Notes on
The Chinn-Ito Financial Openness Index
2023 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 2024*, which contains the information on regulatory restrictions on cross-border financial transactions as of the end of 2023.[1]

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 .

kaopen*_2023.xls** (Excel format) or ***kaopen*_2023.dta** (STATA 17 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 **1970-2023** for **182 countries**. In the dataset, ***cn refers to IMF-World Bank three-

[1] 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 2023 using the data from *AREAER Database 2023*.

– 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:[2]

[2] The figure in parentheses denotes the IMF-World Bank three-digit code. The same is true for the remainder of the

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.[3] 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 2023. The furthest right column indicates whether a country of concern increased ("Up") or decreased ("Down") the level of *KAOPEN* compared to that as of 2023. There are 53 countries that score the "most financially open" value of 2.28 as of 2023 whereas there are 8 countries with the "least financial open" score of -1.94.

Table 3 reports that 3 countries increased the level of *KAOPEN* in 2023 while 13 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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paper.

[3] 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 .

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.

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 summer or fall of 2026, following the publication of the IMF's *AREAER 2025* (probably in the spring of 2026) which will contain information on capital controls policies as of 2024. The release of the update may change due to a variety of reasons. Please check 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.

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	-	2023
3	612	DZA	Algeria	1970	-	2023
4	614	AGO	Angola	1993	-	2023
5	311	ATG	Antigua and Barbuda	1985	-	2023
6	213	ARG	Argentina (e)	1970	-	2023
7	911	ARM	Armenia	1996	-	2023
8	314	ABW	Aruba	1992	-	2023
9	193	AUS	Australia (i)	1970	-	2023
10	122	AUT	Austria (i)	1970	-	2023
11	912	AZE	Azerbaijan	1996	-	2023
12	313	BHS	Bahamas, The	1977	-	2023
13	419	BHR	Bahrain	1976	-	2023
14	513	BGD	Bangladesh (e)	1976	-	2023
15	316	BRB	Barbados	1974	-	2023
16	913	BLR	Belarus	1996	-	2023
17	124	BEL	Belgium (i)	1970	-	2023
18	339	BLZ	Belize	1985	-	2023
19	638	BEN	Benin	1979	-	2023
20	514	BTN	Bhutan	1985	-	2023
21	218	BOL	Bolivia	1970	-	2023
22	963	BIH	Bosnia and Herzegovina	1999	-	2023
23	616	BWA	Botswana (e)	1972	-	2023
24	223	BRA	Brazil (e)	1970	-	2023
25	918	BGR	Bulgaria (e)	1994	-	2023
26	748	BFA	Burkina Faso	1988	-	2023
27	618	BDI	Burundi	1970	-	2023
28	662	CIV	Cote d'Ivoire (e)	1970	-	2023
29	522	KHM	Cambodia	1973	-	2023
30	622	CMR	Cameroon	1970	-	2023
31	156	CAN	Canada (i)	1970	-	2023
32	624	CPV	Cape Verde	1982	-	2023
33	626	CAF	Central African Republic	1970	-	2023
34	628	TCD	Chad	1970	-	2023
35	228	CHL	Chile (e)	1970	-	2023
36	924	CHN	China (e)	1984	-	2023
37	233	COL	Colombia (e)	1970	-	2023
38	632	COM	Comoros	1981	-	2023
39	636	ZAR	Congo, Dem. Rep.	1970	-	2023
40	634	COG	Congo, Rep.	1970	-	2023
41	238	CRI	Costa Rica	1970	-	2023
42	960	HRV	Croatia	1996	-	2023
43	423	CYP	Cyprus	1970	-	2023
44	935	CZE	Czech Republic (e)	1996	-	2023
45	128	DNK	Denmark (i)	1970	-	2023
46	611	DJI	Djibouti	1982	-	2023
47	321	DMA	Dominica	1982	-	2023
48	243	DOM	Dominican Republic	1970	-	2023
49	248	ECU	Ecuador (e)	1970	-	2023
50	469	EGY	Egypt, Arab Rep. (e)	1970	-	2023
51	253	SLV	El Salvador	1970	-	2023
52	642	GNQ	Equatorial Guinea	1973	-	2023
53	643	ERI	Eritrea	1998	-	2023
54	939	EST	Estonia	1996	-	2023
55	644	ETH	Ethiopia	1970	-	2023
56	819	FJI	Fiji	1975	-	2023
57	172	FIN	Finland (i)	1970	-	2023
58	132	FRA	France (i)	1970	-	2023
59	646	GAB	Gabon	1970	-	2023
60	648	GMB	Gambia, The	1971	-	2023

	cn	ccode	Country Name	Availability		
61	915	GEO	Georgia	1996	-	2023
62	134	DEU	Germany (i)	1970	-	2023
63	652	GHA	Ghana (e)	1970	-	2023
64	174	GRC	Greece (i)	1970	-	2023
65	328	GRD	Grenada	1979	-	2023
66	258	GTM	Guatemala	1970	-	2023
67	656	GIN	Guinea	1970	-	2023
68	654	GNB	Guinea-Bissau	1981	-	2023
69	336	GUY	Guyana	1970	-	2023
70	263	HTI	Haiti	1970	-	2023
71	268	HND	Honduras	1970	-	2023
72	532	HKG	Hong Kong, China (e)	1970	-	2023
73	944	HUN	Hungary (e)	1986	-	2023
74	176	ISL	Iceland (i)	1970	-	2023
75	534	IND	India (e)	1970	-	2023
76	536	IDN	Indonesia (e)	1970	-	2023
77	429	IRN	Iran, Islamic Rep.	1970	-	2023
78	433	IRQ	Iraq	1970	-	2002
79	178	IRL	Ireland (i)	1970	-	2023
80	436	ISR	Israel (e)	1970	-	2023
81	136	ITA	Italy (i)	1970	-	2023
82	343	JAM	Jamaica (e)	1970	-	2023
83	158	JPN	Japan (i)	1970	-	2023
84	439	JOR	Jordan (e)	1970	-	2023
85	916	KAZ	Kazakhstan	1996	-	2023
86	664	KEN	Kenya (e)	1970	-	2023
87	826	KIR	Kiribati	1990	-	2023
88	542	KOR	Korea, Rep. (e)	1970	-	2023
89	443	KWT	Kuwait	1970	-	2023
90	917	KGZ	Kyrgyz Republic	1997	-	2023
91	544	LAO	Lao PDR	1970	-	2023
92	941	LVA	Latvia	1996	-	2023
93	446	LBN	Lebanon	1970	-	2023
94	666	LSO	Lesotho	1972	-	2023
95	668	LBR	Liberia	1970	-	2023
96	672	LBY	Libya	1970	-	2023
97	946	LTU	Lithuania (e)	1996	-	2023
98	962	MKD	Macedonia, FYR	1997	-	2023
99	674	MDG	Madagascar	1970	-	2023
100	676	MWI	Malawi	1970	-	2023
101	548	MYS	Malaysia (e)	1970	-	2023
102	556	MDV	Maldives	1982	-	2023
103	678	MLI	Mali	1970	-	2023
104	181	MLT	Malta (i)	1972	-	2023
105	867	MHL	Marshall Islands	1996	-	2023
106	682	MRT	Mauritania	1970	-	2023
107	684	MUS	Mauritius (e)	1972	-	2023
108	273	MEX	Mexico (e)	1970	-	2023
109	868	FSM	Micronesia, Fed. Sts.	1996	-	2021
110	921	MDA	Moldova	1996	-	2023
111	948	MNG	Mongolia	1995	-	2023
112	686	MAR	Morocco (e)	1970	-	2023
113	688	MOZ	Mozambique	1988	-	2023
114	518	MMR	Myanmar	1970	-	2023
115	728	NAM	Namibia	1994	-	2023
116	558	NPL	Nepal	1970	-	2023
117	138	NLD	Netherlands (i)	1970	-	2023
118	353	ANT	Netherlands Antilles	1970	-	2009
119	196	NZL	New Zealand (i)	1970	-	2023
120	278	NIC	Nicaragua	1970	-	2023
121	692	NER	Niger	1970	-	2023
122	694	NGA	Nigeria (e)	1970	-	2023

	cn	ccode	Country Name	Availability		
123	142	NOR	Norway (i)	1970	-	2023
124	449	OMN	Oman	1977	-	2023
125	564	PAK	Pakistan (e)	1970	-	2023
126	283	PAN	Panama	1970	-	2023
127	853	PNG	Papua New Guinea	1979	-	2023
128	288	PRY	Paraguay	1970	-	2023
129	293	PER	Peru (e)	1970	-	2023
130	566	PHL	Philippines (e)	1970	-	2023
131	964	POL	Poland (e)	1986	-	2023
132	182	PRT	Portugal (i)	1970	-	2023
133	453	QAT	Qatar	1976	-	2023
134	968	ROU	Romania	1976	-	2023
135	922	RUS	Russian Federation (e)	1996	-	2023
136	714	RWA	Rwanda	1970	-	2023
137	716	STP	S? Tom and Principe	1981	-	2023
138	862	WSM	Samoa	1975	-	2023
139	135	SMR	San Marino	1996	-	2023
140	456	SAU	Saudi Arabia	1970	-	2023
141	722	SEN	Senegal	1970	-	2023
142	718	SYC	Seychelles	1981	-	2023
143	724	SLE	Sierra Leone	1970	-	2023
144	576	SGP	Singapore (e)	1970	-	2023
145	936	SVK	Slovak Republic (e)	1996	-	2023
146	961	SVN	Slovenia (e)	1996	-	2023
147	813	SLB	Solomon Islands	1982	-	2023
148	726	SOM	Somalia	1970	-	2007
149	199	ZAF	South Africa (e)	1970	-	2023
150	184	ESP	Spain (i)	1970	-	2023
151	524	LKA	Sri Lanka (e)	1970	-	2023
152	361	KNA	St. Kitts and Nevis	1988	-	2023
153	362	LCA	St. Lucia	1983	-	2023

	cn	ccode	Country Name	Availability		
154	364	VCT	St. Vincent and the Grenadines	1983	-	2023
155	732	SDN	Sudan	1970	-	2023
156	366	SUR	Suriname	1970	-	2023
157	734	SWZ	Swaziland	1973	-	2023
158	144	SWE	Sweden (i)	1970	-	2023
159	146	CHE	Switzerland (i)	1996	-	2023
160	463	SYR	Syrian Arab Republic	1970	-	2023
161	923	TJK	Tajikistan	1997	-	2023
162	738	TZA	Tanzania	1970	-	2023
163	578	THA	Thailand (e)	1970	-	2023
164	742	TGO	Togo	1970	-	2023
165	866	TON	Tonga	1989	-	2023
166	369	TTO	Trinidad and Tobago (e)	1970	-	2023
167	744	TUN	Tunisia (e)	1970	-	2023
168	186	TUR	Turkiye (e)	1970	-	2023
169	925	TKM	Turkmenistan	1996	-	2023
170	746	UGA	Uganda	1970	-	2023
171	926	UKR	Ukraine	1996	-	2023
172	466	ARE	United Arab Emirates	1976	-	2023
173	112	GBR	United Kingdom (i)	1970	-	2023
174	111	USA	United States (i)	1970	-	2023
175	298	URY	Uruguay	1970	-	2023
176	927	UZB	Uzbekistan	1996	-	2023
177	846	VUT	Vanuatu	1985	-	2023
178	299	VEN	Venezuela, RB (e)	1970	-	2023
179	582	VNM	Vietnam	1970	-	2023
180	474	YEM	Yemen, Rep.	1995	-	2023
181	754	ZMB	Zambia	1970	-	2023
182	698	ZWE	Zimbabwe (e)	1984	-	2023

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 2021)

	Minimum	Mean	Median	Maximum	Standard Deviation
Full Sample	-1.94	0.00	-0.17	2.28	1.53
Industrialized Countries	-1.94	1.38	2.28	2.28	1.28
Developing Countries	-1.94	-0.23	-1.25	2.28	1.44
Emerging Markets	-1.94	-0.16	-0.17	2.28	1.44

Table 2: Country Ranking as of 2023

Ranking	Country Name	*KAOPEN*	Change in *KAOPEN*
1	Armenia	2.28	
1	Australia	2.28	
1	Austria	2.28	
1	Bahrain	2.28	
1	Belgium	2.28	
1	Botswana	2.28	
1	Cambodia	2.28	
1	Canada	2.28	
1	Cape Verde	2.28	
1	Costa Rica	2.28	
1	Cyprus	2.28	
1	Czech Republic	2.28	
1	Denmark	2.28	
1	Estonia	2.28	
1	Finland	2.28	
1	France	2.28	
1	Gambia, The	2.28	
1	Georgia	2.28	
1	Germany	2.28	
1	Greece	2.28	
1	Guatemala	2.28	
1	Hong Kong, China	2.28	
1	Hungary	2.28	
1	Iceland	2.28	Up
1	Ireland	2.28	
1	Israel	2.28	
1	Italy	2.28	
1	Japan	2.28	
1	Jordan	2.28	
1	Korea, Rep.	2.28	
1	Latvia	2.28	
1	Lithuania	2.28	
1	Malta	2.28	
1	Netherlands	2.28	
1	New Zealand	2.28	
1	Nicaragua	2.28	
1	Norway	2.28	
1	Panama	2.28	
1	Peru	2.28	
1	Portugal	2.28	
1	Qatar	2.28	
1	Seychelles	2.28	
1	Singapore	2.28	
1	Spain	2.28	
1	Sweden	2.28	
1	Switzerland	2.28	
1	United Arab Emirates	2.28	
1	United Kingdom	2.28	
1	United States	2.28	
1	Uruguay	2.28	
1	Vanuatu	2.28	Up
1	Yemen, Rep.	2.28	
1	Zambia	2.28	
54	Mongolia	1.60	
55	Oman	1.53	Down
56	Romania	1.27	Down
57	Antigua and Barbuda	1.20	
57	Rwanda	1.20	
57	Uganda	1.20	
60	Haiti	1.08	
60	Liberia	1.08	
62	Chile	1.02	
62	Croatia	1.02	
62	Djibouti	1.02	
62	Dominican Republic	1.02	Down
62	Ecuador	1.02	
62	El Salvador	1.02	
62	Kenya	1.02	
62	Kiribati	1.02	
62	Kuwait	1.02	
62	Marshall Islands	1.02	
62	Mauritius	1.02	
62	Mexico	1.02	
62	Poland	1.02	
62	San Marino	1.02	
62	Saudi Arabia	1.02	
62	Slovenia	1.02	
78	Trinidad and Tobago	0.84	Down
79	Guyana	0.58	Down
80	Sao Tome and Principe	0.52	
81	Maldives	0.40	Down
81	Sudan	0.40	
83	Kyrgyz Republic	0.34	
84	Slovak Republic	0.19	Down
85	Bolivia	-0.06	
85	Bulgaria	-0.06	Down
85	Lebanon	-0.06	
85	Macedonia, FYR	-0.06	
85	Paraguay	-0.06	
85	Philippines	-0.06	
85	St. Lucia	-0.06	
92	Albania	-0.17	
92	Belarus	-0.17	
92	Colombia	-0.17	
92	Dominica	-0.17	
92	Egypt, Arab Rep.	-0.17	
92	Indonesia	-0.17	
92	Jamaica	-0.17	Down
92	Malaysia	-0.17	
92	Thailand	-0.17	
92	Vietnam	-0.17	
92	Zimbabwe	-0.17	
103	Azerbaijan	-0.25	Down
104	Nigeria	-0.68	
104	Papua New Guinea	-0.68	
106	Tajikistan	-0.93	Down
107	Kazakhstan	-1.00	
108	Algeria	-1.25	
108	Argentina	-1.25	Down
108	Aruba	-1.25	
108	Bangladesh	-1.25	
108	Barbados	-1.25	
108	Belize	-1.25	
108	Benin	-1.25	
108	Bhutan	-1.25	
108	Bosnia and Herzegovina	-1.25	
108	Brazil	-1.25	
108	Burkina Faso	-1.25	
108	Cote d'Ivoire	-1.25	
108	Cameroon	-1.25	
108	Central African Republic	-1.25	
108	Chad	-1.25	
108	China	-1.25	
108	Comoros	-1.25	
108	Congo, Dem. Rep.	-1.25	
108	Congo, Rep.	-1.25	
108	Equatorial Guinea	-1.25	
108	Ethiopia	-1.25	
108	Fiji	-1.25	
108	Gabon	-1.25	
108	Grenada	-1.25	
108	Guinea-Bissau	-1.25	
108	Honduras	-1.25	
108	India	-1.25	
108	Lao PDR	-1.25	
108	Lesotho	-1.25	

108	Libya	-1.25	
108	Madagascar	-1.25	
108	Malawi	-1.25	
108	Mali	-1.25	
108	Mauritania	-1.25	
108	Moldova	-1.25	
108	Morocco	-1.25	
108	Mozambique	-1.25	
108	Myanmar	-1.25	
108	Namibia	-1.25	
108	Nepal	-1.25	
108	Niger	-1.25	
108	Pakistan	-1.25	
108	Russian Federation	-1.25	
108	Samoa	-1.25	
108	Senegal	-1.25	
108	Sierra Leone	-1.25	
108	Solomon Islands	-1.25	
108	South Africa	-1.25	
108	St. Kitts and Nevis	-1.25	
108	St. Vincent and the Grenadines	-1.25	
108	Suriname	-1.25	
108	Swaziland	-1.25	
108	Tanzania	-1.25	
108	Togo	-1.25	
108	Tonga	-1.25	
108	Tunisia	-1.25	
108	Türkiye	-1.25	
108	Turkmenistan	-1.25	
108	Uzbekistan	-1.25	
167	Burundi	-1.69	Up
168	Angola	-1.94	
168	Bahamas, The	-1.94	
168	Eritrea	-1.94	
168	Ghana	-1.94	
168	Guinea	-1.94	
168	Iran, Islamic Rep.	-1.94	
168	Sri Lanka	-1.94	Down
168	Syrian Arab Republic	-1.94	

Table 3: Countries that increased *KAOPEN* in 2023

	Ranking	Country Name	*KAOPEN* (as of 2023)	Change in *KAOPEN*
1	1	Iceland	2.28	0.25
2	1	Vanuatu	2.28	0.25
3	167	Burundi	-1.69	0.25

Table 4: Countries that decreased *KAOPEN* in 2023

	Ranking	Country Name	*KAOPEN* (as of 2023)	Change in *KAOPEN*
1	92	Jamaica	-0.17	-0.12
2	62	Dominican Republic	1.02	-0.25
3	106	Tajikistan	-0.93	-0.25
4	84	Slovak Republic	0.19	-0.25
5	103	Azerbaijan	-0.25	-0.25
6	55	Oman	1.53	-0.25
7	56	Romania	1.27	-0.25
8	79	Guyana	0.58	-0.25
9	85	Bulgaria	-0.06	-0.25
10	108	Argentina	-1.25	-0.25
11	78	Trinidad and Tobago	0.84	-0.25
12	168	Sri Lanka	-1.94	-0.69
13	81	Maldives	0.40	-1.20

Figure 1: Development of *KAOPEN* for Different Income Groups, 1970 – 2023

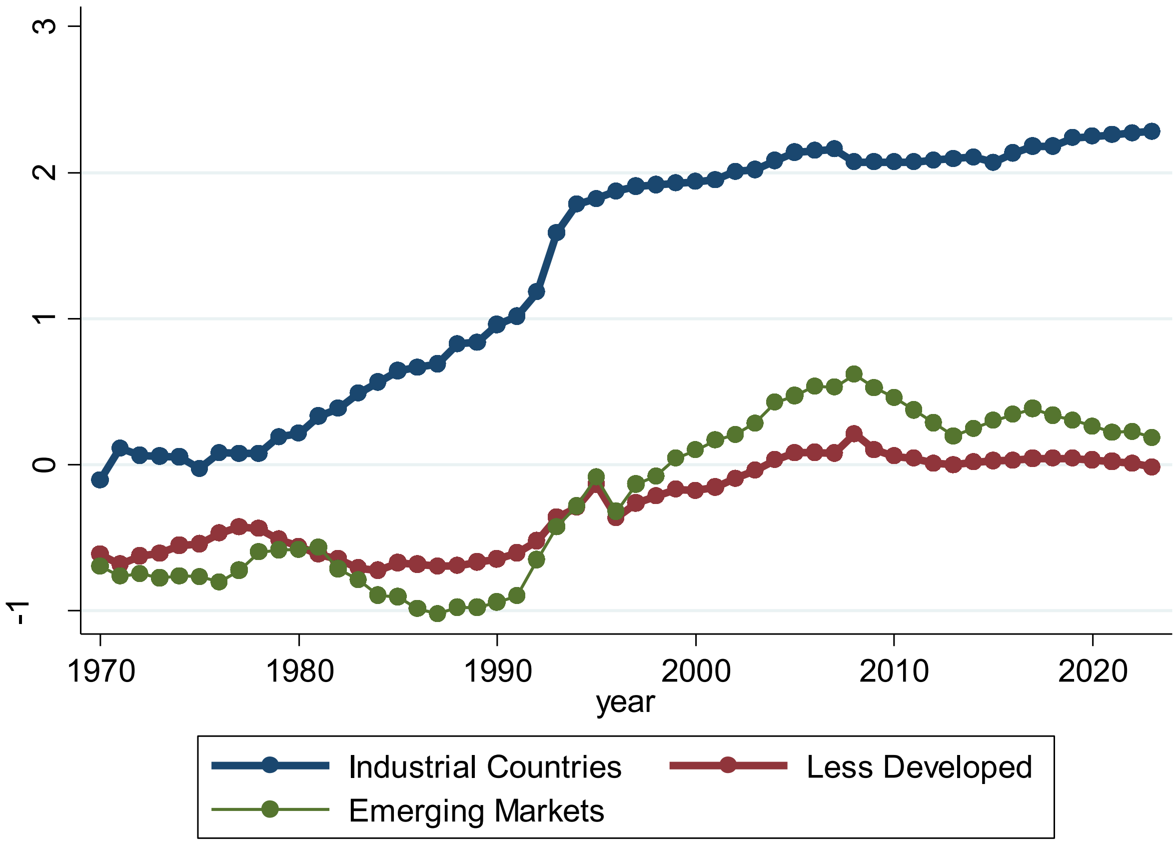
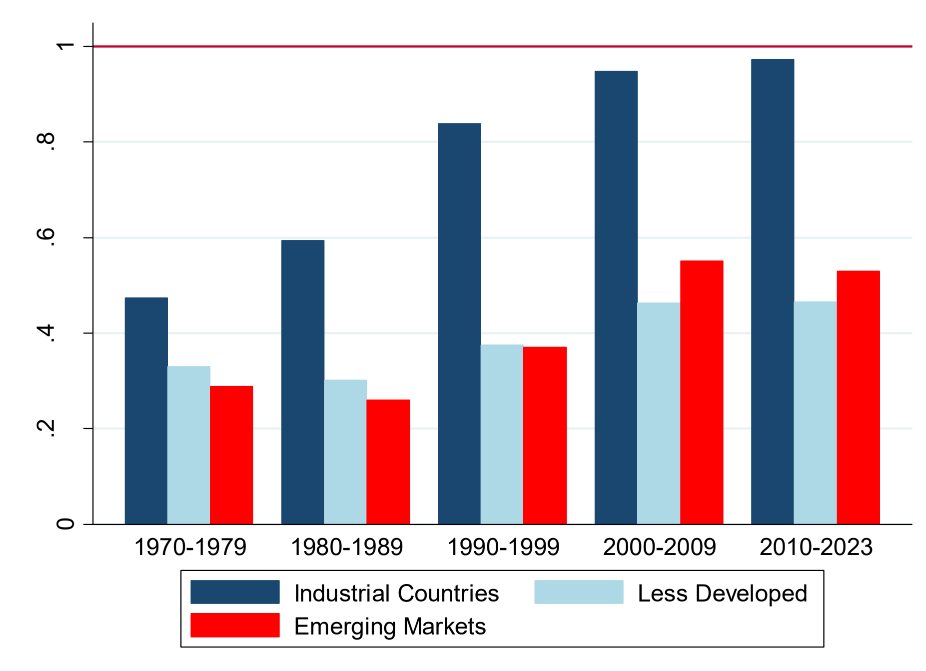
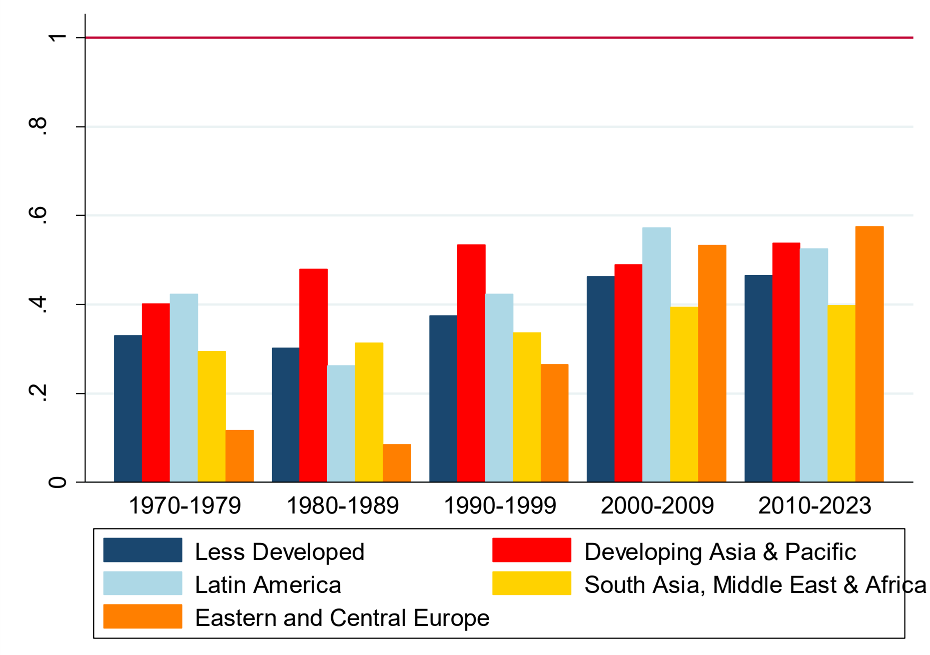


Figure 2: Comparison of *KAOPEN* across Different Income Groups



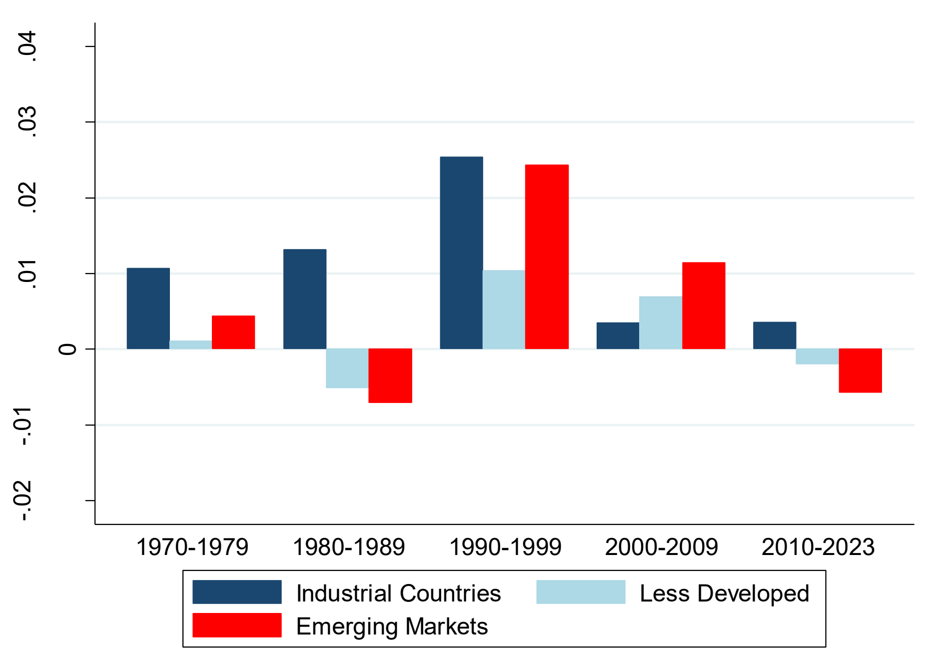
Note: The maximal value of *KAOPEN* is indexed as 1.00 for the sake of easier comparison.

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



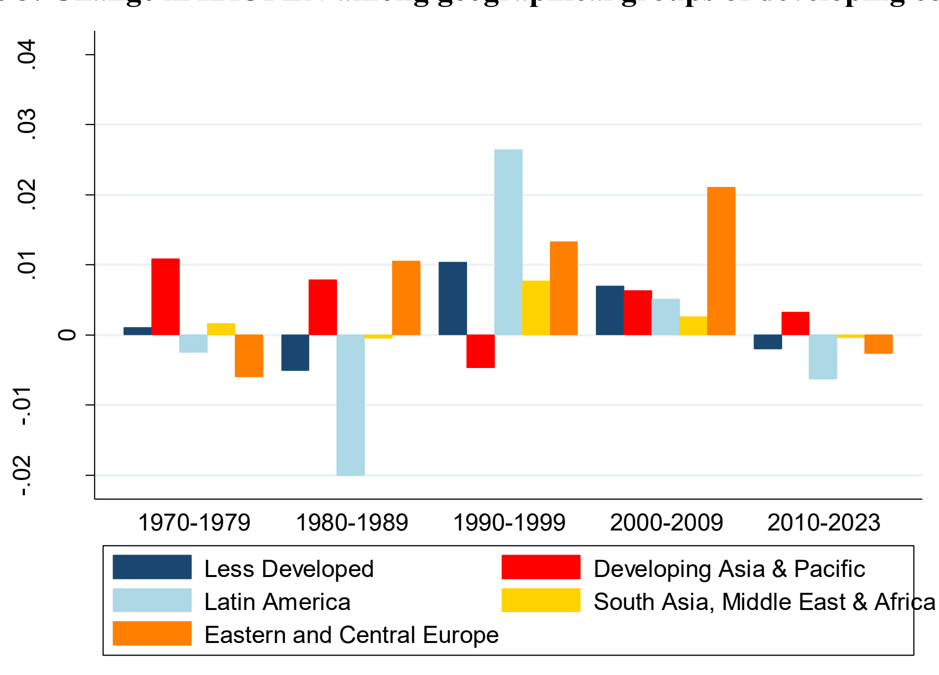
Note: The maximal value of *KAOPEN* is indexed as 1.00.

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).