive nor inexpensive, although Canada has somewhat high levels of education (according to tertiary education rates) and very good quality of education (according to PISA test scores). Further, people in Canada don't work long hours relative to the cost of their labor—the average person of working age works 20.9 hours per week (21st out of 35 countries, and 24th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given Canada's high per capita income levels, with investment at about 16% of GDP (28th out of 35 countries). Canada's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is shrinking at a rate of -0.6% per year (vs. an average of +1% across the developed world). Investment in Canada is about as productive as investment in other countries with similar levels of economic development, ranked 9th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Canadian culture appears to be an around average contributor to growth in coming years, ranked 20th among the countries we measure. Note that our culture measures compare Canada to countries of similar levels of economic development. Starting with self-sufficiency, Canada is rated about average on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 45% of GDP and transfer payments to households of 24% of GDP), and its labor markets are very flexible. Canada also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat weak in Canada relative to income. We see the country investing lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are low. Finally, relative to its income, Canada has somewhat low bureaucracy and red tape, average levels of corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Canada's indebtedness position is about average compared to other countries, ranked 20th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 351% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally neutral.

THE POWERS AND PROSPECTS OF SWITZERLAND

This is our computer generated reading for Switzerland as of July 2024.

Based on the latest readings of key indicators, **Switzerland appears to be a modest power (in the middle third of countries we rank) in decline, although over the last 3 years, its trajectory has been flat. As shown in the table below, the key strength of Switzerland is its strong rule of law/low corruption. Its weaknesses are its relatively weak military, its relatively small economy, and its relatively expensive labor (on a quality-adjusted basis).** The eight major measures of power are somewhat weak today and have, in aggregate, fallen over the last 20 years. In particular, Switzerland's competitiveness, its share of global output, and its importance as a financial center are declining. Note that Switzerland generally scores well on our measures of quality but less well on quantity given its small size. You can see more detail on our per capita scores at the end of the overall report.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Switzerland, **the big cycles look somewhat unfavorable, though we have a limited read**.

Switzerland is in a moderately unfavorable position in its economic and financial cycles, with a moderately low debt burden but very low expected real growth over the next 10 years (0.2% per year). In the last 3 years, real growth has been 2.4% per year, above our longer-term expectations. Over the same time, the stock market in Switzerland has returned 8.3% above cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are high (300% of GDP across non-financial sectors). Breaking this down, government debt levels are low (28% of GDP), which we net against 115% of GDP in sovereign wealth and FX reserves; household debt levels are high (126% of GDP); and non-financial corporate debt levels are high (146% of GDP). The bulk (85%) of these debts are in its own currency, which mitigates its debt risks. Switzerland has significantly more foreign assets than foreign debts (net international investment position is 99% of GDP). The ability to use interest rate cuts to stimulate the economy is modest (short rates at 1.1%).

At this time, we do not have a read on internal disorder for Switzerland because we lack sufficient reliable data. Wealth, income and values gaps are relatively large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Switzerland capture 10% and 31% of income (respectively the 22nd and 24th highest share across major countries) and 31% and 63% of wealth (both the 10th highest share across major countries).

Looking in more detail at the eight key measures of power, we would call out its relatively weak military, its relatively small economy, and its relatively expensive labor (on a quality-adjusted basis). A small share (less than 1%) of global military spending is by Switzerland, and it has a small share (less than 1%) of the world's military personnel. With labor cost, once we adjust for worker quality, labor is somewhat more expensive than the global average.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Switzerland scores modestly high on our happiness index (1.3z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Switzerland is 84 compared to a global average of 75.

SWITZERLAND—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.19		Rank: 15	Getting Worse	Flat

The Big Cycles	Level	Z-Score	Rank	20y Trajectory	3y Trajectory
Economic/Financial Position	Moderately Unfavorable	-0.5	15	-	Getting Worse
Debt Burden	Low Debt	0.2	8	Getting Worse	Getting Worse
Expected Growth	0.2%	-1.0	22	-	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Relatively Large	-0.5	16	Flat	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Financial Center	Average	-0.3	8	Flat	Flat
Innovation and Technology	Average	-0.3	8	Flat	Getting Worse
Education	Average	-0.5	10	Flat	Flat
Trade	Weak	-0.8	14	Getting Better	Getting Better
Reserve Currency Status	Weak	-0.7	16	Flat	Flat
Economic Output	Weak	-1.4	23	Getting Worse	Flat
Competitiveness	Weak	-1.2	24	Getting Worse	Getting Worse
Military	Very Weak	-2.0	24	Flat	Flat
Additional Measures of Power					
Governance/Rule of Law	Strong	1.2	2	Flat	Flat
Infrastructure & Investment	Average	-0.2	7	Flat	Flat
Character/Determination/Civility	Average	0.3	9	Getting Worse	Getting Worse
Geology	Average	-0.4	14	Getting Better	Getting Better
Resource Allocation Efficiency	Average	-0.4	16	Getting Worse	Getting Worse
Acts of Nature	Strong	1.3	5	-	Getting Better
Wellbeing					
Happiness Gauge	Good	1.3	5	-	Flat
Health Gauge	Excellent	2.3	3	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Switzerland.

This computer-generated report is our best attempt to synthesize conditions in Switzerland. If anything sounds off, we'd love your comments.

SWITZERLAND'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Switzerland's real growth rate over the next 10 years will be in the vicinity of 0.2%. This growth rate is well below the global average, ranked 32nd out of 35 major economies, and 14th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Switzerland's case, our growth estimate comes from combining our expectation of a 0.5% growth rate per worker, which is well below the global average, and a labor force growth rate of -0.3%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Switzerland's productivity growth to be somewhat worse than most major countries (implying a growth rate of 0.4% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.0% on its own). As shown below, Switzerland's biggest relative strengths are its level of innovation/commercialism and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and the value its workers provide relative to education levels. However, we put less stock in our assessment of Switzerland's indebtedness given its significant stock of assets (e.g., FX reserves and/or sovereign wealth fund assets) that are not considered in this measurement. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

SWITZERLAND—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**0.2%**		**32**
Working-Age Population Growth	**-0.3%**		**24**
Growth Per Worker Estimate	**0.5%**		**35**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**31**
What You Pay vs. What You Get	**45%**		**34**
Education	11%		33
Labor Productivity	11%		35
Working Hard	11%		33
Investing	11%		32
Culture	**20%**		**9**
Corruption	3%		21
Bureaucracy	3%		21
Rule of Law	3%		23
Savoring Life vs. Achieving	3%		21
Innovation	3%		2
Self Sufficiency	3%		9
Indebtedness	**35%**		**27**
Debt Levels and Flow	**18%**		**32**
Monetary Policy	**18%**		**14**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Switzerland

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Switzerland offers much worse than average value, ranked 34th of 35 countries we measure. Its workers are very expensive, weighing Switzerland's somewhat low levels of education (according to tertiary education rates) and good quality of education (according to PISA test scores). Further, people in Switzerland don't work long hours relative to the cost of their labor—the average person of working age works 20.4 hours per week (22nd out of 35 countries, and 28th out of 35 countries after adjusting for income), and the demographics of the workforce are very unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given Switzerland's very high per capita income levels, with investment at about 23% of GDP (8th out of 35 countries). Switzerland's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.0% per year (vs. an average of +1% across the developed world). Investment in Switzerland is about as productive as investment in other countries with similar levels of economic development, ranked 12th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Swiss culture appears to be a somewhat better than average contributor to growth in coming years, ranked 9th among the countries we measure. Note that our culture measures compare Switzerland to countries of similar levels of economic development. Starting with self-sufficiency, Switzerland is rated pretty well on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is low (with government outlays of 33% of GDP and transfer payments to households of 17% of GDP), and its labor markets are very flexible. Switzerland also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't especially value accomplishment and achievement. Furthermore, innovation and commercialism are very strong in Switzerland relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, Switzerland has somewhat low bureaucracy and red tape, average levels of corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Switzerland's indebtedness position is slightly worse than other countries, ranked 27th out of the 35 countries we look at. However, we put less stock in our assessment of Switzerland's indebtedness given its significant stock of assets (e.g., FX reserves and/or sovereign wealth fund assets) that are not considered in this measurement. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF BRAZIL

This is our computer generated reading for Brazil as of July 2024.

Based on the latest readings of key indicators, **Brazil appears to be a modest power (in the middle third of countries we rank) on a flat trajectory. As shown in the table below, the key strength of Brazil is its wealth of natural resources. Its weaknesses are its weak relative position in education, its bad reading on innovation and technology, its relative unimportance to global trade, its corruption and inconsistent rule of law, its poor infrastructure and low investment, and its relatively poor allocation of labor and capital.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Brazil, **the big cycles look somewhat unfavorable, though we have a limited read**.

Brazil is in a moderately unfavorable position in its economic and financial cycles, with a moderately high debt burden and relatively low expected real growth over the next 10 years (1.7% per year). In the last 3 years, real growth has been 2.4% per year, above our longer-term expectations. Over the same time, the stock market in Brazil has returned -23.1% below cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are modest (169% of GDP across non-financial sectors). Breaking this down, government debt levels are modest (84% of GDP); household debt levels are low (33% of GDP); and non-financial corporate debt levels are modest (52% of GDP). The bulk (93%) of these debts are in its own currency, which mitigates its debt risks. Brazil has modestly more foreign debts than foreign assets (net international investment position is -44% of GDP).

At this time, we do not have a read on internal disorder for Brazil because we lack sufficient reliable data. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Brazil capture 20% and 58% of income (respectively the 5th and 3th highest share across major countries) and 48% and 79% of wealth (both the 2th highest share across major countries). Over the last decade, incomes for the top 10% grew 3% while incomes for the bottom 60% grew 6%. The relatively low income growth for the bottom 60% increases the risks from inequality.

Looking in more detail at the eight key measures of power, we would call out its weak relative position in education, its bad reading on innovation and technology, and its relative unimportance to global trade. With education—Brazil has a small share of the world's bachelor's degrees (3%) and a small share of the world's doctorate degrees (2%). On years of education, Brazil is poor—students have on average 9.4 years of education vs 11.7 in the average major country. PISA scores, which measure the proficiency of 15-year-old students across countries, are poor—397 vs 479 in the average major country. With innovation and technology—a small share (less than 1%) of global patent applications, a small share (2%) of global R&D spending and a small share (2%) of global researchers are in Brazil. Brazil exports just 2% of global exports.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Brazil scores modestly high on our happiness index (1.1z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores neutral on our health index (0.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the share of the population undernourished in Brazil is 5% compared to a global average of 2%.

BRAZIL—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.18		Rank: 16	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	-0.5	14	Getting Worse	Getting Worse
Debt Burden	Moderately High Debt	-0.3	14	Getting Worse	Getting Worse
Expected Growth	1.7%	-0.5	13	Getting Worse	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Large	-1.8	18	Getting Better	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Strong	0.7	7	Getting Better	Getting Better
Economic Output	Weak	-0.7	11	Flat	Getting Worse
Military	Weak	-0.5	12	Flat	Flat
Reserve Currency Status	Weak	-0.7	14	-	Flat
Financial Center	Weak	-0.8	17	Flat	Getting Better
Innovation and Technology	Weak	-1.0	18	Flat	Getting Worse
Trade	Weak	-1.1	18	Getting Better	Getting Better
Education	Weak	-1.3	19	Flat	Getting Better
Additional Measures of Power					
Geology	Very Strong	1.9	3	Getting Better	Getting Better
Character/Determination/Civility	Weak	-0.9	20	Getting Worse	Flat
Resource Allocation Efficiency	Weak	-1.4	20	Getting Worse	Getting Worse
Infrastructure & Investment	Weak	-1.1	21	Flat	Getting Worse
Governance/Rule of Law	Very Weak	-2.4	23	Getting Worse	Getting Worse
Acts of Nature	Very Weak	-2.4	24	-	Getting Worse
Wellbeing					
Happiness Gauge	Good	1.1	9	-	Flat
Health Gauge	Moderate	0.3	19	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Brazil.

This computer-generated report is our best attempt to synthesize conditions in Brazil. If anything sounds off, we'd love your comments.

BRAZIL'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Brazil's real growth rate over the next 10 years will be in the vicinity of 1.7%. This growth rate is roughly at the global average, ranked 21st out of 35 major economies, and 18th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that Brazil is a somewhat large net exporter of commodities (net commodity exports are ~9% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In Brazil's case, our growth estimate comes from combining our expectation of a 1.6% growth rate per worker, which is roughly in line with the global average, and a labor force growth rate of 0.1%, which will have little impact on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Brazil's productivity growth to be about average compared to most major countries (implying a growth rate of 1.6% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 1.1% on its own). As shown below, Brazil's biggest relative strengths are the value its workers provide relative to education levels and its levels of investment, and its biggest relative problems are its monetary policy and its debt and debt service levels. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

BRAZIL—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.7%**		**21**
Working-Age Population Growth	**0.1%**		**17**
Growth Per Worker Estimate	**1.6%**		**21**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**15**
What You Pay vs. What You Get	**45%**		**9**
Education	11%		7
Labor Productivity	11%		8
Working Hard	11%		15
Investing	11%		6
Culture	**20%**		**32**
Corruption	3%		26
Bureaucracy	3%		35
Rule of Law	3%		28
Savoring Life vs. Achieving	3%		32
Innovation	3%		20
Self Sufficiency	3%		28
Indebtedness	**35%**		**13**
Debt Levels and Flow	**18%**		**14**
Monetary Policy	**18%**		**21**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Brazil

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Brazil offers somewhat better than average value, ranked 9th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Brazil's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Brazil work an average number of hours relative to the cost of their labor—the average person of working age works 20.2 hours per week (24th out of 35 countries, and 16th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat high given Brazil's low per capita income levels, with investment at about 14% of GDP (31st out of 35 countries). Brazil's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a relatively slow rate of 0.0% per year (vs. an average of +1% across the emerging world). Investment in Brazil is more productive than investment in other countries with similar levels of economic development, ranked 5th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Brazilian culture appears to be a much worse than average contributor to growth in coming years, ranked 32nd among the countries we measure. Note that our culture measures compare Brazil to countries of similar levels of economic development. Starting with self-sufficiency, Brazil is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 47% of GDP and transfer payments to households of 15% of GDP), and its labor markets are moderately rigid. Brazil also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't value accomplishment and achievement. Furthermore, innovation and commercialism are about average in Brazil relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are low. Finally, relative to its income, Brazil has very high bureaucracy and red tape, average levels of corruption, and somewhat weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Brazil's indebtedness position is slightly better than other countries, ranked 13th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has little room to lever up in the future. The total debt burden is around 190% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF NETHERLANDS

This is our computer generated reading for Netherlands as of July 2024.

Based on the latest readings of key indicators, **Netherlands is not a meaningful global power (in the bottom third of countries we rank) on a flat trajectory. As shown in the table below, the key strengths of Netherlands are its high internal order and its strong rule of law/low corruption. Its weaknesses are its relatively weak military, its relatively small economy, and its relatively expensive labor (on a quality-adjusted basis).** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years. Note that The Netherlands generally scores well on our measures of quality but less well on quantity given its small size. You can see more detail on our per capita scores at the end of the overall report.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Netherlands, **the big cycles look mixed**.

The Netherlands is in a moderately unfavorable position in its economic and financial cycles, with a moderately low debt burden but relatively low expected real growth over the next 10 years (1.2% per year). In the last 3 years, real growth has been 3.2% per year, above our longer-term expectations. Over the same time, the stock market in Netherlands has returned 30.0% above cash, meaningfully outperforming the rest of the world (17.1%). Debt levels are high (255% of GDP across non-financial sectors). Breaking this down, government debt levels are low (44% of GDP); household debt levels are modest (87% of GDP); and non-financial corporate debt levels are high (125% of GDP), but as Netherlands is a financial center, this includes debts of foreigners that are issued in Netherlands. The Netherlands's debts are largely in euros, which increases Netherlands's debt risks, since this is not a currency that Netherlands directly controls. The Netherlands has significantly more foreign assets than foreign debts (net international investment position is 57% of GDP). The ability to use interest rate cuts to stimulate the economy is modest for the Eurozone (short rates are at 3.6%).

Internal disorder is a low risk. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Netherlands capture 9% and 32% of income (respectively the 24th and 23rd highest share across major countries) and 17% and 49% of wealth (both the 23rd highest share across major countries). Our internal conflict gauge is low and getting better. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

Looking in more detail at the eight key measures of power, we would call out its relatively weak military, its relatively small economy, and its relatively expensive labor (on a quality-adjusted basis). A small share (less than 1%) of global military spending is by Netherlands, and it has a small share (less than 1%) of the world's military personnel. A small share (2%) of global economic activity (adjusted for differences in prices across countries) is in Netherlands. With labor cost, once we adjust for worker quality, labor is somewhat more expensive than the global average.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. The Netherlands scores high on our happiness index (1.5z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.1z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in the Netherlands is 82 compared to a global average of 75.

NETHERLANDS—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.17		Rank: 17	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	-0.4	12	Getting Better	Getting Better
Debt Burden	Moderately High Debt	0.0	11	Getting Better	Getting Better
Expected Growth	1.2%	-0.7	16	Flat	Getting Worse
Internal Order	Low Risk	0.8	2	Getting Better	Getting Worse
Wealth/Values Gap	Narrow	0.7	3	Getting Better	Getting Worse
Internal Conflict	Low	0.9	2	Getting Better	Flat
External Order	-	-	-	-	-
Key Eight Measures of Power					
Trade	Weak	-0.6	9	Flat	Flat
Innovation and Technology	Average	-0.4	10	Flat	Flat
Financial Center	Average	-0.4	13	Flat	Flat
Education	Weak	-0.8	14	Flat	Getting Worse
Competitiveness	Weak	-0.8	22	Flat	Getting Worse
Economic Output	Weak	-1.4	22	Flat	Flat
Military	Very Weak	-1.7	23	Flat	Flat
Reserve Currency Status	-	-	-	-	-
Additional Measures of Power					
Governance/Rule of Law	Strong	1.1	3	Flat	Flat
Resource Allocation Efficiency	Average	0.1	9	Getting Better	Getting Better
Infrastructure & Investment	Average	-0.4	10	Flat	Getting Better
Geology	Average	-0.4	13	Getting Worse	Getting Better
Character/Determination/Civility	Average	-0.3	17	Getting Better	Flat
Acts of Nature	Average	0.5	7	-	Getting Worse
Wellbeing					
Happiness Gauge	Good	1.5	3	-	Flat
Health Gauge	Excellent	2.1	12	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for the Netherlands.

This computer-generated report is our best attempt to synthesize conditions in the Netherlands. If anything sounds off, we'd love your comments.

THE NETHERLANDS' PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that the Netherlands's real growth rate over the next 10 years will be in the vicinity of 1.2%. This growth rate is somewhat below the global average, ranked 24th out of 35 major economies, and 6th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In the Netherlands's case, our growth estimate comes from combining our expectation of a 1.4% growth rate per worker, which is somewhat below the global average, and a labor force growth rate of -0.2%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect the Netherlands's productivity growth to be somewhat worse than most major countries (implying a growth rate of 1.5% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.3% on its own). As shown below, the Netherlands's biggest relative strengths are its level of innovation/commercialism and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

NETHERLANDS—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.2%**		**24**
Working-Age Population Growth	**-0.2%**		**21**
Growth Per Worker Estimate	**1.4%**		**23**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**26**
What You Pay vs. What You Get	**45%**		**32**
Education	11%		32
Labor Productivity	11%		33
Working Hard	11%		34
Investing	11%		29
Culture	**20%**		**12**
Corruption	3%		8
Bureaucracy	3%		17
Rule of Law	3%		20
Savoring Life vs. Achieving	3%		26
Innovation	3%		3
Self Sufficiency	3%		21
Indebtedness	**35%**		**24**
Debt Levels and Flow	**18%**		**20**
Monetary Policy	**18%**		**20**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Netherlands

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

The Netherlands offers much worse than average value, ranked 32nd of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing the Netherlands's low levels of education (according to tertiary education rates) and about average quality of education (according to PISA test scores). Further, people in the Netherlands don't work long hours relative to the cost of their labor—the average person of working age works 18.1 hours per week (28th out of 35 countries, and 30th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given the Netherlands's high per capita income levels, with investment at about 19% of GDP (19th out of 35 countries). The Netherlands's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.2% per year (vs. an average of +1% across the developed world). Investment in the Netherlands is more productive than investment in other countries with similar levels of economic development, ranked 5th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Dutch culture appears to be a somewhat better than average contributor to growth in coming years, ranked 12th among the countries we measure. Note that our culture measures compare the Netherlands to countries of similar levels of economic development. Starting with self-sufficiency, the Netherlands is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 45% of GDP and transfer payments to households of 17% of GDP), and its labor markets are moderately flexible. The Netherlands also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't especially value accomplishment and achievement. Furthermore, innovation and commercialism are very strong in the Netherlands relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, the Netherlands has somewhat low bureaucracy and red tape, somewhat low corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. The Netherlands's indebtedness position is slightly worse than other countries, ranked 24th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 267% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF INDONESIA

This is our computer generated reading for Indonesia as of July 2024.

Based on the latest readings of key indicators, **Indonesia is not a meaningful global power (in the bottom third of countries we rank), though in ascent. As shown in the table below, the key strengths of Indonesia are its strong economic and financial position, its cost-competitive labor (on a quality-adjusted basis), and its people's self-sufficiency and strong work ethic. Its weaknesses are its weak relative position in education, its bad reading on innovation and technology, its relative unimportance to global trade, and its corruption and inconsistent rule of law.** The eight major measures of power are somewhat weak today but have, in aggregate, risen over the last 20 years. In particular, Indonesia's innovation and technology, its importance to global trade, and its relative position in education are strengthening.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Indonesia, **the big cycles look somewhat favorable, though we have a limited read**.

Indonesia is in a highly favorable position in its economic and financial cycles, with a low debt burden and relatively high expected real growth over the next 10 years (5.5% per year). In the last 3 years, real growth has been 4.9% per year, below our longer-term expectations. Over the same time, the stock market in Indonesia has returned 18.9% above cash, somewhat above the rest of the world (17.1%). Debt levels are low (79% of GDP across non-financial sectors). Breaking this down, government debt levels are low (39% of GDP); household debt levels are low (16% of GDP); and non-financial corporate debt levels are low (24% of GDP). The bulk (80%) of these debts are in its own currency, which mitigates its debt risks. Indonesia has slightly more foreign debts than foreign assets (net international investment position is -19% of GDP).

At this time, we do not have a read on internal disorder for Indonesia because we lack sufficient reliable data. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Indonesia capture 17% and 45% of income (respectively the 9th and 10th highest share across major countries) and 30% and 61% of wealth (both the 12th highest share across major countries). Over the last decade, incomes for the top 10% grew 44% while incomes for the bottom 60% grew 61%. The relatively high income growth for the bottom 60% reduces the risks from inequality.

Looking in more detail at the eight key measures of power—Indonesia has the second cheapest labor among major countries. Adjusted for worker quality, labor is significantly cheaper than the global average.

We net this against its weak relative position in education, its bad reading on innovation and technology, and its relative unimportance to global trade. With education—Indonesia has a moderate share of the world's bachelor's degrees (3%) and a small share of the world's doctorate degrees (2%). On years of education, Indonesia is poor—students have on average 8.5 years of education vs 11.7 in the average major country. PISA scores, which measure the proficiency of 15-year-old students across countries, are bad—369 vs 479 in the average major country. With innovation and technology—a small share (less than 1%) of global patent applications, a small share (less than 1%) of global R&D spending and a small share (less than 1%) of global researchers are in Indonesia. Indonesia exports just 1% of global exports.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Indonesia scores high on our happiness index (1.6z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores neutral on our health index (-0.4z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators).

INDONESIA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.17		Rank: 18	Getting Better	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Highly Favorable	1.1	2	Getting Better	Getting Better
Debt Burden	Low Debt	0.7	3	Getting Better	Getting Better
Expected Growth	5.5%	0.9	2	Flat	Getting Better
Internal Order	-	-	-	-	-
Wealth/Values Gap	Narrow	0.6	7	Flat	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Strong	1.6	2	Getting Better	Getting Better
Reserve Currency Status	Weak	-0.7	9	-	Flat
Military	Weak	-0.6	13	Flat	Flat
Economic Output	Weak	-0.8	14	Flat	Flat
Financial Center	Weak	-1.0	20	Flat	Getting Better
Innovation and Technology	Weak	-1.2	21	Getting Better	Getting Better
Trade	Weak	-1.2	22	Getting Better	Getting Better
Education	Very Weak	-1.8	24	Getting Better	Getting Better
Additional Measures of Power					
Character/Determination/Civility	Strong	1.4	4	Flat	Flat
Geology	Average	0.4	7	Getting Better	Flat
Resource Allocation Efficiency	Strong	0.5	8	Getting Better	Getting Worse
Infrastructure & Investment	Weak	-0.5	14	Getting Better	Getting Better
Governance/Rule of Law	Weak	-1.4	18	Flat	Flat
Acts of Nature	Very Weak	-2.2	22	-	Flat
Wellbeing					
Happiness Gauge	Good	1.6	2	-	Flat
Health Gauge	Moderate	-0.4	22	-	Flat

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Indonesia.

This computer-generated report is our best attempt to synthesize conditions in Indonesia. If anything sounds off, we'd love your comments.

INDONESIA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Indonesia's real growth rate over the next 10 years will be in the vicinity of 5.5%. This growth rate is well above the global average, ranked 3rd out of 35 major economies, and 3rd out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Indonesia's case, our growth estimate comes from combining our expectation of a 4.8% growth rate per worker, which is well above the global average, and a labor force growth rate of 0.7%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Indonesia's productivity growth to be much better than most major countries (implying a growth rate of 5.0% on its own), and indebtedness conditions to be better than other countries (implying a growth rate of 4.4% on its own). As shown below, Indonesia's biggest relative strengths are its levels of investment and the value its workers provide relative to education levels, and its biggest relative problems are its monetary policy and its reliance on credit flows for growth (though compared to other countries it doesn't rate especially poorly on these measures). The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

INDONESIA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**5.5%**		**3**
Working-Age Population Growth	**0.7%**		**7**
Growth Per Worker Estimate	**4.8%**		**2**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**2**
What You Pay vs. What You Get	**45%**		**2**
Education	11%		2
Labor Productivity	11%		3
Working Hard	11%		2
Investing	11%		2
Culture	**20%**		**5**
Corruption	3%		2
Bureaucracy	3%		6
Rule of Law	3%		10
Savoring Life vs. Achieving	3%		7
Innovation	3%		11
Self Sufficiency	3%		5
Indebtedness	**35%**		**2**
Debt Levels and Flow	**18%**		**1**
Monetary Policy	**18%**		**7**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on Indonesia

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Indonesia offers much better than average value, ranked 2nd of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Indonesia's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Indonesia work very long hours relative to the cost of their labor—the average person of working age works 31.2 hours per week (6th out of 35 countries, and 2nd out of 35 countries after adjusting for income), and the demographics of the workforce are favorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are high given Indonesia's very low per capita income levels, with investment at about 23% of GDP (6th out of 35 countries). Indonesia's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.2% per year (vs. an average of +1% across the emerging world). Investment in Indonesia is about as productive as investment in other countries with similar levels of economic development, ranked 12th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Indonesian culture appears to be a significant contributor to growth in coming years, ranked 5th among the countries we measure. Note that our culture measures compare Indonesia to countries of similar levels of economic development. Starting with self-sufficiency, Indonesia is rated pretty well on this measure, weighing that its workers have a roughly average work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is low (with government outlays of 18% of GDP and transfer payments to households of 3% of GDP), and its labor markets are very flexible. Indonesia also seems to value savoring about the same as it values achieving—again, its work ethic is roughly average, but surveys suggest that its people value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat strong in Indonesia relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, Indonesia has very low bureaucracy and red tape, very low corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Indonesia's indebtedness position is better than other countries, ranked 2nd out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a moderate amount of room to lever up in the future. The total debt burden is around 83% of GDP, compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally neutral.

THE POWERS AND PROSPECTS OF ITALY

This is our computer generated reading for Italy as of July 2024.

Based on the latest readings of key indicators, **Italy is not a meaningful global power (in the bottom third of countries we rank) in gradual decline, although over the last 3 years, its trajectory has been flat. As shown in the table below, the key weaknesses of Italy that put it in this position are its unfavorable economic/financial position, its corruption and inconsistent rule of law, its people's lower than average work ethic and low self-sufficiency, and its relatively poor allocation of labor and capital.** The eight major measures of power are somewhat weak today and have, in aggregate, fallen slowly over the last 20 years. In particular, Italy's share of global output, its importance to global trade, and its importance as a financial center are declining.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Italy, **the big cycles look somewhat unfavorable, though we have a limited read**.

Italy is in an unfavorable position in its economic and financial cycles, with a moderately high debt burden and very low expected real growth over the next 10 years (-0.5% per year). In the last 3 years, real growth has been 3.5% per year, above our longer-term expectations. Over the same time, the stock market in Italy has returned 47.0% above cash, meaningfully outperforming the rest of the world (17.1%). Debt levels are high (231% of GDP across non-financial sectors). Breaking this down, government debt levels are high (132% of GDP); household debt levels are low (38% of GDP); and non-financial corporate debt levels are modest (61% of GDP). Italy's debts are largely in euros, which increases Italy's debt risks, since this is not a currency that Italy directly controls. Italy has similar levels of foreign debts and foreign assets (net international investment position is 7% of GDP). The ability to use interest rate cuts to stimulate the economy is modest for the Eurozone (short rates are at 3.6%).

At this time, we do not have a read on internal disorder for Italy because we lack sufficient reliable data. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Italy capture 13% and 38% of income (respectively the 13th and 14th highest share across major countries) and 22% and 56% of wealth (respectively the 21st and 22nd highest share across major countries). Over the last decade, incomes for the top 10% grew 12% while incomes for the bottom 60% grew 9%. The relatively low income growth for the bottom 60% increases the risks from inequality.

On the eight key measures of power, Italy looks somewhat weak in aggregate. It has no particularly prominent strengths or weaknesses that I will call out.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Italy scores modestly high on our happiness index (0.8z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.2z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Italy is 84 compared to a global average of 75.

ITALY—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.17		Rank: 19	Getting Worse	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Unfavorable	-1.1	20	Flat	Flat
Debt Burden	Moderately High Debt	-0.5	18	Flat	Flat
Expected Growth	-0.5%	-1.3	24	Flat	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Narrow	0.5	9	Flat	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Trade	Weak	-0.7	10	Getting Worse	Getting Better
Military	Weak	-0.5	11	Flat	Flat
Economic Output	Weak	-0.8	12	Getting Worse	Getting Worse
Financial Center	Weak	-0.6	14	Flat	Flat
Innovation and Technology	Weak	-0.8	15	Flat	Getting Better
Education	Weak	-1.0	17	Flat	Flat
Competitiveness	Weak	-0.6	19	Flat	Getting Better
Reserve Currency Status	-	-	-	-	-
Additional Measures of Power					
Infrastructure & Investment	Weak	-0.7	18	Getting Worse	Getting Better
Geology	Weak	-0.7	20	Flat	Getting Worse
Governance/Rule of Law	Very Weak	-1.8	20	Getting Worse	Flat
Resource Allocation Efficiency	Very Weak	-2.2	22	Getting Worse	Getting Worse
Character/Determination/Civility	Weak	-1.4	23	Flat	Getting Better
Acts of Nature	Weak	-1.0	17	-	Getting Worse
Wellbeing					
Happiness Gauge	Moderate	0.8	15	-	Flat
Health Gauge	Excellent	2.2	8	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Italy.

This computer-generated report is our best attempt to synthesize conditions in Italy. If anything sounds off, we'd love your comments.

ITALY'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Italy's real growth rate over the next 10 years will be in the vicinity of -0.5%. This growth rate is well below the global average, ranked 35th out of 35 major economies, and 17th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Italy's case, our growth estimate comes from combining our expectation of a 0.6% growth rate per worker, which is well below the global average, and a labor force growth rate of -1.1%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Italy's productivity growth to be much worse than most major countries (implying a growth rate of 0.3% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.1% on its own). As shown below, Italy's biggest relative strengths are its low reliance on credit flows for growth and the value its workers provide relative to education levels (though compared to other countries it doesn't rate especially well on these measures), and its biggest relative problems are its debt and debt service levels and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

ITALY—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**-0.5%**		**35**
Working-Age Population Growth	**-1.1%**		**34**
Growth Per Worker Estimate	**0.6%**		**33**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**34**
What You Pay vs. What You Get	**45%**		**29**
Education	11%		27
Labor Productivity	11%		24
Working Hard	11%		31
Investing	11%		24
Culture	**20%**		**35**
Corruption	3%		35
Bureaucracy	3%		33
Rule of Law	3%		35
Savoring Life vs. Achieving	3%		30
Innovation	3%		32
Self Sufficiency	3%		35
Indebtedness	**35%**		**21**
Debt Levels and Flow	**18%**		**23**
Monetary Policy	**18%**		**19**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Italy

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Italy offers much worse than average value, ranked 29th of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing Italy's low levels of education (according to tertiary education rates) and poor quality of education (according to PISA test scores). Further, people in Italy don't work long hours relative to the cost of their labor—the average person of working age works 17.6 hours per week (30th out of 35 countries, and 29th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Italy's high per capita income levels, with investment at about 20% of GDP (16th out of 35 countries). Italy's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 2.0% per year (vs. an average of +1% across the developed world). Investment in Italy is more productive than investment in other countries with similar levels of economic development, ranked 7th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Italian culture appears to be a much worse than average contributor to growth in coming years, ranked 35th among the countries we measure. Note that our culture measures compare Italy to countries of similar levels of economic development. Starting with self-sufficiency, Italy is rated very poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is very high (with government outlays of 55% of GDP and transfer payments to households of 30% of GDP), and its labor markets are very rigid. Italy also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't especially value accomplishment and achievement. Furthermore, innovation and commercialism are very weak in Italy relative to income. We see the country investing lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Italy has somewhat high bureaucracy and red tape, very high corruption, and very weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Italy's indebtedness position is about average compared to other countries, ranked 21st out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 278% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF SPAIN

This is our computer generated reading for Spain as of July 2024.

Based on the latest readings of key indicators, **Spain is not a meaningful global power (in the bottom third of countries we rank) on a flat trajectory. As shown in the table below, the key weaknesses of Spain that put it in this position are its unfavorable economic/financial position, its relatively poor allocation of labor and capital, its people's lower than average work ethic and low self-sufficiency, and its bad reading on innovation and technology.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Spain, **the big cycles look mixed**.

Spain is in an unfavorable position in its economic and financial cycles, with a moderately high debt burden and very low expected real growth over the next 10 years (0.3% per year). In the last 3 years, real growth has been 4.3% per year, above our longer-term expectations. Over the same time, the stock market in Spain has returned 33.4% above cash, meaningfully outperforming the rest of the world (17.1%). Debt levels are high (237% of GDP across non-financial sectors). Breaking this down, government debt levels are high (110% of GDP); household debt levels are low (47% of GDP); and non-financial corporate debt levels are modest (79% of GDP). Spain's debts are largely in euros, which increases Spain's debt risks, since this is not a currency that Spain directly controls. Spain has significantly more foreign debts than foreign assets (net international investment position is -54% of GDP). The ability to use interest rate cuts to stimulate the economy is modest for the Eurozone (short rates are at 3.6%).

Internal disorder is a low risk. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Spain capture 11% and 33% of income (respectively the 19th and 21st highest share across major countries) and 24% and 58% of wealth (both the 19th highest share across major countries). Our internal conflict gauge is average though getting better. This gauge measures actual conflict events (i.e., protests), political conflict (i.e., partisanship), and general discontent (based on surveys).

Looking in more detail at the eight key measures of power, we would call out its bad reading on innovation and technology. A small share (less than 1%) of global patent applications, a small share (1%) of global R&D spending and a small share (1%) of global researchers are in Spain.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Spain scores modestly high on our happiness index (0.8z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores high on our health index (2.3z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Spain is 84 compared to a global average of 75.

SPAIN—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.17		Rank: 20	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Unfavorable	-1.1	22	Flat	Flat
Debt Burden	Moderately High Debt	-0.9	21	Flat	Getting Better
Expected Growth	0.3%	-1.0	20	Getting Worse	Getting Worse
Internal Order	Low Risk	0.3	6	Getting Better	Getting Better
Wealth/Values Gap	Narrow	0.6	5	Getting Better	Flat
Internal Conflict	Average	-0.1	7	Getting Better	Getting Better
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Average	-0.5	16	Flat	Flat
Financial Center	Weak	-0.6	16	Flat	Flat
Trade	Weak	-0.9	16	Flat	Flat
Education	Weak	-0.9	16	Flat	Flat
Economic Output	Weak	-1.0	16	Getting Worse	Getting Worse
Military	Weak	-0.8	17	Flat	Flat
Innovation and Technology	Weak	-0.9	17	Getting Worse	Flat
Reserve Currency Status	-	-	-	-	-
Additional Measures of Power					
Infrastructure & Investment	Weak	-0.5	13	Getting Worse	Getting Worse
Governance/Rule of Law	Weak	-0.7	15	Flat	Getting Better
Geology	Weak	-0.5	16	Flat	Getting Worse
Character/Determination/Civility	Weak	-1.0	21	Flat	Flat
Resource Allocation Efficiency	Weak	-1.4	21	Getting Worse	Getting Worse
Acts of Nature	Weak	-0.7	16	-	Getting Worse
Wellbeing					
Happiness Gauge	Moderate	0.8	16	-	Flat
Health Gauge	Excellent	2.3	4	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Spain.

This computer-generated report is our best attempt to synthesize conditions in Spain. If anything sounds off, we'd love your comments.

SPAIN'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Spain's real growth rate over the next 10 years will be in the vicinity of 0.3%. This growth rate is well below the global average, ranked 31st out of 35 major economies, and 13th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Spain's case, our growth estimate comes from combining our expectation of a 1.0% growth rate per worker, which is somewhat below the global average, and a labor force growth rate of -0.7%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Spain's productivity growth to be somewhat worse than most major countries (implying a growth rate of 0.9% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.3% on its own). As shown below, Spain's biggest relative strengths are its low reliance on credit flows for growth and its rule of law (though compared to other countries it doesn't rate especially well on these measures), and its biggest relative problems are its debt and debt service levels and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

SPAIN—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**0.3%**		**31**
Working-Age Population Growth	**-0.7%**		**28**
Growth Per Worker Estimate	**1.0%**		**28**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**32**
What You Pay vs. What You Get	**45%**		**26**
Education	11%		24
Labor Productivity	11%		23
Working Hard	11%		30
Investing	11%		23
Culture	**20%**		**33**
Corruption	3%		30
Bureaucracy	3%		32
Rule of Law	3%		22
Savoring Life vs. Achieving	3%		25
Innovation	3%		33
Self Sufficiency	3%		33
Indebtedness	**35%**		**19**
Debt Levels and Flow	**18%**		**22**
Monetary Policy	**18%**		**18**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Spain

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Spain offers somewhat worse than average value, ranked 26th of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing Spain's somewhat low levels of education (according to tertiary education rates) and poor quality of education (according to PISA test scores). Further, people in Spain don't work long hours relative to the cost of their labor—the average person of working age works 16.3 hours per week (34th out of 35 countries, and 31st out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Spain's high per capita income levels, with investment at about 18% of GDP (21st out of 35 countries). Spain's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 0.9% per year (vs. an average of +1% across the developed world). Investment in Spain is more productive than investment in other countries with similar levels of economic development, ranked 8th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Spanish culture appears to be a much worse than average contributor to growth in coming years, ranked 33rd among the countries we measure. Note that our culture measures compare Spain to countries of similar levels of economic development. Starting with self-sufficiency, Spain is rated very poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is very high (with government outlays of 48% of GDP and transfer payments to households of 27% of GDP), and its labor markets are moderately rigid. Spain also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are very weak in Spain relative to income. We see the country investing lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Spain has average levels of bureaucracy and red tape, somewhat high corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Spain's indebtedness position is about average compared to other countries, ranked 19th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 276% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was depressed by low credit creation, which is supportive for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF SAUDI ARABIA

This is our computer generated reading for Saudi Arabia as of July 2024.

Based on the latest readings of key indicators, **Saudi Arabia is not a meaningful global power (in the bottom third of countries we rank) on a flat trajectory. As shown in the table below, the key strengths of Saudi Arabia are its strong economic and financial position and its people's self-sufficiency and strong work ethic. Its weaknesses are its weak relative position in education, its bad reading on innovation and technology, its relatively small economy, and its relative unimportance to global trade.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years. Note that Saudi Arabia generally scores well on our measures of quality but less well on quantity given its small size. You can see more detail on our per capita scores at the end of the overall report.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Saudi Arabia, **the big cycles look somewhat favorable, though we have a limited read**.

Saudi Arabia is in a highly favorable position in its economic and financial cycles, with a low debt burden and relatively high expected real growth over the next 10 years (4.6% per year). In the last 3 years, real growth has been 3.3% per year, below our longer-term expectations. Over the same time, the stock market in Saudi Arabia has returned 3.8% above cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are low (102% of GDP across non-financial sectors). Breaking this down, government debt levels are low (27% of GDP), which we net against 143% of GDP in sovereign wealth and FX reserves; household debt levels are low (32% of GDP); and non-financial corporate debt levels are low (43% of GDP). The bulk (89%) of these debts are in its own currency, which mitigates its debt risks. Saudi Arabia has significantly more foreign assets than foreign debts (net international investment position is 73% of GDP).

At this time, we do not have a read on internal disorder for Saudi Arabia because we lack sufficient reliable data. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Saudi Arabia capture 21% and 54% of income (respectively the 4th and 5th highest share across major countries) and 40% and 73% of wealth (both the 5th highest share across major countries).

Looking in more detail at the eight key measures of power, we would call out its weak relative position in education, its bad reading on innovation and technology, and its relatively small economy. With education—Saudi Arabia has a small share of the world's bachelor's degrees (less than 1%) and a small share of the world's doctorate degrees (less than 1%). On years of education, Saudi Arabia is around average—students have on average 10.6 years of education vs 11.7 in the average major country. With innovation and technology—a small share (less than 1%) of global patent applications, a small share (less than 1%) of global R&D spending and a small share (less than 1%) of global researchers are in Saudi Arabia. On technology, only 0.2% of the world's technology companies by value are listed in Saudi Arabia even though it comprises 2.4% of the total global equity market cap.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Saudi Arabia scores modestly high on our happiness index (0.5z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores modestly high on our health index (1.1z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in Saudi Arabia is 78 compared to a global average of 75.

SAUDI ARABIA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.15		Rank: 21	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Highly Favorable	1.5	1	-	Getting Worse
Debt Burden	Low Debt	1.7	1	-	Getting Worse
Expected Growth	4.6%	0.5	3	-	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Large	-2.9	24	Getting Better	Getting Better
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Average	0.5	10	-	Getting Better
Reserve Currency Status	Weak	-0.7	11	-	Flat
Military	Weak	-0.7	14	Getting Better	Flat
Financial Center	Weak	-0.8	18	Getting Better	Getting Better
Economic Output	Weak	-1.2	18	Flat	Flat
Education	Weak	-1.2	18	Getting Better	Flat
Trade	Weak	-1.1	19	Flat	Getting Better
Innovation and Technology	Weak	-1.2	22	Getting Better	Getting Better
Additional Measures of Power					
Character/Determination/Civility	Very Strong	2.3	2	Getting Better	Getting Better
Geology	Average	0.3	8	Flat	Getting Worse
Governance/Rule of Law	Average	0.5	10	Getting Better	Getting Better
Infrastructure & Investment	Weak	-0.6	15	Getting Better	Getting Better
Resource Allocation Efficiency	Average	0.2	23	Getting Better	Getting Better
Acts of Nature	Very Weak	-1.8	19	-	Getting Better
Wellbeing					
Happiness Gauge	Moderate	0.5	18	-	Flat
Health Gauge	Good	1.1	16	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Saudi Arabia.

This computer-generated report is our best attempt to synthesize conditions in Saudi Arabia. If anything sounds off, we'd love your comments.

SAUDI ARABIA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Saudi Arabia's real growth rate over the next 10 years will be in the vicinity of 4.6%. This growth rate is well above the global average, ranked 4th out of 35 major economies, and 4th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that Saudi Arabia is a large net exporter of commodities (net commodity exports are ~19% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In Saudi Arabia's case, our growth estimate comes from combining our expectation of a 3.0% growth rate per worker, which is somewhat above the global average, and a labor force growth rate of 1.6%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Saudi Arabia's productivity growth to be somewhat better than most major countries (implying a growth rate of 3.3% on its own), and indebtedness conditions to be slightly better than other countries (implying a growth rate of 1.8% on its own). As shown below, Saudi Arabia's biggest relative strengths are its debt and debt service levels and its growing workforce, and its biggest relative problems are its monetary policy and its level of innovation/commercialism. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

SAUDI ARABIA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**4.6%**		**4**
Working-Age Population Growth	**1.6%**		**1**
Growth Per Worker Estimate	**3.0%**		**8**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**10**
What You Pay vs. What You Get	**45%**		**12**
Education	11%		18
Labor Productivity	11%		10
Working Hard	11%		7
Investing	11%		10
Culture	**20%**		**8**
Corruption	3%		22
Bureaucracy	3%		7
Rule of Law	3%		4
Savoring Life vs. Achieving	3%		3
Innovation	3%		34
Self Sufficiency	3%		3
Indebtedness	**35%**		**5**
Debt Levels and Flow	**18%**		**4**
Monetary Policy	**18%**		**23**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Saudi Arabia

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Saudi Arabia offers somewhat better than average value, ranked 12th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Saudi Arabia's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Saudi Arabia work very long hours relative to the cost of their labor—the average person of working age works 34.5 hours per week (2nd out of 35 countries, and 6th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Saudi Arabia's high per capita income levels, with investment at about 22% of GDP (9th out of 35 countries). Saudi Arabia's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is shrinking at a rate of -0.9% per year (vs. an average of +1% across the emerging world). Investment in Saudi Arabia is more productive than investment in other countries with similar levels of economic development, ranked 9th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Saudi Arabian culture appears to be a somewhat better than average contributor to growth in coming years, ranked 8th among the countries we measure. Note that our culture measures compare Saudi Arabia to countries of similar levels of economic development. Starting with self-sufficiency, Saudi Arabia is rated very well on this measure, weighing that its workers have a somewhat strong work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is low (with government outlays of 33% of GDP and transfer payments to households of 3% of GDP), and its labor markets are very flexible. Saudi Arabia also seems to value achieving much more than savoring—again, its work ethic is somewhat strong, but it lacks the survey data our measures use to triangulate this view. Furthermore, innovation and commercialism are very weak in Saudi Arabia relative to income. We see the country investing very lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Saudi Arabia has very low bureaucracy and red tape, average levels of corruption, and very strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Saudi Arabia's indebtedness position is better than other countries, ranked 5th out of the 35 countries we look at. However, we put less stock in our assessment of Saudi Arabia's indebtedness given its significant stock of assets (e.g., FX reserves and/or sovereign wealth fund assets) that are not considered in this measurement. In the past few years, its growth was supported by high credit creation, which is restrictive for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THE POWERS AND PROSPECTS OF MEXICO

This is our computer generated reading for Mexico as of July 2024.

Based on the latest readings of key indicators, **Mexico is not a meaningful global power (in the bottom third of countries we rank) on a flat trajectory. As shown in the table below, the key strength of Mexico is its people's self-sufficiency and strong work ethic. Its weaknesses are its relative unimportance as a global financial center, its weak relative position in education, its bad reading on innovation and technology, its relatively weak military, its corruption and inconsistent rule of law, and its poor infrastructure and low investment.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Mexico, **the big cycles look mixed**.

Mexico is in a somewhat favorable position in its economic and financial cycles, with a low debt burden and moderate expected real growth over the next 10 years (2.5% per year). In the last 3 years, real growth has been 2.9% per year, above our longer-term expectations. Over the same time, the stock market in Mexico has returned -9.4% below cash, meaningfully underperforming the rest of the world (17.1%). Debt levels are low (76% of GDP across non-financial sectors). Breaking this down, government debt levels are low (40% of GDP); household debt levels are low (16% of GDP); and non-financial corporate debt levels are low (20% of GDP). The bulk (86%) of these debts are in its own currency, which mitigates its debt risks. Mexico has modestly more foreign debts than foreign assets (net international investment position is -39% of GDP).

At this time, we do not have a read on internal disorder for Mexico because we lack sufficient reliable data. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Mexico capture 28% and 65% of income (respectively the 1th and 2th highest share across major countries) and 47% and 79% of wealth (respectively the 4th and 3th highest share across major countries). Over the last decade, incomes for the top 10% grew -1% while incomes for the bottom 60% grew 31%. The relatively high income growth for the bottom 60% reduces the risks from inequality.

Looking in more detail at the eight key measures of power, we would call out its relative unimportance as a global financial center, its weak relative position in education, and its bad reading on innovation and technology, among other weaknesses laid out in the table below. Mexico's equity markets are a small share of the world total (less than 1% of free-float market cap and less than 1% of volume), and a small share of global transactions happen in MXN (less than 1%). With education—Mexico has a moderate share of the world's bachelor's degrees (4%) and a small share of the world's doctorate degrees (less than 1%). On years of education, Mexico is poor—students have on average 9.6 years of education vs 11.7 in the average major country. PISA scores, which measure the proficiency of 15-year-old students across countries, are bad—407 vs 479 in the average major country. With innovation and technology—a small share (less than 1%) of global patent applications, a small share (less than 1%) of global R&D spending and a small share (less than 1%) of global researchers are in Mexico.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Mexico scores modestly high on our happiness index (1.4z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores neutral on our health index (0.0z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the share of the population reported happy in Mexico is 92% compared to a global average of 88%.

MEXICO—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.14		Rank: 22	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Somewhat Favorable	0.1	6	Flat	Flat
Debt Burden	Low Debt	0.4	6	Flat	Getting Better
Expected Growth	2.5%	-0.2	9	Getting Worse	Getting Worse
Internal Order	-	-	-	-	-
Wealth/Values Gap	Large	-2.4	22	Getting Better	Getting Better
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Strong	0.7	8	Getting Better	Getting Worse
Economic Output	Weak	-0.8	13	Getting Worse	Getting Worse
Trade	Weak	-0.8	15	Getting Better	Getting Better
Reserve Currency Status	Weak	-0.7	17	-	Flat
Education	Weak	-1.5	20	Flat	Flat
Financial Center	Weak	-1.1	21	Getting Worse	Flat
Military	Weak	-1.1	21	-	Flat
Innovation and Technology	Weak	-1.3	24	Flat	Getting Worse
Additional Measures of Power					
Character/Determination/Civility	Strong	1.6	3	Getting Worse	Getting Better
Geology	Average	-0.3	11	Flat	Flat
Resource Allocation Efficiency	Average	-0.4	14	Getting Worse	Getting Worse
Infrastructure & Investment	Weak	-1.1	22	Getting Better	Flat
Governance/Rule of Law	Very Weak	-2.3	22	Getting Worse	Getting Worse
Acts of Nature	Weak	-1.2	18	-	Getting Worse
Wellbeing					
Happiness Gauge	Good	1.4	4	-	Flat
Health Gauge	Moderate	0.0	21	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Mexico.

This computer-generated report is our best attempt to synthesize conditions in Mexico. If anything sounds off, we'd love your comments.

MEXICO'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Mexico's real growth rate over the next 10 years will be in the vicinity of 2.5%. This growth rate is somewhat above the global average, ranked 12th out of 35 major economies, and 12th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Mexico's case, our growth estimate comes from combining our expectation of a 1.7% growth rate per worker, which is roughly in line with the global average, and a labor force growth rate of 0.8%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Mexico's productivity growth to be somewhat better than most major countries (implying a growth rate of 1.9% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 1.4% on its own). As shown below, Mexico's biggest relative strengths are the value its workers provide relative to education levels and its debt and debt service levels, and its biggest relative problems are its monetary policy and its level of innovation/commercialism. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

MEXICO—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**2.5%**		**12**
Working-Age Population Growth	**0.8%**		**5**
Growth Per Worker Estimate	**1.7%**		**20**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**13**
What You Pay vs. What You Get	**45%**		**10**
Education	11%		6
Labor Productivity	11%		11
Working Hard	11%		3
Investing	11%		16
Culture	**20%**		**24**
Corruption	3%		33
Bureaucracy	3%		26
Rule of Law	3%		27
Savoring Life vs. Achieving	3%		8
Innovation	3%		35
Self Sufficiency	3%		4
Indebtedness	**35%**		**9**
Debt Levels and Flow	**18%**		**2**
Monetary Policy	**18%**		**33**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Mexico

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Mexico offers somewhat better than average value, ranked 10th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Mexico's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Mexico work very long hours relative to the cost of their labor—the average person of working age works 32.0 hours per week (5th out of 35 countries, and 4th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Mexico's low per capita income levels, with investment at about 16% of GDP (25th out of 35 countries). Mexico's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a relatively slow rate of 0.8% per year (vs. an average of +1% across the emerging world). Investment in Mexico is less productive than investment in other countries with similar levels of economic development, ranked 17th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Mexican culture appears to be a somewhat worse than average contributor to growth in coming years, ranked 24th among the countries we measure. Note that our culture measures compare Mexico to countries of similar levels of economic development. Starting with self-sufficiency, Mexico is rated pretty well on this measure, weighing that its workers have a roughly average work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is low (with government outlays of 28% of GDP and transfer payments to households of 7% of GDP), and its labor markets are very flexible. Mexico also seems to value savoring about the same as it values achieving—again, its work ethic is roughly average, but surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are very weak in Mexico relative to income. We see the country investing very lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Mexico has somewhat low bureaucracy and red tape, somewhat high corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Mexico's indebtedness position is slightly better than other countries, ranked 9th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a moderate amount of room to lever up in the future. The total debt burden is around 107% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally tight.

THE POWERS AND PROSPECTS OF SOUTH AFRICA

This is our computer generated reading for South Africa as of July 2024.

Based on the latest readings of key indicators, **South Africa is not a meaningful global power (in the bottom third of countries we rank) on a flat trajectory. As shown in the table below, the key weaknesses of South Africa that put it in this position are its weak relative position in education, its bad reading on innovation and technology, its relatively weak military, its relatively small economy, its relative unimportance to global trade, its corruption and inconsistent rule of law, and its poor infrastructure and low investment.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For South Africa, **the big cycles look mixed**.

South Africa is in a somewhat favorable position in its economic and financial cycles, with a moderately low debt burden and moderate expected real growth over the next 10 years (2.9% per year). In the last 3 years, real growth has been 1.3% per year, below our longer-term expectations. Over the same time, the stock market in South Africa has returned 16.3% above cash, somewhat below the rest of the world (17.1%). Debt levels are modest (141% of GDP across non-financial sectors). Breaking this down, government debt levels are modest (75% of GDP); household debt levels are low (34% of GDP); and non-financial corporate debt levels are low (32% of GDP). The bulk (88%) of these debts are in its own currency, which mitigates its debt risks. South Africa has modestly more foreign assets than foreign debts (net international investment position is 28% of GDP).

At this time, we do not have a read on internal disorder for South Africa because we lack sufficient reliable data. Wealth, income and values gaps are large (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in South Africa capture 19% and 65% of income (respectively the 8th and highest share across major countries) and 55% and 86% of wealth (both the 1st highest share across major countries). Over the last decade, incomes for the top 10% grew 5% while incomes for the bottom 60% grew 8%. The relatively low income growth for the bottom 60% increases the risks from inequality.

Looking in more detail at the eight key measures of power, we would call out its weak relative position in education, its bad reading on innovation and technology, and its relatively weak military, among other weaknesses laid out in the table below. With education—South Africa has a small share of the world's bachelor's degrees (less than 1%) and a small share of the world's doctorate degrees (less than 1%). On years of education, South Africa is poor—students have on average 9.4 years of education vs 11.7 in the average major country. With innovation and technology—a small share (less than 1%) of global patent applications, a small share (less than 1%) of global R&D spending and a small share (less than 1%) of global researchers are in South Africa. A small share (less than 1%) of global military spending is by South Africa, and it has a small share (less than 1%) of the world's military personnel.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. South Africa scores neutral on our happiness index (0.1z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores low on our health index (-1.7z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the life expectancy at birth (in years) in South Africa is 62 compared to a global average of 75.

SOUTH AFRICA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.10		Rank: 23	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Somewhat Favorable	0.1	9	Getting Worse	Getting Better
Debt Burden	Moderately Low Debt	0.2	9	Flat	Getting Better
Expected Growth	2.9%	-0.1	6	Getting Worse	Getting Better
Internal Order	-	-	-	-	-
Wealth/Values Gap	Large	-2.7	23	Getting Better	Getting Better
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Strong	0.8	6	Getting Better	Getting Better
Reserve Currency Status	Weak	-0.7	12	-	Flat
Financial Center	Weak	-0.8	19	Getting Worse	Flat
Economic Output	Weak	-1.2	19	Flat	Flat
Education	Weak	-1.7	21	Flat	Flat
Military	Weak	-1.2	22	Flat	Flat
Innovation and Technology	Weak	-1.2	23	Flat	Flat
Trade	Weak	-1.3	23	Flat	Flat
Additional Measures of Power					
Geology	Average	-0.2	10	Getting Worse	Flat
Resource Allocation Efficiency	Weak	-0.6	17	Getting Worse	Getting Worse
Character/Determination/Civility	Weak	-0.5	19	-	Getting Worse
Governance/Rule of Law	Weak	-1.5	19	Getting Worse	Getting Worse
Infrastructure & Investment	Weak	-1.0	20	Flat	Getting Worse
Acts of Nature	Very Weak	-2.1	21	-	Getting Worse
Wellbeing					
Happiness Gauge	Moderate	0.1	20	-	Flat
Health Gauge	Very Low	-1.7	24	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for South Africa.

This computer-generated report is our best attempt to synthesize conditions in South Africa. If anything sounds off, we'd love your comments.

SOUTH AFRICA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that South Africa's real growth rate over the next 10 years will be in the vicinity of 2.9%. This growth rate is somewhat above the global average, ranked 8th out of 35 major economies, and 8th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that South Africa is a large net exporter of commodities (net commodity exports are ~12% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In South Africa's case, our growth estimate comes from combining our expectation of a 1.9% growth rate per worker, which is roughly in line with the global average, and a labor force growth rate of 1.0%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect South Africa's productivity growth to be somewhat better than most major countries (implying a growth rate of 2.2% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 1.0% on its own). As shown below, South Africa's biggest relative strengths are the value its workers provide relative to education levels and its growing workforce, and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

SOUTH AFRICA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**2.9%**		**8**
Working-Age Population Growth	**1.0%**		**2**
Growth Per Worker Estimate	**1.9%**		**17**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**11**
What You Pay vs. What You Get	**45%**		**7**
Education	11%		-
Labor Productivity	11%		6
Working Hard	11%		13
Investing	11%		4
Culture	**20%**		**21**
Corruption	3%		13
Bureaucracy	3%		14
Rule of Law	3%		6
Savoring Life vs. Achieving	3%		27
Innovation	3%		28
Self Sufficiency	3%		26
Indebtedness	**35%**		**8**
Debt Levels and Flow	**18%**		**11**
Monetary Policy	**18%**		**6**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the South Africa

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

South Africa offers much better than average value, ranked 7th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration South Africa's low levels of education (according to tertiary education rates).Further, people in South Africa work an average number of hours relative to the cost of their labor—the average person of working age works 17.6 hours per week (31st out of 35 countries, and 17th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat high given South Africa's very low per capita income levels, with investment at about 14% of GDP (32nd out of 35 countries). South Africa's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is shrinking at a rate of -0.8% per year (vs. an average of +1% across the emerging world). Investment in South Africa is more productive than investment in other countries with similar levels of economic development, ranked 1st out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

South African culture appears to be an around average contributor to growth in coming years, ranked 21st among the countries we measure. Note that our culture measures compare South Africa to countries of similar levels of economic development. Starting with self-sufficiency, South Africa is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 33% of GDP and transfer payments to households of 6% of GDP), and its labor markets are neither rigid nor flexible. South Africa also seems to value savoring much more than achieving—again, its work ethic is relatively weak, but surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat weak in South Africa relative to income. We see the country investing very lightly in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, South Africa has somewhat low bureaucracy and red tape, average levels of corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. South Africa's indebtedness position is slightly better than other countries, ranked 8th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has little room to lever up in the future. The total debt burden is around 179% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally neutral.

THE POWERS AND PROSPECTS OF ARGENTINA

This is our computer generated reading for Argentina as of July 2024.

Based on the latest readings of key indicators, **Argentina is not a meaningful global power (in the bottom third of countries we rank) on a flat trajectory. As shown in the table below, the key weaknesses of Argentina that put it in this position are its relative unimportance as a global financial center, its weak relative position in education, its bad reading on innovation and technology, its relatively weak military, its relatively small economy, its relative unimportance to global trade, its corruption and inconsistent rule of law, its poor infrastructure and low investment, and its relatively poor allocation of labor and capital.** The eight major measures of power are somewhat weak today and have, in aggregate, moved sideways over the last 20 years.

The table on the next page shows our aggregate country power gauge and the major drivers, the rank of each measure of power across 24 major countries today, as well as the trajectory over the past three and twenty years.

To understand a country, we start by looking at **the big cycles**, as well as **measures of power** that both reflect and drive the rise and fall of a country. While we refer to these factors individually, they are not separate; they interact with and reinforce one another to move a country along its cycle.

For Argentina, **the big cycles look somewhat unfavorable, though we have a limited read**.

Argentina is in a moderately unfavorable position in its economic and financial cycles, with a moderately high debt burden and moderate expected real growth over the next 10 years (2.0% per year). In the last 3 years, real growth has been 2.4% per year, above our longer-term expectations. Over the same time, the stock market in Argentina has returned 7.1% above cash, underperforming the rest of the world (17.1%). Debt levels are low (138% of GDP across non-financial sectors). Breaking this down, government debt levels are high (118% of GDP); household debt levels are low (3% of GDP); and non-financial corporate debt levels are low (17% of GDP). The bulk (85%) of these debts are in its own currency, which mitigates its debt risks. Argentina has modestly more foreign assets than foreign debts (net international investment position is 28% of GDP).

At this time, we do not have a read on internal disorder for Argentina because we lack sufficient reliable data. Wealth, income and values gaps are narrow (relative to countries of similar per capita income levels). Regarding inequality—the top 1% and top 10% in Argentina capture 13% and 45% of income (respectively the 11th and 9th highest share across major countries) and 25% and 59% of wealth (both the 16th highest share across major countries). Over the last decade, incomes for the top 10% grew -2% while incomes for the bottom 60% grew -2%. The relatively low income growth for the bottom 60% increases the risks from inequality.

Looking in more detail at the eight key measures of power, we would call out its relative unimportance as a global financial center, its weak relative position in education, and its bad reading on innovation and technology, among other weaknesses laid out in the table below. Argentina's equity markets are a small share of the world total (less than 1% of free-float market cap and less than 1% of volume), and a small share of global transactions happen in ARS (less than 1%). With education—Argentina has a small share of the world's bachelor's degrees (less than 1%) and a small share of the world's doctorate degrees (less than 1%). On years of education, Argentina is poor—students have on average 9.3 years of education vs 11.7 in the average major country. PISA scores, which measure the proficiency of 15-year-old students across countries, are poor—395 vs 479 in the average major country. With innovation and technology—a small share (less than 1%) of global patent applications, a small share (less than 1%) of global R&D spending and a small share (less than 1%) of global researchers are in Argentina.

Finally, we also assess broader wellbeing by looking at measures of happiness and health/safety. Argentina scores modestly high on our happiness index (0.9z, which measures survey responses like the share of people that reported being happy in the country and other indications of societal satisfaction like low suicide rates) and scores modestly high on our health index (0.9z, which measures factors like life expectancy, exposure to pollution, and homicide rates among other indicators). For example, the share of the population using safely managed drinking water services in Argentina is 99% compared to a global average of 93%.

ARGENTINA—KEY DRIVERS OF OUR COUNTRY POWER SCORE

Overall Strength Gauge (0–1)	Level: 0.07		Rank: 24	Flat	Flat
The Big Cycles	**Level**	**Z-Score**	**Rank**	**20y Trajectory**	**3y Trajectory**
Economic/Financial Position	Moderately Unfavorable	-0.7	17	Getting Worse	Getting Better
Debt Burden	Moderately High Debt	-0.8	19	Getting Worse	Getting Better
Expected Growth	2.0%	-0.4	11	Flat	Getting Better
Internal Order	-	-	-	-	-
Wealth/Values Gap	Narrow	0.6	8	Getting Better	Flat
Internal Conflict	-	-	-	-	-
External Order	-	-	-	-	-
Key Eight Measures of Power					
Competitiveness	Strong	0.6	9	Getting Better	Flat
Reserve Currency Status	Weak	-0.7	13	-	Flat
Military	Weak	-1.0	19	Flat	Flat
Innovation and Technology	Weak	-1.2	20	Getting Worse	Getting Worse
Economic Output	Weak	-1.2	20	Flat	Flat
Education	Very Weak	-1.8	22	Flat	Flat
Financial Center	Weak	-1.2	23	Getting Worse	Getting Worse
Trade	Weak	-1.3	24	Flat	Flat
Additional Measures of Power					
Geology	Average	-0.3	12	Getting Worse	Getting Worse
Character/Determination/Civility	Average	-0.2	15	Flat	Flat
Infrastructure & Investment	Weak	-1.5	24	Flat	Getting Worse
Resource Allocation Efficiency	Very Weak	-2.2	24	Flat	Getting Worse
Governance/Rule of Law	Very Weak	-2.4	24	Getting Worse	Getting Worse
Acts of Nature	Very Weak	-2.1	20	-	Getting Worse
Wellbeing					
Happiness Gauge	Moderate	0.9	12	-	Flat
Health Gauge	Moderate	0.9	17	-	Getting Better

Note: All ranks shown are out of 24, except in the case of Internal Conflict & Internal Order (out of 10) and Reserve Currency Status (out of 19).

The next page goes into more detail on how we are getting to our read on future growth for Argentina.

This computer-generated report is our best attempt to synthesize conditions in Argentina. If anything sounds off, we'd love your comments.

ARGENTINA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Argentina's real growth rate over the next 10 years will be in the vicinity of 2.0%. This growth rate is roughly at the global average, ranked 16th out of 35 major economies, and 14th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Argentina's case, our growth estimate comes from combining our expectation of a 1.2% growth rate per worker, which is somewhat below the global average, and a labor force growth rate of 0.8%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Argentina's productivity growth to be about average compared to most major countries (implying a growth rate of 2.1% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of -0.6% on its own). As shown below, Argentina's biggest relative strengths are the value its workers provide relative to education levels and its growing workforce, and its biggest relative problems are its monetary policy and its debt and debt service levels. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

ARGENTINA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**2.0%**		**16**
Working-Age Population Growth	**0.8%**		**4**
Growth Per Worker Estimate	**1.2%**		**25**

Breaking Down our Growth per Worker Estimate	Weight	Score -4.00 0 4.00	Rank
Productivity (vs. similar income countries)*	**65%**		**16**
What You Pay vs. What You Get	**45%**		**11**
Education	11%		8
Labor Productivity	11%		12
Working Hard	11%		6
Investing	11%		18
Culture	**20%**		**29**
Corruption	3%		23
Bureaucracy	3%		31
Rule of Law	3%		30
Savoring Life vs. Achieving	3%		29
Innovation	3%		29
Self Sufficiency	3%		17
Indebtedness	**35%**		**29**
Debt Levels and Flow	**18%**		**12**
Monetary Policy	**18%**		**35**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Argentina

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Argentina offers somewhat better than average value, ranked 11th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Argentina's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Argentina work long hours relative to the cost of their labor—the average person of working age works 23.9 hours per week (14th out of 35 countries, and 10th out of 35 countries after adjusting for income), and the demographics of the workforce are favorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Argentina's low per capita income levels, with investment at about 10% of GDP (34th out of 35 countries). Argentina's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a relatively slow rate of 0.4% per year (vs. an average of +1% across the emerging world). Investment in Argentina is less productive than investment in other countries with similar levels of economic development, ranked 18th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Argentine culture appears to be a much worse than average contributor to growth in coming years, ranked 29th among the countries we measure. Note that our culture measures compare Argentina to countries of similar levels of economic development. Starting with self-sufficiency, Argentina is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 38% of GDP and transfer payments to households of 11% of GDP), and its labor markets are neither rigid nor flexible. Argentina also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat weak in Argentina relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Argentina has average levels of bureaucracy and red tape, average levels of corruption, and somewhat weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Argentina's indebtedness position is worse than other countries, ranked 29th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has little room to lever up in the future. In the past few years, its growth was supported by high credit creation, which is restrictive for growth going forward. Lastly, the stance of monetary policy is generally tight.

THE UNITED ARAB EMIRATES'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that the United Arab Emirates's real growth rate over the next 10 years will be in the vicinity of 5.5%. This growth rate is well above the global average, ranked 2nd out of 35 major economies, and 2nd out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that the United Arab Emirates is a very large net exporter of commodities (net commodity exports are ~36% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In the United Arab Emirates's case, our growth estimate comes from combining our expectation of a 4.8% growth rate per worker, which is well above the global average, and a labor force growth rate of 0.8%, which will boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect the United Arab Emirates's productivity growth to be much better than most major countries (implying a growth rate of 4.2% on its own), and indebtedness conditions to be better than other countries (implying a growth rate of 5.2% on its own). As shown below, the United Arab Emirates's biggest relative strengths are its level of self-sufficiency and how its people value savoring life versus achieving, and its biggest relative problems are its level of innovation/commercialism and its levels of investment. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

UNITED ARAB EMIRATES—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**5.5%**		**2**
Working-Age Population Growth	**0.8%**		**6**
Growth Per Worker Estimate	**4.8%**		**3**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**4**
What You Pay vs. What You Get	**45%**		**14**
Education	11%		15
Labor Productivity	11%		13
Working Hard	11%		5
Investing	11%		20
Culture	**20%**		**3**
Corruption	3%		5
Bureaucracy	3%		2
Rule of Law	3%		5
Savoring Life vs. Achieving	3%		1
Innovation	3%		31
Self Sufficiency	3%		1
Indebtedness	**35%**		**1**
Debt Levels and Flow	**18%**		**3**
Monetary Policy	**18%**		**1**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the United Arab Emirates

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

The United Arab Emirates offers somewhat better than average value, ranked 14th of 35 countries we measure. Its workers are somewhat inexpensive, weighing the United Arab Emirates's high levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in the United Arab Emirates work very long hours relative to the cost of their labor—the average person of working age works 40.6 hours per week (1st out of 35 countries, and 3rd out of 35 countries after adjusting for income), although the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given the United Arab Emirates's high per capita income levels, with investment at about 20% of GDP (17th out of 35 countries). The United Arab Emirates's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.4% per year (vs. an average of +1% across the emerging world). Investment is about as productive as investment in other countries with similar levels of economic development, ranked 13th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Emirati culture appears to be a significant contributor to growth in coming years, ranked 3rd among the countries we measure. Note that our culture measures compare the United Arab Emirates to countries of similar levels of economic development. Starting with self-sufficiency, the United Arab Emirates is rated very well on this measure, weighing that its workers have a relatively strong work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is very low (with government outlays of 27% of GDP and transfer payments to households of 1% of GDP), and its labor markets are very flexible. The United Arab Emirates also seems to value achieving much more than savoring—again, its work ethic is relatively strong, but it lacks the survey data our measures use to triangulate this view. Furthermore, innovation and commercialism are very weak in the United Arab Emirates relative to income. We see the country investing moderately in research and innovation, and its outputs from innovation, including inventions and earnings, are low. Finally, relative to its income, the United Arab Emirates has very low bureaucracy and red tape, somewhat low corruption, and very strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. The United Arab Emirates's indebtedness position is better than other countries, ranked 1st out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a moderate amount of room to lever up in the future. The total debt burden is around 158% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit stimulative.

POLAND'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Poland's real growth rate over the next 10 years will be in the vicinity of 2.9%. This growth rate is well above the global average, ranked 7th out of 35 major economies, and 7th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Poland's case, our growth estimate comes from combining our expectation of a 3.5% growth rate per worker, which is well above the global average, and a labor force growth rate of -0.6%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Poland's productivity growth to be about average compared to most major countries (implying a growth rate of 2.7% on its own), and indebtedness conditions to be slightly better than other countries (implying a growth rate of 4.3% on its own). As shown below, Poland's biggest relative strengths are the value its workers provide relative to education levels and its monetary policy, and its biggest relative problems are how hard its people work and its level of self-sufficiency. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

POLAND—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**2.9%**		**7**
Working-Age Population Growth	**-0.6%**		**27**
Growth Per Worker Estimate	**3.5%**		**6**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**18**
What You Pay vs. What You Get	**45%**		**15**
Education	11%		12
Labor Productivity	11%		9
Working Hard	11%		14
Investing	11%		12
Culture	**20%**		**25**
Corruption	3%		24
Bureaucracy	3%		27
Rule of Law	3%		31
Savoring Life vs. Achieving	3%		11
Innovation	3%		23
Self Sufficiency	3%		24
Indebtedness	**35%**		**3**
Debt Levels and Flow	**18%**		**7**
Monetary Policy	**18%**		**4**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Poland

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Poland offers around average value, ranked 15th of 35 countries we measure. Its workers are somewhat inexpensive, weighing Poland's low levels of education (according to tertiary education rates) and good quality of education (according to PISA test scores). Further, people in Poland work long hours relative to the cost of their labor—the average person of working age works 24.0 hours per week (12th out of 35 countries, and 13th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Poland's about average per capita income levels, with investment at about 13% of GDP (33rd out of 35 countries). Poland's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.2% per year (vs. an average of +1% across the emerging world). Investment is more productive than investment in other countries with similar levels of economic development, ranked 1st out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Polish culture appears to be a somewhat worse than average contributor to growth in coming years, ranked 25th among the countries we measure. Note that our culture measures compare Poland to countries of similar levels of economic development. Starting with self-sufficiency, Poland is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 46% of GDP and transfer payments to households of 22% of GDP), and its labor markets are moderately flexible. Poland also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat weak in Poland relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Poland has average levels of bureaucracy and red tape, average levels of corruption, and somewhat weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Poland's indebtedness position is better than other countries, ranked 3rd out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a bit of room to lever up in the future. The total debt burden is around 136% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally neutral.

COLOMBIA'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Colombia's real growth rate over the next 10 years will be in the vicinity of 2.8%. This growth rate is somewhat above the global average, ranked 10th out of 35 major economies, and 10th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Colombia's case, our growth estimate comes from combining our expectation of a 2.3% growth rate per worker, which is somewhat above the global average, and a labor force growth rate of 0.5%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Colombia's productivity growth to be somewhat better than most major countries (implying a growth rate of 2.7% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 1.5% on its own). As shown below, Colombia's biggest relative strengths are the value its workers provide relative to education levels and its levels of investment, and its biggest relative problems are its monetary policy and its debt and debt service levels (though compared to other countries it doesn't rate especially poorly on these measures). The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

COLOMBIA—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**2.8%**		**10**
Working-Age Population Growth	**0.5%**		**9**
Growth Per Worker Estimate	**2.3%**		**13**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**7**
What You Pay vs. What You Get	**45%**		**4**
Education	11%		4
Labor Productivity	11%		4
Working Hard	11%		8
Investing	11%		8
Culture	**20%**		**22**
Corruption	3%		14
Bureaucracy	3%		19
Rule of Law	3%		26
Savoring Life vs. Achieving	3%		24
Innovation	3%		19
Self Sufficiency	3%		18
Indebtedness	**35%**		**7**
Debt Levels and Flow	**18%**		**10**
Monetary Policy	**18%**		**9**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Colombia

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Colombia offers much better than average value, ranked 4th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Colombia's about average levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Colombia work very long hours relative to the cost of their labor—the average person of working age works 25.5 hours per week (9th out of 35 countries, and 7th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat high given Colombia's low per capita income levels, with investment at about 7% of GDP (35th out of 35 countries). Colombia's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 0.5% per year (vs. an average of +1% across the emerging world). Investment is about as productive as investment in other countries with similar levels of economic development, ranked 14th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Colombian culture appears to be a somewhat worse than average contributor to growth in coming years, ranked 22nd among the countries we measure. Note that our culture measures compare Colombia to countries of similar levels of economic development. Starting with self-sufficiency, Colombia is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 34% of GDP and transfer payments to households of 19% of GDP), and its labor markets are moderately flexible. Colombia also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't value accomplishment and achievement. Furthermore, innovation and commercialism are about average in Colombia relative to income. We see the country investing lightly in research and innovation, though its outputs from innovation, including inventions and earnings, are high. Finally, relative to its income, Colombia has somewhat low bureaucracy and red tape, average levels of corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Colombia's indebtedness position is better than other countries, ranked 7th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a bit of room to lever up in the future. The total debt burden is around 128% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was supported by high credit creation, which is restrictive for growth going forward. Lastly, the stance of monetary policy is generally neutral.

CHILE'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Chile's real growth rate over the next 10 years will be in the vicinity of 2.4%. This growth rate is somewhat above the global average, ranked 13th out of 35 major economies, and 13th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that Chile is a large net exporter of commodities (net commodity exports are ~15% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In Chile's case, our growth estimate comes from combining our expectation of a 2.2% growth rate per worker, which is somewhat above the global average, and a labor force growth rate of 0.2%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Chile's productivity growth to be somewhat better than most major countries (implying a growth rate of 2.5% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.6% on its own). As shown below, Chile's biggest relative strengths are the value its workers provide relative to education levels and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and its monetary policy. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

CHILE—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**2.4%**		**13**
Working-Age Population Growth	**0.2%**		**14**
Growth Per Worker Estimate	**2.2%**		**14**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**14**
What You Pay vs. What You Get	**45%**		**16**
Education	11%		9
Labor Productivity	11%		15
Working Hard	11%		12
Investing	11%		14
Culture	**20%**		**15**
Corruption	3%		3
Bureaucracy	3%		12
Rule of Law	3%		13
Savoring Life vs. Achieving	3%		28
Innovation	3%		17
Self Sufficiency	3%		13
Indebtedness	**35%**		**16**
Debt Levels and Flow	**18%**		**15**
Monetary Policy	**18%**		**22**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Chile

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Chile offers around average value, ranked 16th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Chile's low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Chile work long hours relative to the cost of their labor—the average person of working age works 24.0 hours per week (13th out of 35 countries, and 12th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Chile's about average per capita income levels, with investment at about 19% of GDP (20th out of 35 countries). Chile's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 0.7% per year (vs. an average of +1% across the emerging world). Investment is about as productive as investment in other countries with similar levels of economic development, ranked 15th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Chilean culture appears to be an around average contributor to growth in coming years, ranked 15th among the countries we measure. Note that our culture measures compare Chile to countries of similar levels of economic development. Starting with self-sufficiency, Chile is rated about average on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is neutral (with government outlays of 29% of GDP and transfer payments to households of 19% of GDP), and its labor markets are moderately flexible. Chile also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't value accomplishment and achievement. Furthermore, innovation and commercialism are about average in Chile relative to income. We see the country investing very lightly in research and innovation, though its outputs from innovation, including inventions and earnings, are high. Finally, relative to its income, Chile has very low bureaucracy and red tape, somewhat low corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Chile's indebtedness position is about average compared to other countries, ranked 16th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

SWEDEN'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Sweden's real growth rate over the next 10 years will be in the vicinity of 2.3%. This growth rate is somewhat above the global average, ranked 14th out of 35 major economies, and 1st out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Sweden's case, our growth estimate comes from combining our expectation of a 1.9% growth rate per worker, which is roughly in line with the global average, and a labor force growth rate of 0.4%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Sweden's productivity growth to be about average compared to most major countries (implying a growth rate of 2.3% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.3% on its own). As shown below, Sweden's biggest relative strengths are its level of innovation/commercialism and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

SWEDEN—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**2.3%**		**14**
Working-Age Population Growth	**0.4%**		**12**
Growth Per Worker Estimate	**1.9%**		**16**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**21**
What You Pay vs. What You Get	**45%**		**23**
Education	11%		28
Labor Productivity	11%		26
Working Hard	11%		23
Investing	11%		27
Culture	**20%**		**13**
Corruption	3%		6
Bureaucracy	3%		20
Rule of Law	3%		16
Savoring Life vs. Achieving	3%		14
Innovation	3%		4
Self Sufficiency	3%		27
Indebtedness	**35%**		**28**
Debt Levels and Flow	**18%**		**33**
Monetary Policy	**18%**		**12**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Sweden

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Sweden offers somewhat worse than average value, ranked 23rd of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing Sweden's about average levels of education (according to tertiary education rates) and about average quality of education (according to PISA test scores). Further, people in Sweden don't work long hours relative to the cost of their labor—the average person of working age works 19.9 hours per week (26th out of 35 countries, and 27th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given Sweden's high per capita income levels, with investment at about 26% of GDP (3rd out of 35 countries). Sweden's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 2.2% per year (vs. an average of +1% across the developed world). Investment is about as productive as investment in other countries with similar levels of economic development, ranked 11th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Swedish culture appears to be a somewhat better than average contributor to growth in coming years, ranked 13th among the countries we measure. Note that our culture measures compare Sweden to countries of similar levels of economic development. Starting with self-sufficiency, Sweden is rated very poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 48% of GDP and transfer payments to households of 23% of GDP), and its labor markets are moderately rigid. Sweden also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, but surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are very strong in Sweden relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very high. Finally, relative to its income, Sweden has somewhat low bureaucracy and red tape, somewhat low corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Sweden's indebtedness position is slightly worse than other countries, ranked 28th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 359% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

THAILAND'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Thailand's real growth rate over the next 10 years will be in the vicinity of 1.9%. This growth rate is roughly at the global average, ranked 17th out of 35 major economies, and 15th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Thailand's case, our growth estimate comes from combining our expectation of a 2.7% growth rate per worker, which is somewhat above the global average, and a labor force growth rate of -0.7%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Thailand's productivity growth to be much better than most major countries (implying a growth rate of 3.0% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 2.0% on its own). As shown below, Thailand's biggest relative strengths are its levels of investment and the value its workers provide relative to education levels, and its biggest relative problems are its monetary policy and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

THAILAND—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.9%**		**17**
Working-Age Population Growth	**-0.7%**		**29**
Growth Per Worker Estimate	**2.7%**		**11**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**6**
What You Pay vs. What You Get	**45%**		**8**
Education	11%		10
Labor Productivity	11%		14
Working Hard	11%		9
Investing	11%		5
Culture	**20%**		**7**
Corruption	3%		12
Bureaucracy	3%		5
Rule of Law	3%		2
Savoring Life vs. Achieving	3%		20
Innovation	3%		14
Self Sufficiency	3%		11
Indebtedness	**35%**		**15**
Debt Levels and Flow	**18%**		**13**
Monetary Policy	**18%**		**30**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Thailand

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Thailand offers somewhat better than average value, ranked 8th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Thailand's somewhat low levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Thailand work long hours relative to the cost of their labor—the average person of working age works 24.6 hours per week (11th out of 35 countries, and 8th out of 35 countries after adjusting for income), although the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat high given Thailand's low per capita income levels, with investment at about 16% of GDP (26th out of 35 countries). Thailand's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 0.9% per year (vs. an average of +1% across the emerging world). Investment is more productive than investment in other countries with similar levels of economic development, ranked 7th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Thai culture appears to be a significant contributor to growth in coming years, ranked 7th among the countries we measure. Note that our culture measures compare Thailand to countries of similar levels of economic development. Starting with self-sufficiency, Thailand is rated about average on this measure, weighing that its workers have a somewhat weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is low (with government outlays of 24% of GDP and transfer payments to households of 9% of GDP), and its labor markets are moderately flexible. Thailand also seems to value savoring much more than achieving—again, its work ethic is somewhat weak, and surveys suggest that its people don't especially value accomplishment and achievement. Furthermore, innovation and commercialism are about average in Thailand relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, Thailand has very low bureaucracy and red tape, somewhat low corruption, and very strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Thailand's indebtedness position is about average compared to other countries, ranked 15th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has little room to lever up in the future. The total debt burden is around 258% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was supported by high credit creation, which is restrictive for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

HUNGARY'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Hungary's real growth rate over the next 10 years will be in the vicinity of 1.9%. This growth rate is roughly at the global average, ranked 18th out of 35 major economies, and 16th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Hungary's case, our growth estimate comes from combining our expectation of a 2.4% growth rate per worker, which is somewhat above the global average, and a labor force growth rate of -0.5%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Hungary's productivity growth to be about average compared to most major countries (implying a growth rate of 2.4% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.9% on its own). As shown below, Hungary's biggest relative strengths are the value its workers provide relative to education levels and its levels of investment, and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

HUNGARY—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.9%**		**18**
Working-Age Population Growth	**-0.5%**		**26**
Growth Per Worker Estimate	**2.4%**		**12**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**19**
What You Pay vs. What You Get	**45%**		**13**
Education	11%		14
Labor Productivity	11%		7
Working Hard	11%		17
Investing	11%		11
Culture	**20%**		**26**
Corruption	3%		34
Bureaucracy	3%		28
Rule of Law	3%		32
Savoring Life vs. Achieving	3%		18
Innovation	3%		12
Self Sufficiency	3%		22
Indebtedness	**35%**		**17**
Debt Levels and Flow	**18%**		**24**
Monetary Policy	**18%**		**8**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Hungary

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Hungary offers somewhat better than average value, ranked 13th of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Hungary's somewhat low levels of education (according to tertiary education rates) and poor quality of education (according to PISA test scores). Further, people in Hungary work an average number of hours relative to the cost of their labor—the average person of working age works 21.0 hours per week (20th out of 35 countries, and 18th out of 35 countries after adjusting for income), although the demographics of the workforce are about average (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Hungary's about average per capita income levels, with investment at about 22% of GDP (10th out of 35 countries). Hungary's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 3.3% per year (vs. an average of +1% across the emerging world). Investment is more productive than investment in other countries with similar levels of economic development, ranked 6th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Hungarian culture appears to be a somewhat worse than average contributor to growth in coming years, ranked 26th among the countries we measure. Note that our culture measures compare Hungary to countries of similar levels of economic development. Starting with self-sufficiency, Hungary is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 49% of GDP and transfer payments to households of 16% of GDP), and its labor markets are very flexible. Hungary also seems to value savoring much more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people don't especially value accomplishment and achievement. Furthermore, innovation and commercialism are about average in Hungary relative to income. We see the country investing heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, Hungary has average levels of bureaucracy and red tape, somewhat high corruption, and somewhat weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Hungary's indebtedness position is about average compared to other countries, ranked 17th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. In the past few years, its growth was heavily supported by high credit creation, which is very restrictive for growth going forward. Lastly, the stance of monetary policy is generally neutral.

THE CZECH REPUBLIC'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that the Czech Republic's real growth rate over the next 10 years will be in the vicinity of 1.9%. This growth rate is roughly at the global average, ranked 19th out of 35 major economies, and 17th out of 18 emerging countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In the Czech Republic's case, our growth estimate comes from combining our expectation of a 1.8% growth rate per worker, which is roughly in line with the global average, and a labor force growth rate of 0.0%, which will have little impact on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect the Czech Republic's productivity growth to be about average compared to most major countries (implying a growth rate of 1.2% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 2.1% on its own). As shown below, the Czech Republic's biggest relative strengths are the value its workers provide relative to education levels and its levels of investment (though compared to other countries it doesn't rate especially well on these measures), and its biggest relative problems are its monetary policy and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

CZECH REPUBLIC—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**1.9%**		**19**
Working-Age Population Growth			**18**
Growth Per Worker Estimate	**1.8%**		**19**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**22**
What You Pay vs. What You Get	**45%**		**19**
Education	11%		19
Labor Productivity	11%		19
Working Hard	11%		18
Investing	11%		13
Culture	**20%**		**31**
Corruption	3%		32
Bureaucracy	3%		34
Rule of Law	3%		33
Savoring Life vs. Achieving	3%		22
Innovation	3%		22
Self Sufficiency	3%		19
Indebtedness	**35%**		**10**
Debt Levels and Flow	**18%**		**8**
Monetary Policy	**18%**		**25**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Czech Republic

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

The Czech Republic offers around average value, ranked 19th of 35 countries we measure. Its workers are somewhat inexpensive, weighing the Czech Republic's low levels of education (according to tertiary education rates) and good quality of education (according to PISA test scores). Further, people in the Czech Republic work an average number of hours relative to the cost of their labor—the average person of working age works 22.3 hours per week (16th out of 35 countries, and 19th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given the Czech Republic's high per capita income levels, with investment at about 23% of GDP (7th out of 35 countries). The Czech Republic's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 0.5% per year (vs. an average of +1% across the emerging world). Investment is more productive than investment in other countries with similar levels of economic development, ranked 4th out of 18 emerging countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Czech culture appears to be a much worse than average contributor to growth in coming years, ranked 31st among the countries we measure. Note that our culture measures compare the Czech Republic to countries of similar levels of economic development. Starting with self-sufficiency, the Czech Republic is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 45% of GDP and transfer payments to households of 21% of GDP), and its labor markets are moderately flexible. The Czech Republic also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, but it lacks the survey data our measures use to triangulate this view. Furthermore, innovation and commercialism are about average in the Czech Republic relative to income. We see the country investing heavily in research and innovation, though its outputs from innovation, including inventions and earnings, are low. Finally, relative to its income, the Czech Republic has somewhat high bureaucracy and red tape, somewhat high corruption, and somewhat weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. The Czech Republic's indebtedness position is slightly better than other countries, ranked 10th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has a bit of room to lever up in the future. The total debt burden is around 154% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

PORTUGAL'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Portugal's real growth rate over the next 10 years will be in the vicinity of 1.1%. This growth rate is somewhat below the global average, ranked 27th out of 35 major economies, and 9th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Portugal's case, our growth estimate comes from combining our expectation of a 1.9% growth rate per worker, which is roughly in line with the global average, and a labor force growth rate of -0.8%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Portugal's productivity growth to be somewhat worse than most major countries (implying a growth rate of 1.5% on its own), and indebtedness conditions to be about average compared to other countries (implying a growth rate of 2.6% on its own). As shown below, Portugal's biggest relative strengths are its monetary policy and its level of bureaucracy (though compared to other countries it doesn't rate especially well on these measures), and its biggest relative problems are its debt and debt service levels and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

PORTUGAL—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**1.1%**		**27**
Working-Age Population Growth	**-0.8%**		**31**
Growth Per Worker Estimate	**1.9%**		**18**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**24**
What You Pay vs. What You Get	**45%**		**22**
Education	11%		22
Labor Productivity	11%		22
Working Hard	11%		24
Investing	11%		17
Culture	**20%**		**28**
Corruption	3%		16
Bureaucracy	3%		25
Rule of Law	3%		29
Savoring Life vs. Achieving	3%		31
Innovation	3%		26
Self Sufficiency	3%		30
Indebtedness	**35%**		**11**
Debt Levels and Flow	**18%**		**16**
Monetary Policy	**18%**		**5**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Portugal

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Portugal offers somewhat worse than average value, ranked 22nd of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Portugal's low levels of education (according to tertiary education rates) and poor quality of education (according to PISA test scores). Further, people in Portugal work an average number of hours relative to the cost of their labor—the average person of working age works 20.1 hours per week (25th out of 35 countries, and 21st out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Portugal's about average per capita income levels, with investment at about 22% of GDP (11th out of 35 countries). Portugal's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 2.0% per year (vs. an average of +1% across the developed world). Investment is more productive than investment in other countries with similar levels of economic development, ranked 6th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Portuguese culture appears to be a somewhat worse than average contributor to growth in coming years, ranked 28th among the countries we measure. Note that our culture measures compare Portugal to countries of similar levels of economic development. Starting with self-sufficiency, Portugal is rated very poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 45% of GDP and transfer payments to households of 24% of GDP), and its labor markets are moderately rigid. Portugal also seems to value savoring much more than achieving—again, its work ethic is relatively weak, but it lacks the survey data our measures use to triangulate this view. Furthermore, innovation and commercialism are somewhat weak in Portugal relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are low. Finally, relative to its income, Portugal has somewhat low bureaucracy and red tape, average levels of corruption, and somewhat weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Portugal's indebtedness position is slightly better than other countries, ranked 11th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 251% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally neutral.

BELGIUM'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Belgium's real growth rate over the next 10 years will be in the vicinity of 0.9%. This growth rate is somewhat below the global average, ranked 28th out of 35 major economies, and 10th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Belgium's case, our growth estimate comes from combining our expectation of a 1.1% growth rate per worker, which is somewhat below the global average, and a labor force growth rate of -0.2%, which will moderately weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Belgium's productivity growth to be somewhat worse than most major countries (implying a growth rate of 0.9% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.5% on its own). As shown below, Belgium's biggest relative strengths are its level of bureaucracy and its level of corruption relative to income (though compared to other countries it doesn't rate especially well on these measures), and its biggest relative problems are its debt and debt service levels and how hard its people work. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

BELGIUM—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**0.9%**		**28**
Working-Age Population Growth	**-0.2%**		**20**
Growth Per Worker Estimate	**1.1%**		**26**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**33**
What You Pay vs. What You Get	**45%**		**31**
Education	11%		30
Labor Productivity	11%		29
Working Hard	11%		28
Investing	11%		31
Culture	**20%**		**30**
Corruption	3%		25
Bureaucracy	3%		30
Rule of Law	3%		24
Savoring Life vs. Achieving	3%		34
Innovation	3%		18
Self Sufficiency	3%		32
Indebtedness	**35%**		**25**
Debt Levels and Flow	**18%**		**30**
Monetary Policy	**18%**		**13**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Belgium

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Belgium offers much worse than average value, ranked 31st of 35 countries we measure. Its workers are neither expensive nor inexpensive, weighing Belgium's about average levels of education (according to tertiary education rates) and about average quality of education (according to PISA test scores). Further, people in Belgium don't work long hours relative to the cost of their labor—the average person of working age works 16.7 hours per week (33rd out of 35 countries, and 34th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given Belgium's high per capita income levels, with investment at about 25% of GDP (5th out of 35 countries). Belgium's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 0.8% per year (vs. an average of +1% across the developed world). Investment is less productive than investment in other countries with similar levels of economic development, ranked 15th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Belgian culture appears to be a much worse than average contributor to growth in coming years, ranked 30th among the countries we measure. Note that our culture measures compare Belgium to countries of similar levels of economic development. Starting with self-sufficiency, Belgium is rated very poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is very high (with government outlays of 55% of GDP and transfer payments to households of 28% of GDP), and its labor markets are moderately rigid. Belgium also seems to value savoring much more than achieving—again, its work ethic is relatively weak, but it lacks the survey data our measures use to triangulate this view. Furthermore, innovation and commercialism are about average in Belgium relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are about average. Finally, relative to its income, Belgium has average levels of bureaucracy and red tape, average levels of corruption, and average rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Belgium's indebtedness position is slightly worse than other countries, ranked 25th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 363% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was supported by high credit creation, which is restrictive for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

NORWAY'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Norway's real growth rate over the next 10 years will be in the vicinity of 0.8%. This growth rate is well below the global average, ranked 30th out of 35 major economies, and 12th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars). Please note that Norway is a very large net exporter of commodities (net commodity exports are ~23% of GDP). Our growth estimate is on the non-commodity part of the economy. We do not have a view on the long-term growth in commodity exports.

In Norway's case, our growth estimate comes from combining our expectation of a 0.6% growth rate per worker, which is well below the global average, and a labor force growth rate of 0.1%, which will moderately boost growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Norway's productivity growth to be much worse than most major countries (implying a growth rate of 0.2% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 1.4% on its own). As shown below, Norway's biggest relative strengths are its rule of law and its level of bureaucracy, and its biggest relative problems are its debt and debt service levels and the value its workers provide relative to education levels. However, we put less stock in our assessment of Norway's indebtedness given its significant stock of assets (e.g., FX reserves and/or sovereign wealth fund assets) that are not considered in this measurement. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

NORWAY—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score (-4.00 / 0 / 4.00)	Rank
Final Growth Estimate	**0.8%**		**30**
Working-Age Population Growth	**0.1%**		**16**
Growth Per Worker Estimate	**0.6%**		**32**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score (-4.00 / 0 / 4.00)**	**Rank**
Productivity (vs. similar income countries)*	**65%**		**35**
What You Pay vs. What You Get	**45%**		**35**
Education	11%		34
Labor Productivity	11%		34
Working Hard	11%		32
Investing	11%		35
Culture	**20%**		**23**
Corruption	3%		18
Bureaucracy	3%		23
Rule of Law	3%		12
Savoring Life vs. Achieving	3%		19
Innovation	3%		24
Self Sufficiency	3%		25
Indebtedness	**35%**		**23**
Debt Levels and Flow	**18%**		**29**
Monetary Policy	**18%**		**11**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Norway

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Norway offers much worse than average value, ranked 35th of 35 countries we measure. Its workers are somewhat expensive, weighing Norway's somewhat low levels of education (according to tertiary education rates) and poor quality of education (according to PISA test scores). Further, people in Norway don't work long hours relative to the cost of their labor—the average person of working age works 18.3 hours per week (27th out of 35 countries, and 32nd out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are somewhat low given Norway's very high per capita income levels, with investment at about 21% of GDP (13th out of 35 countries). Norway's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 1.6% per year (vs. an average of +1% across the developed world). Investment is less productive than investment in other countries with similar levels of economic development, ranked 17th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Norwegian culture appears to be a somewhat worse than average contributor to growth in coming years, ranked 23rd among the countries we measure. Note that our culture measures compare Norway to countries of similar levels of economic development. Starting with self-sufficiency, Norway is rated pretty poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is high (with government outlays of 46% of GDP and transfer payments to households of 22% of GDP), and its labor markets are neither rigid nor flexible. Norway also seems to value savoring a bit more than achieving—again, its work ethic is relatively weak, and surveys suggest that its people moderately value accomplishment and achievement. Furthermore, innovation and commercialism are somewhat weak in Norway relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Norway has somewhat low bureaucracy and red tape, average levels of corruption, and somewhat strong rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Norway's indebtedness position is slightly worse than other countries, ranked 23rd out of the 35 countries we look at. However, we put less stock in our assessment of Norway's indebtedness given its significant stock of assets (e.g., FX reserves and/or sovereign wealth fund assets) that are not considered in this measurement. In the past few years, its growth was neither supported nor depressed by credit creation, which is neutral for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

GREECE'S PROJECTED 10-YEAR FUTURE GROWTH

Based on our economic health index, we project that Greece's real growth rate over the next 10 years will be in the vicinity of 0.0%. This growth rate is well below the global average, ranked 33rd out of 35 major economies, and 15th out of 17 developed countries. As a reminder, this estimate (and this writing) is based on our computer-generated analysis of the statistics detailed in the Appendix: Measuring Future Growth Prospects and doesn't account for exogenous shocks (like commodity or political shocks, natural disasters, or wars).

In Greece's case, our growth estimate comes from combining our expectation of a 0.9% growth rate per worker, which is well below the global average, and a labor force growth rate of -0.9%, which will weigh on growth. The growth in output per worker is driven significantly by productivity and indebtedness. Over the long term, productivity matters most, while swings in indebtedness tend to be an important driver in the short term. Given that we are looking at a 10-year time frame, we weigh our productivity measures about two-thirds and our indebtedness measure about one-third (though there is no precision here).

Over the next 10 years, we expect Greece's productivity growth to be somewhat worse than most major countries (implying a growth rate of 0.9% on its own), and indebtedness conditions to be slightly worse than other countries (implying a growth rate of 0.7% on its own). As shown below, Greece's biggest relative strengths are the value its workers provide relative to education levels and its level of bureaucracy (though compared to other countries it doesn't rate especially well on these measures), and its biggest relative problems are its debt and debt service levels and its shrinking workforce. The various gauges and weights are shown below. The individual indicators that are behind them are explained in the appendix of this study. Please review this table to understand our comments.

GREECE—FUTURE GROWTH ESTIMATE

Future Growth Estimate	Growth Estimate	Score -4.00 0 4.00	Rank
Final Growth Estimate	**0.0%**		**33**
Working-Age Population Growth	**-0.9%**		**32**
Growth Per Worker Estimate	**0.9%**		**30**
Breaking Down our Growth per Worker Estimate	**Weight**	**Score** -4.00 0 4.00	**Rank**
Productivity (vs. similar income countries)*	**65%**		**28**
What You Pay vs. What You Get	**45%**		**21**
Education	11%		20
Labor Productivity	11%		20
Working Hard	11%		22
Investing	11%		22
Culture	**20%**		**34**
Corruption	3%		27
Bureaucracy	3%		29
Rule of Law	3%		34
Savoring Life vs. Achieving	3%		35
Innovation	3%		30
Self Sufficiency	3%		31
Indebtedness	**35%**		**26**
Debt Levels and Flow	**18%**		**35**
Monetary Policy	**18%**		**16**

Note: Scores here reflect the number of standard deviations away from the average observation across countries and time.
**All productivity-related scores are relative to countries with similar income levels, because we think these measures matter relative to cost. We generally see that less wealthy countries score worse outright on our culture measures, but we would expect businesspeople to accept somewhat worse corruption, bureaucracy, etc. as the cost of doing business in a cheaper country. But if a country has poor culture even relative to countries of a similar income level, we would expect that to weigh on the decision to do business in those countries and thus weigh on potential growth. You can see more detail on these adjustments in the appendix.*

More Detail on the Greece

As mentioned, the descriptions below are based on influences that are conveyed in gauges that are made up of a composite of indicators, shown in the appendix. So, if you want to see why we are saying what we are saying, you can trace them through by looking at those statistics.

Productivity

Value: What You Pay Versus What You Get

A country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers who are relatively inexpensive and that have higher investment rates grow faster than those that don't.

Greece offers around average value, ranked 21st of 35 countries we measure. Its workers are somewhat inexpensive, even taking into consideration Greece's about average levels of education (according to tertiary education rates) and very poor quality of education (according to PISA test scores). Further, people in Greece don't work long hours relative to the cost of their labor—the average person of working age works 18.0 hours per week (29th out of 35 countries, and 26th out of 35 countries after adjusting for income), and the demographics of the workforce are unfavorable (according to the projected 10-year change in the dependency ratio). Levels of saving and investing are roughly average given Greece's about average per capita income levels, with investment at about 15% of GDP (29th out of 35 countries). Greece's capital stock per capita (its structures, machinery, transportation equipment, software and intellectual property) is growing at a rate of 3.0% per year (vs. an average of +1% across the developed world). Investment is more productive than investment in other countries with similar levels of economic development, ranked 4th out of 17 developed countries (measuring productivity as incremental growth for each additional dollar of capital).

Culture

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously-shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform.

Greek culture appears to be a much worse than average contributor to growth in coming years, ranked 34th among the countries we measure. Note that our culture measures compare Greece to countries of similar levels of economic development. Starting with self-sufficiency, Greece is rated very poorly on this measure, weighing that its workers have a relatively weak work ethic (considering a variety of indicators including hours worked, retirement age, and vacations), its level of government support is very high (with government outlays of 53% of GDP and transfer payments to households of 24% of GDP), and its labor markets are moderately flexible. Greece also seems to value savoring much more than achieving—again, its work ethic is relatively weak, but it lacks the survey data our measures use to triangulate this view. Furthermore, innovation and commercialism are very weak in Greece relative to income. We see the country investing neither lightly nor heavily in research and innovation, and its outputs from innovation, including inventions and earnings, are very low. Finally, relative to its income, Greece has average levels of bureaucracy and red tape, somewhat high corruption, and very weak rule of law, according to the international measures we are using.

Indebtedness

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. When you are taking it out, you can spend more than is sustainable, but when debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse. You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt.

The other major piece of our economic health index looks at the likelihood of debt being a support or detriment to future growth. Greece's indebtedness position is slightly worse than other countries, ranked 26th out of the 35 countries we look at. Based on current debt levels and debt service costs, the country has very little room to lever up in the future. The total debt burden is around 297% of GDP (incl. financial firm debts), compared to a global average of 236%. In the past few years, its growth was supported by high credit creation, which is restrictive for growth going forward. Lastly, the stance of monetary policy is generally a bit tight.

APPENDIX: MORE DETAIL ON EACH OF THE GAUGES

- **Education:** What is the quantity of educated people at different levels and what is the quality of their education? The gauge use measures of basic and higher education, split about evenly between the two. Half of the measures capture absolute quantity of educated people at various levels and about half is placed on quality rankings such as higher education, test scores, and average years of education.
- **Innovation & Technology:** This gauge measures inventiveness, technological advancement, and entrepreneurship. It gives about half its weight to the country's absolute share of key innovation metrics (e.g., patents, researchers, R&D spending, and venture capital funding), and half to a combination of external rankings and measures of innovation per capita (to help capture how widespread innovation is in the economy).
- **Cost Competitiveness:** This gauge measures what one gets for what one pays. We want to see this because countries that produce the best at costs that are too expensive aren't in good shape, even though they rank highly in quality. We look at quality-adjusted and productivity-adjusted labor costs, along with other productivity measures.
- **Infrastructure & Investment:** This gauge measures the quantity of infrastructure and investment spending and the quality of it. It captures a country's absolute share of global investment, as well the extent to which a country prioritizes quality of infrastructure and productivity-enhancing investments. The gauge weighs measures of investment as a share of world investment, overall infrastructure quality, investment and savings as a share of GDP, and logistics performance.
- **Economic Output:** This gauge measures the strength of a country's economic resources. We measure output primarily through GDP levels as a share of world (adjusted for price differences across countries). We allocate some weight to GDP per capita rather than total GDP to capture quality.
- **Productivity/Output Growth:** This gauge measures how well a country is positioned to grow its economy over the next 10 years. We look at a variety of metrics to estimate forward-looking 10-year economic growth, placing 2/3 weight on metrics that predict productivity, and 1/3 on metrics that predict the impact of indebtedness on growth.
- **Trade:** This gauge measures how strong an exporter a country is. It looks at the absolute level of a country's exports as a share of the world. China scores highest (being the largest exporter in the world), followed by the Eurozone and the US.
- **Military Strength:** This gauge is driven mostly by absolute share of military spending and strength measured by number of personnel, nuclear weapons, and external indices of military capabilities. It does not look at military powers in varying regions or of various types, failing to capture some military superiorities Russia and China have in certain geographic areas, certain types of military technologies, and the role of alliances in shaping the balance of military power.
- **Financial Markets and Financial Center:** This gauge measures the level of development and the size of a country's financial markets and financial center. We're looking at absolute measures of transaction shares and market capitalizations, as well as more qualitative external indices of financial center cities.

- **Reserve Status:** This gauge measures the extent to which a country's currency operates as a global reserve currency. We measure reserve status by the share of transactions, debts, and reserves that are denominated or held in a country's currency.
- **Indebtedness (Debt Cycles):** This gauge is based on a combination of a) debt levels relative to asset levels, b) the sizes of its external and internal surpluses and deficits, c) the sizes of its debt service costs relative to GDP, d) the amount of debt in its own currency or foreign currency, e) the amount that is held by its own citizens versus foreigners, and d) its credit rating. It has been composed this way because this way has shown to be best in foreshadowing declines in real wealth, whether these declines come in the form of a) debt defaults that result from not creating enough money and credit to satisfy excessive debt needs or b) devaluations that come from creating more than enough money and credit to satisfy excessive debt needs. We constructed this index to not include the reserve currency status of the currency so that we could separately see the debt burden from the ability to fund it because it has a reserve currency. That way we can see the exposure the country would have if it lost its reserve currency status.
- **Internal Conflict (Social & Political):** This gauge looks at how much domestic conflict and discontent there is within a country. It measures actual conflict events (e.g. protests), political conflict (e.g. partisanship), and general discontent (based on surveys).
- **Rule of Law/Governance:** This gauge measures the extent to which a country's legal system is consistent, predictable, and conducive to growth and advancement. The gauge combines rule of law measures (based primarily on business surveys of doing business in the country) and corruption measures (via a combination of external corruption indices and surveys from businesses).
- **Gaps in Wealth, Opportunity, & Values:** This gauge measures how big the gaps in wealth/income, opportunities, and values are. This gauge combines measures of both a) wealth and income inequality (e.g. how much does the top 1% have vs the rest) as well as b) political conflict (e.g. how split is the legislature on ideology).
- **Geology:** This gauge measures each country's geographic endowment, including land size and value of its natural resources. It includes the total production of energy, agriculture, and industrial metals in order to capture the absolute production capacity of each nation, as well as net exports to capture relative self-reliance for each of the categories (in addition to measuring some other natural resources like freshwater supply).
- **Character/Civility/Determination:** This gauge attempts to measure to what extent the attitudes of each country's people create an environment that's supportive to civility and hard work which supports growth and advancement. This gauge uses a) surveys around attitudes towards working hard and success, and b) other measures that proxy how much a society values self-sufficiency and work (e.g., government transfer payments size, effective retirement age) to quantify this.
- **Resource Allocation Efficiency:** This gauge attempts to measure how each country is using its labor and capital. It looks at whether the country has chronically high unemployment (i.e. not finding efficient ways to employ its people), if debt growth generates commensurate income growth over time, and external indices and surveys about the rigidity of the labor market and ease of getting loans.
- **Acts of Nature:** This gauge measures how vulnerable to and impacted by acts of nature each country is. While it is difficult to quantify all the various acts of nature that might impact a country, we used expert assessments of future climate change impact on each country's GDP, external assessments of each countries' preparedness for natural disasters, and the outcomes from the COVID pandemic (as that was a real time test against an act of nature). I consider this rating so-so and find that there is still a lot more we want to capture to make this gauge better, hence its low quality.

- **External Conflict:** The external conflict gauge measures the levels of economic, political/cultural, and military conflict between pairs of major countries. Within each category, we tried to come up with a mix of structural indicators (to establish a baseline level of conflict between countries) and timely indicators (to flag major escalations above that baseline). For example, for economic conflict we look at bilateral trade between countries, tariff rates, and also track timely news around sanctions, trade wars, etc.
- **Health Index:** The health index looks first at the life expectancy of the population at birth and then layers on a number of other hard facts about life in the country including child mortality, the cleanliness of air and drinking water, access to basic sanitation, quality nutrition, crime and public safety, and access to essential health services.
- **Happiness Index:** The happiness index tries to measure the happiness of the country's people primarily using surveys of reported happiness, daily enjoyment, life satisfaction, and the feeling of having a good social support network. Along with these surveys, we also look at the suicide rate in the country as another measure of unhappiness and dissatisfaction with society.

APPENDIX: CONSIDERING QUALITY VERSUS QUANTITY AND THE SIZE OF COUNTRIES

Each determinant is an aggregate of many indicators that I combined in the way that I felt best captured that particular determinant, giving consideration to both measures of absolute size (like share of global exports) and measures that adjust for/remove size (like GDP per capita or PISA test scores). Some determinants use a mix of both types of measures, and some are all one type. I tried to structure these weightings so that I could imagine who would win if countries had a competition like the Olympics or a war. However, in doing this exercise, I found it helpful to see how countries would score if I just looked at things on a per capita/quality basis, which would allow me to differentiate between countries that are extremely developed and capable, but small (like Singapore) versus countries that get a lot of credit for being big (like India). The scores shown in the table below are the weighted average percent rank from 0% (scoring worst on all underlying measures) to 100% (scoring best on all underlying measures) of all the underlying indicators that make up the determinant, shown if we include all the measures ("Total") or only per capita/quality measures. In case it is helpful or interesting to you, you can review those scores below shown as of July 2024.*

Headline Empire Scores Across Major Countries

		Empire Score		Education		Innovation and Technology		Competitiveness, Culture, Investment†	Military Strength		Trade		Economic Output		Markets & Financial Center		Reserve Currency Status	
	Country	Total	Per Capita/ Quality Only	Total	Per Capita/ Quality Only	Total	Per Capita/ Quality Only	Total	Total	Per Capita/ Quality Only	Total	Per Capita/ Quality Only	Total	Per Capita/ Quality Only	Total	Per Capita/ Quality Only	Total	Per Capita/ Quality Only
Strong Powers	USA	0.89	0.71	87%	96%	68%	70%	52%	86%	84%	73%	32%	49%	61%	99%	100%	100%	83%
	CHN	0.80	0.30	72%	56%	64%	54%	86%	63%	6%	100%	8%	45%	16%	44%	39%	5%	1%
	EUR	0.56	0.43	59%	80%	36%	43%	46%	38%	25%	79%	37%	38%	45%	40%	34%	36%	33%
Middle Powers	DEU	0.38	0.54	45%	82%	35%	60%	39%	20%	21%	51%	100%	18%	52%	25%	36%	---	---
	JPN	0.33	0.40	48%	82%	34%	55%	43%	27%	11%	13%	29%	19%	40%	29%	49%	10%	23%
	KOR	0.32	0.54	50%	89%	38%	70%	54%	33%	56%	7%	59%	6%	42%	15%	29%	0%	1%
	IND	0.30	0.07	36%	5%	10%	16%	42%	51%	1%	6%	0%	20%	6%	6%	5%	0%	0%
	GBR	0.29	0.46	48%	89%	26%	43%	32%	34%	26%	15%	58%	11%	44%	25%	39%	10%	41%
	FRA	0.27	0.45	41%	81%	25%	47%	33%	33%	34%	14%	59%	11%	43%	25%	45%	---	---
	RUS	0.26	0.28	38%	61%	15%	24%	27%	53%	41%	0%	14%	14%	26%	0%	1%	0%	0%
	SGP	0.24	0.89	35%	71%	26%	59%	61%	14%	92%	11%	100%	1%	100%	19%	39%	0%	7%
	AUS	0.23	0.56	44%	89%	24%	51%	31%	22%	37%	0%	31%	3%	48%	17%	47%	3%	37%
	TUR	0.21	0.28	20%	37%	17%	37%	49%	28%	16%	0%	12%	10%	29%	0%	0%	0%	0%
	CAN	0.21	0.50	45%	89%	22%	45%	27%	16%	21%	4%	68%	4%	47%	18%	52%	4%	28%
Minor Powers	CHE	0.19	0.66	40%	83%	32%	69%	45%	0%	18%	2%	100%	1%	68%	18%	84%	0%	9%
	BRZ	0.18	0.14	17%	25%	11%	25%	22%	27%	6%	0%	4%	10%	13%	1%	2%	0%	0%
	NLD	0.17	0.55	37%	76%	29%	65%	39%	0%	25%	12%	100%	2%	55%	19%	50%	---	---
	IDR	0.17	0.13	13%	13%	8%	20%	34%	25%	0%	0%	2%	8%	11%	0%	0%	0%	0%
	ITA	0.17	0.31	32%	63%	15%	31%	26%	27%	28%	6%	48%	8%	40%	14%	28%	---	---
	ESP	0.17	0.34	33%	65%	11%	23%	39%	18%	19%	0%	46%	5%	38%	19%	31%	---	---
	SAR	0.15	0.45	19%	45%	11%	26%	33%	25%	100%	0%	38%	4%	45%	0%	5%	0%	1%
	MEX	0.14	0.15	24%	38%	5%	11%	28%	14%	2%	2%	17%	9%	19%	0%	1%	0%	0%
	SAF	0.10	0.12	12%	30%	7%	17%	23%	11%	0%	0%	6%	3%	12%	0%	1%	0%	0%
	ARG	0.07	0.14	12%	24%	6%	16%	1%	15%	2%	0%	6%	3%	20%	0%	0%	0%	0%

** In a few cases where there were no quality measures, I had to create quality measures by adjusting the quantity for a country's population, turning it into a per capita measure. We did not give reserve currency status scores to the countries that share the euro, which is why those measures are displayed as dashes.*

† Because the notion of competitiveness is inherently relative, we only show the total score for this measure.

APPENDIX: MEASURING WELL-BEING

In measuring a country's well-being (beyond its economic situation), I am trying to capture two concepts: the **health** and the **happiness** of the population. These concepts are of course related to the country's economic situation, but they are not fully explained by it and they are important measures in their own right for understanding the success of a country and its leaders in producing a good life for its people. In this appendix, I will provide more detail on the construction of the health and happiness indices.

- **Health Index:** The health index looks first at the life expectancy of the population at birth and then layers on a number of other hard facts about life in the country including child mortality, the cleanliness of air and drinking water, access to basic sanitation, quality nutrition, crime and public safety, and access to essential health services. On these measures, Japan and Australia rank the highest of the countries covered in this report while South Africa and India rank the lowest.
- **Happiness Index:** The happiness index tries to measure the happiness of the country's people primarily using surveys of reported happiness, daily enjoyment, life satisfaction, and the feeling of having a good social support network. Along with these surveys, we also look at the suicide rate in the country as another measure of unhappiness and dissatisfaction with society.

The tables below describe the construction of the gauges in fuller detail:

CONSTRUCTION OF HEALTH INDEX

Concept	Weight
Health Index	**100%**
Life Expectancy At Birth	30.0%
Child Mortality (Deaths / 1000 Live Births)	10.0%
Air Pollution Exposure (PPM)	5.0%
Share of Population Using Safely Managed Drinking Water	5.0%
Share of Population With Basic Sanitation Facilities	5.0%
Share of Population Facing Food Insecurity	15.0%
Homicide Rate (Per 100,000 People)	7.5%
Share of Population Displaced By Conflict	7.5%
Share of Population With Access To Essential Health Services	15.0%

CONSTRUCTION OF HAPPINESS INDEX

Concept	Weight
Happiness Index	**100%**
Share of Population Reported Happy	22.5%
Share of Population Reported Daily Enjoyment	22.5%
Reported Life Satisfaction (1–10)	22.5%
Share of Population Reports Having Good Social Support Network	22.5%
Suicide Rate (Per 100,000 People)	10.0%

APPENDIX: MEASURING FUTURE GROWTH PROSPECTS

In this section, I share the key drivers of productivity that make up my forecast of future economic growth. That index is made up of 19 economic health gauges, made up of 81 indicators, and it shows what these gauges portend for real GDP growth in each of these countries over the next 10 years. This economic health index provides both a reliable prognosis for each of these country's growth rates over the next 10 years and a reliable formula for success. By looking at these cause-effect relationships in much the same way as a doctor looks at one's genetics, blood tests, exercise and diet, we can see both each country's health prospects and what changes policymakers can make so that these countries become economically healthier.

PART 1: THE FORMULA FOR ECONOMIC SUCCESS

What determines which countries prosper and which countries don't? What determines different countries' future growth rates? In my capacity as a global macro investor who has invested in many countries for several decades and researched cause-effect relationships for investment purposes, I look at relationships between causes and effects that we hope will be useful to others in answering these questions.

While many people have provided opinions about why countries succeed and fail economically, few have shown linkages between causes and effects. Often, even commonly agreed-upon indicators of what is good for an economy have not been properly analyzed and correlated with subsequent results. For example, everyone knows that having a more educated population is better than having a less educated population, so naturally we hear that improving education is important to improving productivity. However, indicators of the cost-effectiveness of education are lacking and correlations of the factors with subsequent growth don't exist, at least to my knowledge. That is dangerous. For example, if policy makers simply educate people without considering the costs and paybacks of that education, they will waste resources and make their economies less productive even though we will become more educated people. To make matters worse, the views of those who influence policies typically reflect their ideological inclinations (e.g., being politically left or right), which divides people. For this reason, I believe that objective good indicators that are logically correlated with subsequent results are needed so that the facts speak for themselves and help people reach agreement about what should be done. That is what I believe I provide here. The economic health indicators that I will show would have predicted the subsequent 10-year real growth of the 35 countries shown over the last 70 years within 2% of the realized growth 90% of the time and within 1% 61% of the time.

While I believe that the body of evidence I will show you is compelling, I certainly don't claim to have all the answers or expect people to blindly follow what is presented here without poking at it. On the contrary, I am putting these cause-effect relationships on the table to help foster discussion to bring about progress. I hope that people with divergent views will explore and debate how the economic machine works by looking at both the logic and the evidence presented here and enter into the process of making improvements in an open-source way with me. People, most importantly policymakers and investors can use this to see what these determinants portend for the future, and explore what can be done to make the future better. Having said that, we are confident enough in these estimates to bet on their accuracy, which we do in our investments.

The Determinants of Economic Health Are Timeless and Universal

As with human bodies, the economies of different countries have worked in essentially the same ways for as far back as you can see while they also have evolved over time. The most important cause-effect relationships have been timeless and universal and evolutionary changes have logical determinants that changed them. In this section I review these most important cause-effect relationships and look at many countries in different timeframes to show how they worked. I am laying these out for you to consider. I don't believe that it is good enough for me to just show the correlations between changes in these factors and their outcomes. Instead, I am starting with the logical cause-effect relationships that feel obvious. If the logic does not make sense, I can't be confident that a statistical relationship will persist into the future. I will first present the concepts and then take you into the indicators to show how they worked in the past and what they portend for the future.

What Are the Keys to Success?

I Will Start with a Top-Down Perspective: As with health, many factors (reflected in many statistics) produce good and bad outcomes. One can approach them by looking down on the forest or building up from the trees. I chose to present them from the top down to provide the big picture perspective simply and then flesh out the picture with more detail. Receiving information presented this way will require you to be patient with the sweeping generalizations I make until I get down to the particulars that make them up, which will show both the norms and the exceptions.

Productivity Influences on Growth and Debt Influences Are Most Important When Trying to Project Economic Growth 10 Years Ahead: As explained in my books "Principles for Dealing with the Changing World Order" and "Principles for Navigating Big Debt Crises", while productivity growth is ultimately what matters for long-term prosperity, the effects of debt cycles are substantial over the short and medium term. For that reason, it is impossible to look at growth periods without calculating the effects of debt cycles. Of course, when one lengthens the observed timeframe, the shorter-term volatility that is due to debt swings diminishes in importance. We chose to look at rolling 10-year periods of 35 countries which gave us a sample size of 218 observations (where we measure every 5 years).

The Big Picture: Stepping away from the wiggles, and looking at the big picture from the top down, one can see that the big shifts in economic growth are about two-thirds driven by productivity and one-third driven by indebtedness. "Luck" (e.g., having a lot of resources when the resources are valuable) and "conflict" (especially wars) are also drivers.

Productivity

A country's production (GDP) will equal its number of workers times the output per worker (productivity). One can increase one's productivity either by working harder or by working smarter. Productivity is driven by how cost-effectively one can produce, so, relative productivity—i.e., competitiveness—will have a big effect on relative growth. In a global economy those producers who are more competitive will both 1) sell more in their own country and other countries, and 2) move their production to countries where they can produce more cost-effectively. Likewise, investors will follow these opportunities.

Competitiveness (i.e., relative productivity levels) is driven by what you get relative to what you pay in one country versus another. Countries are just the aggregates of the people and the companies that make them up. As you know with the individuals you hire and from the products you buy, those that offer the most value for money are the most competitive and do better than those that don't.

Specific Indicators: Since people are the largest cost of production, it follows that those countries that offer the best "value" (i.e., the most productive workers per dollar of cost) will, all else being equal, experience the most demand for their people. **That is why the per-hour-worked cost differences of educated people (i.e., their income after adjusting for hours worked each year) is one of the best indicators of productivity.** Other obvious and important factors that influence productivity include the cost of uneducated people, levels of bureaucracy, attitudes about work, raw material costs, lending, and capital market efficiencies—i.e., everything that affects the value of what is produced relative to the cost of making it. In other words, there is a world market for productive resources that increases the demand, and hence the growth rates, for the countries that are most competitive because of the cost of production arbitrage. That cost of production arbitrage has been a big driver of growth—in fact overwhelmingly the largest. To reiterate, the magnitude of this competitiveness arbitrage is driven more by the cost of the workers relative to how hard they work, their education, and investment

levels, than by anything else. These variables characterize the value of hiring a worker in a given country and doing business there (i.e., what you pay for what you get).

Of course, barriers to the flow of trade and capital (like China's closed door policies until the early 1980s, geographic isolation, etc.) can stand in the way of people, companies, and countries being allowed to compete. As these barriers break down (e.g., transportation becomes cheaper and quicker, telecommunications reduce impediments to intellectual competition, etc.) or increase (e.g., trade barriers are put up), the ability to arbitrage the costs of production, and in turn the relative growth rates, is affected. Well developed debt and capital markets, when run efficiently, provide resources to those with good ideas to raise productivity. The surest way to raise productivity is to give well educated, talented, hard working, inventive people financial resources in a country that runs efficiently.

While countries that operate efficiently will grow at faster paces than countries that operate inefficiently, the countries that will grow the fastest are those that have big inefficiencies that are rapidly being disposed of. As an example, in the 1970s and 1980s, China had a well-educated, intelligent labor force that could work for cheap, but faced a closed-door policy. Opening the door unleashed China's great potential. Looking forward, while the United States is relatively efficient, it would not grow as fast as Mexico (i.e., which has competitively priced educated people with low debt) if Mexico could significantly reduce its barriers to productivity (e.g., corruption, lack of investment, lack of innovation etc.). That is why I am most optimistic about inefficient countries that are undertaking the sort of reforms that are described in this section.

Culture is one of the biggest drivers of productivity. It's intuitive that what a country's people value and how they operate together matters for a country's competitive position. Culture influences the decisions people make about factors such as savings rates or how many hours they work each week. Culture can also help explain why a country can appear to have the right ingredients for growth but consistently underperform, or vice versa. For example, in Russia, which has a lot of untapped potential, the culture that affects lifestyles (e.g., alcoholism, the low drive to succeed, etc.) causes it to substantially under-live its potential, while in Singapore, where high income levels make their labor relatively uncompetitive, their lifestyles and values (e.g., around working, saving, and investing) allow them to realize a higher percentage of their potential. While lots of elements of culture can matter, the ones that I find matter most are: 1) the extent to which individuals enjoy the rewards and suffer the penalties of their productivity (i.e., the degrees of their self-sufficiency), 2) how much the people value savoring life versus achieving, 3) the extent to which innovation and commercialism are valued, 4) the degree of bureaucracy, 5) the extent of corruption, and 6) the extent to which there is rule of law. Basically, countries that have people who earn their keep, strive to achieve and innovate, and facilitate an efficient market-based economy will grow faster than countries that prioritize savoring life, undermine market forces through highly redistributive systems, and have inefficient institutions.

To be clear, I am not making any value judgments. It would be illogical for me to say that people who savor non-work activities are making a mistake relative to people who love working. It is, however, not illogical for me to say that people who savor non-work activities are likely to be less productive than those who love working.

Indebtedness

Well developed debt and capital markets can contribute a lot to putting resources in the hands of talented, hard working people. At the risk of repeating myself too many times, I will review the way I look at debt cycles because I carry that perspective into my calculations in explaining 10-year growth rates.

As explained, short-term volatility is more due to debt cycles than productivity, but this volatility cancels out over time because credit allows people to consume more than they produce when they acquire it, and it forces

people to consume less than they produce when they pay it back. Undulations around long-term productivity are driven by debt cycles. Remember, in an economy without credit, the only way to increase your spending is to produce more, but in an economy with credit, you can also increase your spending by borrowing. That creates cycles. When debt levels are low relative to income levels and are rising, the upward cycle is self-reinforcing on the upside because rising spending generates rising incomes and rising net worth, which raise borrowers' capacity to borrow, which allows more buying and spending, etc. However, since debts can't rise faster than money and income forever, there are limits to debt growth.

Think of debt growth that is faster than income growth as being like air in a scuba bottle—there is a limited amount of it that you can use to get an extra boost, but you can't live on it forever. In the case of debt, you can take it out before you put it in (i.e., if you don't have any debt, you can take it out), but you are expected to return what you took out. When you are taking it out, you can spend more than is sustainable, which will give you the appearance of being prosperous. At such times, you and those who are lending to you might mistake you as being creditworthy and not pay enough attention to what paying back will look like. When debts can no longer be raised relative to incomes and the time for paying back comes, the process works in reverse.

You can get a picture of where countries stand in the long-term debt cycle and the likelihood of debt being a support or detriment to future growth by assessing the past reliance on debt to support incomes and the attractiveness of taking on new debt. For these reasons **I expect countries that have a) low amounts of debt relative to incomes, b) debt growth rates that are low in relation to income growth rates, and c) easier monetary policies to grow faster over the next 10 years than countries with d) high amounts of debt relative to incomes, e) debt growth rates that are high in relation to income growth rates, and f) tighter monetary policies**. That is true with one exception, which is when adequate financial intermediaries don't exist. Institutions and capital markets that facilitate these transactions have to be in place for the system to work. For that reason, when forecasting long-term future growth rates, we have taken into consideration the levels of development of countries' financial intermediaries.

The Interaction of These Forces Is Driven by Human Nature

While productivity and indebtedness can be thought of as separate concepts, they are ultimately a function of the choices people make and their psychology. I briefly touched on culture as an influence on these choices and their outcomes. Also, I observe important shifts in attitudes from one generation to the next, which are due to their different experiences. In *The Changing World Order*, I describe how psychology tends to shift as countries move through their economic life cycles. It is worth touching on this influence here before I delve into an examination of what all the economic health indicators are pointing to for the 35 major economies.

In addition to productivity and the debt cycles I spoke about, there tends to be a psychologically motivated cycle that occurs as a function of one's past level of prosperity and whether one experienced improving or worsening economic conditions. When a country is poor and focused on survival, its people who have subsistence lifestyles don't waste money because they value it a lot and they don't have any debt to speak of because savings are short and nobody wants to lend to them. Even though the country's labor is low-cost, it is not competitive, and the lack of investment stymies future productivity gains.

Some emerge from this stage and others don't, with culture and location being two of the biggest determinants. For those that do—either because a country removes a big barrier like being closed to the world (as China did in 1980) or simply because a more gradual evolution makes their labor attractive—a virtuous cycle can kick in. At this stage, the investments are not just inexpensive; the stock of infrastructure and other physical capital is also typically low and there is lots of room to adopt existing technologies that can radically improve the country's potential.

Leveraging up (increasing one's indebtedness) can feed back into higher productivity and competitiveness gains, which produce high returns that attract more investment at a time when the capacity to leverage is high. The key is that this money and credit must be used to produce investments that yield enough returns to pay for the debt service and finance further growth (so that incomes rise as fast as or faster than debts).

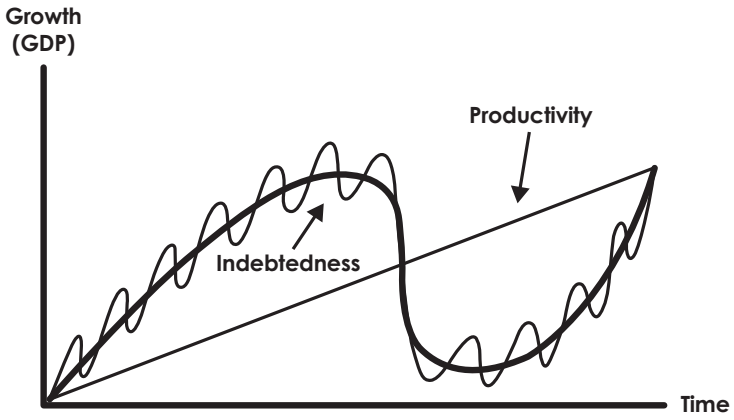
As countries grow wealthier, more and more of the credit tends to fuel consumption rather than investment. A process that was once virtuous can become self-destructive. The decreased investment in quality projects means productivity growth slows, even as the borrowing and spending makes incomes grow and labor more expensive. People feel rich and begin taking more leisure—after all, asset prices are high—even though their balance sheets are starting to deteriorate.

At this point, debt burdens start to compound and incomes grow faster than productivity growth. In other words, the country tends to become over-indebted and uncompetitive. The country is becoming poor even though it is still behaving as though it is rich. Eventually the excess tends to lead to bubbles bursting, a period of slow decline and deleveraging. Suffice it to say that when looking at a country's potential to grow, it is critical to look at the country's productivity and indebtedness holistically, as part of its stage of development.

A Formula for Future Growth

As explained, my research team and I built the formula for future growth from the top down. We started with my concepts of how productivity and indebtedness affect growth, then fleshed these forces out with specific indicators, and then saw how the formula created this way worked. I followed this approach because I believe that one should be able to describe the cause-effect relationships and the logic behind them without looking at the data and that only after doing that should one look at the data to see how well the descriptions square with what happened because otherwise one would be inclined to be blinded by data and not force oneself to objectively test one's understanding of the cause-effect relationships.

As mentioned, from what I can tell, about two-thirds of a country's 10-year growth rates will be due to productivity and about one-third will be due to indebtedness. The visual below conveys these two forces. Our productivity indicators aim to measure how steep the productivity growth line will be over time, and our indebtedness measures aim to measure how debt cycles will influence growth over the medium term.



Below is a list of what I have come to learn about these things along with the names of the indices my research team and I created to reflect them. Based on the reasons outlined there, we created a simple logic-weighted index of productivity and a simple logic-weighted index of indebtedness. We used the same set of factors weighed the same way for each gauge across all the countries and across all timeframes. That way, there was no fitting the data and our measures for productivity and indebtedness are timeless and universal.

After creating these indices, we observed how each predicted the subsequent 10 years' growth rates for each country (which we measure every 5 years). In other words, we observed rather than fit the data. The table below shows the concepts, their weights, and their correlations with the next 10 years' per capita growth rates for our universe of 35 countries. Together these indicators were 81% correlated with the countries' subsequent growth rates. Below we show how well these measures related to future growth across countries and time.

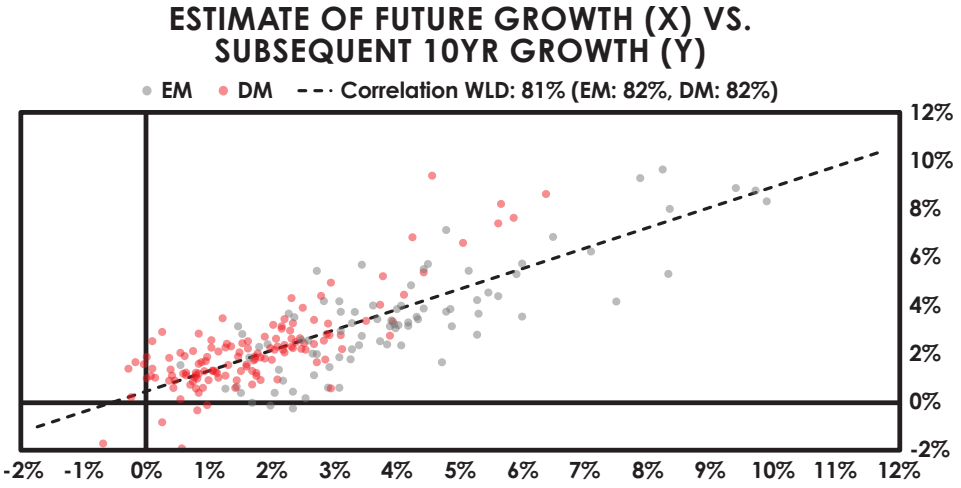
A SUMMARY OF OUR REASONS

	Reasoning	Corr. to Growth	Weight
Growth Per Worker Estimate		**81%**	**100.0%**
Productivity (vs. similar income countries)	**Producing more by working harder or smarter**	**64%**	**65.0%**
Culture	**Culture influences the choices people make and the effectiveness of an economic system**	**49%**	**19.5%**
Corruption	Corruption deters investment and distorts market incentives	50%	3.3%
Bureaucracy	Lots of red tape and regulation stymies business activity	21%	3.3%
Rule of Law	Investors and businesses need to feel secure their agreements and property will be protected	38%	3.3%
Savoring Life vs Achieving	Those who value achievement will be more successful in finding ways to be more productive	40%	3.3%
Innovation	Countries that value new ideas and invest in them will find new better ways to produce faster	36%	3.3%
Self Sufficiency	The ability to independently support oneself is healthy and important to being successful	32%	3.3%
What You Pay vs. What You Get	**Countries that offer the most value for money do better than those that don't**	**60%**	**45.5%**
Education	A better educated worker will be more effective today and offers more promise for tomorrow	64%	11.4%
Labor Productivity	Workers of similar education producing more in the same amount of time are more attractive	49%	11.4%
Working Hard	Hard workers will generally produce more and find ways to improve faster	61%	11.4%
Investing	Countries that save and invest in productive capital and infrastructure improve their potential	51%	11.4%
Indebtedness	**Swings in credit drive swings in spending and economic growth**	**34%**	**35.0%**
Debt Levels and Flow	**Countries with high debt burdens have less room to leverage and take on new debt**	32%	17.5%
Monetary Policy	**Monetary policy can make new borrowing more or less attractive**	15%	17.5%

Note: As mentioned, our gauges of productivity and indebtedness are constructed using simple logic-based weights. Within productivity, we put two-thirds weight on what you pay versus what you get and one-third on culture. Within each of these gauges we put equal weight on the different sub-pieces. Within our indebtedness gauge, we put half the weight on debt cycle dynamics and half on monetary policy.
Note 2: My approach to research is to first think through what makes sense to me and then to look at the data to stress test my thinking. This is a very different approach compared to optimization methods (or data mining) which typically go to the data first, and fish for relationships and conclusions. Because I was asked how much better the results would be if we let the computer fit the equations, we ran the data-fitting exercise and observed that if we do that, the correlations with future growth don't change much (they're likewise in the range of 80-90% correlated with future growth depending on the process used).

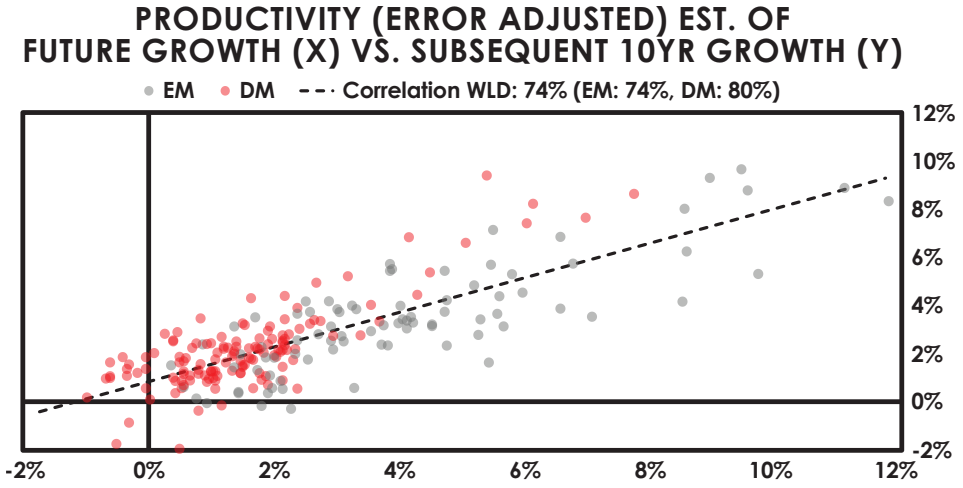
These measures of productivity and indebtedness can be used to predict each country's absolute and relative growth rates over the next 10 years, or longer periods. They also can be used by policy makers to indicate what levers they can move to influence future growth. To reiterate, my goal is to get the big picture right—i.e., to reliably be approximately right by focusing on the most important drivers rather than to try to be precise by focusing on the details.

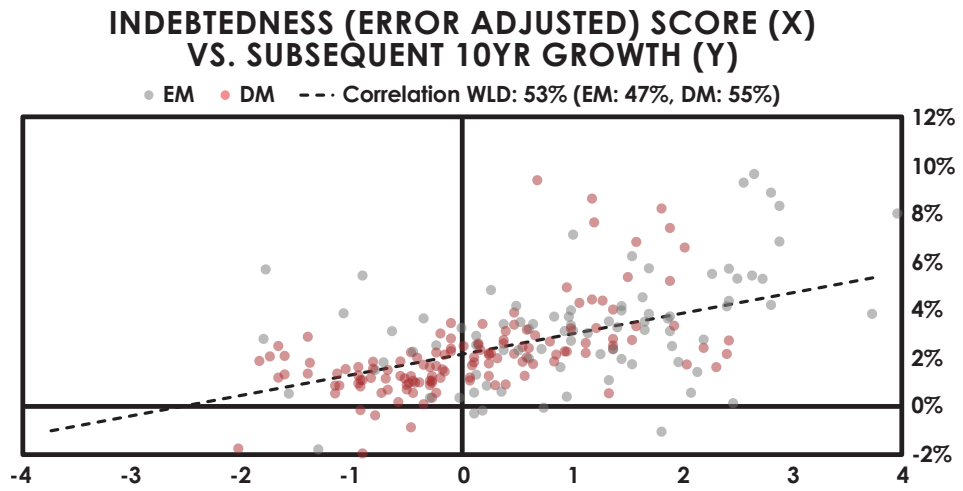
Before looking at the picture we will show you how our aggregate indicator would have predicted growth versus what actually occurred. While staring at the observations helps us ground ourselves in reality and test our logic, we know there is no precision in the specific numbers and what matters most to us is whether our logic is strong. Our examination covers 218 separate observations across 35 different countries over the last 70+ years, which provides a wide range of different environments to test our indicator. Along with the correlation of our predictions and what growth actually materialized (shown below), another test is how reliably we predicted something reasonably close to what happened. In our set, our aggregate predictions for a country's average growth over the next decade were within one percent of the actual growth 61% of the time, and within two percent 90% of the time.



Because these are timeless and universal drivers, we expect them to be just as important in developed countries as they are in emerging ones. The type of investment or education that matters may shift, but ultimately whether a country sees productivity growth is still going to be largely a function of the basic building blocks of productivity — whether its workers offer value, whether it is investing and creating a culture of success — as well as how its indebtedness is evolving. As you can see above, across the countries we have examined our aggregate indicator is about as correlated with future growth for developed and emerging countries (82% correlated with the growth in income per worker in developed countries and 82% correlated in emerging countries). Of course, which countries are 'developed' or 'emerging' changes over very long periods. So in these tests, we adjust for that, for example excluding Japan in the 1960s when it was much more like an emerging country.

Below we show the same perspective for each of our productivity and indebtedness gauges, comparing what they implied individually for a country's growth versus what happened. As you can see our measure of productivity is more strongly correlated with each country's growth than our indebtedness measure is (74% versus 53%), which makes sense given it is the more important driver over the timeframes tested. Still, each has a fairly good relationship on its own.





To reiterate, I believe getting to this fundamental level is critical to understanding and predicting the growth of countries. Naïve measures of a country's future growth—for example just income on its own or a country's trailing growth—won't get you much because they won't help you get at the drivers. They also tend to be much worse predictors than the formula I have described here (about 25% as good by traditional statistical measures). Looking at the economy as a machine and granularly measuring the cause-effect relationships makes all the difference.

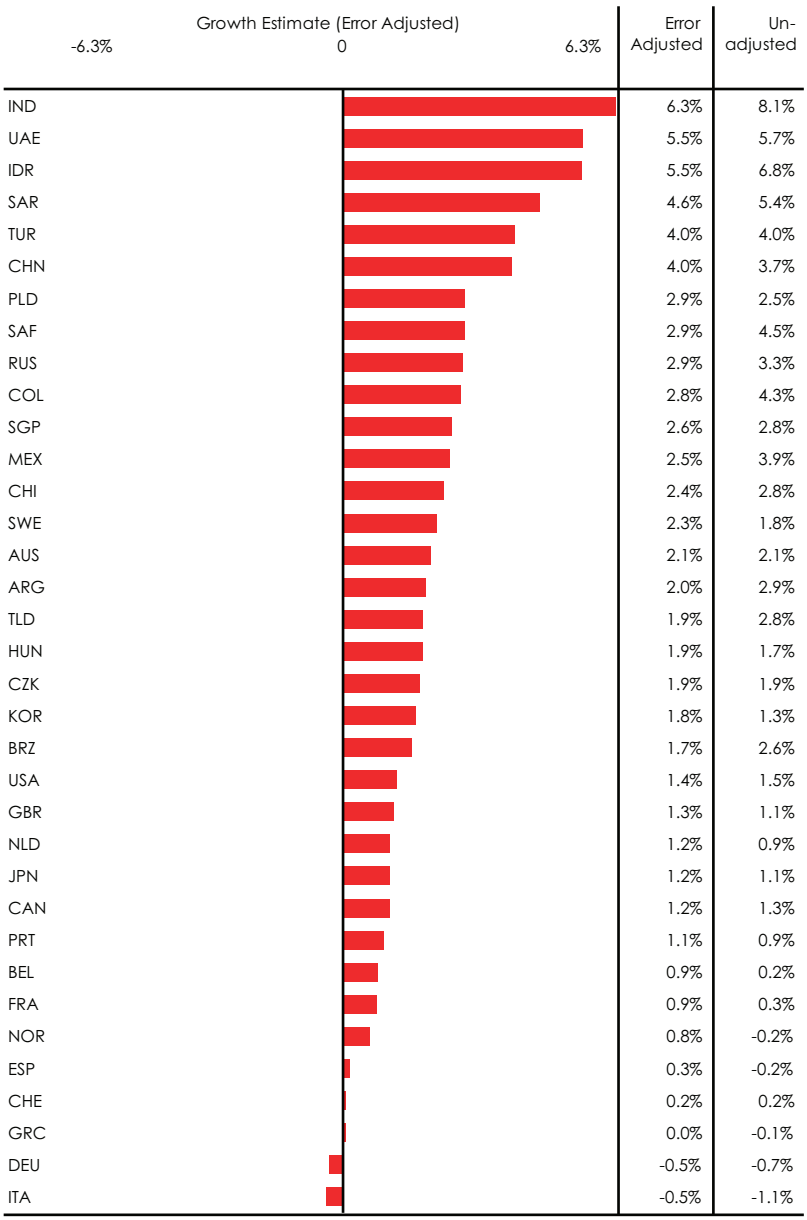
Projections

I will start with our projections and then explain how they were derived.

As discussed, by looking at the elements that drive productivity and indebtedness you can arrive at a view of how fast a country will grow its output per worker. Since economic growth is mechanically just a function of growth in its a) output per worker and b) number of workers, it's then a simple step for us to estimate economic growth. In the following section we quickly scan what our projections show. We go into greater depth on the reasons behind them in the appendix.

Below we show our final estimate for real GDP growth over 10 years in each major country.

AGGREGATE ESTIMATE OF FUTURE RGDP GROWTH (10 YEARS)



Under the hood, there are two estimates here. We start by producing an estimate based on the same formula for all countries (the Unadjusted value) and then correct for the average past error to produce our final estimate (the error Adjusted Value). This additional step notes whether we were systematically over-optimistic or pessimistic in our predictions for a given country and adjust for that to account for the fact that we may be missing country-specific factors. We simply found how much the universal formula was off in the past on average (i.e., 1%) and assumed it would be off by that amount for the next ten years. That adjustment is meant to account for unexplained factors. These two estimates typically don't yield meaningful differences and don't affect the order of the rankings much.

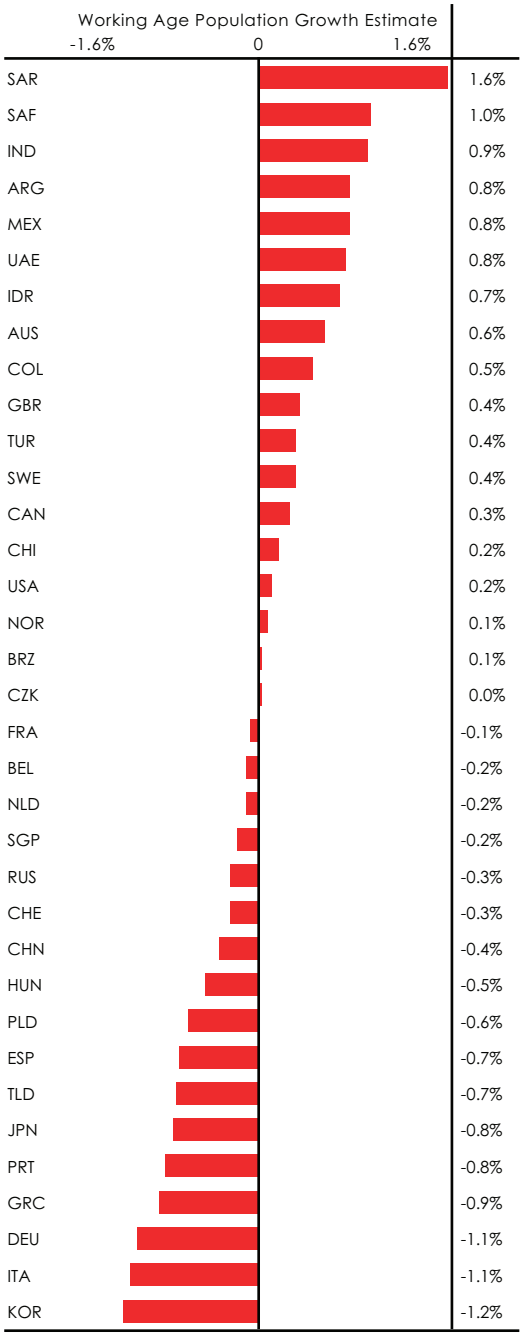
How We Came to Our Estimates

Because GDP is just output per worker times the number of workers, our estimate comprises two major pieces: the expected change in workers and the estimated growth per worker.

Expected Change in Workers

Below we show our expected change in workers by country. You can see how emerging markets generally see a favorable tailwind from workforce growth, while Europe, Russia and Japan's challenges are compounded by an aging and shrinking workforce.

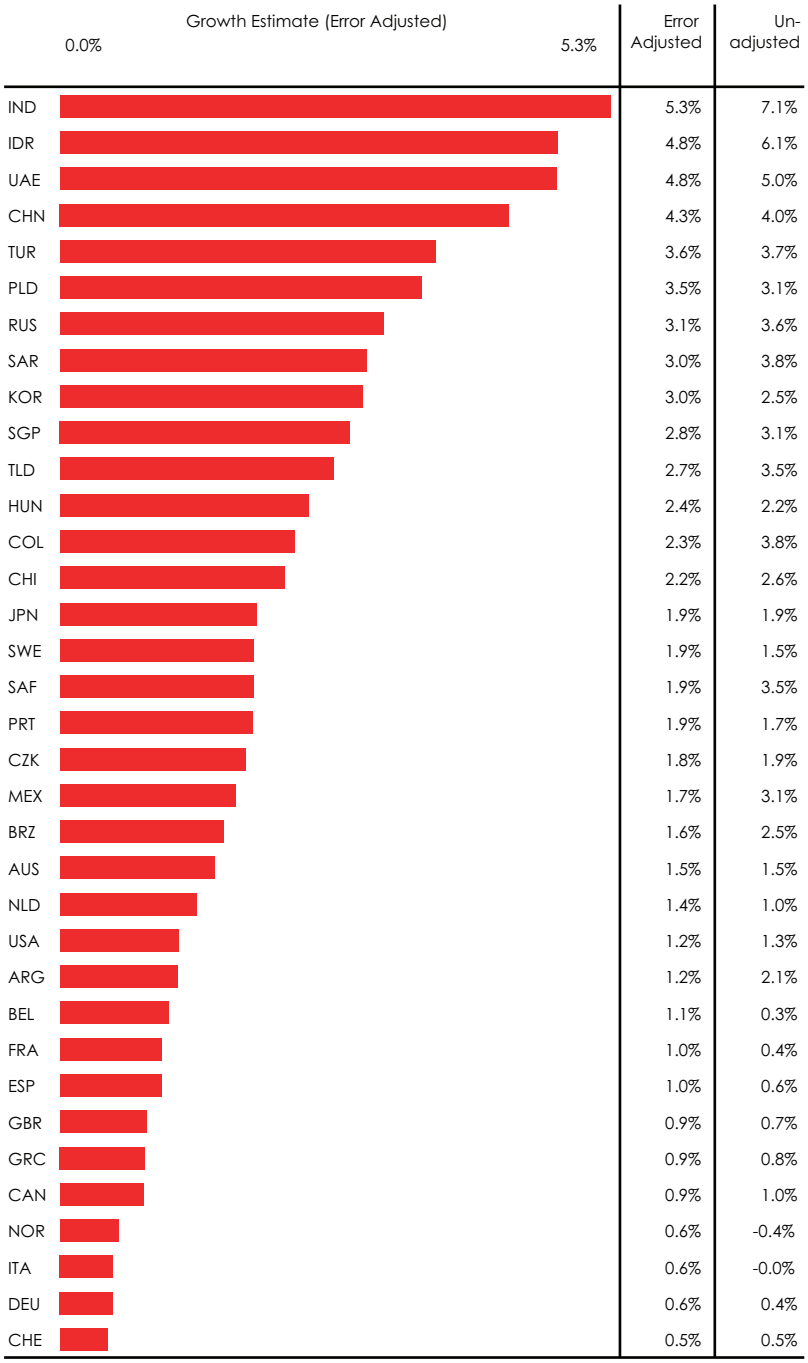
ESTIMATED ANNUAL CHANGE IN WORKING AGE POPULATION



Estimated Growth Per Worker

Then, below we show our estimate of expected growth per worker, and a breakout of our final, error adjusted estimates and our unadjusted estimate across countries.

AGGREGATE ESTIMATE OF FUTURE GROWTH PER WORKER (10 YEARS)

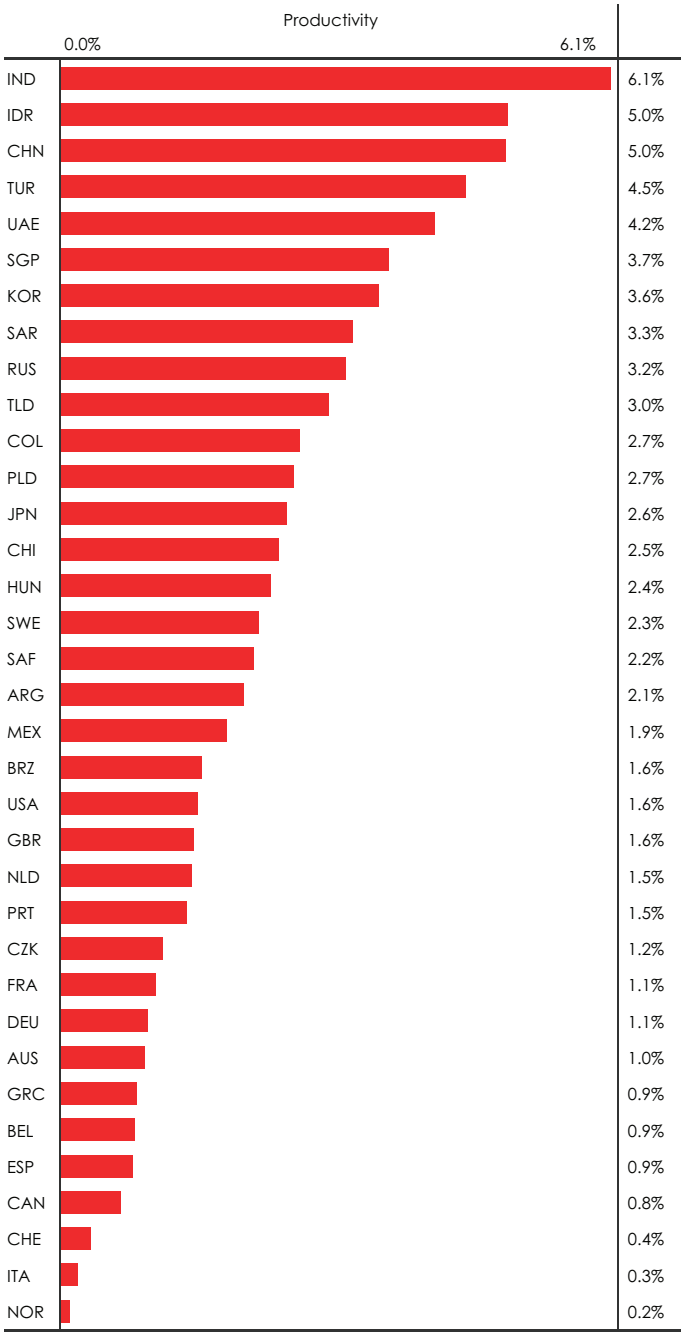


	Error Adjusted	Un-adjusted
IND	5.3%	7.1%
IDR	4.8%	6.1%
UAE	4.8%	5.0%
CHN	4.3%	4.0%
TUR	3.6%	3.7%
PLD	3.5%	3.1%
RUS	3.1%	3.6%
SAR	3.0%	3.8%
KOR	3.0%	2.5%
SGP	2.8%	3.1%
TLD	2.7%	3.5%
HUN	2.4%	2.2%
COL	2.3%	3.8%
CHI	2.2%	2.6%
JPN	1.9%	1.9%
SWE	1.9%	1.5%
SAF	1.9%	3.5%
PRT	1.9%	1.7%
CZK	1.8%	1.9%
MEX	1.7%	3.1%
BRZ	1.6%	2.5%
AUS	1.5%	1.5%
NLD	1.4%	1.0%
USA	1.2%	1.3%
ARG	1.2%	2.1%
BEL	1.1%	0.3%
FRA	1.0%	0.4%
ESP	1.0%	0.6%
GBR	0.9%	0.7%
GRC	0.9%	0.8%
CAN	0.9%	1.0%
NOR	0.6%	-0.4%
ITA	0.6%	-0.0%
DEU	0.6%	0.4%
CHE	0.5%	0.5%

Productivity

Next, below we show our estimated impact of productivity on future growth and a breakout of our final, error adjusted estimates and our unadjusted estimate across countries.

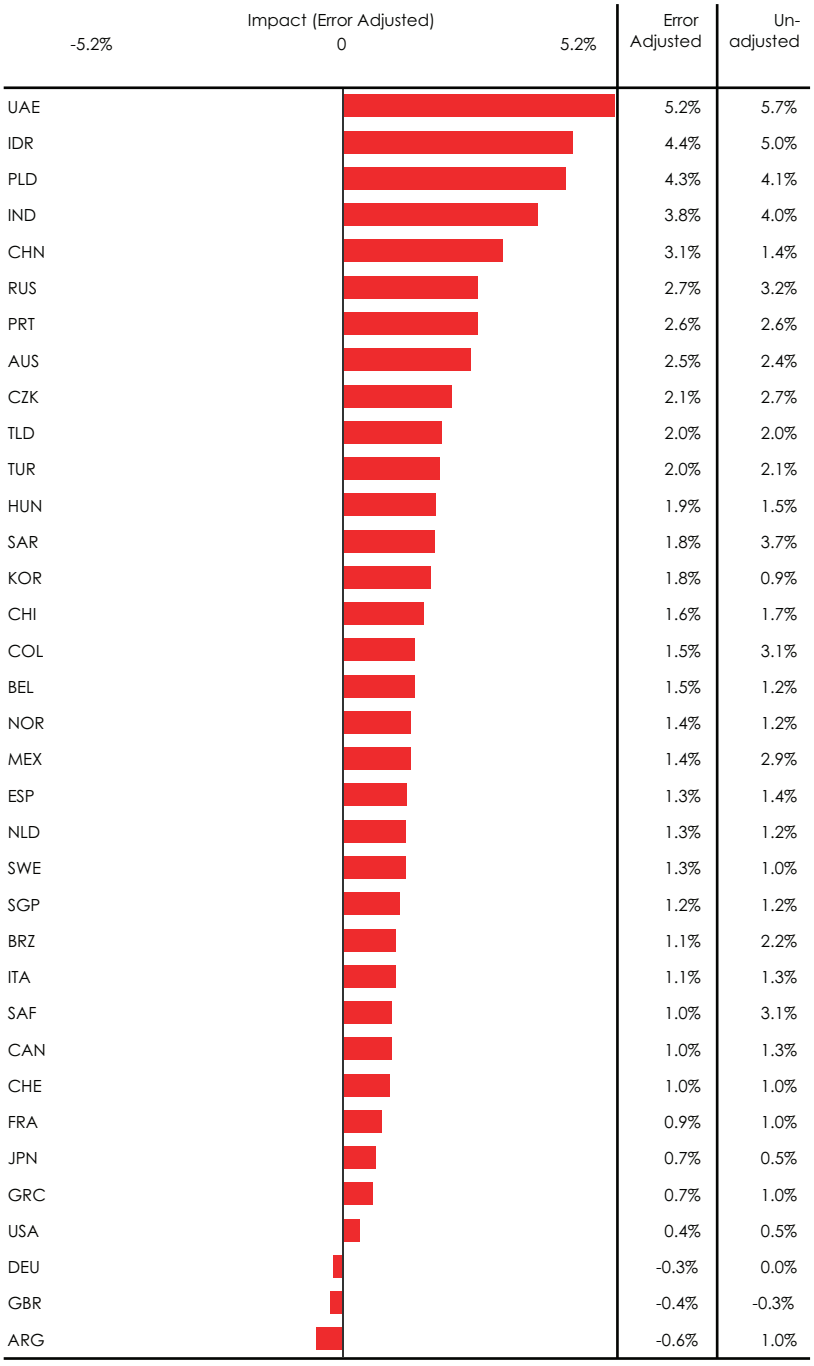
ESTIMATED PRODUCTIVITY IMPACT ON FUTURE GROWTH



Indebtedness

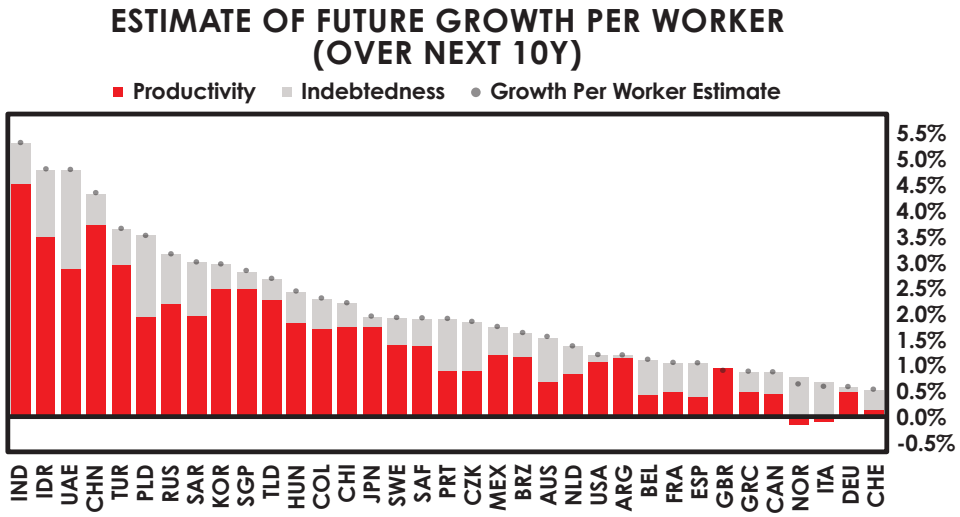
Finally, below we show our estimated impact of indebtedness on future growth and a breakout of our final, error adjusted estimates and our unadjusted estimate across countries.

ESTIMATED INDEBTEDNESS IMPACT ON FUTURE GROWTH



Tying it All Together

Under the hood, our future growth per worker estimate includes two major components: a productivity estimate, and an indebtedness estimate. Below we show how these two components add up to our growth per worker estimate. You can see that emerging countries generally have higher expected productivity growth given the labor arbitrage between emerging and developed countries. Emerging markets generally also have more room to leverage up, while much of the developed world is deleveraging and has limited room for spending and income growth from credit expansion.



PRODUCTIVITY AND COMPETITIVENESS MEASURES

Expected productivity growth is the main component of our growth per worker estimate—we put 2/3 weight on it. Here we briefly describe this measure. There is more detail on how we're constructing these in the appendix.

Our productivity measure is based primarily on how competitive a country's economy is, and how culture is either buoying up growth beyond what productivity would suggest or holding it back.

A country's competitiveness is driven by the value of all that it offers relative to the value of what others offer—most importantly the value of its people relative to their cost. In a global economy, countries that are more productive will not only produce better value products, but they will also attract investment and new businesses, and they will compel the means of production to move. We expect the producers who are more competitive to both 1) sell more in their own country and other countries, and 2) move their production to countries where they can produce more cost-effectively.

As explained, the most important way countries differentiate themselves is through their labor: whether it is more attractive for a company to hire their workers than to hire workers in a different country. This is not just a function of whether the workers are more productive today. It's a function of the attributes that make them more attractive to hire and invest in over the long term. Since ultimately the only way one can become more productive is through working harder or working smarter, it makes intuitive sense to us that education and work ethic are the most important attributes that matter. Those countries that offer these most cost-competitively tend to do the best. A country may also be more attractive because it's a cheap place to build a factory or because the returns of building new capital and technologies are higher. Additionally, countries that save and invest more tend to grow faster by creating new innovations, capital equipment, and infrastructure that help improve the productivity of their workforce relative to other countries with more limited investment rates.

These are the most important ingredients for the productivity growth of a country. But that's not all there is to it. Partly, culture drives the decisions people make about factors like savings rates or how many hours they work each week. But culture can also help explain why a country can appear to have the right ingredients for growth but consistently underperform.

Culture matters a lot. Ultimately how a country develops is a function of human behavior and the decisions its people make. Many of those decisions are captured in the attributes that go into a country's relative productivity (like how much people save or how hard they work). But you can learn a lot about the psychology of the different players in the economy and their motivations by staring at different cultural elements. Over very long stretches of time a country's cultural evolution is at the core of its long-term cycles (from being poor and believing it's poor to becoming rich).

Over any decade, the way we think about culture is that it can help explain why a country can appear to have the right ingredients for growth but consistently underperform or outperform. For us it makes intuitive sense that countries that emphasize individual self-reliance and striving to achieve are more likely to succeed by creating a meritocratic environment where incentives are based largely on market forces. Countries can also outperform if they are more innovative in producing new products and ideas of value and more commercially minded in harvesting them. On the other hand, countries can underperform if they are corrupt or bureaucratic, or if the rule of law is unsound. To be clear, we are not assessing whether one culture is good or bad; our focus is on the cultural elements that are most important for economic prosperity.

OUR PRODUCTIVITY GAUGE

In this section, we briefly lay out how we go from the above framework to a specific number for expected growth due to productivity.

When we look at gauging the productivity of a country we create a measure of 1) the relative value it offers and 2) its culture. We weigh the relative value of a country the most since it is the most important determinant.

Our productivity gauge is just based on the logic we have described. It is mostly a function of the relative value of a country's workers (the labor arbitrage aspect): how educated they are relative to their cost and how hard the people work relative to their cost. These measures give us a sense of whether a country's workers have the ingredients to grow their productivity by working harder or smarter. To triangulate the cost of an educated worker we look at two measures, one that adjusts for the quality of education and one that looks at their observed productivity today. Moving beyond a country's human capital, we also look at investment relative to the cost, which gives us a lens into whether a country is investing to grow its productivity in the future and whether the returns are likely to be attractive (i.e., another perspective on the "cost of production arbitrage").

To measure culture, we create a gauge for each of the concepts we have outlined: 1) whether a country values self-sufficiency, 2) whether it values savoring the fruits of life or achieving, 3) whether it is innovative and commercially oriented, 4) its degree of bureaucracy, 5) corruption, and 6) rule of law. Self-sufficiency encourages productivity by tying the ability to spend to the need to produce. The concept of savoring life versus achieving captures how much the people in a country are focused on enjoying the things they have versus trying to increase their success and achieve, earn, and create more. Innovation and commercialism capture whether a society is oriented toward seeking profit or generating new insights. The last three get at the basic questions of how difficult it is to get business done in a country—i.e., whether a given country is one where businesses could get off the ground and operate smoothly, where business can be conducted fairly (without corruption), and whether investors and businesses can be confident that contracts and laws will be well enforced.

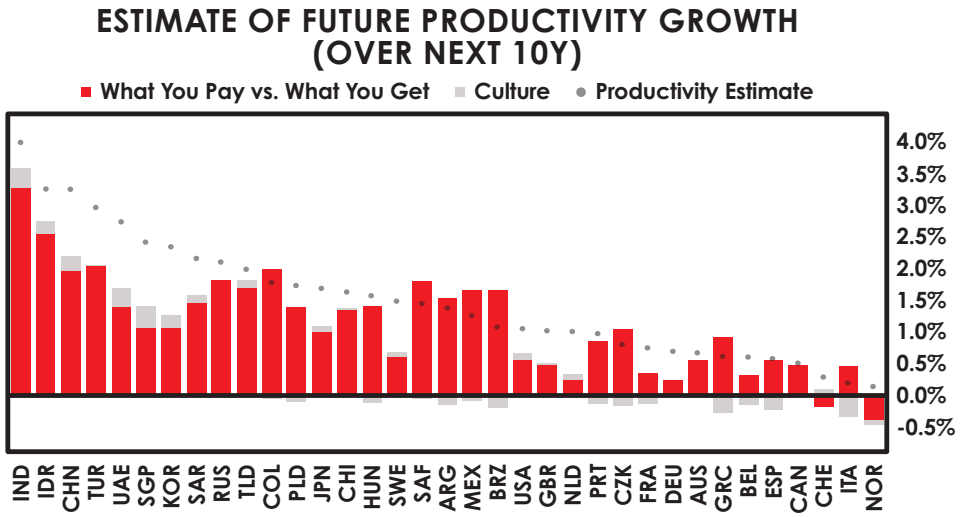
Together our indicators of productivity were 74% related to countries' subsequent growth rates. To repeat, these estimates were made by applying the exact same factors to all countries in all time periods to determine their subsequent growth. Below, we again lay out the major gauges that feed into our growth estimate as well we how we are weighting these.

PRODUCTIVITY COMPONENTS

	Reasoning	Corr. to Growth	Weight
Productivity (vs. similar income countries)	**Producing more by working harder or smarter**	**64%**	**65.0%**
Culture	**Culture influences the choices people make and the effectiveness of an economic system**	**49%**	**19.5%**
Corruption	Corruption deters investment and distorts market incentives	50%	3.3%
Bureaucracy	Lots of red tape and regulation stymies business activity	21%	3.3%
Rule of Law	Investors and businesses need to feel secure their agreements and property will be protected	38%	3.3%
Savoring Life vs Achieving	Those who value achievement will be more successful in finding ways to be more productive	40%	3.3%
Innovation	Countries that value new ideas and invest in them will find new better ways to produce faster	36%	3.3%
Self Sufficiency	The ability to independently support oneself is healthy and important to being successful	32%	3.3%
What You Pay vs. What You Get	**Countries that offer the most value for money do better than those that don't**	**60%**	**45.5%**
Education	A better educated worker will be more effective today and offers more promise for tomorrow	64%	11.4%
Labor Productivity	Workers of similar education producing more in the same amount of time are more attractive	49%	11.4%
Working Hard	Hard workers will generally produce more and find ways to improve faster	61%	11.4%
Investing	Countries that save and invest in productive capital and infrastructure improve their potential	51%	11.4%

Breakdown of Productivity Based Growth

The chart below gives a picture of how we would rate countries today on productivity based on the same logic described above. Our ratings are represented in terms of what a given country's productivity would imply for that country's future growth in income per worker over the next 10 years. The different color bars show how impactful our assessment of value is for each country (i.e., what you pay for what you get) and whether culture is a support to or drag on income growth.



For a fuller description of the components that make up our estimates, please see the appendix. Next, we walk through our health indices for each country.

PART 2: ECONOMIC HEALTH INDICES BY COUNTRY, AND THE PROGNOSES THAT THEY IMPLY

While in Part 1 I explained how the economic health index worked, in this part I break it down country by country. By turning to the countries that you are interested in, you will be able to see all of the influences and what they imply for economic growth over the next 10 years for each of those countries in one simple table. They are shown in the order of projected economic growth rates and can be found by looking at the table of contents on the next page.

The projected economic growth rates for each country are shown and attributed to a) the average annual growth rate of the working population and b) the projected average annual change in the output per worker. The projected change in the average annual output per worker is determined two-thirds by that country's projected productivity growth and one-third by the size of its debt burdens. The determinants of each country's productivity growth are shown in several gauges that reflect each of the drivers (e.g., cost competitiveness, work attitudes, etc.). These are conveyed in tables that show: 1) the deviation of that country's determinant from the world average (shown in standard deviation terms), and 2) the ranking of that country (among the 20 countries shown) for that indicator. In other words, this one simple table will provide you virtually all that you need to know to gauge each country's economic health and its prospects for the next 10 years. By scanning the table and reading the accompanying text, you will be able to see a country's biggest strengths and biggest weaknesses. The projections do not take into consideration exogenous factors such as the discoveries of natural resources and wars which will influence growth rates and are beyond my ability to forecast.

The table will not provide the thinking or the individual statistics that are behind each of these gauges. Should you wish to see a deeper explanation of the thinking behind each indicator or the individual statistics behind these gauges, you can find them in the appendix. Unfortunately, we are not able to share the statistics underlying our indebtedness measures, which are proprietary.

To be clear, these health indicators show where the current conditions will lead, not what is inevitable. If countries change the influences on their health, like individuals who stop smoking and start exercising, they can improve their prognoses. In fact, while we expect the countries that are more efficient (as measured by our gauges) to do better than those that are less efficient, we expect those that remove their impediments to have the biggest improvements to growth—just as China's strong growth over the last couple decades resulted from it ending its closed-door policy.

It should be noted that there was no subjective judgment used in coming up with these numbers, or even in coming up with the text that explains these indicators. Both the numbers and the text were computer generated. As explained in Part 1 my process of converting indicators into health gauge measures and in turn into projections for growth is very straightforward. To help it to be better understood and to provide each person with their own abilities to vary the processes in the ways they prefer, I am willing to make these statistics and processes open to those who are interested so that they can assess the relationships and change the weights in the ways they think are best.

Below you'll find more detailed descriptions of the pieces we used to construct our productivity gauge. We suggest skimming this section, perhaps tracking how a particular country does through the different metrics.

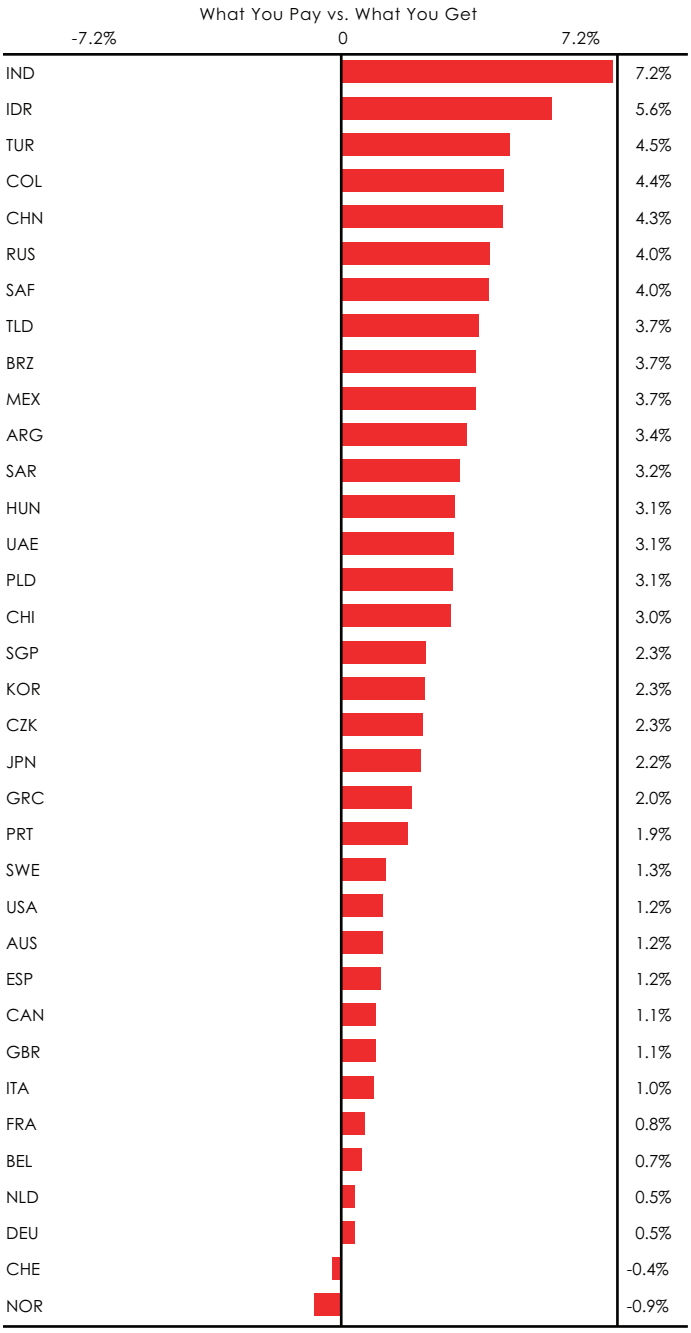
WHAT YOU PAY VS. WHAT YOU GET

As previously discussed, a country's productivity and competitiveness are mostly a function of the relative value it offers, especially for its labor. As shorthand for this, we refer to our gauge of this relative value as "what you pay versus what you get"; it reflects a) the cost and value of employees and b) the levels of investment. Countries that have well-educated workers that are relatively inexpensive and that have higher investment rates grow faster than those that don't.

To construct this gauge we first looked at the average cost of an educated worker, adjusted for the average hours worked (including the average workweek, vacation time, and holidays) and adjusted for the quality of education (based on international tests). We also created a gauge of the productivity-adjusted cost of labor (a spot picture of how much workers offer relative to what you pay). And we created a gauge of working hard, where we look at the portion of the population working, and then how many hours each of those workers puts in (again adjusting for things like vacation). In addition, this gauge considers demographic shifts that change according to how much that society is of working age relative to those who are very young or old and dependent. We weighted these equally. This gives us perspective on the cost and value of employees. We also added in a gauge of savings and investment that was also weighted equally. As shown in the correlations, all of these measures were individually highly effective predictors of future growth, as was the aggregate of them. Most interesting are the individual country rankings by measure, which are shown in the charts that follow. We suggest picking a few countries that you are most interested in and seeing where they stand in these rankings. As we progress through the charts in this section, clear pictures will emerge.

	Corr. to Growth	Weight
What You Pay vs. What You Get	**60%**	**70.0%**
Education	**64%**	**17.5%**
Cost of Quality Adjusted Educated Worker Relative to the USA	64%	17.5%
Labor Productivity	**49%**	**17.5%**
Cost of a Prod. Adj. Educated Worker	49%	17.5%
Working Hard	**61%**	**17.5%**
Avg Hours Worked	62%	11.7%
Change in Dependency Ratio (10Yrs Fwd)	40%	5.8%
Investing	**51%**	**17.5%**
Investment Pct	48%	3.1%
Savings Rate	44%	3.1%
Income Volatility	14%	2.6%
Inflation Volatility	-21%	2.6%
Productivity of Capital Investments	21%	3.1%
Growth in Capital Stock	35%	3.1%

WHAT YOU PAY VS. WHAT YOU GET IMPACT ON FUTURE GROWTH

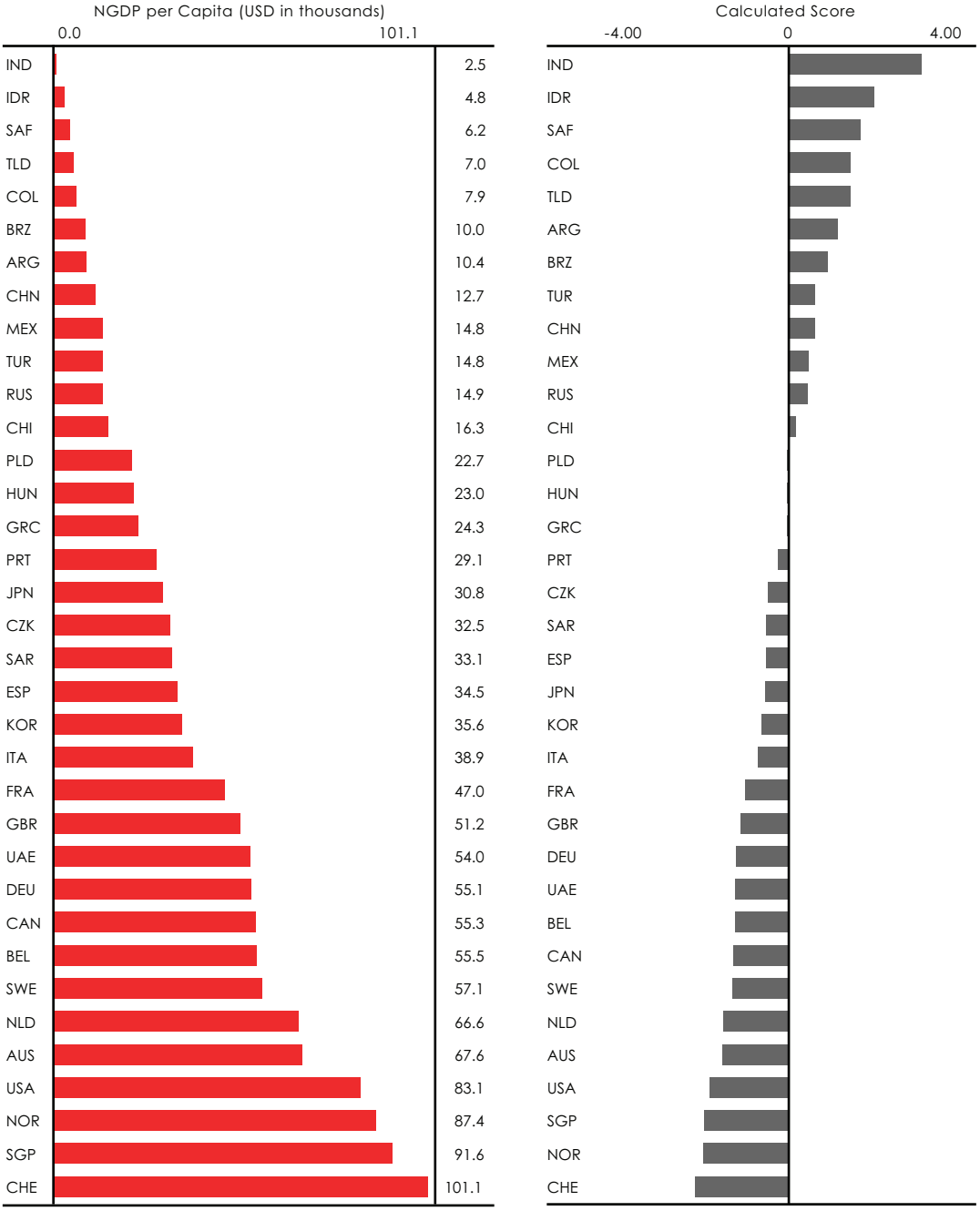


A SIMPLE MEASURE OF COST: PER CAPITA INCOME

To make any assessment of value we want to look at the attributes of a country relative to their costs. Absent other indications of productivity or indications of what you get for workers, we'd expect relative income levels alone to give you some indication of a country's relative future growth, albeit a naïve one. Through time, countries with cheap workers and low skills can leverage existing technology to increase their productive ability. Similarly, the richest countries generally do not continue to outperform the rest of the world, as their competitive advantages are eaten away by technology transfers to less competitive economies, and the normal behavior of most economies is to increasingly savor the fruits of success by working and investing less.

Our measure of cost simply compares the nominal GDP per capita of a given country relative to the developed world average in log terms, which we believe is more reflective of the impact of differences in income levels. That's based on our intuition that, from a competitiveness perspective, a $2,000 difference is more meaningful between one country that makes $500 and one that makes $2,500 than between countries that make $40,000 and $42,000. Again, this measure of cost is one side of the picture. We combine it with our assessment of various indications of what a country offers to understand its productivity and competitiveness (what it offers relative to its cost).

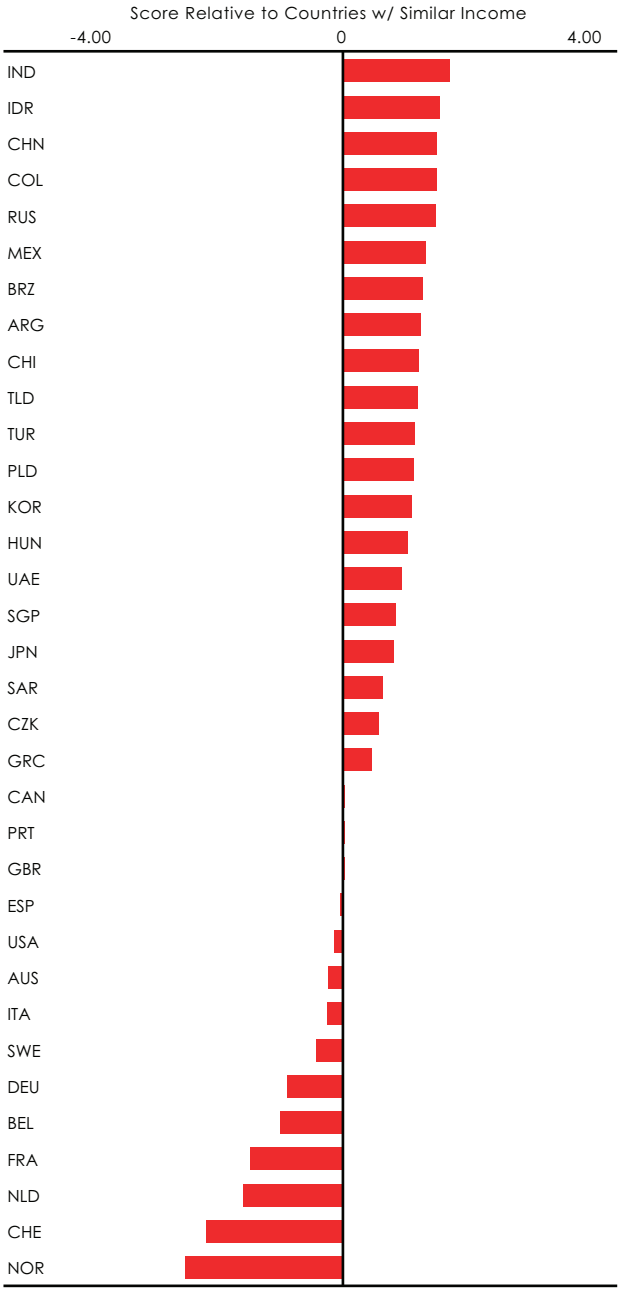
PER CAPITA INCOME DATA AND SCORES



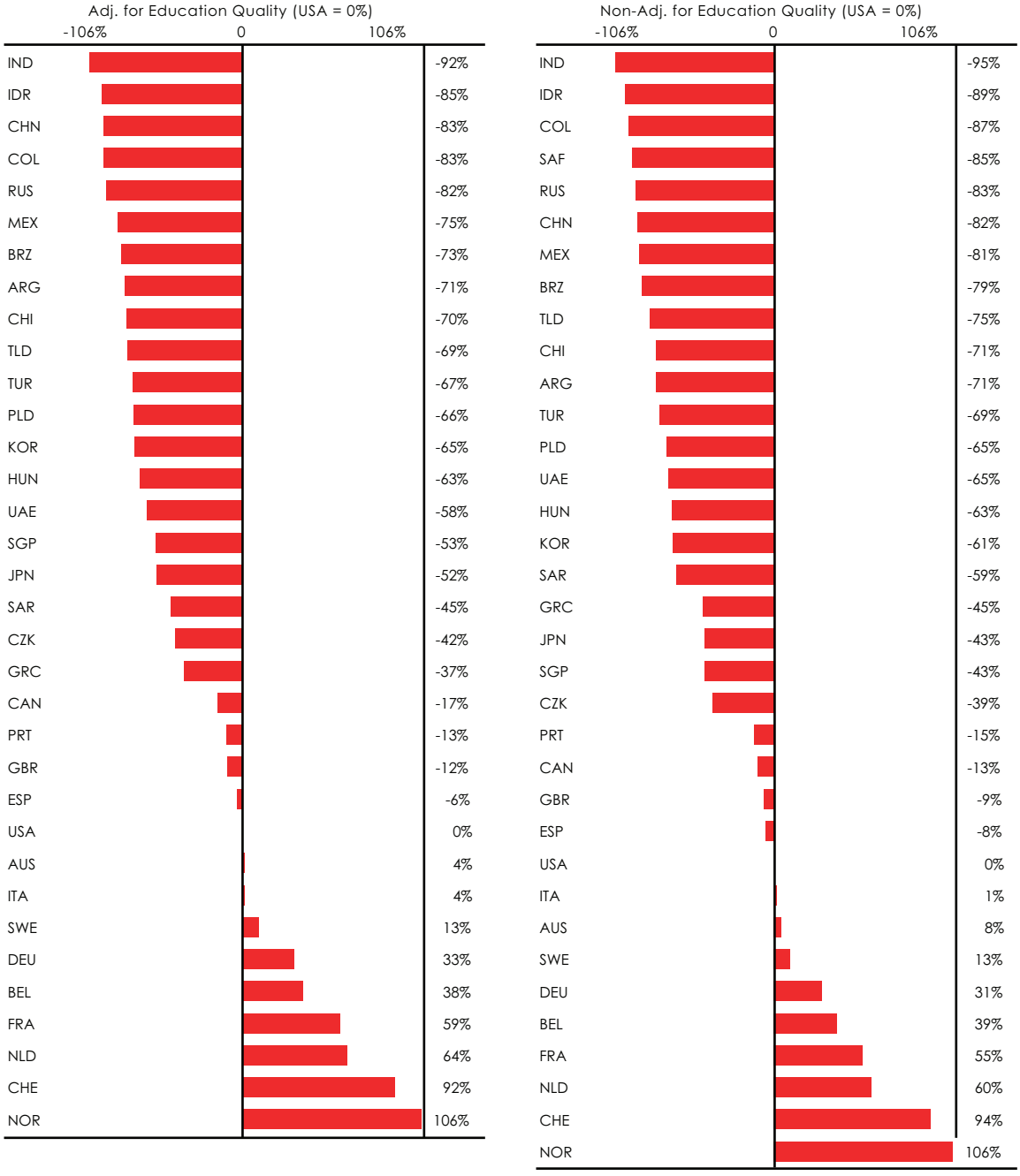
EDUCATION

Our single best measure of productivity is the relative cost of a country's educated workforce adjusted for the quality of that education. To construct our measure we look at the relative cost of different cohorts of educated and uneducated workers (e.g., college, high school, those without education), allowing us to get closer to the individuals where the competition occurs. We can then look at the average cost of those workers per hour worked (adjusting for differences like vacation). Further, we take into account the quality of education in one country versus another (e.g., if a high school graduate in the US costs the same as one in France, we also want to ask whether the quality of high school education is the same in both countries). For this adjustment, we use an internationally accepted measure of education quality. That allows us to compare for a given cohort the relative quality of workers' education compared to the relative cost. To come up with an aggregate measure for a country we weight proportionally how much of its population is in each group because if a country's workforce is highly educated, then most of the labor competition happens with other countries at those levels (e.g., between drug researchers in the US and their peers in Germany). Of course we recognize there is some labor arbitrage across cohorts, but this approach lets us capture the dynamic reasonably well.

EDUCATION SCORES



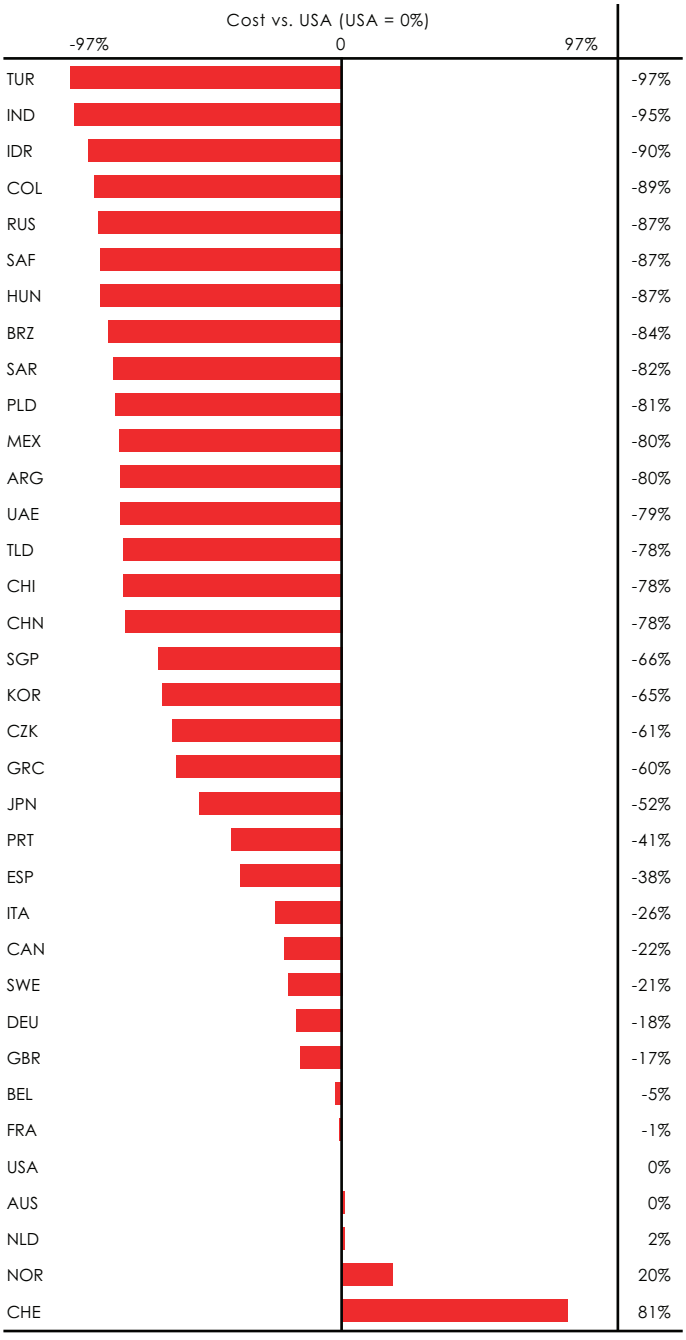
COST OF QUALITY-ADJUSTED EDUCATED WORKER



LABOR PRODUCTIVITY

To triangulate our picture of the cost of an educated worker, we also look at the cost adjusting for observed differences in productivity (output per hour worked) rather than education quality. With this measure, we take the same approach of looking at the cost of the different cohorts. By adjusting for differences in observed productivity today we can get a better sense of the effective cost. Imagine you hire two workers of the same cost: one has a better education, but the other is more productive from day one on the job.

COST OF A PRODUCTIVITY ADJUSTED EDUCATED WORKER

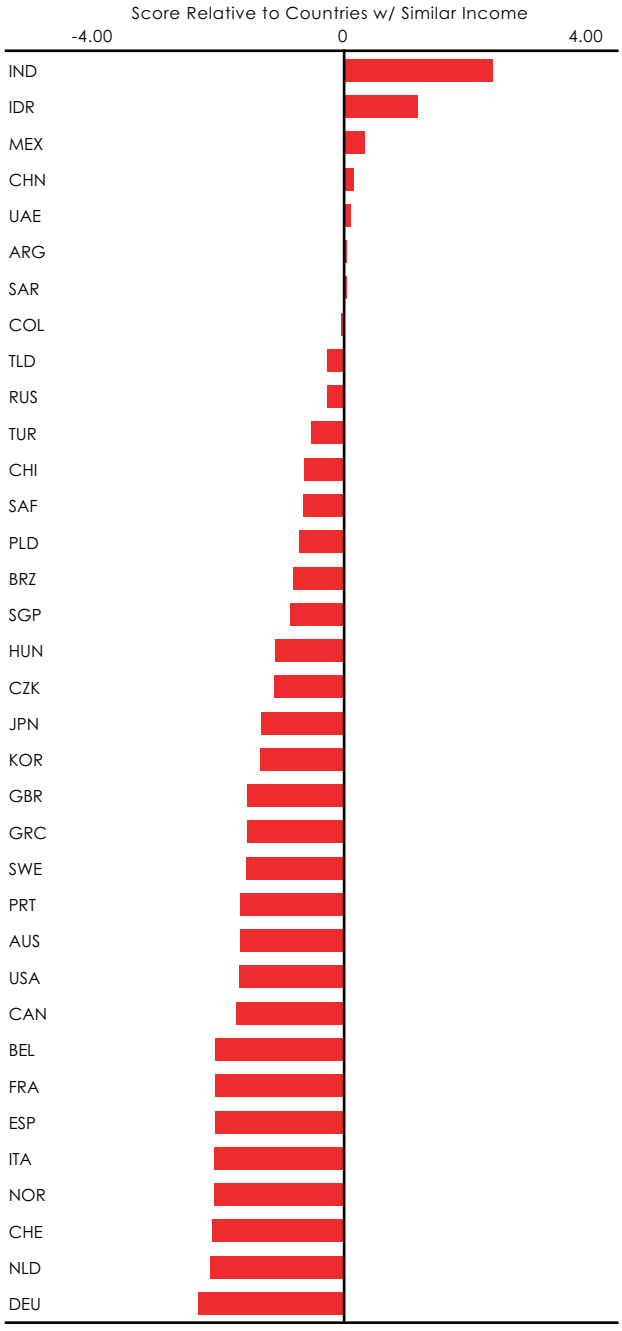


WORKING HARD

Just like hardworking individuals, hardworking countries will generally be more productive and find ways to improve faster than those that are less hardworking. We believe a country's work ethic impacts both the level of its relative advantage today and the pace at which it learns and improves over time. Working hard doesn't just mean working a lot of hours; it means having a certain ethic, a determination to achieve quality outcomes, and to improve. Demographics can also impact the work ethic of a society—when a society ages and the number of dependents rises relative to those in the workforce, it can impact the overall work ethic of the society. Similarly, when there is a boom of young professionals, it can improve the vibrancy, initiative, and determination of the society. We expect a country with a hardworking society that is low-cost to be more competitive and grow faster than a country with a population that prefers leisure and is expensive.

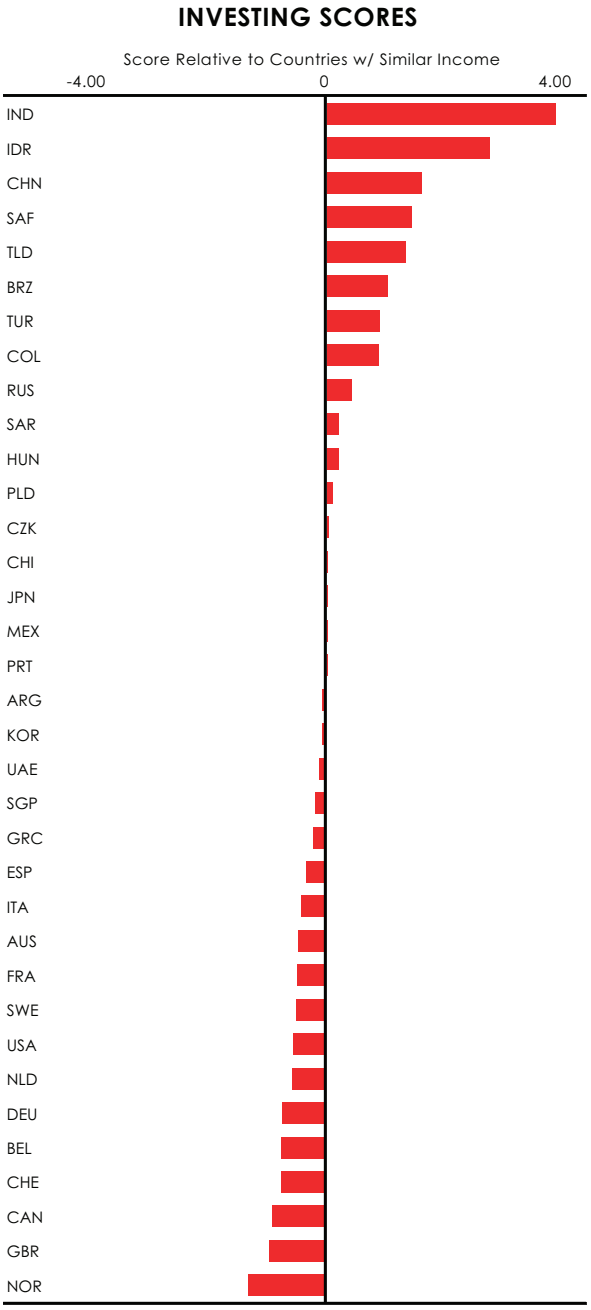
To construct a simple measure of working hard, we look at two pieces: 1) average weekly hours of actual work by men in the labor force, adjusting for things like vacation time and holidays, and 2) shifts in the amount of the population as a whole that is working. While the number of hours worked is just one measure of the effort a country puts in, and doesn't account for the determination and effort put in during those hours, it gives us a decent starting point; we return to some other measures that triangulate our picture when we look at culture.

WORKING HARD SCORES



INVESTING

Countries that save and invest in their future tend to grow faster by creating capital equipment and infrastructure that helps improve the productivity of their workforce relative to other countries with more limited investment rates. Further, high rates of savings provide the capital needed to invest in the most innovative companies. Of course, there are always risks that this investment is unproductive. Typically, the investments that yield the most productivity gains occur in emerging countries that are just becoming rich. At this stage, the investments are not just inexpensive; the stock of infrastructure and other physical capital is also typically low and there is lots of room to adopt existing technologies that can radically improve the country's potential. Investing is measured by looking at 1) the rate of total non-residential fixed investment in a given economy and 2) the household savings rate.



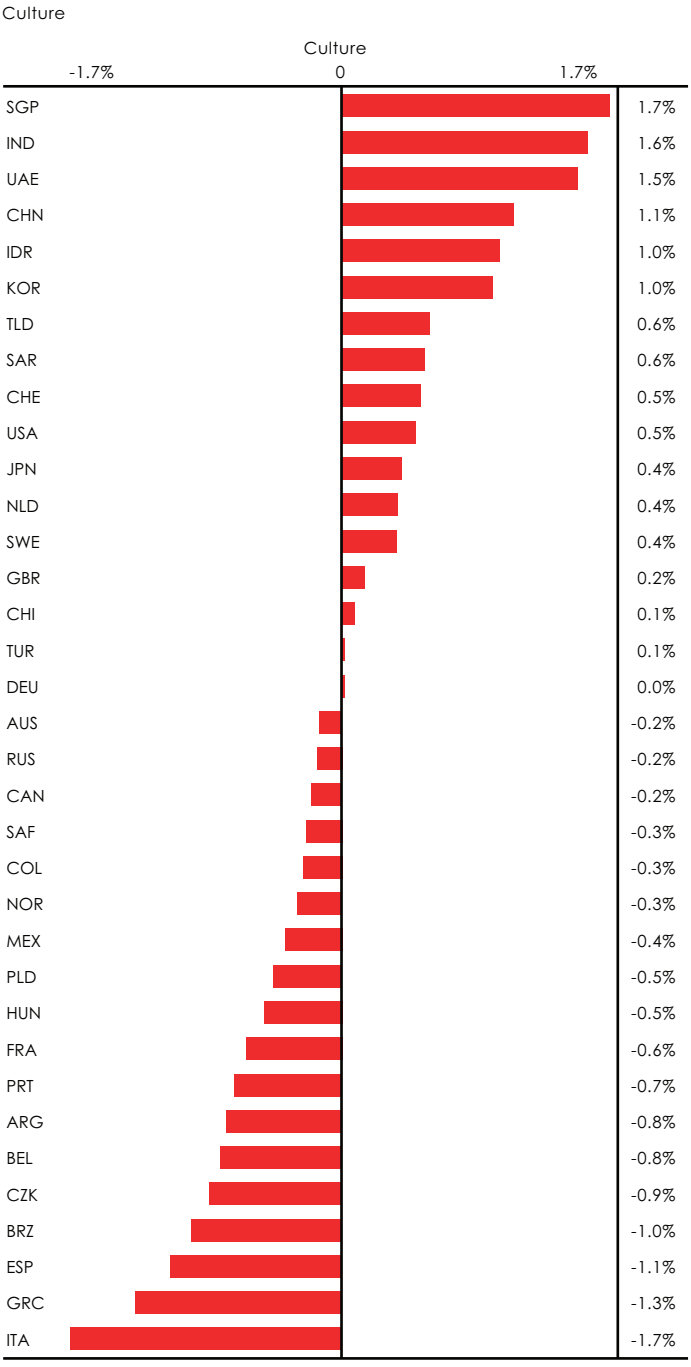
CULTURE

Just looking solely at the relative value of a country's workers misses the role that the culture plays in determining how much a country will grow. As I've discussed, culture influences the decisions people make about factors like savings rates or how many hours they work each week, which we measure in the previously shown indicators, but culture can also influence work attitudes, levels of efficiency, reliability, and other such influences on whether countries underperform or outperform. While some people shy away from examining culture because it is perceived as a sensitive subject and/or difficult to measure, I think those views are mistaken. I don't see any reason why we shouldn't look at culture objectively as we do any other element of an economy; also, it can be well measured. I think that it's unfortunate that this important influence on economic well-being has not been well studied.

To be clear, I don't mean to judge whether a culture is good or bad any more than I could judge whether working hard is a better way to live one's life than savoring the pleasures of life. I am, however, confident that people who prefer savoring life over working hard will work and produce differently in ways that we should understand. Similarly, it makes intuitive sense that countries that emphasize individual self-reliance and striving to achieve are more likely to succeed than countries that don't. Countries can also outperform if the people in them are more innovative in producing new products and ideas of value and are more commercially minded in harvesting them. On the other hand, it makes sense that countries will underperform if they are corrupt, bureaucratic, or if the rule of law is unsound. In this section we will look at the relationships between measures of such factors and future growth, and we will examine how different countries stack up against these measures and what that implies for their future growth rates.

	Corr. to Growth	Weight
Culture	**49%**	**30.0%**
Corruption	**50%**	**5.0%**
Surveys of Corruption	61%	2.5%
Transparency Index	-18%	2.5%
Bureaucracy	**21%**	**5.0%**
Starting a Business	-33%	1.7%
Construction Permits	-34%	1.7%
Burden of Govt Regulation	24%	1.7%
Rule of Law	**38%**	**5.0%**
Efficiency of Legal Frameworks	3%	1.3%
Property Rights	-30%	1.3%
Protecting Investors Value	-3%	1.3%
Enforcing Contracts	-6%	1.3%
Savoring Life vs Achieving	**40%**	**5.0%**
Observed Outcomes	10%	2.5%
Expressed Values	9%	2.5%
Innovation	**36%**	**5.0%**
Innovation Inputs	49%	2.5%
Innovation Outputs	33%	2.5%
Self Sufficiency	**32%**	**5.0%**
Hard Work	34%	2.5%
Government Support	20%	1.3%
Rigidity of Labor Market	7%	1.3%

CULTURE IMPACT ON FUTURE GROWTH



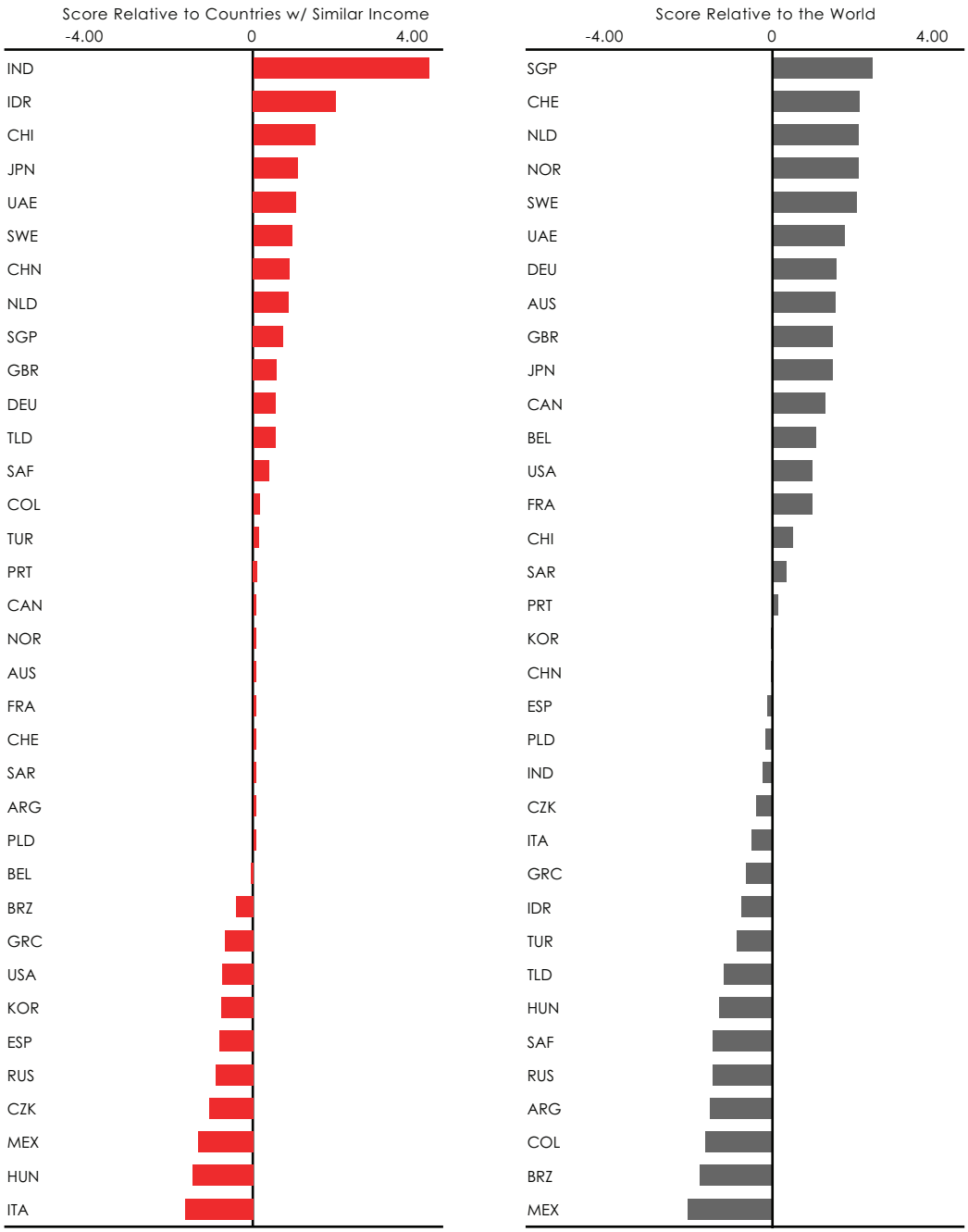
CORRUPTION

Corruption undermines the effectiveness of a market-based system in a variety of ways, diverting resources, distorting incentives, raising the costs of doing business, undermining business competition and efficiency, and creating uncertainty for investment. Corruption also both discourages profit-seeking and often impedes it. Small types of corruption (like the bribes one may have to pay at the airport or to an administrative official) create inefficiencies that slow down the agility of businesses, raise costs, and make it more difficult to cultivate a new business. Big forms of corruption (for example, business appropriation) create limits to financial success and others (like large bribes to enter an industry or win a license) create entry barriers and lower prospective returns. All forms can make a country's system dysfunctional and create uncertainty around doing business in a given country. In all these ways corruption undermines productivity and the capacity of a society to realize its potential.

To measure corruption, we combine Transparency International's measures of corruption across countries with three sub-indices from the World Economic Forum's competitiveness index: "diversion of public funds," "irregular payments and bribes," and "favoritism in decisions of government officials." These measures help us capture the different types of corruption (big and small). The pieces of our corruption indicator are shown in the table below. When we look at these measures we see that poorer countries tend to have higher degrees of corruption. That's for a number of reasons we won't explore in depth here, including fewer opportunities for wealth creation, entrenched ways of operating that may have once been part of a different, non-market based system, or weaker rule of law. Businessmen and investors will likely put up with a certain degree of corruption to operate in an emerging country that is otherwise competitive. But if that country has an exceptionally high degree of corruption relative to countries of similar income, it is no doubt going to weigh on the decision to do business in that country. Notably, the relationship is slightly negative without this adjustment. Along with our measures of bureaucracy and the rule of law, this gauge helps us triangulate the picture of how hard it is to do business in a country.

	Corr. to Growth	Weight
Corruption	**50%**	**16.7%**
Surveys of Corruption	**61%**	**8.3%**
Diversion of Public Funds	-20%	2.8%
Irregular Payments and Bribes	-17%	2.8%
Favoritism in Govt Decisions	-9%	2.8%
Transparency Index	**-18%**	**8.3%**

CORRUPTION SCORES

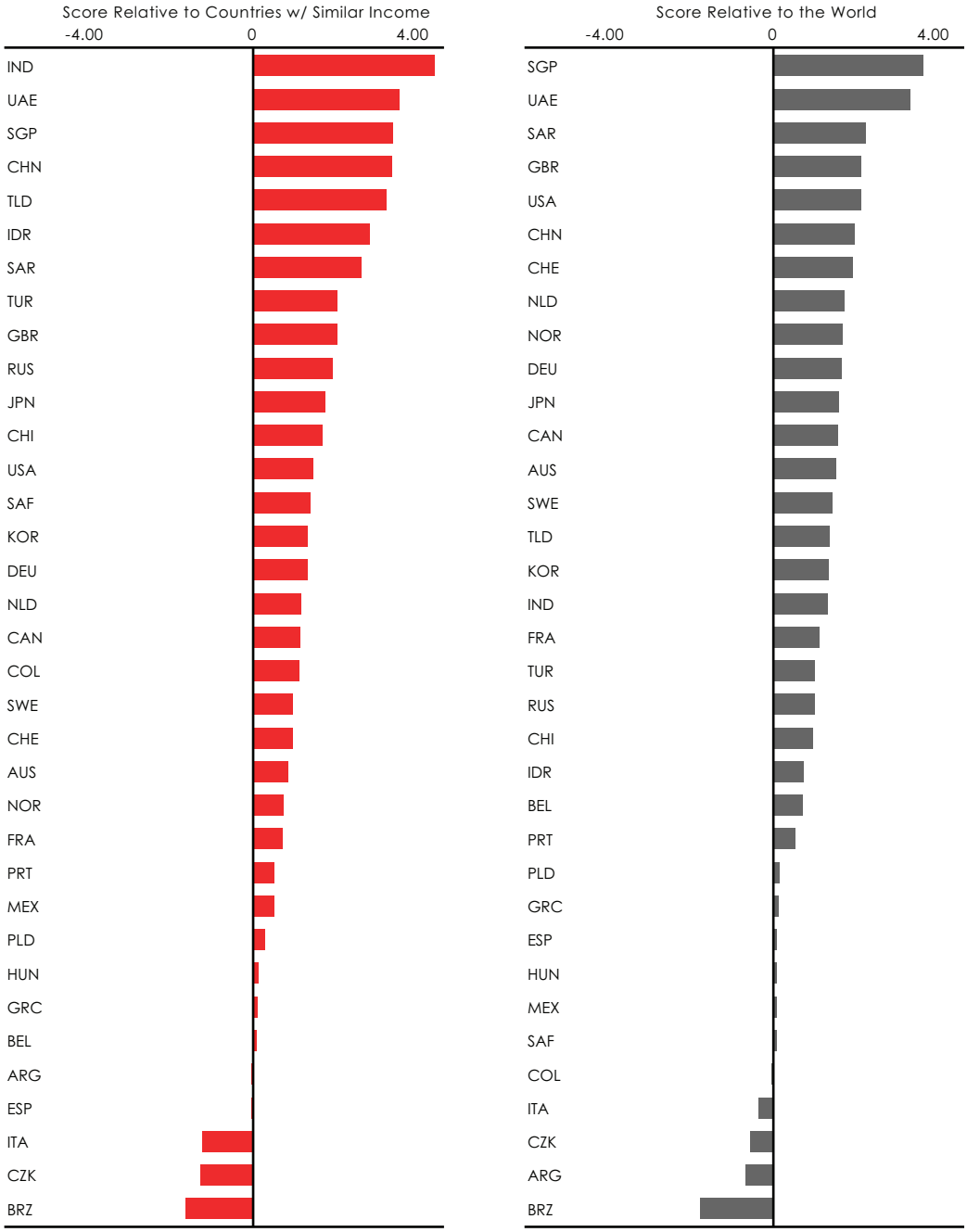


BUREAUCRACY

Lots of red tape and government regulation stymie business activity. They impact the core elements of a thriving economy by hindering people from innovating or creating new businesses, and they make running a business burdensome, requiring people to spend time complying with unnecessary or heavy administrative controls instead of focusing on business improvements. That's not to say that regulation is not important—of course, good governance and the rule of law are critical to a healthy market-based economy, as we will examine next. But excessive, time-consuming, and rigid controls gum up the wheels of the economy.

To measure bureaucracy we look at measures related to the ease of starting a business (from the World Bank/IFC), the efficiency and cost of dealing with construction permits (also World Bank/IFC), and the burden of government regulation (from the World Economic Forum). The pieces of our bureaucracy indicator are shown in the table below. Bureaucracy tends to be more prevalent in less developed countries and so is fairly related to income levels. This is fairly natural for a number of reasons, because the processes are simply less efficient and require more steps, because the market systems are less advanced or established and have more controls, or because of inter-related factors, like weaker rule of law and a higher degree of corruption leading to more controls that allow for rent-seeking. From a growth perspective, businessmen and investors will likely accept that a certain degree of bureaucracy is to be expected to do business in an emerging country that is otherwise competitive. But if the bureaucracy is exceptional even relative to countries of similar income, it is no doubt going to weigh on the decision to do business in that country.

BUREAUCRACY SCORES

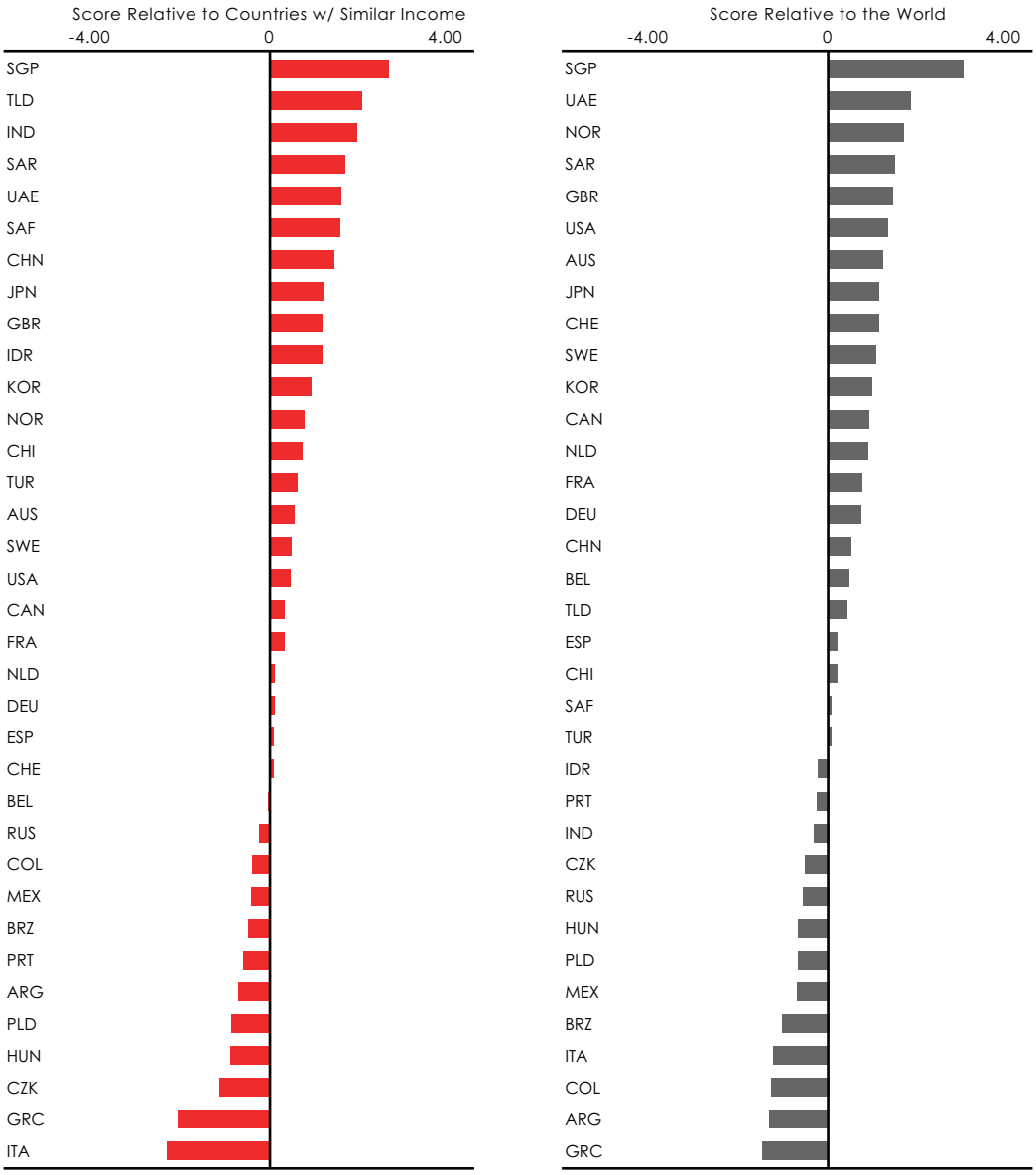


RULE OF LAW

A strong rule of law helps ensure fair competition in a market-based system and it protects the incentives and efficiency of this system. When a country's legal system can reliably and efficiently enforce agreements that businesses make and protect people's property and investments, the economy can function. If there are strong disagreements, a contract broken, or a bankruptcy, a well-developed legal system makes working these things out fair and orderly. When the government fails to do these things, investing and doing business in a country is a lot riskier and inefficient. A strong rule of law also helps stamp out corruption and other activities that discourage profit seeking and prevent the most highly valued products and businesses from thriving.

We measure rule of law by combining measures related to the efficiency of the legal framework in settling disputes (WEF), property rights (WEF), protecting investors (World Bank/IFC), and enforcing contracts (World Bank/IFC). The pieces of our rule of law indicator are shown in the table below. As with our measures of corruption and bureaucracy, the rule of law tends to be strongly related to a country's income. Again, we won't delve into all the reasons here, but it's intuitive that countries that have less resources and less educated populations have more immature legal systems, and the rule of law is likely compounded by interrelated factors, like higher corruption. Here we want to look at the rule of law of a country taking into account its development stage. That gives us a better sense of the underlying cultural elements that will determine its lawfulness as it develops. It's also a more helpful perspective in looking at future growth. As with our measures of bureaucracy and corruption, we would expect that businessmen and investors will likely expect there to be lower rule of law in poorer countries, and so it may not impact their decision to do business or invest in an emerging country that is otherwise competitive. But if the rule of law is particularly weak in that country relative to others of similar income, that is likely a drag.

RULE OF LAW SCORES

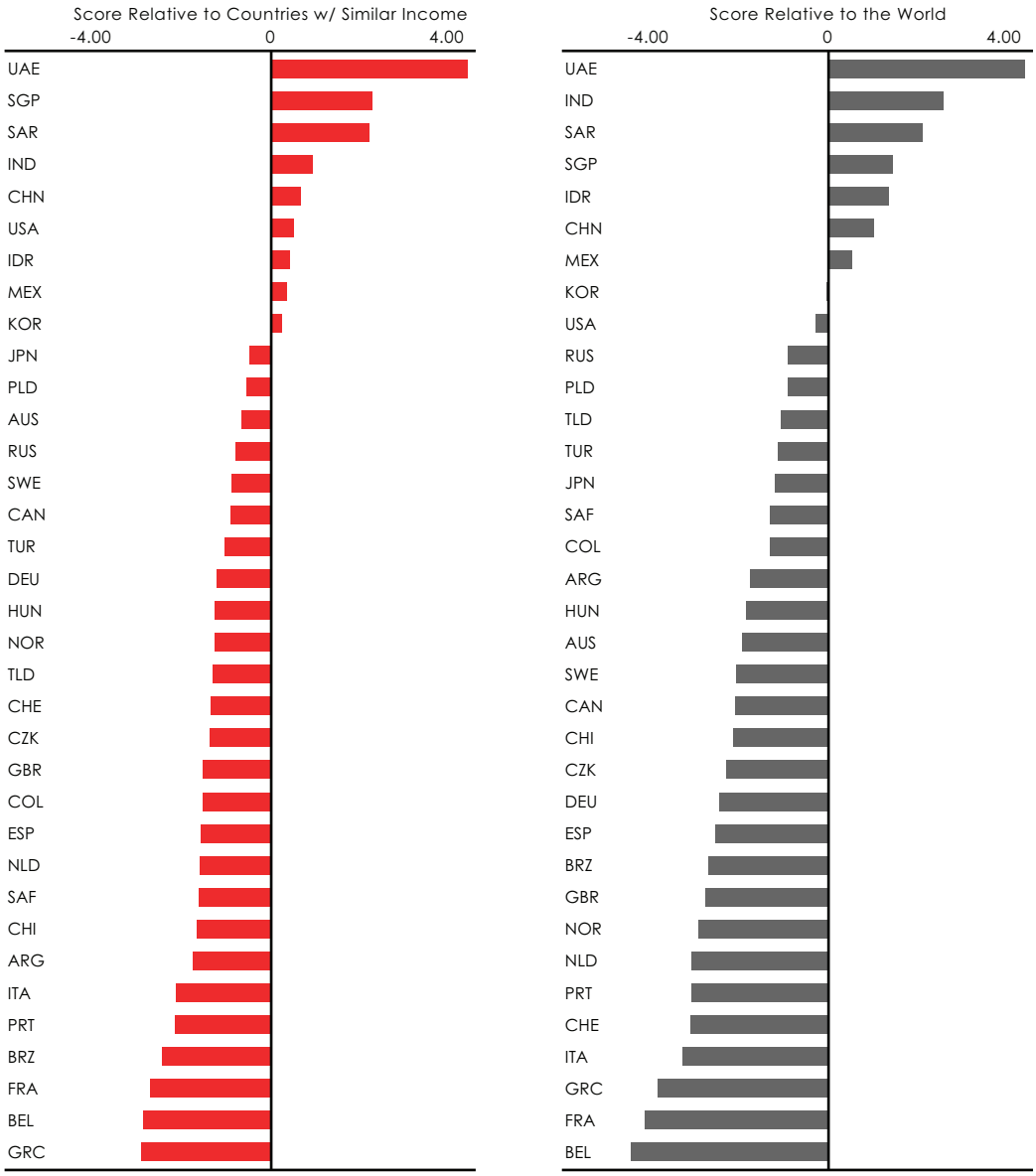


SAVORING LIFE VS ACHIEVING

It makes intuitive sense to us that those who value achievement over savoring the fruits of life will be more successful in finding ways to work harder and smarter to become more prosperous. Of course achievement means different things to different people. When I talk about a society that values achievement I imagine one where its people prioritize professional success, creating thriving businesses and building economic security versus other goals like enjoying leisure. What's more, these societies tend to be ones where there is a faith that competition is fair and hard work will be rewarded (otherwise it's less likely for the people to be motivated).

	Corr. to Growth	Weight
Savoring Life vs Achieving	**40%**	**16.7%**
Observed Outcomes	**10%**	**8.3%**
Average Hours Worked	57%	8.3%
Expressed Values	**9%**	**8.3%**
Children Having Responsibilities is Important	-17%	1.2%
Growth is Important for the Future of a Country	74%	1.2%
Having a Good Time is Important	15%	1.2%
Importance of Being Successful	59%	1.2%
Economic Growth should be a Priority over the Environment	18%	1.2%
Competition is Not Harmful to Business	30%	1.2%
Hard Work Leads to Success	28%	1.2%

SAVORING LIFE VS ACHIEVING SCORES



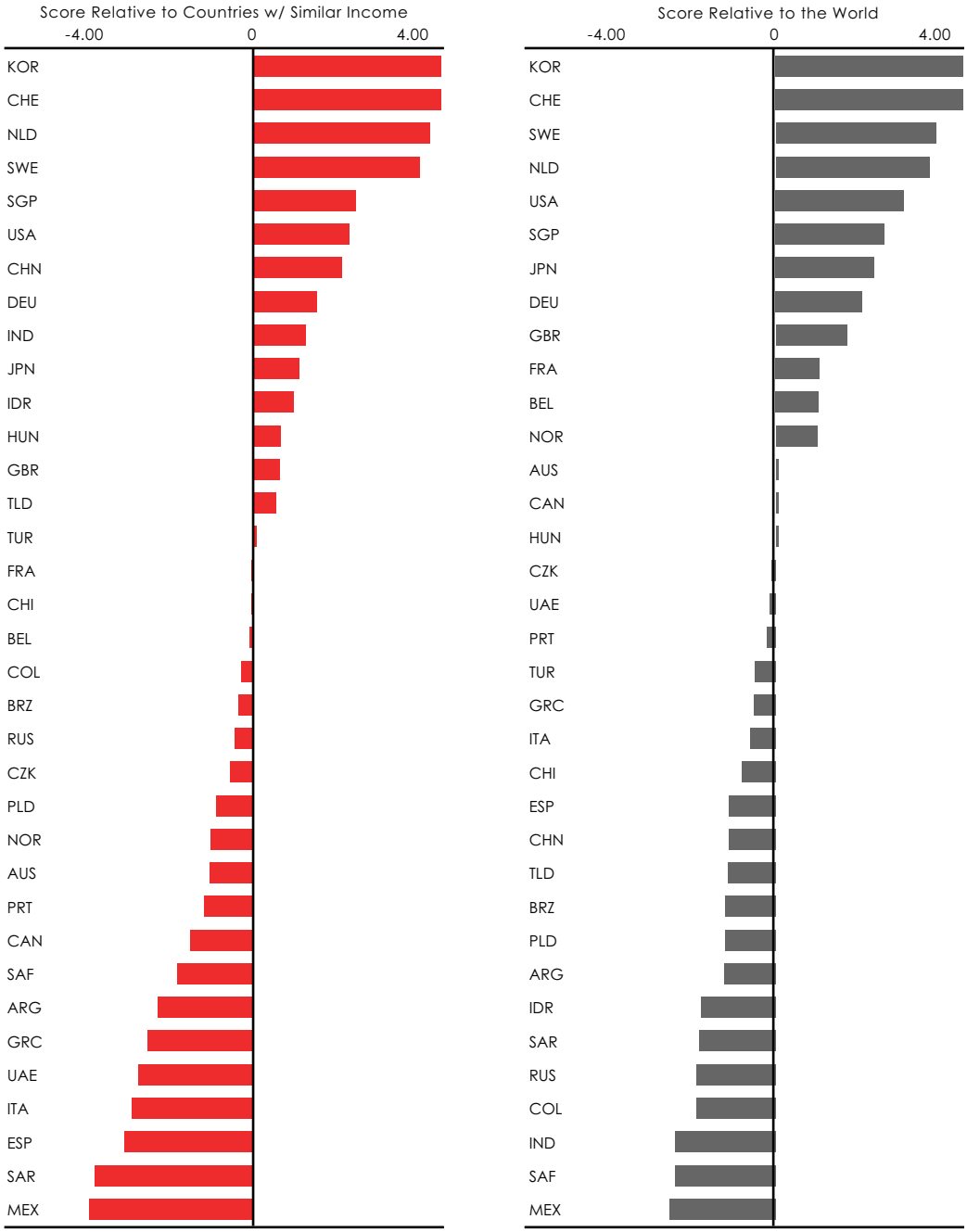
INNOVATION

An innovative and commercial spirit is the lifeblood of a thriving economy. The drive to tinker and invent, to discover, to improve from prior failures—this is how people learn and find new and better ways of creating things of value. In a market-based system, the most powerful way to drive innovation is to bring new ideas to market and to commercialize and profit from them. The marketplace is generally efficient in weeding out the good ideas from the bad and pricing which innovations are most valued by society. In this way, the concepts of innovation and commercialism go hand in hand. They capture whether people in a society value finding new knowledge or creating new things, and whether their incentives are aligned to encourage them to seek a profit by commercializing these ideas. The following statistics measure the level of innovation and commercialism in different countries and their correlations with future growth.

We looked at a variety of measures to triangulate these concepts. For both scientific and commercial innovation, we wanted to have a balance between indicators that captured outputs (new inventions or businesses), and indicators that measured inputs (values, investment, and people) that we thought would logically lead to innovation. We weigh the inputs and outputs equally. The pieces of our innovation and commercialism indicator are shown in the following table. Overall, the raw indications of innovation and commercialism are stronger in higher-income countries, especially measures of investment (like R&D expenditure) that require a certain level of resources, or measures of knowledge creation (like patent creation) that require a level of acquired knowledge. What we are focused on with our culture measures, however, are the underlying values of a society independent of its wealth and development stage (which we proxy in a simple way with income levels).

	Corr. to Growth	Weight
Innovation	**36%**	**16.7%**
Innovation Inputs	**49%**	**8.3%**
Gross expenditure on R&D	-20%	1.0%
Researchers	-28%	1.0%
Fear of Business Failure	11%	1.0%
Entrepreneurship Prevalence	29%	1.0%
Innovation Outputs	**33%**	**8.3%**
# New Patents	-33%	2.1%
Royalty and license fees, payments	-36%	2.1%
# New Businesses	-28%	1.0%
% of People Creating New Businesses	27%	1.0%
# New Major Websites	-45%	1.0%
New Trademark Creation	-21%	1.0%

INNOVATION SCORES



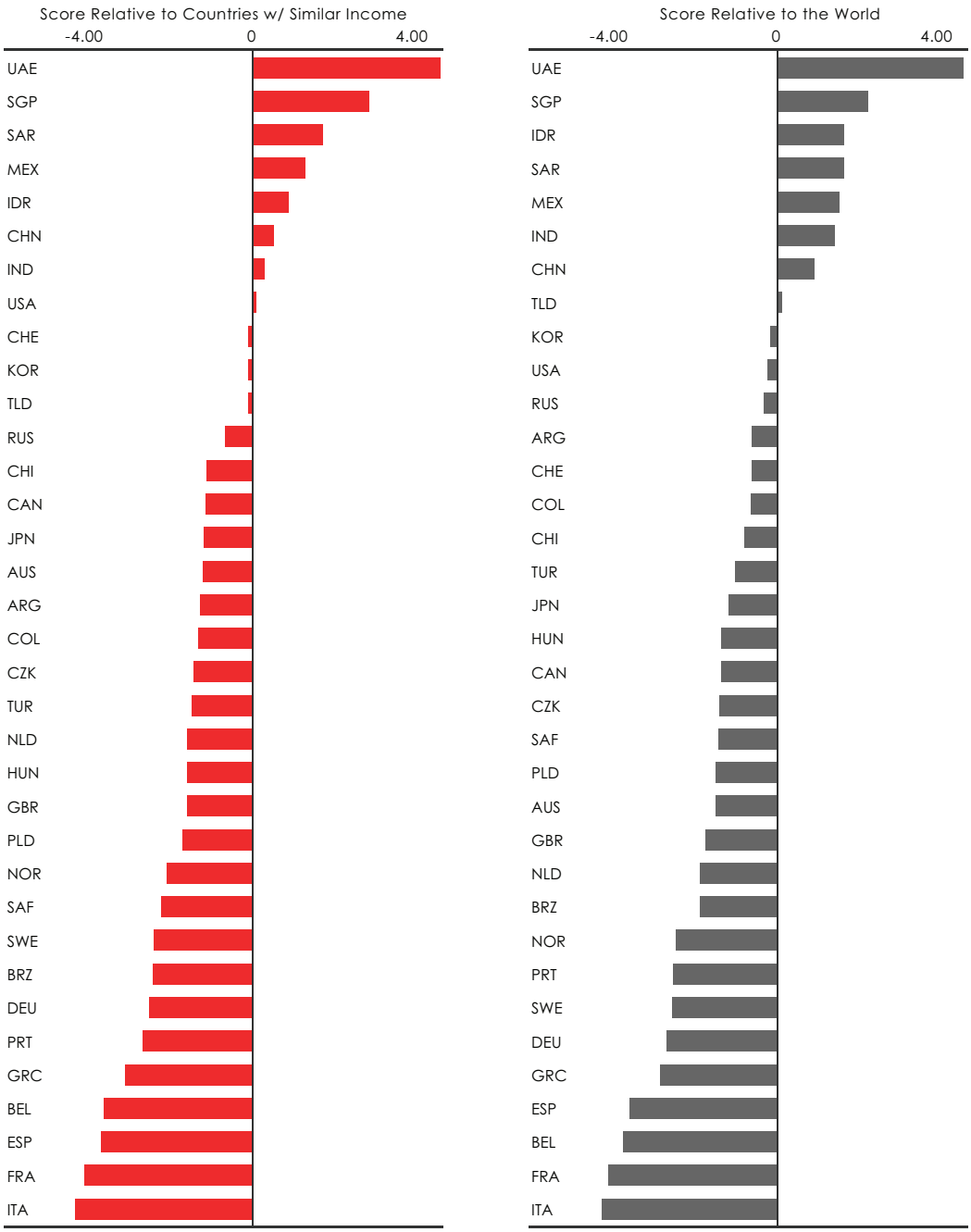
SELF-SUFFICIENCY

It is both logical and consistent with the evidence to believe that self-sufficiency (i.e., the need and the ability to independently support oneself) is an important ingredient for individuals and societies to be successful. It is not controversial to say that people spend the money that they earn differently than the money that others give them—i.e., that the connection between earning and spending is a healthy one. If people have to earn money to spend it, they have to be more productive. Over the long run, living standards rise as a function of increases in productivity. So, it is not a big leap to presume that countries with greater amounts of self-sufficiency do better than those with less. Since self-sufficiency creates capability and independence in addition to fostering increased production, it also produces self-esteem. For these reasons, it is logical to conclude that self-reliance is rewarding, both economically and psychologically. The evidence clearly shows this to be true.

Below, we show how self-sufficiency varies by country and how it has been correlated with subsequent economic growth. You will see that there are significant differences in self-sufficiency levels between countries and that these differences occur for different reasons. For example, in some cases they are chosen (e.g., the amounts of transfer payments developed economies have are largely chosen) while in other cases they are not (e.g., high self-sufficiency in the poorest societies is primarily the result of necessity rather than choice). Nonetheless, the evidence is clear. Societies in which individuals are more responsible for themselves grow more than those in which they are less responsible for themselves.

	Corr. to Growth	Weight
Self Sufficiency	**32%**	**16.7%**
Hard Work	**34%**	**8.3%**
Average Hours Worked	57%	4.2%
Labor Force Participation	29%	1.4%
Effective Retirement Age	23%	1.4%
Actual Vacation Days	32%	1.4%
Government Support	**20%**	**4.2%**
Transfer Payments to Households	46%	2.1%
Government Outlays	40%	2.1%
Rigidity of Labor Market	**7%**	**4.2%**
Collective Bargaining as Pct of Workforce	32%	1.4%
Ease of Hiring/Firing Index	30%	1.4%
Minimum Wage	-6%	1.4%

SELF-SUFFICIENCY SCORES



APPENDIX: DATA SOURCES

My goal in building these measures is to encourage thought about what policymakers intend to go after and how best to measure their success. You may well think certain measures are more or less important than others and want to weigh the indicators differently than me depending on your own goals. I would ideally like to give you the tools to do so, by building my gauges in an open-source way.

I cannot directly share the data I am using, because many of the concepts are proprietary or for sale. Thus, in this appendix, I wanted to share some of the helpful data sources I used. My overall index uses a few hundred indicators—below I am sharing a selection in case you would want to obtain these directly.

#	Indicator/Concept Used	Data Sourced From
1	Access to Essential Health Services	The Social Progress Imperative
2	Aerospace and Defense Sector Returns	Thomson Reuters
3	Agriculture, Forestry & Fishing, Value Added	World Development Indicators (World Bank)
4	Artificial Intelligence: # of New Companies, # of Patents, # of Citations	Center for Security and Emerging Tech
5	Banking Claims in Country (By Currency & Source Country)	Bank for International Settlements
6	Bloomberg Innovation Index	Bloomberg
7	Book Titles Per Capita	CLIO Infra
8	Child Mortality Rate	The Social Progress Imperative
9	Climate Vulnerability and Preparedness Index & Subcomponents	University of Notre Dame: Global Adaptation Initiative Index
10	CO2 Emissions	CLIO Infra
11	Conflict Intensity and Count Per Capita	Cline Center
12	Construction Permits Score	World Bank - Doing Business Report
13	Days Lost To Labor Disputes	CLIO Infra
14	Discontent, Populism, and Conflict Terms in Media	The GDELT Project
15	Education Spending	World Development Indicators (World Bank)
16	Educational Attainment	Barro-Lee Educational Attainment Data
17	Electricity Production	National Bureau of Economic Research: CHAT Dataset
18	Energy Production and Consumption	The U.S. Energy Information Administration
19	Enforcing Contracts Score	World Bank - Doing Business Report
20	GINI Coefficient	World Development Indicators (World Bank)
21	Google Searches for Political Conflict Terms	Google Trends
22	Google Searches indicating Economic / Political / Social / Emotional Discontent	Google Trends
23	Government Disapproval & Verbal Opposition in News / Media	The GDELT Project
24	Gross Expenditure on R&D	WIPO Global Innovation Index
25	Historical Aviation Passengers & Cargo	National Bureau of Economic Research: CHAT Dataset
26	Historical Technology Adoption (Milking Machine to Internet)	National Bureau of Economic Research: CHAT Dataset
27	Homicide Rate	The Social Progress Imperative
28	Hours Worked Per Week	World Inequality Database
29	Human Capital Index	World Bank
30	Income Distributions	World Bank
31	Internal Armed Conflict	CLIO Infra
32	Internet Users	National Bureau of Economic Research: CHAT Dataset
33	Male Labor Force Participation Rate	World Bank
34	Metals and Ores Production	CLIO Infra
35	Nuclear Weapon Stockpile	The Federation of American Scientists

#	Indicator/Concept Used	Data Sourced From
36	Number of New Patents	WIPO Global Innovation Index
37	Numeracy	CLIO Infra
38	OTC FX Turnover	Bank for International Settlements
39	Particulate Matter Pollution	The Social Progress Imperative
40	Patent Applications	World Development Indicators (World Bank)
41	People Displaced by Conflict & Violence	World Development Indicators (World Bank)
42	People Using Safely Managed Drinking Water Services	World Bank
43	Prevalence of Undernourishment	World Bank
44	Protecting Investors Value Score	World Bank - Doing Business Report
45	Protest Intensity Index	The GDELT Project
46	Public Sector Corruption & Theft Score	V-DEM Institute
47	Rail Lines Opened and Rail Cargo	National Bureau of Economic Research: CHAT Dataset
48	Real GDP Per Worker	Penn World Tables
49	Real Growth Rate	World Bank
50	Renewable Freshwater Resources	World Development Indicators (World Bank)
51	Rigorous and Impartial Government Score	V-DEM Institute
52	Royalty and License Fees	WIPO Global Innovation Index
53	Share of Universities in Top 500	Shanghai Ranking Consultancy
54	Shipping Tonnage by Sail / Steam / Motor and in Total	National Bureau of Economic Research: CHAT Dataset
55	Starting a Business Score	World Bank - Doing Business Report
56	Suicide Mortality Rate	World Bank
57	Tariff Rate	World Bank
58	Top 1% and Top 10% Income Shares	World Inequality Database
59	Top 1% and Top 10% Wealth Shares	World Inequality Database
60	Total Labor Disputes	CLIO Infra
61	Transparent Laws with Predictable Enforcement Score	V-DEM Institute
62	Universities Founded	CLIO Infra
63	# of New Businesses & # of People Creating New Businesses	WIPO Global Innovation Index
64	# of New Major Websites	WIPO Global Innovation Index

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