

RANKING 2:

Complexity Outlook Index

RANKING 2 sorts countries according to their Complexity Outlook Index as of 2010 (see Part 1, Section 5: *How does Economic Complexity Evolve?*). This index captures how well countries are positioned in the product space by quantifying how close the products that they make are to the products that they do not make, weighted by how complex those products are. Countries that are closer to more complex products will have an easier time sorting out the chicken and egg problems that slow down the accumulation of productive capabilities. In Technical Box 5.5 we showed that the Complexity Outlook Index strongly affects the growth of the Economic Complexity Index over time.

The countries that top the list are India, Turkey, Portugal, Greece, Bulgaria, Indonesia and China. In general, these countries have experienced remarkable changes in their productive structure and are well positioned to move into more and more complex products. In the year 2000, the top countries were India, China, Indonesia, Turkey, Bulgaria, Poland, Spain and Thailand, countries that in general experienced rapid transformation in the 2000-2010 decade.

We noted in Part I, Section 3 that Portugal and Greece are countries whose current level of income is well above that which would be expected given their relatively low complexity. Together with Spain, these are countries that experienced a capital inflows boom that followed the adoption of the Euro and which led to a stronger real exchange rate and less dynamic exports. With the end of the capital inflows booms, these countries were left in dire circumstances. Here we note that these countries are well positioned to increase their complexity, making their recovery potentially easier.

The bottom of the list is occupied by Germany and Yemen. Germany's position is due to the fact that the country already makes most of the most complex products, so it can only increase its complexity by inventing products that do not yet exist. For the case of Yemen, the problem is caused by the fact

that they have so few capabilities that alternative products are many capabilities away. The Complexity Outlook Index is not a simple function of a country's GDP per capita, as illustrated in Figure 2. Countries with similar levels of income per capita may exhibit very different COIs. Rich countries with low COIs are typically either highly diversified into most complex products (e.g., Germany, Austria and the US), or are rich in natural resources and hence placed very peripherally in the product space. Map 2 depicts the worldwide distribution of the countries according to their COI.

BY REGION:

By region, 6 out of the top 10 countries are in Europe. In Western Europe, less developed countries like Portugal (3) and Greece (4) lead the list, whereas highly diversified countries such as Austria (78) and Germany (128) are the laggards. In Eastern Europe and Central Asia, the leaders are Turkey (2), Bulgaria (5), Serbia (9) and Estonia (11); whereas the laggards are Tajikistan (109), Turkmenistan (112) and Azerbaijan (116).

In South Asia, India is the regional and global leader (1), while Bangladesh is the laggard (113) with Pakistan (40) and Sri Lanka (57) in between, as they were in the ECI. In East Asia and the Pacific the leaders are Indonesia (6), China (7) and Thailand (13), while Mongolia (117), Papua New Guinea (118) and Cambodia (120) have the lowest COI.

In the Middle East and North Africa, Egypt (8), Lebanon (17) and Israel (31) lead the COI rankings, while the laggards are Iran (94), Algeria (102), Libya (111) and Yemen (127).

In Latin America the leaders are Brazil (10), Mexico (36) and Argentina (37), while the laggards are Jamaica (99), Trinidad and Tobago (103) and Venezuela (107).

In Sub-Saharan Africa, South Africa (23), Kenya (50) and Tanzania (63) have the greatest potential to increase their economic complexity, while the laggards are Cameroon (124), Ethiopia (125) and Sudan (126). ●

RANKING 2. COMPLEXITY OUTLOOK INDEX

RANK COI (2010)	REGIONAL COI RANKING	COUNTRY NAME	ISO CODE	COI (2010)	COI (2000)	RANK COI (2000)	Δ COI (00 - 10)	RANK Δ COI (00 - 10)	Δ ECI (00 - 10)	RANK Δ ECI (00 - 10)	REGION
1	1/4	India	IND	3.29	2.61	1	0.68	12	-0.05	74	South Asia
2	1/27	Turkey	TUR	2.22	1.79	4	0.43	16	0.30	22	Eastern Europe and Central Asia
3	1/16	Portugal	PRT	1.85	1.15	19	0.69	11	0.10	52	Western Europe
4	2/16	Greece	GRC	1.69	1.52	9	0.17	39	-0.03	72	Western Europe
5	2/27	Bulgaria	BGR	1.67	1.77	5	-0.10	81	0.18	36	Eastern Europe and Central Asia
6	1/16	Indonesia	IDN	1.65	1.85	3	-0.20	93	-0.09	85	East Asia and Pacific
7	2/16	China	CHN	1.49	2.38	2	-0.88	119	0.47	6	East Asia and Pacific
8	1/16	Egypt, Arab Rep.	EGY	1.46	0.16	54	1.30	1	0.06	57	Middle East and North Africa
9	3/27	Serbia	SRB	1.34							Eastern Europe and Central Asia
10	1/21	Brazil	BRA	1.29	1.46	10	-0.17	86	-0.38	110	Latin America and the Caribbean
11	4/27	Estonia	EST	1.28	0.84	32	0.44	15	0.30	24	Eastern Europe and Central Asia
12	5/27	Romania	ROU	1.28	1.05	26	0.23	33	0.27	27	Eastern Europe and Central Asia
13	3/16	Thailand	THA	1.26	1.54	8	-0.28	99	0.40	12	East Asia and Pacific
14	1/2	Canada	CAN	1.25	1.38	12	-0.12	84	-0.28	99	North America
15	3/16	Netherlands	NLD	1.23	1.40	11	-0.17	87	-0.21	93	Western Europe
16	4/16	Hong Kong SAR, China	HKG	1.21	1.20	16	0.01	67	0.08	54	East Asia and Pacific
17	2/16	Lebanon	LBN	1.11	0.39	46	0.72	10	0.31	20	Middle East and North Africa
18	4/16	Spain	ESP	1.10	1.62	7	-0.51	112	-0.06	78	Western Europe
19	6/27	Ukraine	UKR	1.09	1.18	17	-0.09	80	0.07	55	Eastern Europe and Central Asia
20	7/27	Croatia	HRV	1.08	1.14	20	-0.06	76	0.18	37	Eastern Europe and Central Asia
21	8/27	Lithuania	LTU	1.05	0.79	33	0.25	30	0.34	14	Eastern Europe and Central Asia
22	5/16	Finland	FIN	1.04	1.02	27	0.03	63	-0.18	91	Western Europe
23	1/26	South Africa	ZAF	1.01	1.26	14	-0.25	97	-0.06	80	Sub-Saharan Africa
24	9/27	Latvia	LVA	0.99	0.27	49	0.73	9	0.34	15	Eastern Europe and Central Asia
25	5/16	Vietnam	VNM	0.99	0.15	55	0.84	5	0.44	9	East Asia and Pacific
26	6/16	Denmark	DNK	0.97	1.17	18	-0.20	91	-0.27	96	Western Europe
27	6/16	Korea, Rep.	KOR	0.95	1.09	23	-0.15	85	0.52	4	East Asia and Pacific
28	10/27	Bosnia and Herzegovina	BIH	0.90	0.71	37	0.20	34	0.27	26	Eastern Europe and Central Asia
29	7/16	Belgium	BEL	0.88	1.25	15	-0.38	106	-0.21	92	Western Europe
30	11/27	Hungary	HUN	0.86	1.28	13	-0.42	107	0.42	10	Eastern Europe and Central Asia
31	3/16	Israel	ISR	0.82	1.05	25	-0.23	96	0.02	62	Middle East and North Africa
32	8/16	United Kingdom	GBR	0.81	0.64	39	0.17	38	-0.29	102	Western Europe
33	7/16	Singapore	SGP	0.81	0.66	38	0.15	41	0.23	30	East Asia and Pacific
34	12/27	Poland	POL	0.80	1.69	6	-0.89	120	0.16	41	Eastern Europe and Central Asia
35	13/27	Slovak Republic	SVK	0.80	1.12	21	-0.33	102	0.12	47	Eastern Europe and Central Asia
36	2/21	Mexico	MEX	0.79	0.99	28	-0.19	90	-0.01	68	Latin America and the Caribbean
37	3/21	Argentina	ARG	0.79	0.91	31	-0.11	82	-0.06	79	Latin America and the Caribbean
38	9/16	Switzerland	CHE	0.79	0.77	34	0.02	64	-0.27	98	Western Europe
39	14/27	Slovenia	SVN	0.75	1.09	24	-0.34	104	0.01	66	Eastern Europe and Central Asia
40	2/4	Pakistan	PAK	0.74	-0.41	70	1.15	3	0.13	46	South Asia
41	8/16	New Zealand	NZL	0.71	0.64	40	0.07	53	-0.08	83	East Asia and Pacific
42	4/16	Tunisia	TUN	0.65	-0.30	68	0.95	4	0.45	8	Middle East and North Africa
43	9/16	Malaysia	MYS	0.57	0.27	50	0.30	28	0.10	51	East Asia and Pacific

RANKING 2. COMPLEXITY OUTLOOK INDEX

RANK COI (2010)	REGIONAL COI RANKING	COUNTRY NAME	ISO CODE	COI (2010)	COI (2000)	RANK COI (2000)	Δ COI (00 - 10)	RANK Δ COI (00 - 10)	Δ ECI (00 - 10)	RANK Δ ECI (00 - 10)	REGION
44	4/21	Panama	PAN	0.53	0.07	57	0.45	13	0.46	7	Latin America and the Caribbean
45	10/16	Sweden	SWE	0.51	0.97	30	-0.46	109	-0.36	106	Western Europe
46	11/16	Ireland	IRL	0.37	0.49	45	-0.12	83	-0.09	86	Western Europe
47	10/16	Australia	AUS	0.32	0.99	29	-0.66	117	-0.37	109	East Asia and Pacific
48	15/27	Belarus	BLR	0.32	0.50	44	-0.18	88	0.06	58	Eastern Europe and Central Asia
49	5/21	Uruguay	URY	0.29	0.35	47	-0.06	75	0.02	63	Latin America and the Caribbean
50	2/26	Kenya	KEN	0.27	-0.51	72	0.79	6	0.19	34	Sub-Saharan Africa
51	16/27	Macedonia, FYR	MKD	0.24	0.08	56	0.17	40	-0.08	84	Eastern Europe and Central Asia
52	11/16	Philippines	PHL	0.24	-0.15	66	0.39	20	0.26	28	East Asia and Pacific
53	6/21	El Salvador	SLV	0.23	-0.13	63	0.36	22	0.08	53	Latin America and the Caribbean
54	5/16	Syrian Arab Republic	SYR	0.21	-1.02	101	1.23	2	0.80	1	Middle East and North Africa
55	7/21	Peru	PER	0.21	-0.10	62	0.30	27	-0.12	87	Latin America and the Caribbean
56	6/16	United Arab Emirates	ARE	0.16	-0.57	75	0.73	8	0.61	3	Middle East and North Africa
57	3/4	Sri Lanka	LKA	0.11	-0.24	67	0.35	23	0.16	40	South Asia
58	17/27	Russian Federation	RUS	0.09	0.74	35	-0.65	114	-0.44	115	Eastern Europe and Central Asia
59	8/21	Guatemala	GTM	0.04	-0.03	59	0.07	54	-0.02	70	Latin America and the Caribbean
60	18/27	Moldova	MDA	0.04	-0.14	64	0.17	36	0.07	56	Eastern Europe and Central Asia
61	12/16	Norway	NOR	-0.02	0.26	51	-0.27	98	-0.33	105	Western Europe
62	9/21	Colombia	COL	-0.02	0.21	53	-0.23	95	0.02	65	Latin America and the Caribbean
63	3/26	Tanzania	TZA	-0.02	-0.78	88	0.76	7	0.32	18	Sub-Saharan Africa
64	7/16	Jordan	JOR	-0.03	0.30	48	-0.33	103	0.12	48	Middle East and North Africa
65	13/16	France	FRA	-0.05	1.10	22	-1.15	122	-0.01	69	Western Europe
66	19/27	Czech Republic	CZE	-0.08	0.57	43	-0.66	116	0.15	44	Eastern Europe and Central Asia
67	8/16	Morocco	MAR	-0.20	-0.53	74	0.34	25	0.16	43	Middle East and North Africa
68	20/27	Kyrgyz Republic	KGZ	-0.23	-0.58	76	0.35	24	0.01	67	Eastern Europe and Central Asia
69	10/21	Dominican Republic	DOM	-0.25	-0.65	80	0.40	18	0.26	29	Latin America and the Caribbean
70	11/21	Chile	CHL	-0.30	-0.09	61	-0.22	94	-0.16	90	Latin America and the Caribbean
71	12/16	Japan	JPN	-0.35	0.58	42	-0.92	121	-0.32	104	East Asia and Pacific
72	12/21	Costa Rica	CRI	-0.37	-0.34	69	-0.03	73	0.34	17	Latin America and the Caribbean
73	21/27	Uzbekistan	UZB	-0.41	-0.71	84	0.29	29	0.30	23	Eastern Europe and Central Asia
74	4/26	Mauritius	MUS	-0.42	-0.86	91	0.44	14	0.34	16	Sub-Saharan Africa
75	14/16	Italy	ITA	-0.44	0.72	36	-1.16	124	-0.07	81	Western Europe
76	22/27	Georgia	GEO	-0.51	0.25	52	-0.76	118	-0.79	123	Eastern Europe and Central Asia
77	13/21	Honduras	HND	-0.51	-0.83	89	0.32	26	0.16	42	Latin America and the Caribbean
78	15/16	Austria	AUT	-0.52	0.64	41	-1.15	123	0.02	64	Western Europe
79	5/26	Zimbabwe	ZWE	-0.59	0.04	58	-0.63	113	-0.27	97	Sub-Saharan Africa
80	14/21	Paraguay	PRY	-0.63	-0.64	79	0.02	65	0.11	50	Latin America and the Caribbean
81	6/26	Botswana	BWA	-0.63							Sub-Saharan Africa
82	7/26	Uganda	UGA	-0.64	-1.06	108	0.43	17	0.32	19	Sub-Saharan Africa
83	2/2	United States	USA	-0.65	-0.14	65	-0.51	111	-0.39	113	North America
84	23/27	Kazakhstan	KAZ	-0.67	-0.48	71	-0.19	89	-0.37	107	Eastern Europe and Central Asia
85	9/16	Saudi Arabia	SAU	-0.68	-0.78	86	0.10	48	0.14	45	Middle East and North Africa
86	13/16	Lao PDR	LAO	-0.68	-1.08	110	0.40	19	0.17	38	East Asia and Pacific

RANKING 2. COMPLEXITY OUTLOOK INDEX

RANK COI (2010)	REGIONAL COI RANKING	COUNTRY NAME	ISO CODE	COI (2010)	COI (2000)	RANK COI (2000)	Δ COI (00 - 10)	RANK Δ COI (00 - 10)	Δ ECI (00 - 10)	RANK Δ ECI (00 - 10)	REGION
87	8/26	Madagascar	MDG	-0.71	-0.95	95	0.24	31	0.22	31	Sub-Saharan Africa
88	24/27	Albania	ALB	-0.72	-0.07	60	-0.65	115	-0.46	116	Eastern Europe and Central Asia
89	15/21	Ecuador	ECU	-0.74	-0.78	87	0.04	60	0.22	32	Latin America and the Caribbean
90	16/21	Bolivia	BOL	-0.78	-0.76	85	-0.02	69	0.05	60	Latin America and the Caribbean
91	10/16	Qatar	QAT	-0.81	-1.05	107	0.24	32	0.40	11	Middle East and North Africa
92	11/16	Kuwait	KWT	-0.81	-0.96	96	0.14	42	0.06	59	Middle East and North Africa
93	12/16	Oman	OMN	-0.85	-1.02	102	0.17	35	0.29	25	Middle East and North Africa
94	13/16	Iran, Islamic Rep.	IRN	-0.88	-0.86	90	-0.03	72	-0.02	71	Middle East and North Africa
95	9/26	Senegal	SEN	-0.88	-0.97	98	0.09	51	-0.05	75	Sub-Saharan Africa
96	17/21	Nicaragua	NIC	-0.88	-0.68	83	-0.20	92	-0.22	94	Latin America and the Caribbean
97	10/26	Malawi	MWI	-0.89	-1.26	124	0.36	21	0.68	2	Sub-Saharan Africa
98	18/21	Cuba	CUB	-0.89	-1.06	109	0.17	37	0.48	5	Latin America and the Caribbean
99	19/21	Jamaica	JAM	-0.90	-0.93	93	0.03	62	0.31	21	Latin America and the Caribbean
100	11/26	Liberia	LBR	-0.91	-0.98	100	0.07	55	-0.23	95	Sub-Saharan Africa
101	12/26	Zambia	ZMB	-0.93	-0.98	99	0.05	58	0.18	35	Sub-Saharan Africa
102	14/16	Algeria	DZA	-0.93	-1.03	105	0.10	46	-0.06	77	Middle East and North Africa
103	20/21	Trinidad and Tobago	TTO	-0.94	-0.58	77	-0.36	105	-0.57	120	Latin America and the Caribbean
104	13/26	Gabon	GAB	-0.96	-1.04	106	0.08	52	-0.38	111	Sub-Saharan Africa
105	14/26	Angola	AGO	-0.97	-1.10	112	0.13	44	-0.54	118	Sub-Saharan Africa
106	15/26	Ghana	GHA	-0.97	-0.97	97	-0.01	68	-0.03	73	Sub-Saharan Africa
107	21/21	Venezuela, RB	VEN	-0.98	-0.65	81	-0.32	101	-0.87	125	Latin America and the Caribbean
108	16/26	Mali	MLI	-0.98	-0.68	82	-0.30	100	-0.57	119	Sub-Saharan Africa
109	25/27	Tajikistan	TJK	-0.98	-0.92	92	-0.07	77	-0.28	100	Eastern Europe and Central Asia
110	17/26	Namibia	NAM	-0.98							Sub-Saharan Africa
111	15/16	Libya	LBY	-0.99	-1.03	104	0.05	59	-0.60	121	Middle East and North Africa
112	26/27	Turkmenistan	TKM	-0.99	-1.11	114	0.12	45	0.16	39	Eastern Europe and Central Asia
113	4/4	Bangladesh	BGD	-1.01	-1.11	115	0.10	49	-0.07	82	South Asia
114	18/26	Côte d'Ivoire	CIV	-1.02	-0.93	94	-0.09	79	-0.13	88	Sub-Saharan Africa
115	19/26	Mozambique	MOZ	-1.03	-0.53	73	-0.51	110	-0.84	124	Sub-Saharan Africa
116	27/27	Azerbaijan	AZE	-1.04	-0.62	78	-0.43	108	-0.67	122	Eastern Europe and Central Asia
117	14/16	Mongolia	MNG	-1.07	-1.03	103	-0.05	74	-0.37	108	East Asia and Pacific
118	15/16	Papua New Guinea	PNG	-1.07	-1.21	121	0.13	43	0.38	13	East Asia and Pacific
119	20/26	Congo, Rep.	COG	-1.08	-1.10	113	0.03	61	-0.38	112	Sub-Saharan Africa
120	16/16	Cambodia	KHM	-1.09	-1.15	118	0.07	56	0.11	49	East Asia and Pacific
121	21/26	Guinea	GIN	-1.10	-1.20	120	0.10	47	0.04	61	Sub-Saharan Africa
122	22/26	Nigeria	NGA	-1.14	-1.23	123	0.09	50	-0.42	114	Sub-Saharan Africa
123	23/26	Mauritania	MRT	-1.15	-1.13	116	-0.02	71	-0.49	117	Sub-Saharan Africa
124	24/26	Cameroon	CMR	-1.16	-1.21	122	0.05	57	-0.06	76	Sub-Saharan Africa
125	25/26	Ethiopia	ETH	-1.17	-1.10	111	-0.07	78	-0.14	89	Sub-Saharan Africa
126	26/26	Sudan	SDN	-1.17	-1.15	117	-0.02	70	-0.31	103	Sub-Saharan Africa
127	16/16	Yemen, Rep.	YEM	-1.18	-1.20	119	0.01	66	0.20	33	Middle East and North Africa
128	16/16	Germany	DEU	-3.87	-2.64	125	-1.23	125	-0.29	101	Western Europe

MAP 2:

► Countries are color coded according to their ranking in Complexity Outlook Index.

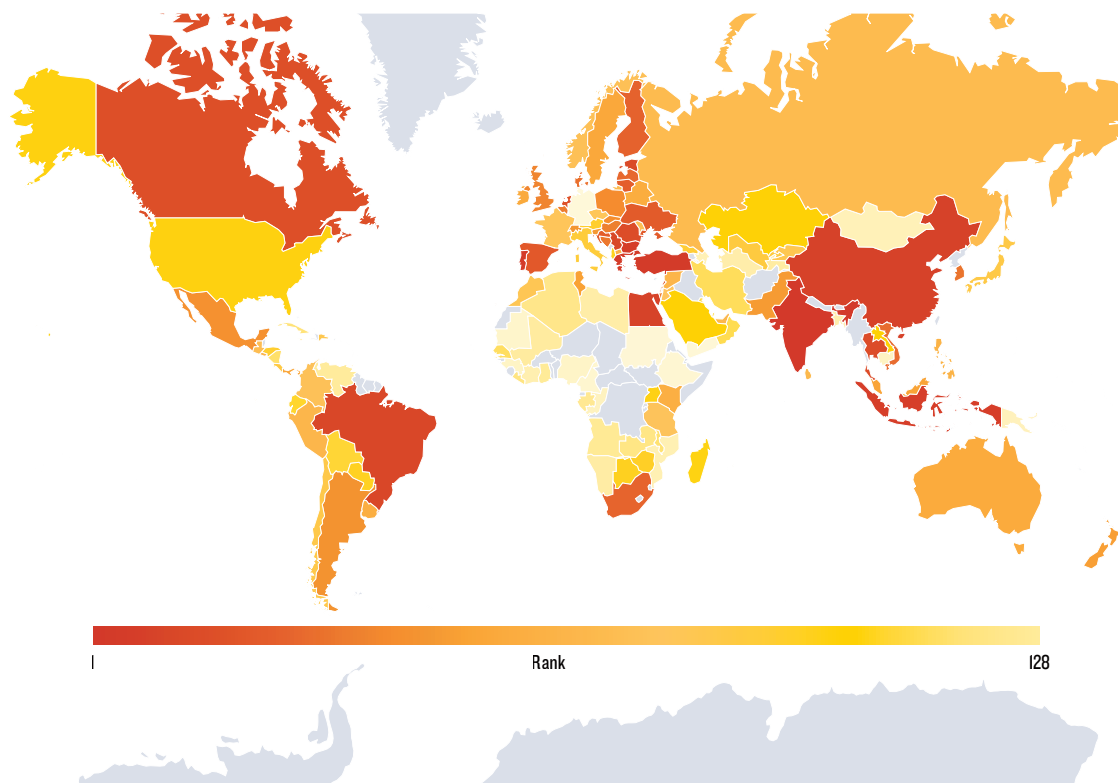
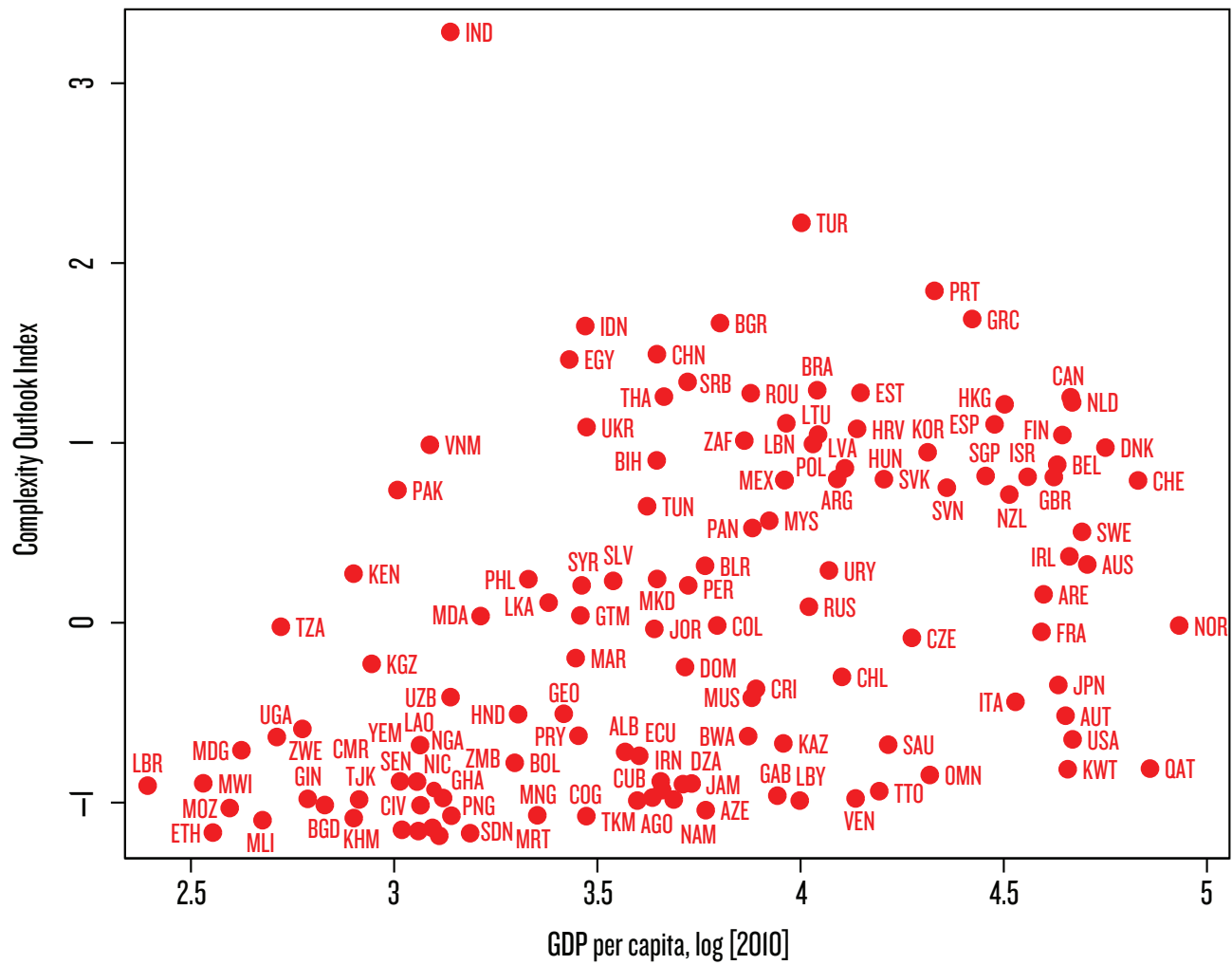


FIGURE 2:

► Complexity Outlook Index with respect to GDP per capita in 2010.



This is a section of [doi:10.7551/mitpress/9647.001.0001](https://doi.org/10.7551/mitpress/9647.001.0001)

The Atlas of Economic Complexity

Mapping Paths to Prosperity

By: Ricardo Hausmann, César A. Hidalgo, Sebastián Bustos, Michele Coscia, Alexander Simoes, Muhammed A. Yildirim

Citation:

The Atlas of Economic Complexity: Mapping Paths to Prosperity

By: Ricardo Hausmann, César A. Hidalgo, Sebastián Bustos, Michele Coscia, Alexander Simoes, Muhammed A. Yildirim

DOI: 10.7551/mitpress/9647.001.0001

ISBN (electronic): 9780262317719

Publisher: The MIT Press

Published: 2014



The MIT Press

THE ATLAS OF ECONOMIC COMPLEXITY MAPPING PATHS TO PROSPERITY

AUTHORS:

Ricardo Hausmann | César A. Hidalgo | Sebastián Bustos
Michele Coscia | Alexander Simoes | Muhammed A. Yıldırım

ACKNOWLEDGMENTS

The research on which this Atlas is based began around 2006 with the idea of the product space. In the original paper published in *Science* in 2007, we collaborated with Albert-Laszlo Barabasi and Bailey Klinger. The view of economic development of countries as a process of discovering which products a country can master, a process we called self-discovery, came from joint work with Dani Rodrik and later also with Jason Hwang. We explored different implications of the basic approach in papers with Dany Bahar, Bailey Klinger, Robert Lawrence, Francisco Rodriguez, Dani Rodrik, Charles Sabel, Rodrigo Wagner and Andrés Zahler. Throughout, we received significant feedback and advice from Lant Pritchett, Andrés Velasco and Adrian Wood. We would also like to thank Sarah Chung and Juan Jimenez for their contributions to the 2011 edition of *The Atlas*.

We want to thank the dedicated team that runs Harvard's Center for International Development (CID) for helping bring *The Atlas* to life: Marcela Escobari, Jennifer Gala, Andrea Carranza, Melissa Siegel, Victoria Whitney, Adriana Hoyos, Erinn Wattie and Anne Morriss. We are also indebted to the NeCSys team at the MIT Media Lab and to Sandy Sener. We thank the leadership at Harvard Kennedy School and the MIT Media Lab who were early enthusiasts of our work. The editorial design of this book was produced by Draft Diseño (www.draft.cl). We would like to especially acknowledge the contributions of Francisca Barros and Draft Diseño team.

2013 Center for International Development, Harvard University

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

MIT Press books may be purchased at special quantity discounts for business or sales promotional use. For information, please email special_sales@mitpress.mit.edu or write to Special Sales Department, The MIT Press, 55 Hayward Street, Cambridge, MA 02142.

This book was printed and bound in Malaysia.

Library of Congress Cataloging-in-Publication Data.

The atlas of economic complexity: mapping paths to prosperity / edited by Ricardo Hausmann and César A. Hidalgo.

p. cm
Includes bibliographical references.

ISBN 978-0-262-52542-8 (pbk. : alk. paper)

1. Technological innovation—Economic aspects. 2. Industrial management—Economic aspects. 3. Economic development. 4. Gross domestic product. I. Hausmann, Ricardo. II. Hidalgo, César A. (Professor)

HC79.T4A85 2013

330.1—dc23

2013010258

10 9 8 7 6 5 4 3 2 1

