

**Notes on**  
**The Chinn-Ito Financial Openness Index**  
**2017 Update**

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The Chinn-Ito index (*KAOPEN*) is an index measuring a country's degree of capital account openness. The index was initially introduced in Chinn and Ito (*Journal of Development Economics*, 2006). *KAOPEN* is based on the binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)*. This update is based on *AREAER 2018*, which contains the information on regulatory restrictions on cross-border financial transactions as of the end of 2017.<sup>1</sup>

More information on how the index is constructed and how it compares with other measures of cross-border financial flows can be found in:

[“A New Measure of Financial Openness”](#), *Journal of Comparative Policy Analysis*, Volume 10, Issue 3 September 2008, p. 309 - 322. Note that this paper uses the 2007 version of the dataset (containing data up to only 2005), which will differ from the current version of the dataset.

When you use the index, please acknowledge the following paper as the data source:

Chinn, Menzie D. and Hiro Ito. 2006. [“What Matters for Financial Development? Capital Controls, Institutions, and Interactions,”](#) *Journal of Development Economics*, Volume 81, Issue 1, Pages 163-192 (October).

The dataset is available at [http://web.pdx.edu/~ito/Chinn-Ito\\_website.htm](http://web.pdx.edu/~ito/Chinn-Ito_website.htm) .

*kaopen\_2017.xls* (Excel format) or *kaopen\_2017.dta* (STATA 15 dataset format) is a data file that contains the updated version of the Chinn and Ito index series. The dataset encompasses the time period of **1970-2017** for **182 countries**. In the dataset, *cn* refers to IMF-World Bank three-

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<sup>1</sup> Not all the countries report their regulatory controls as of the end of the year of concern. For each country, the report stipulates the date as of which the data are based.

digit code; *ccode* to “ISO Alpha-3 Code”; *kaopen* to the Chinn-Ito index; and *ka\_open* to the Chinn-Ito index normalized to range between zero and one. A complete list of the countries and their data availability are presented in the *Country List* shown below.

### ***Regarding KAOPEN***

As is explained with details in Chinn and Ito (2006, 2008), *KAOPEN* is the first principal component of the original variables pertaining to regulatory controls over current or capital account transactions, the existence of multiple exchange rates, and the requirements of surrendering export proceeds. For more details, refer to Chinn and Ito (2006, 2008).

Principal component analysis (PCA) is a statistical tool that extracts principal components (PCs), which are orthogonal linear combinations of a set of variables based on their ability to capture the variations of these variables. The first PC covers the greatest variance of the original variables: (i.e., *k1*, *k2*, *Share\_k3*, and *k4*). In the process of constructing PCs, the original variables are standardized, which makes the mean of the PC zero, i.e., make the PC range between negative and positive territories. See Anderson (2003) and other standard statistics textbooks for additional discussions of PCA.

By the nature of the principal component, every time the data are updated to include the most recent year’s data, the index is recalculated using the *entire* sample of the original variables, including corrected/fixed data. Because of this procedure, the data for the older years are recalculated, and the *KAOPEN* index becomes incompatible across different versions. Hence, the summary statistics change across different versions of the index.

### ***What’s new?***

- *KAOPEN* is updated for 2017 using the “Summary Features of Exchange Arrangements and Regulatory Frameworks for Current and Capital Transactions in IMF Member Countries” included in *AREAER 2018*.
- It appears that the international sanctions against terrorist states have made some countries, especially industrialized countries, start reporting implementations of capital controls from 2005 on. Hence, in the *AREAER*, the following countries appear as though they “imposed” capital controls since 2005. However, given the nature of the “capital controls” and also given the lack of perception or evidence that these countries did actually implement capital controls in economically meaningful ways, we decided to consider that these countries did not impose capital controls from 2005 on. Specifically, the original *k3* is given the value of zero for the following countries, except for France and Japan which appear to have imposed “international sanctions” through *k2* restrictions from 2006 on.

The countries of our concern here are:<sup>2</sup>

United States (111), Austria (122), Belgium (124), France (132), Germany (134), Sweden (144), Switzerland (146), Japan (158), Finland (172), Greece (174), Portugal (182), Spain (184), Czech Rep. (935), and Hungary (944).

- The variables of *KAOPEN*, *k1*, *k2*, *k3*, and *k4* are replaced with missing variables for the following countries and years because of the lack of functioning governments and financial markets.

Afghanistan in 2001 to present

Iraq in 2003 to present

Somalia in 2008 to present

### Summary Statistics of *KAOPEN*

The summary statistics of *KAOPEN* for different income groups are shown in Table 1.

Figure 1 compares the subsample averages of *KAOPEN* for different income groups of countries.<sup>3</sup> Figure 2 does the same thing, but in terms of ratios with the maximal value normalized as 1.00 (i.e., *ka\_open*) for different income groups and decades. Figure 3 compares the ratios of *KAOPEN* for developing countries across different geographical regions.

Table 2 ranks countries based on the level of *KAOPEN* as of 2017. The furthest right column indicates whether a country of concern increased (“Up”) or decreased (“Down”) the level of *KAOPEN* compared to that as of 2017. There are 51 countries that score the “most financially open” value of 2.35 as of 2017 whereas there are 12 countries with the “least financial open” score of -1.92.

Table 3 reports that 8 countries increased the level of *KAOPEN* in 2017 while 8 countries decreased the level of *KAOPEN* the same year.

Figure 4 compares the averages of annual changes in *KAOPEN* (i.e., the first-differenced change in the normalized *KAOPEN*) for different time periods and different income groups. Figure 5 does the same thing for different geographical groups of developing countries.

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<sup>2</sup> The figure in parentheses denotes the IMF-World Bank three-digit code. The same is true for the remainder of the paper.

<sup>3</sup> The industrialized countries (IDC) refer to traditional OECD countries, leaving the other countries as the developing countries (LDC). The emerging market countries (EMGs), a subgroup of LDC, are defined as the countries classified as either emerging or frontier during the period of 1980-1997 by the International Financial Corporation plus Hong Kong and Singapore. In the country list shown in Appendix I, IDCs and EMGs are denoted by “i” and “e”, respectively.

## Notes

The dataset is available at [http://web.pdx.edu/~ito/Chinn-Ito\\_website.htm](http://web.pdx.edu/~ito/Chinn-Ito_website.htm) .

The document [“A New Measure of Financial Openness”](#) details the construction of the index and other relevant information. Please consult with that document before sending inquiries to [ito@pdx.edu](mailto:ito@pdx.edu).

The IMF’s *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)* of 2010 has a survey of the literature on various measures of capital account restrictiveness in Appendix to Introduction (p. 48–53).

**Next Update:** The index might be updated in the spring or summer of 2020, following the publication of the IMF’s *AREAER 2019* (probably in the winter of 2019-20) which will contain information on capital controls policies as of 2018. The release of the update may change due to a variety of reasons. Please check [http://web.pdx.edu/~ito/Chinn-Ito\\_website.htm](http://web.pdx.edu/~ito/Chinn-Ito_website.htm) before sending us inquiries.

**Disclaimer:** When you use the index, please acknowledge our *JDE* paper (see below) as the data source. We are not responsible for the results of the estimations that use the index. Although the index is based on the information released by the International Monetary Fund, the index is not associated with the Fund. All the errors of the index are the authors’ own. All rights reserved.

## References

- Anderson, T. W. 2003. *An Introduction to Multivariate Statistical Analysis*, 3rd Edition, Wiley Series in Probability and Statistics, New York: Wiley.
- Chinn, Menzie D. and Hiro Ito (2008). [“A New Measure of Financial Openness”](#). *Journal of Comparative Policy Analysis*, Volume 10, Issue 3, p. 309 – 322 (September).
- Chinn, Menzie D. and Hiro Ito (2006). [“What Matters for Financial Development? Capital Controls, Institutions, and Interactions.”](#) *Journal of Development Economics*, Volume 81, Issue 1, Pages 163-192 (October). The longer version is available as NBER Working Paper No. 11370 (May 2005).
- International Monetary Fund (2010, various years). *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)*, Washington, D.C.: International Monetary Fund.

## Appendix I: Country List

	cn	ccode	Country Name	Availability		
1	512	AFG	Afghanistan	1970	-	2000
2	914	ALB	Albania	1995	-	2017
3	612	DZA	Algeria	1970	-	2017
4	614	AGO	Angola	1993	-	2017
5	311	ATG	Antigua and Barbuda	1985	-	2009
6	213	ARG	Argentina (e)	1970	-	2017
7	911	ARM	Armenia	1996	-	2017
8	314	ABW	Aruba	1992	-	2017
9	193	AUS	Australia (i)	1970	-	2017
10	122	AUT	Austria (i)	1970	-	2017
11	912	AZE	Azerbaijan	1996	-	2017
12	313	BHS	Bahamas, The	1977	-	2017
13	419	BHR	Bahrain	1976	-	2017
14	513	BGD	Bangladesh (e)	1976	-	2017
15	316	BRB	Barbados	1974	-	2017
16	913	BLR	Belarus	1996	-	2017
17	124	BEL	Belgium (i)	1970	-	2017
18	339	BLZ	Belize	1985	-	2017
19	638	BEN	Benin	1979	-	2017
20	514	BTN	Bhutan	1985	-	2017
21	218	BOL	Bolivia	1970	-	2017
22	963	BIH	Bosnia and Herzegovina	1999	-	2017
23	616	BWA	Botswana (e)	1972	-	2017
24	223	BRA	Brazil (e)	1970	-	2017
25	918	BGR	Bulgaria (e)	1994	-	2017
26	748	BFA	Burkina Faso	1988	-	2017
27	618	BDI	Burundi	1970	-	2017
28	662	CIV	Côte d'Ivoire (e)	1970	-	2017
29	522	KHM	Cambodia	1973	-	2017
30	622	CMR	Cameroon	1970	-	2017
31	156	CAN	Canada (i)	1970	-	2017
32	624	CPV	Cape Verde	1982	-	2017
33	626	CAF	Central African Republic	1970	-	2017
34	628	TCD	Chad	1970	-	2017
35	228	CHL	Chile (e)	1970	-	2017
36	924	CHN	China (e)	1984	-	2017
37	233	COL	Colombia (e)	1970	-	2017
38	632	COM	Comoros	1981	-	2017
39	636	ZAR	Congo, Dem. Rep.	1970	-	2012
40	634	COG	Congo, Rep.	1970	-	2017
41	238	CRI	Costa Rica	1970	-	2017
42	960	HRV	Croatia	1996	-	2017
43	423	CYP	Cyprus	1970	-	2017
44	935	CZE	Czech Republic (e)	1996	-	2017
45	128	DNK	Denmark (i)	1970	-	2017
46	611	DJI	Djibouti	1982	-	2017
47	321	DMA	Dominica	1982	-	2017
48	243	DOM	Dominican Republic	1970	-	2017
49	248	ECU	Ecuador (e)	1970	-	2017
50	469	EGY	Egypt, Arab Rep. (e)	1970	-	2017
51	253	SLV	El Salvador	1970	-	2017
52	642	GNQ	Equatorial Guinea	1973	-	2017
53	643	ERI	Eritrea	1998	-	2017
54	939	EST	Estonia	1996	-	2017
55	734	SWZ	Eswatini	1973	-	2017
56	644	ETH	Ethiopia	1970	-	2017
57	819	FJI	Fiji	1975	-	2017
58	172	FIN	Finland (i)	1970	-	2017
59	132	FRA	France (i)	1970	-	2017
60	646	GAB	Gabon	1970	-	2017

	cn	ccode	Country Name	Availability				cn	ccode	Country Name	Availability		
61	648	GMB	Gambia, The	1971	-	2017	92	544	LAO	Lao PDR	1970	-	2017
62	915	GEO	Georgia	1996	-	2017	93	941	LVA	Latvia	1996	-	2017
63	134	DEU	Germany (i)	1970	-	2017	94	446	LBN	Lebanon	1970	-	2017
64	652	GHA	Ghana (e)	1970	-	2017	95	666	LSO	Lesotho	1972	-	2017
65	174	GRC	Greece (i)	1970	-	2017	96	668	LBR	Liberia	1970	-	2017
66	328	GRD	Grenada	1979	-	2017	97	672	LBY	Libya	1970	-	2017
67	258	GTM	Guatemala	1970	-	2017	98	946	LTU	Lithuania (e)	1996	-	2017
68	656	GIN	Guinea	1970	-	2017	99	674	MDG	Madagascar	1970	-	2017
69	654	GNB	Guinea-Bissau	1981	-	2017	100	676	MWI	Malawi	1970	-	2017
70	336	GUY	Guyana	1970	-	2017	101	548	MYS	Malaysia (e)	1970	-	2017
71	263	HTI	Haiti	1970	-	2017	102	556	MDV	Maldives	1982	-	2017
72	268	HND	Honduras	1970	-	2017	103	678	MLI	Mali	1970	-	2017
73	532	HKG	Hong Kong, China (e)	1970	-	2017	104	181	MLT	Malta (i)	1972	-	2017
74	944	HUN	Hungary (e)	1986	-	2017	105	867	MHL	Marshall Islands	1996	-	2017
75	176	ISL	Iceland (i)	1970	-	2017	106	682	MRT	Mauritania	1970	-	2017
76	534	IND	India (e)	1970	-	2017	107	684	MUS	Mauritius (e)	1972	-	2017
77	536	IDN	Indonesia (e)	1970	-	2017	108	273	MEX	Mexico (e)	1970	-	2017
78	429	IRN	Iran, Islamic Rep.	1970	-	2017	109	868	FSM	Micronesia, Fed. Sts.	1996	-	2017
79	433	IRQ	Iraq	1970	-	2002	110	921	MDA	Moldova	1996	-	2017
80	178	IRL	Ireland (i)	1970	-	2017	111	948	MNG	Mongolia	1995	-	2017
81	436	ISR	Israel (e)	1970	-	2017	112	686	MAR	Morocco (e)	1970	-	2017
82	136	ITA	Italy (i)	1970	-	2017	113	688	MOZ	Mozambique	1988	-	2017
83	343	JAM	Jamaica (e)	1970	-	2017	114	518	MMR	Myanmar	1970	-	2017
84	158	JPN	Japan (i)	1970	-	2017	115	728	NAM	Namibia	1994	-	2017
85	439	JOR	Jordan (e)	1970	-	2017	116	558	NPL	Nepal	1970	-	2017
86	916	KAZ	Kazakhstan	1996	-	2017	117	138	NLD	Netherlands (i)	1970	-	2017
87	664	KEN	Kenya (e)	1970	-	2017	118	353	ANT	Netherlands Antilles	1970	-	2009
88	826	KIR	Kiribati	1990	-	2005	119	196	NZL	New Zealand (i)	1970	-	2017
89	542	KOR	Korea, Rep. (e)	1970	-	2017	120	278	NIC	Nicaragua	1970	-	2017
90	443	KWT	Kuwait	1970	-	2017	121	692	NER	Niger	1970	-	2017
91	917	KGZ	Kyrgyz Republic	1997	-	2017	122	694	NGA	Nigeria (e)	1970	-	2017

	<b>cn</b>	<b>ccode</b>	<b>Country Name</b>	<b>Availability</b>		
123	962	MKD	North Macedonia, FYR	1997	-	2017
124	142	NOR	Norway (i)	1970	-	2017
125	449	OMN	Oman	1977	-	2017
126	564	PAK	Pakistan (e)	1970	-	2017
127	283	PAN	Panama	1970	-	2017
128	853	PNG	Papua New Guinea	1979	-	2017
129	288	PRY	Paraguay	1970	-	2017
130	293	PER	Peru (e)	1970	-	2017
131	566	PHL	Philippines (e)	1970	-	2017
132	964	POL	Poland (e)	1986	-	2017
133	182	PRT	Portugal (i)	1970	-	2017
134	453	QAT	Qatar	1976	-	2017
135	968	ROM	Romania	1976	-	2017
136	922	RUS	Russian Federation (e)	1996	-	2017
137	714	RWA	Rwanda	1970	-	2017
138	716	STP	Sao Tome and Principe	1981	-	2017
139	862	WSM	Samoa	1975	-	2017
140	135	SMR	San Marino	1996	-	2017
141	456	SAU	Saudi Arabia	1970	-	2017
142	722	SEN	Senegal	1970	-	2017
143	718	SYC	Seychelles	1981	-	2017
144	724	SLE	Sierra Leone	1970	-	2017
145	576	SGP	Singapore (e)	1970	-	2017
146	936	SVK	Slovak Republic (e)	1996	-	2017
147	961	SVN	Slovenia (e)	1996	-	2017
148	813	SLB	Solomon Islands	1982	-	2017
149	726	SOM	Somalia	1970	-	2007
150	199	ZAF	South Africa (e)	1970	-	2017
151	184	ESP	Spain (i)	1970	-	2017
152	524	LKA	Sri Lanka (e)	1970	-	2017
153	361	KNA	St. Kitts and Nevis	1988	-	2017

	<b>cn</b>	<b>ccode</b>	<b>Country Name</b>	<b>Availability</b>		
154	362	LCA	St. Lucia	1983	-	2017
			St. Vincent and the			
			Grenadines	1983	-	2017
155	364	VCT	Grenadines	1983	-	2017
156	732	SDN	Sudan	1970	-	2017
157	366	SUR	Suriname	1970	-	2017
158	144	SWE	Sweden (i)	1970	-	2017
159	146	CHE	Switzerland (i)	1996	-	2017
160	463	SYR	Syrian Arab Republic	1970	-	2017
161	923	TJK	Tajikistan	1997	-	2017
162	738	TZA	Tanzania	1970	-	2017
163	578	THA	Thailand (e)	1970	-	2017
164	742	TGO	Togo	1970	-	2017
165	866	TON	Tonga	1989	-	2017
166	369	TTO	Trinidad and Tobago (e)	1970	-	2017
167	744	TUN	Tunisia (e)	1970	-	2017
168	186	TUR	Turkey (e)	1970	-	2017
169	925	TKM	Turkmenistan	1996	-	2017
170	746	UGA	Uganda	1970	-	2017
171	926	UKR	Ukraine	1996	-	2017
172	466	ARE	United Arab Emirates	1976	-	2017
173	112	GBR	United Kingdom (i)	1970	-	2017
174	111	USA	United States (i)	1970	-	2017
175	298	URY	Uruguay	1970	-	2017
176	927	UZB	Uzbekistan	1996	-	2017
177	846	VUT	Vanuatu	1985	-	2000
178	299	VEN	Venezuela, RB (e)	1970	-	2017
179	582	VNM	Vietnam	1970	-	2017
180	474	YEM	Yemen, Rep.	1995	-	2017
181	754	ZMB	Zambia	1970	-	2017
182	698	ZWE	Zimbabwe (e)	1984	-	2017

Notes: “cn” refers to IMF-World Bank three-digit code. “ccode” to “ISO Alpha-3 Code”. “(i)” and “(e)” refer to IDCs and EMGs, respectively.

**Table 1: Summary Statistics (as of 2017)**

	Minimum	Mean	Median	Maximum	Standard Deviation
Full Sample	-1.92	0.00	-0.14	2.35	1.53
Industrialized Countries	-1.92	1.32	2.35	2.35	1.33
Developing Countries	-1.92	-0.23	-1.21	2.35	1.44
Emerging Markets	-1.92	-0.17	-0.64	2.35	1.44



**Table 2: Country Ranking as of 2017**

Ranking	Country Name	KAOPEN	Change in KAOPEN	Ranking	Country Name	KAOPEN	Change in KAOPEN
1	Australia	2.35		65	Chile	1.07	
1	Austria	2.35		65	Croatia	1.07	
1	Bahrain	2.35		65	Djibouti	1.07	
1	Belgium	2.35		65	Ecuador	1.07	
1	Botswana	2.35		65	El Salvador	1.07	
1	Bulgaria	2.35		65	Iceland	1.07	Up
1	Cambodia	2.35		65	Kenya	1.07	
1	Canada	2.35		65	Kuwait	1.07	
1	Costa Rica	2.35		65	Marshall Islands	1.07	
1	Czech Republic	2.35		65	Mauritius	1.07	
1	Denmark	2.35		65	Mexico	1.07	
1	Estonia	2.35		65	Poland	1.07	
1	Finland	2.35		65	San Marino	1.07	
1	France	2.35		65	Saudi Arabia	1.07	
1	Gambia, The	2.35		65	Slovenia	1.07	
1	Georgia	2.35		80	Russian Federation	0.63	Down
1	Germany	2.35		81	Maldives	0.57	Down
1	Guatemala	2.35		82	Sudan	0.43	Up
1	Haiti	2.35		83	Kyrgyz Republic	0.36	
1	Hong Kong, China	2.35		84	Cape Verde	0.12	Up
1	Hungary	2.35		85	Azerbaijan	0.07	
1	Ireland	2.35		85	Papua New Guinea	0.07	
1	Israel	2.35		85	Sao Tome and Principe	0.07	Down
1	Italy	2.35		88	Bolivia	0.00	
1	Japan	2.35		88	Lebanon	0.00	
1	Jordan	2.35		88	Macedonia, FYR	0.00	
1	Korea, Rep.	2.35		88	Paraguay	0.00	
1	Latvia	2.35		88	Philippines	0.00	
1	Malta	2.35		88	St. Lucia	0.00	
1	Micronesia, Fed. Sts.	2.35		88	Tonga	0.00	
1	New Zealand	2.35		88	Turkey	0.00	
1	Nicaragua	2.35		96	Albania	-0.14	
1	Norway	2.35		96	Colombia	-0.14	
1	Oman	2.35		96	Dominica	-0.14	
1	Panama	2.35		96	Egypt, Arab Rep.	-0.14	Up
1	Peru	2.35		96	Indonesia	-0.14	
1	Portugal	2.35		96	Jamaica	-0.14	Down
1	Qatar	2.35		96	Malaysia	-0.14	
1	Romania	2.35		96	Vietnam	-0.14	
1	Seychelles	2.35		96	Zimbabwe	-0.14	
1	Singapore	2.35		105	Nigeria	-0.64	
1	Spain	2.35		106	Algeria	-1.21	
1	Sweden	2.35		106	Aruba	-1.21	
1	Switzerland	2.35		106	Bangladesh	-1.21	
1	Uganda	2.35		106	Barbados	-1.21	
1	United Arab Emirates	2.35		106	Belarus	-1.21	
1	United Kingdom	2.35		106	Belize	-1.21	
1	United States	2.35		106	Benin	-1.21	
1	Uruguay	2.35		106	Bhutan	-1.21	
1	Yemen, Rep.	2.35		106	Bosnia and Herzegovina	-1.21	
1	Zambia	2.35		106	Brazil	-1.21	
52	Cyprus	2.09	Up	106	Burkina Faso	-1.21	
53	Lithuania	1.83	Up	106	Côte d'Ivoire	-1.21	
54	Armenia	1.64		106	Cameroon	-1.21	
54	Mongolia	1.64		106	Central African Republic	-1.21	
54	Trinidad and Tobago	1.64	Down	106	Chad	-1.21	
57	Argentina	1.32	Up	106	China	-1.21	
57	Dominican Republic	1.32	Up	106	Comoros	-1.21	
59	Greece	1.28		106	Congo, Rep.	-1.21	
59	Rwanda	1.28		106	Equatorial Guinea	-1.21	
59	Slovak Republic	1.28		106	Ethiopia	-1.21	
62	Guyana	1.14	Down	106	Fiji	-1.21	
62	Liberia	1.14		106	Gabon	-1.21	
62	Netherlands	1.14	Down	106	Grenada	-1.21	

Ranking	Country Name	KAOPEN	Change in KAOPEN
106	Guinea-Bissau	-1.21	
106	Honduras	-1.21	
106	India	-1.21	
106	Kazakhstan	-1.21	
106	Lao PDR	-1.21	
106	Lesotho	-1.21	
106	Libya	-1.21	
106	Madagascar	-1.21	
106	Malawi	-1.21	
106	Mali	-1.21	
106	Mauritania	-1.21	
106	Moldova	-1.21	
106	Morocco	-1.21	
106	Mozambique	-1.21	
106	Namibia	-1.21	
106	Nepal	-1.21	
106	Niger	-1.21	
106	Pakistan	-1.21	
106	Samoa	-1.21	
106	Senegal	-1.21	
106	Sierra Leone	-1.21	
106	Solomon Islands	-1.21	
106	South Africa	-1.21	
106	Sri Lanka	-1.21	
106	St. Kitts and Nevis	-1.21	
106	St. Vincent and the Grenadines	-1.21	
106	Suriname	-1.21	
106	Swaziland	-1.21	
106	Tajikistan	-1.21	Up
106	Tanzania	-1.21	
106	Thailand	-1.21	
106	Togo	-1.21	
106	Tunisia	-1.21	
106	Turkmenistan	-1.21	
163	Angola	-1.92	
163	Bahamas, The	-1.92	
163	Burundi	-1.92	
163	Eritrea	-1.92	
163	Ghana	-1.92	
163	Guinea	-1.92	
163	Iran, Islamic Rep.	-1.92	Down
163	Myanmar	-1.92	
163	Syrian Arab Republic	-1.92	
163	Ukraine	-1.92	
163	Uzbekistan	-1.92	
163	Venezuela, RB	-1.92	

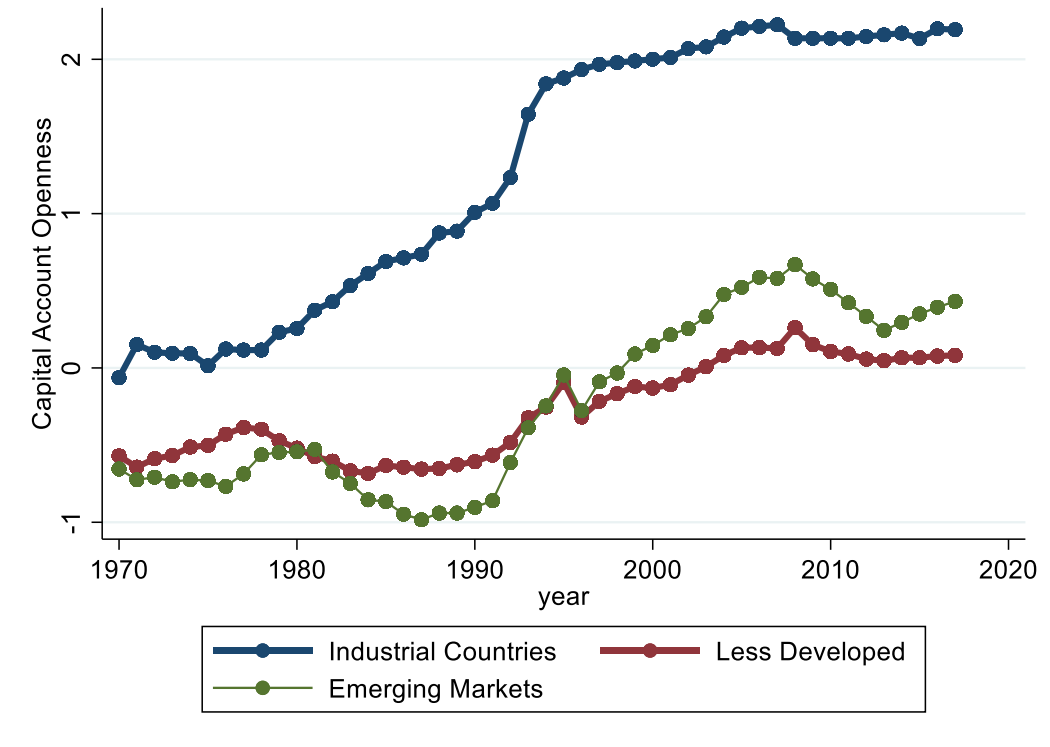
**Table 3: Countries that increased *KAOPEN* in 2017**

	<b>Ranking</b>	<b>Country Name</b>	<b><i>KAOPEN</i> (as of 2017)</b>	<b>Change in <i>KAOPEN</i></b>
1	84	Cape Verde	0.12	1.33
2	65	Iceland	1.07	1.07
2	82	Sudan	0.43	1.07
2	96	Egypt, Arab Rep.	-0.14	1.07
5	106	Tajikistan	-1.21	0.71
6	52	Cyprus	2.09	0.26
6	53	Lithuania	1.83	0.26
6	57	Dominican Republic	1.32	0.26

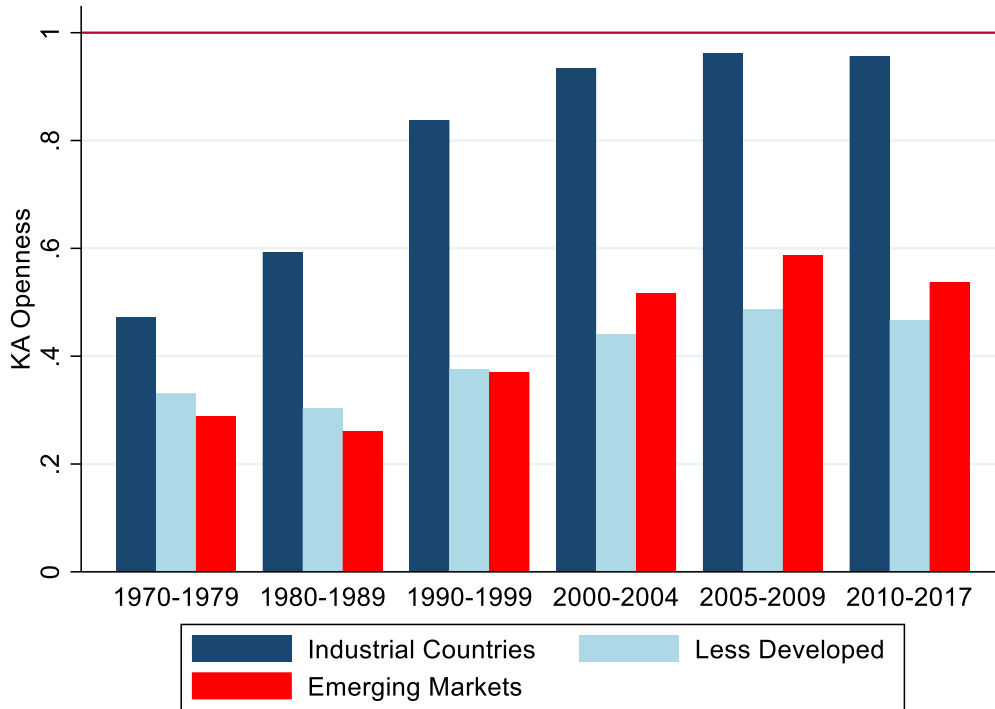
**Table 4: Countries that decreased *KAOPEN* in 2017**

	<b>Ranking</b>	<b>Country Name</b>	<b><i>KAOPEN</i> (as of 2017)</b>	<b>Change in <i>KAOPEN</i></b>
1	62	Guyana	1.14	-1.21
1	62	Netherlands	1.14	-1.21
1	96	Jamaica	-0.14	-1.21
1	163	Iran, Islamic Rep.	-1.92	-1.21
5	81	Maldives	0.57	-1.07
5	85	Sao Tome and Principe	0.07	-1.07
7	54	Trinidad and Tobago	1.64	-0.71
8	80	Russian Federation	0.63	-0.26

Figure 1: Development of *KAOPEN* for Different Income Groups, 1970 – 2017

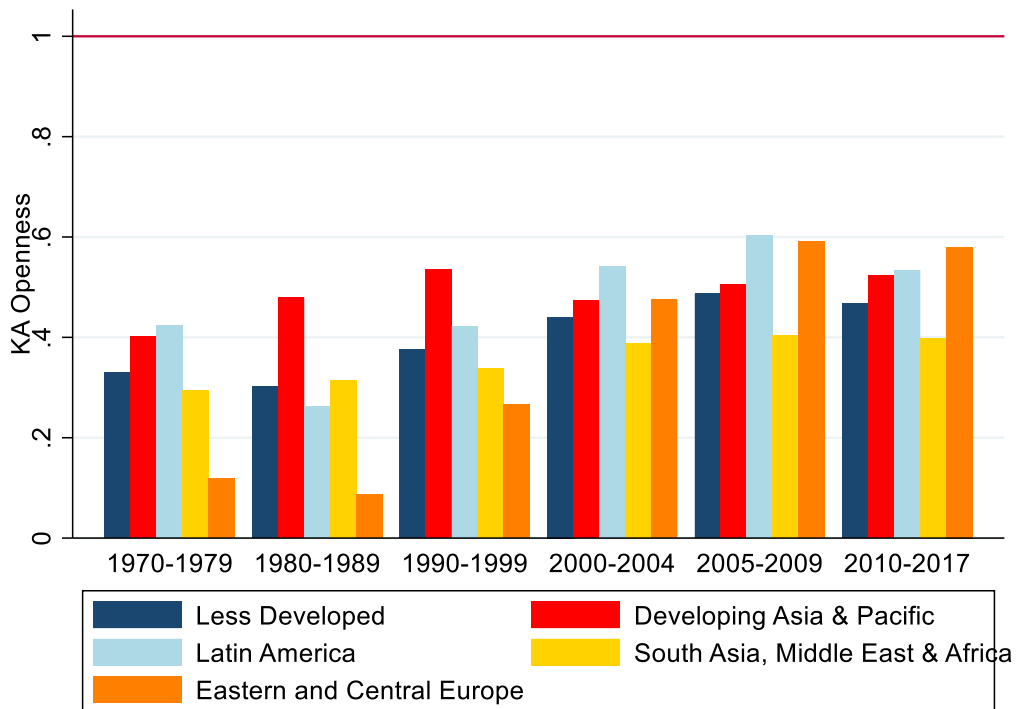


**Figure 2: Comparison of *KAOPEN* across Different Income Groups**



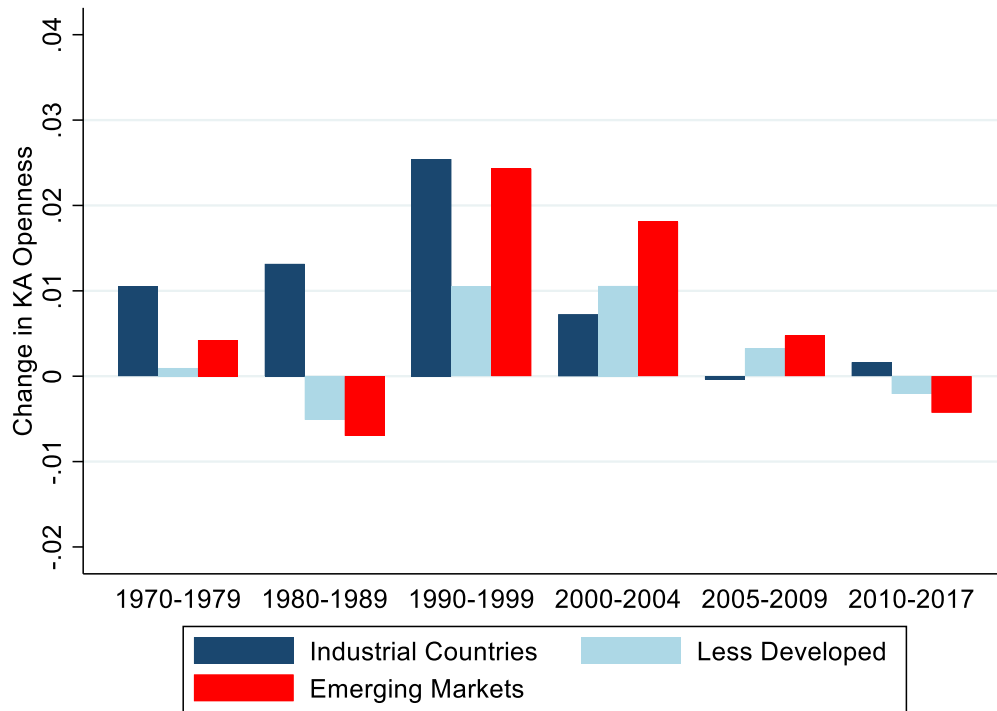
Note: The maximal value of *KAOPEN* is indexed as 1.00 for the sake of easier comparison.

**Figure 3: Comparison of *KAOPEN* of Developing Countries across Different Regions**



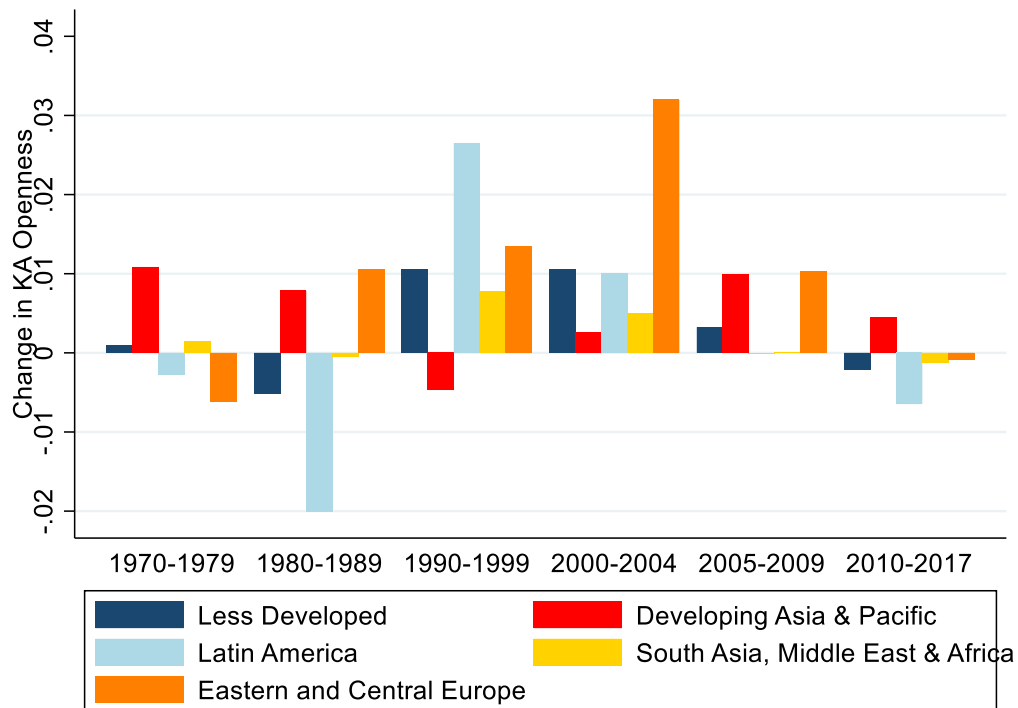
Note: The maximal value of *KAOPEN* is indexed as 1.00.

**Figure 4: Change in *KAOPEN* among different income groups**



Note: The change in *KAOPEN* is shown as the change in the normalized *KAOPEN* (max=1.00).

**Figure 5: Change in *KAOPEN* among geographical groups of developing countries**



Note: The change in *KAOPEN* is shown as the change in the normalized *KAOPEN* (max=1.00).