

Notes on
the Chinn-Ito Financial Openness Index
2010 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)*.

More information on how the index is constructed, the index's summary statistics, 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.

The dataset is available at http://web.pdx.edu/~ito/Chinn-Ito_website.htm.

kaopen_2010.xls (Excel format) or *kaopen_2010.dta* (STATA 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 **1970-2010** for **182 countries**. A complete list of the countries and their data availability are presented in the Country List shown below.

What's new?

- *KAOPEN* is updated for 2010 using the summary table of AREAER 2011.
- The underlying data from the AREAER for *KAOPEN* of the following country have been corrected.

Vietnam (582)¹

- 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 through 2010. 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 through 2010.

The countries of our concern here are:

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).

Summary Statistics of *KAOPEN*

The summary statistics of *KAOPEN* for different income groups are shown in Table 1.²

Figure 1 compares the subsample averages of *KAOPEN* for different income groups of countries. Figure 2 does the same thing, but in terms of ratios with the maximal value normalized as 1.00 for different income groups and decades.³ 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 2010. The furthest right column indicates whether a country of concern increased (“Up”) or decreased (“Down”) the level of *KAOPEN* compared to that as of 2009. There are 53 countries that score the “most financially

¹ The figure in parentheses denotes the IMF-World Bank three-digit code. The same is true for the remainder of the paper.

² 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. By the nature of the first principal component, every time the new data (i.e., the data for the most recent year) are added, the index is recalculated using the *entire* sample of the original variables. Because of this procedure, the data for the older years are recalculated, which makes the *KAOPEN* index across different versions of it incomparable with each other. Hence, the summary statistics change across different versions of the index.

³ The emerging market countries 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.

open” value of 2.46 as of 2010 whereas there are 13 countries with the “least financial open” score of -1.86.

Table 3 reports that 14 countries increased the level of *KAOPEN* in 2010 while 20 countries decreased the level of *KAOPEN* the same year, possibly reflecting the impact of the financial crisis of 2008-09.

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.

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 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 will be updated in the winter of 2013, following the publication of the IMF’s *AREAER* 2012 (probably in the fall of 2012), which will contain information on capital controls policies as of 2011.

Disclaimer: When you use the index, please acknowledge our *JDE* or *JCPA* 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:

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

	Country Numb. ⁴	Country Code	Country Name	Availability		Country Numb.	Country Code	Country Name	Availability
1	512	AFG	Afghanistan	1970-2010	21	218	BOL	Bolivia	1970-2010
2	914	ALB	Albania	1995-2010	22	963	BIH	Bosnia and Herzegovina	1999-2010
3	612	DZA	Algeria	1970-2010	23	616	BWA	Botswana	1972-2010
4	614	AGO	Angola	1993-2010	24	223	BRA	Brazil	1970-2010
5	311	ATG	Antigua and Barbuda	1985-2009	25	918	BGR	Bulgaria	1994-2010
6	213	ARG	Argentina	1970-2010	26	748	BFA	Burkina Faso	1988-2010
7	911	ARM	Armenia	1996-2010	27	618	BDI	Burundi	1970-2010
8	314	ABW	Aruba	1992-2010	28	662	CIV	Côte d'Ivoire	1970-2010
9	193	AUS	Australia	1970-2010	29	522	KHM	Cambodia	1973-2010
10	122	AUT	Austria	1970-2010	30	622	CMR	Cameroon	1970-2010
11	912	AZE	Azerbaijan	1996-2010	31	156	CAN	Canada	1970-2010
12	313	BHS	Bahamas, The	1977-2010	32	624	CPV	Cape Verde	1982-2010
13	419	BHR	Bahrain	1976-2010	33	626	CAF	Central African Rep.	1970-2010
14	513	BGD	Bangladesh	1976-2010	34	628	TCD	Chad	1970-2010
15	316	BRB	Barbados	1974-2010	35	228	CHL	Chile	1970-2010
16	913	BLR	Belarus	1996-2010	36	924	CHN	China	1984-2010
17	124	BEL	Belgium	1970-2010	37	233	COL	Colombia	1970-2010
18	339	BLZ	Belize	1985-2010	38	632	COM	Comoros	1981-2010
19	638	BEN	Benin	1979-2010	39	636	ZAR	Congo, Dem. Rep.	1970-2000
20	514	BTN	Bhutan	1985-2010	40	634	COG	Congo, Rep.	1970-2010

⁴ The figures in the column denote the IMF-World Bank three-digit codes.

	Country Numb.	Country Code	Country Name	Availability		Country Numb.	Country Code	Country Name	Availability
41	238	CRI	Costa Rica	1970-2010	65	328	GRD	Grenada	1979-2010
42	960	HRV	Croatia	1996-2010	66	258	GTM	Guatemala	1970-2010
43	423	CYP	Cyprus	1970-2010	67	656	GIN	Guinea	1970-2010
44	935	CZE	Czech Republic	1996-2010	68	654	GNB	Guinea-Bissau	1981-2010
45	128	DNK	Denmark	1970-2010	69	336	GUY	Guyana	1970-2010
46	611	DJI	Djibouti	1982-2010	70	263	HTI	Haiti	1970-2010
47	321	DMA	Dominica	1982-2010	71	268	HND	Honduras	1970-2010
48	243	DOM	Dominican Republic	1970-2010	72	532	HKG	Hong Kong, China	1970-2010
49	248	ECU	Ecuador	1970-2010	73	944	HUN	Hungary	1986-2010
50	469	EGY	Egypt, Arab Rep.	1970-2010	74	176	ISL	Iceland	1970-2010
51	253	SLV	El Salvador	1970-2010	75	534	IND	India	1970-2010
52	642	GNQ	Equatorial Guinea	1973-2010	76	536	IDN	Indonesia	1970-2010
53	643	ERI	Eritrea	1998-2010	77	429	IRN	Iran, Islamic Rep.	1970-2010
54	939	EST	Estonia	1996-2010	78	433	IRQ	Iraq	1970-2010
55	644	ETH	Ethiopia	1970-2010	79	178	IRL	Ireland	1970-2010
56	819	FJI	Fiji	1975-2010	80	436	ISR	Israel	1970-2010
57	172	FIN	Finland	1970-2010	81	136	ITA	Italy	1970-2010
58	132	FRA	France	1970-2010	82	343	JAM	Jamaica	1970-2010
59	646	GAB	Gabon	1970-2010	83	158	JPN	Japan	1970-2010
60	648	GMB	Gambia, The	1971-2010	84	439	JOR	Jordan	1970-2010
61	915	GEO	Georgia	1996-2010	85	916	KAZ	Kazakhstan	1996-2010
62	134	DEU	Germany	1970-2010	86	664	KEN	Kenya	1970-2010
63	652	GHA	Ghana	1970-2010	87	826	KIR	Kiribati	1990-2005
64	174	GRC	Greece	1970-2010	88	542	KOR	Korea, Rep.	1970-2010

	Country Numb.	Country Code	Country Name	Availability		Country Numb.	Country Code	Country Name	Availability
89	443	KWT	Kuwait	1970-2010	113	688	MOZ	Mozambique	1988-2010
90	917	KGZ	Kyrgyz Republic	1997-2010	114	518	MMR	Myanmar	1970-2010
91	544	LAO	Lao PDR	1970-2010	115	728	NAM	Namibia	1994-2010
92	941	LVA	Latvia	1996-2010	116	558	NPL	Nepal	1970-2010
93	446	LBN	Lebanon	1970-2010	117	138	NLD	Netherlands	1970-2010
94	666	LSO	Lesotho	1972-2010	118	353	ANT	Netherlands Antilles	1970-2009
95	668	LBR	Liberia	1970-2010	119	196	NZL	New Zealand	1970-2010
96	672	LBY	Libya	1970-2010	120	278	NIC	Nicaragua	1970-2010
97	946	LTU	Lithuania	1996-2010	121	692	NER	Niger	1970-2010
98	962	MKD	Macedonia, FYR	1997-2010	122	694	NGA	Nigeria	1970-2010
99	674	MDG	Madagascar	1970-2010	123	142	NOR	Norway	1970-2010
100	676	MWI	Malawi	1970-2010	124	449	OMN	Oman	1977-2010
101	548	MYS	Malaysia	1970-2010	125	564	PAK	Pakistan	1970-2010
102	556	MDV	Maldives	1982-2010	126	283	PAN	Panama	1970-2010
103	678	MLI	Mali	1970-2010	127	853	PNG	Papua New Guinea	1979-2010
104	181	MLT	Malta	1972-2010	128	288	PRY	Paraguay	1970-2010
105	867	MHL	Marshall Islands	1996-2010	129	293	PER	Peru	1970-2010
106	682	MRT	Mauritania	1970-2010	130	566	PHL	Philippines	1970-2010
107	684	MUS	Mauritius	1972-2010	131	964	POL	Poland	1986-2010
108	273	MEX	Mexico	1970-2010	132	182	PRT	Portugal	1970-2010
109	868	FSM	Micronesia, Fed. Sts.	1996-2010	133	453	QAT	Qatar	1976-2010
110	921	MDA	Moldova	1996-2010	134	968	ROM	Romania	1976-2010
111	948	MNG	Mongolia	1995-2010	135	922	RUS	Russian Federation	1996-2010
112	686	MAR	Morocco	1970-2010	136	714	RWA	Rwanda	1970-2010

	Country Numb.	Country Code	Country Name	Availability		Country Numb.	Country Code	Country Name	Availability
137	716	STP	Sao Tome and Principe	1981-2010	161	923	TJK	Tajikistan	1997-2010
138	862	WSM	Samoa	1975-2010	162	738	TZA	Tanzania	1970-2010
139	135	SMR	San Marino	1996-2010	163	578	THA	Thailand	1970-2010
140	456	SAU	Saudi Arabia	1970-2010	164	742	TGO	Togo	1970-2010
141	722	SEN	Senegal	1970-2010	165	866	TON	Tonga	1989-2010
142	718	SYC	Seychelles	1981-2010	166	369	TTO	Trinidad and Tobago	1970-2010
143	724	SLE	Sierra Leone	1970-2010	167	744	TUN	Tunisia	1970-2010
144	576	SGP	Singapore	1970-2010	168	186	TUR	Turkey	1970-2010
145	936	SVK	Slovak Republic	1996-2010	169	925	TKM	Turkmenistan	1996-2010
146	961	SVN	Slovenia	1996-2010	170	746	UGA	Uganda	1970-2010
147	813	SLB	Solomon Islands	1982-2010	171	926	UKR	Ukraine	1996-2010
148	726	SOM	Somalia	1970-2010	172	466	ARE	United Arab Emirates	1976-2010
149	199	ZAF	South Africa	1970-2010	173	112	GBR	United Kingdom	1970-2010
150	184	ESP	Spain	1970-2010	174	111	USA	United States	1970-2010
151	524	LKA	Sri Lanka	1970-2010	175	298	URY	Uruguay	1970-2010
152	361	KNA	St. Kitts and Nevis	1988-2010	176	927	UZB	Uzbekistan	1996-2010
153	362	LCA	St. Lucia	1983-2010	177	846	VUT	Vanuatu	1985-2000
154	364	VCT	St. Vinc. & the Grenad.	1983-2010	178	299	VEN	Venezuela, RB	1970-2010
155	732	SDN	Sudan	1970-2010	179	582	VNM	Vietnam	1970-2010
156	366	SUR	Suriname	1970-2010	180	474	YEM	Yemen, Rep.	1995-2010
157	734	SWZ	Swaziland	1973-2010	181	754	ZMB	Zambia	1970-2010
158	144	SWE	Sweden	1970-2010	182	698	ZWE	Zimbabwe	1984-2010
159	146	CHE	Switzerland	1996-2010					
160	463	SYR	Syrian Arab Republic	1970-2010					

Table 1: Summary Statistics

	Minimum	Mean	Median	Maximum	Standard Deviation
Full Sample	-1.86	0.00	-0.53	2.46	1.52
Industrialized Countries	-1.86	1.25	1.93	2.46	1.39
Developing Countries	-1.86	-0.22	-1.16	2.46	1.44
Emerging Markets	-1.86	-0.21	-0.80	2.46	1.44

Table 2: Country Ranking

Ranking	Country Name	KAOPEN	Change in KAOPEN	Ranking	Country Name	KAOPEN	Change in KAOPEN
1	Armenia	2.46		62	Slovenia	1.66	Down
1	Austria	2.46		66	Slovak Republic	1.40	
1	Bahrain	2.46		67	Jamaica	1.40	Down
1	Belgium	2.46		68	Mongolia	1.23	Up
1	Botswana	2.46		68	Somalia	1.23	Up
1	Bulgaria	2.46		70	Bosnia and Herzegovina	1.22	
1	Canada	2.46		70	Cambodia	1.22	
1	Cyprus	2.46		70	Costa Rica	1.22	
1	Czech Republic	2.46		73	Papua New Guinea	1.14	Up
1	Denmark	2.46		74	Australia	1.13	
1	Estonia	2.46		74	Croatia	1.13	
1	Finland	2.46		74	Indonesia	1.13	
1	France	2.46		74	Kenya	1.13	
1	Gambia, The	2.46		74	Kuwait	1.13	
1	Germany	2.46		74	Lebanon	1.13	
1	Greece	2.46		74	Marshall Islands	1.13	
1	Guatemala	2.46		74	Mexico	1.13	
1	Guyana	2.46		74	San Marino	1.13	
1	Haiti	2.46		74	Saudi Arabia	1.13	
1	Hong Kong, China	2.46		84	Iraq	0.87	Up
1	Hungary	2.46		85	Korea, Rep.	0.69	Up
1	Ireland	2.46		86	Paraguay	0.61	Down
1	Israel	2.46		87	Sao Tome and Principe	0.52	
1	Italy	2.46		88	Russian Federation	0.42	Up
1	Japan	2.46		89	Bolivia	0.34	Down
1	Jordan	2.46		90	Brazil	0.16	Down
1	Latvia	2.46		91	Iran, Islamic Rep.	0.08	
1	Liberia	2.46		91	Macedonia, FYR	0.08	
1	Malta	2.46		91	Poland	0.08	
1	Micronesia, Fed. Sts.	2.46		91	Sri Lanka	0.08	
1	Netherlands	2.46		91	St. Lucia	0.08	
1	New Zealand	2.46		91	Tonga	0.08	
1	Nicaragua	2.46		91	Turkey	0.08	
1	Norway	2.46		98	Albania	-0.11	Up
1	Oman	2.46		98	Colombia	-0.11	
1	Panama	2.46		98	Dominica	-0.11	
1	Peru	2.46		98	Vietnam	-0.11	
1	Portugal	2.46		98	Zimbabwe	-0.11	Up
1	Qatar	2.46		103	Azerbaijan	-0.37	Up
1	Romania	2.46		104	Georgia	-0.53	Down
1	Seychelles	2.46		104	Nigeria	-0.53	
1	Singapore	2.46		106	Argentina	-0.80	
1	Spain	2.46		106	Madagascar	-0.80	Down
1	Sweden	2.46		108	Comoros	-0.89	Up
1	Switzerland	2.46		108	Rwanda	-0.89	Up
1	Trinidad and Tobago	2.46		110	Algeria	-1.16	
1	Uganda	2.46		110	Aruba	-1.16	
1	United Arab Emirates	2.46		110	Bangladesh	-1.16	
1	United Kingdom	2.46		110	Barbados	-1.16	
1	United States	2.46		110	Belarus	-1.16	
1	Uruguay	2.46		110	Belize	-1.16	
1	Yemen, Rep.	2.46		110	Benin	-1.16	
1	Zambia	2.46		110	Bhutan	-1.16	
54	Dominican Republic	2.19	Up	110	Burkina Faso	-1.16	
55	Afghanistan	1.93	Up	110	Côte d'Ivoire	-1.16	
55	Djibouti	1.93	Down	110	Cameroon	-1.16	
55	Ecuador	1.93	Down	110	Cape Verde	-1.16	
55	Egypt, Arab Rep.	1.93	Down	110	Central African Republic	-1.16	
55	El Salvador	1.93	Down	110	Chad	-1.16	
55	Mauritius	1.93	Down	110	China	-1.16	
61	Maldives	1.76		110	Congo, Rep.	-1.16	
62	Chile	1.66	Down	110	Equatorial Guinea	-1.16	
62	Kyrgyz Republic	1.66		110	Ethiopia	-1.16	
62	Lithuania	1.66	Down	110	Fiji	-1.16	

Ranking	Country Name	KAOPEN	Change in KAOPEN
110	Gabon	-1.16	
110	Ghana	-1.16	
110	Grenada	-1.16	
110	Guinea-Bissau	-1.16	
110	Honduras	-1.16	Down
110	Iceland	-1.16	
110	India	-1.16	
110	Kazakhstan	-1.16	
110	Lao PDR	-1.16	
110	Lesotho	-1.16	
110	Libya	-1.16	
110	Malaysia	-1.16	Down
110	Mali	-1.16	
110	Mauritania	-1.16	
110	Moldova	-1.16	
110	Morocco	-1.16	
110	Mozambique	-1.16	
110	Namibia	-1.16	
110	Nepal	-1.16	
110	Niger	-1.16	
110	Pakistan	-1.16	
110	Philippines	-1.16	Down
110	Samoa	-1.16	
110	Senegal	-1.16	
110	Solomon Islands	-1.16	
110	South Africa	-1.16	
110	St. Kitts and Nevis	-1.16	
110	St. Vincent and the Grenadines	-1.16	
110	Swaziland	-1.16	
110	Tajikistan	-1.16	
110	Tanzania	-1.16	
110	Thailand	-1.16	
110	Togo	-1.16	
110	Tunisia	-1.16	
110	Turkmenistan	-1.16	
164	Sudan	-1.59	Up
165	Angola	-1.86	
165	Bahamas, The	-1.86	
165	Burundi	-1.86	
165	Eritrea	-1.86	Down
165	Guinea	-1.86	
165	Malawi	-1.86	
165	Myanmar	-1.86	
165	Sierra Leone	-1.86	
165	Suriname	-1.86	
165	Syrian Arab Republic	-1.86	
165	Ukraine	-1.86	
165	Uzbekistan	-1.86	Down
165	Venezuela, RB	-1.86	Down

Table 3: Countries that increased *KAOPEN*

	Ranking	Country Name	Change in <i>KAOPEN</i>	<i>KAOPEN</i> (as of 2010)
1	98	Albania	1.05	-0.11
2	98	Zimbabwe	1.05	-0.11
3	54	Dominican Republic	0.26	2.19
4	55	Afghanistan	0.26	1.93
5	68	Mongolia	0.26	1.23
6	68	Somalia	0.26	1.23
7	73	Papua New Guinea	0.26	1.14
8	84	Iraq	0.26	0.87
9	85	Korea, Rep.	0.26	0.69
10	88	Russian Federation	0.26	0.42
11	103	Azerbaijan	0.26	-0.37
12	108	Comoros	0.26	-0.89
13	108	Rwanda	0.26	-0.89
14	164	Sudan	0.26	-1.59

Table 4: Countries that decreased *KAOPEN*

	Ranking	Country Name	Change in <i>KAOPEN</i>	<i>KAOPEN</i> (as of 2010)
1	104	Georgia	-1.24	-0.53
2	110	Philippines	-1.24	-1.16
3	110	Honduras	-1.05	-1.16
4	110	Malaysia	-1.05	-1.16
5	165	Eritrea	-0.70	-1.86
6	165	Uzbekistan	-0.70	-1.86
7	106	Madagascar	-0.70	-0.80
8	62	Chile	-0.26	1.66
9	62	Lithuania	-0.26	1.66
10	62	Slovenia	-0.26	1.66
11	86	Paraguay	-0.26	0.61
12	89	Bolivia	-0.26	0.34
13	90	Brazil	-0.26	0.16
14	165	Venezuela, RB	-0.26	-1.86
15	55	Djibouti	-0.26	1.93
16	55	Ecuador	-0.26	1.93
17	55	Egypt, Arab Rep.	-0.26	1.93
18	55	El Salvador	-0.26	1.93
19	55	Mauritius	-0.26	1.93
20	67	Jamaica	-0.26	1.40

Figure 1: Development of *KAOPEN* for Different Income Groups

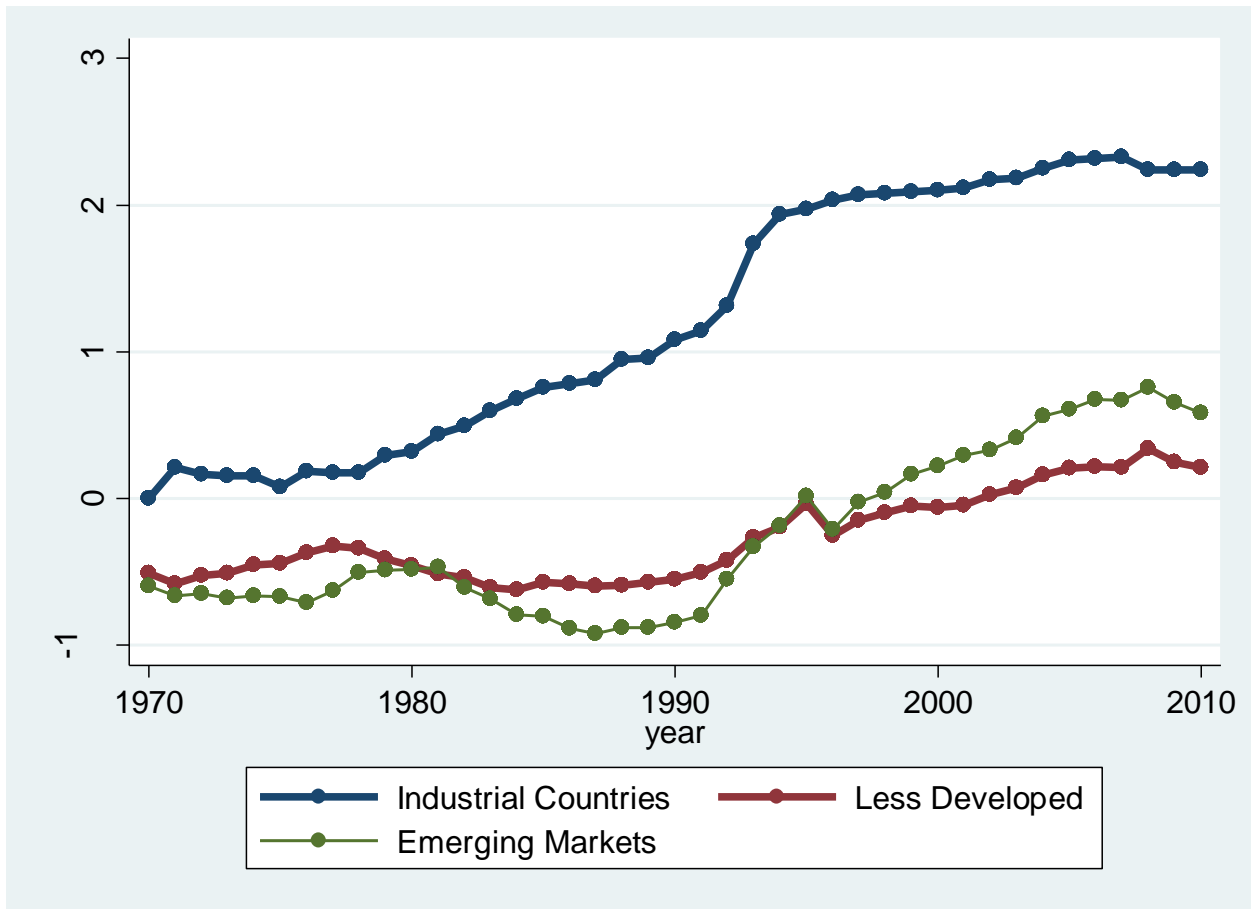
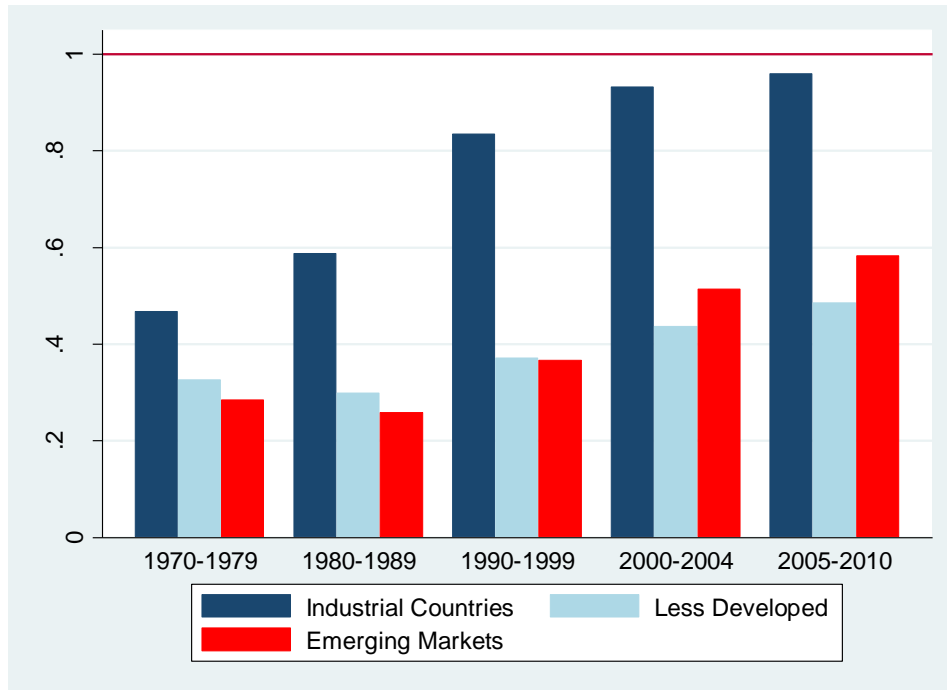
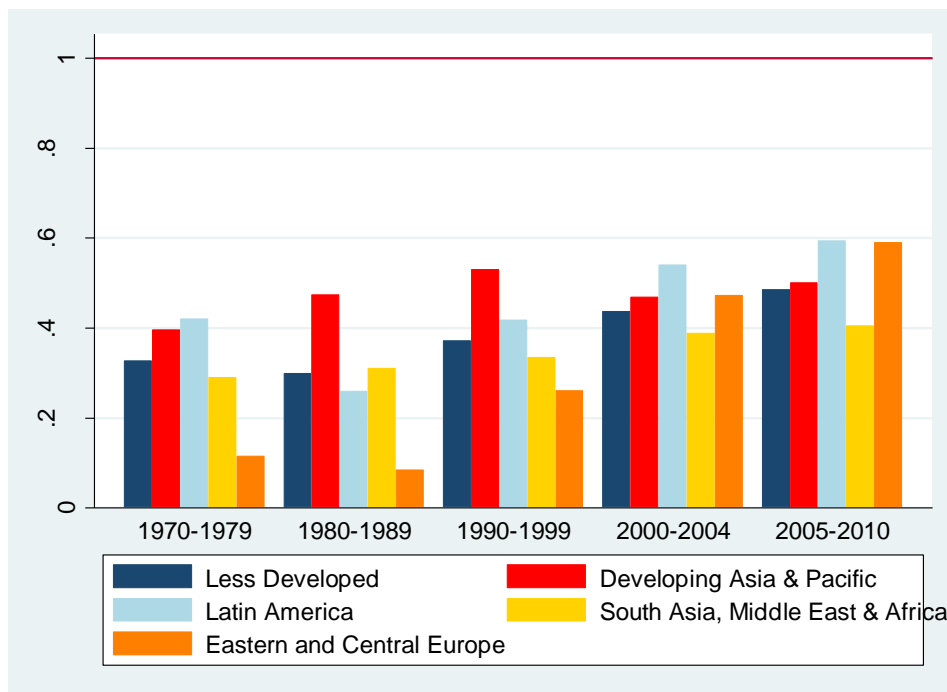


Figure 2: Comparison of *KAOPEN* Across Different Income Groups



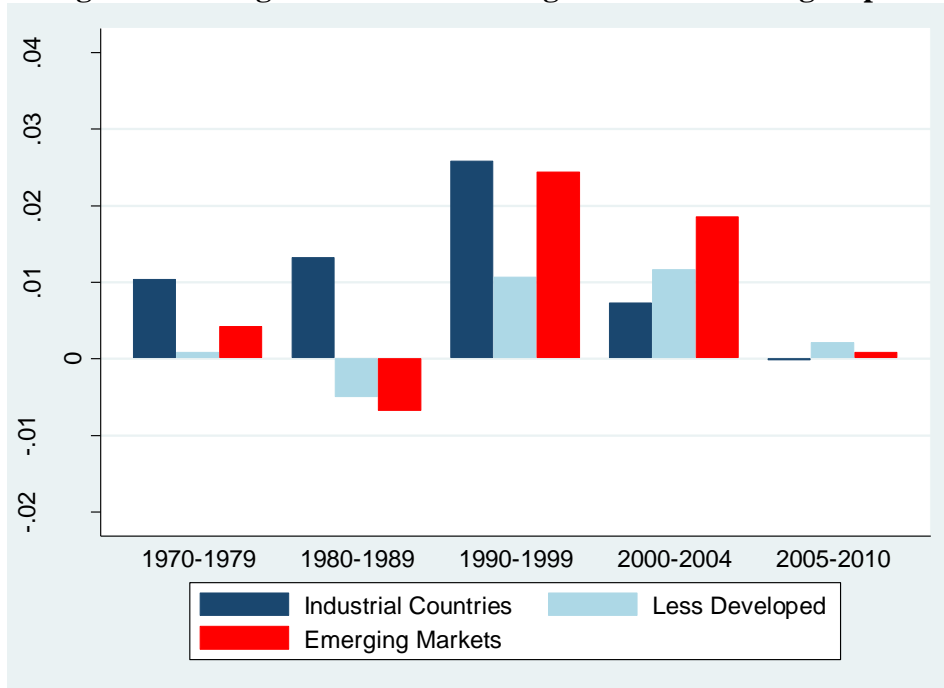
Note: The maximal value of *KAOPEN* is indexed as 1.00 for the sake of easier comparison.

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



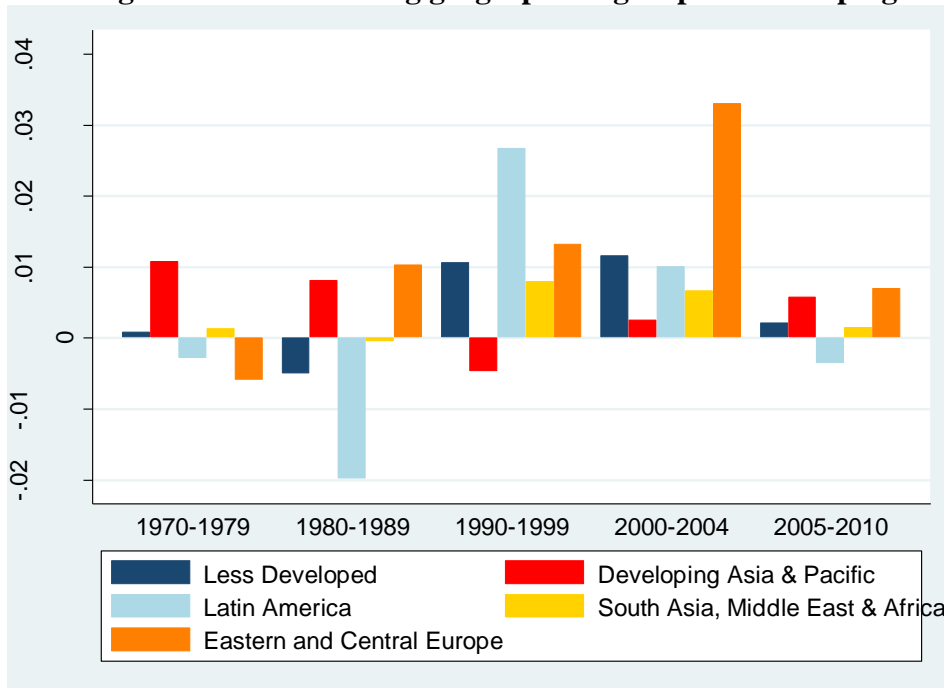
Note: The maximal value of *KAOPEN* is indexed as 1.00.

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).