

Figure 1: Volatility and Development. Averages from 1960–1998

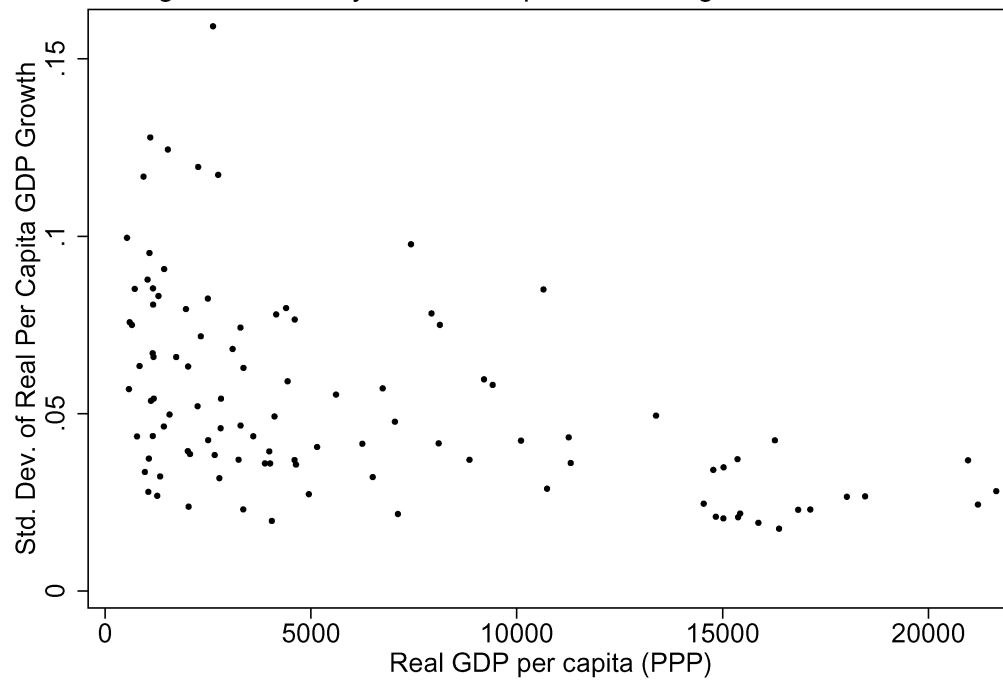


Figure 2: Sectoral\_Risk  
Mean adjusted smooth

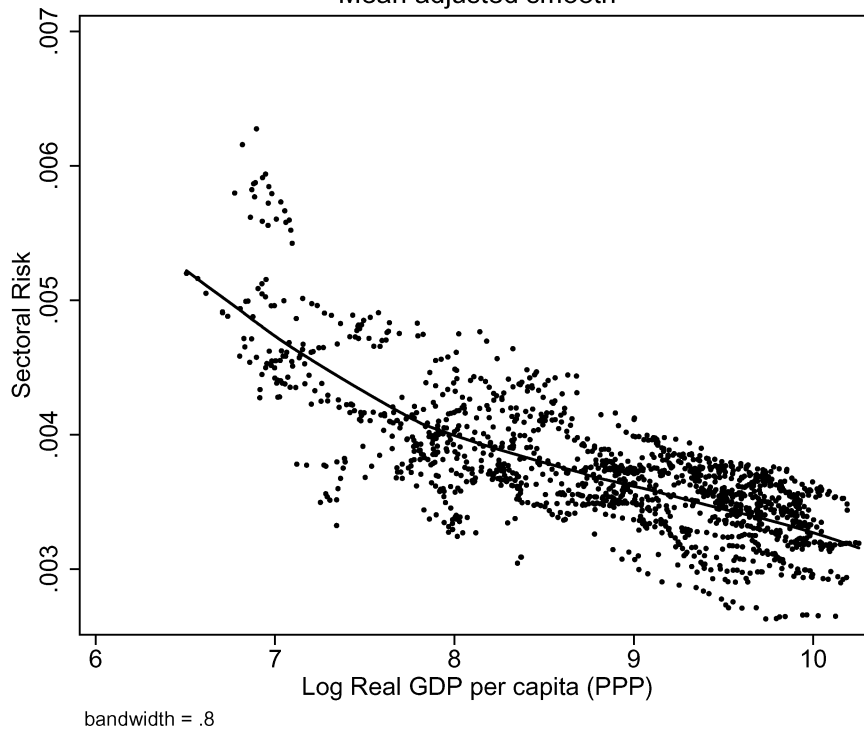


Figure 3: Sectoral\_Risk (within)  
Mean adjusted smooth

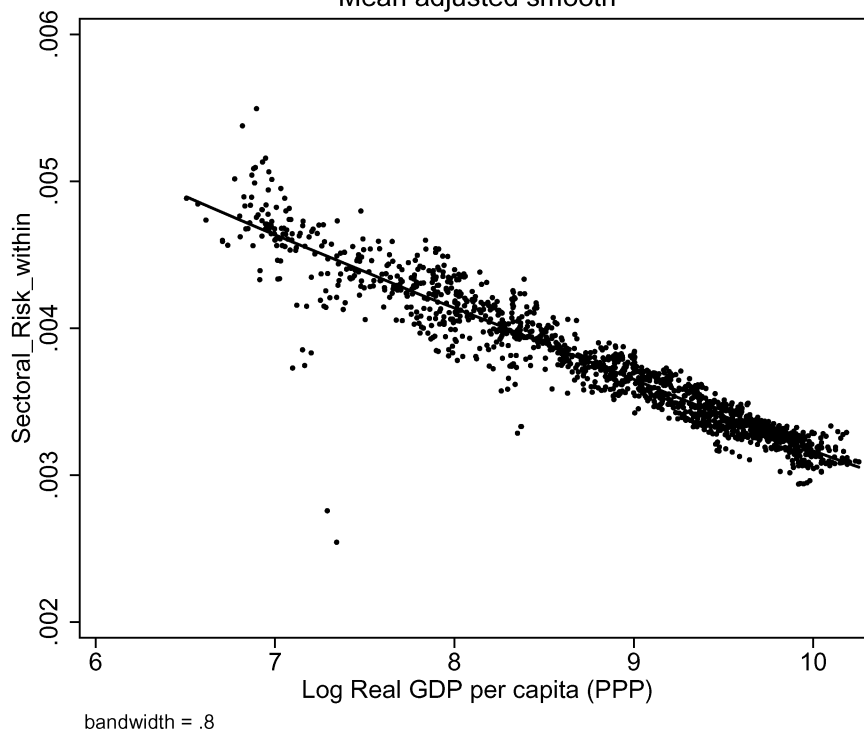


Figure 4: Weighted\_Herfindahl  
Mean adjusted smooth

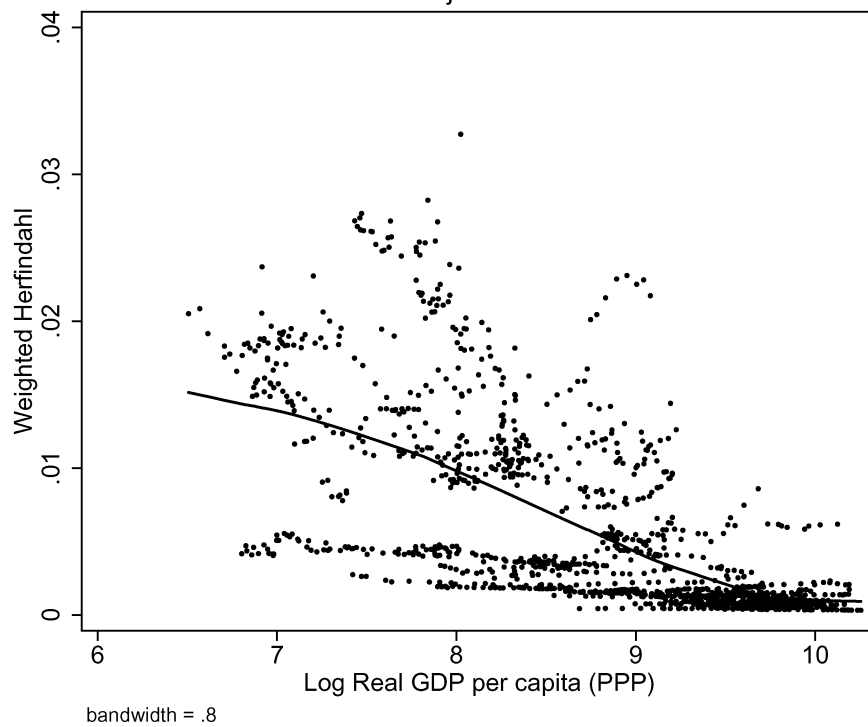


Figure 5: Weighted\_Herfindahl (within)  
Mean adjusted smooth

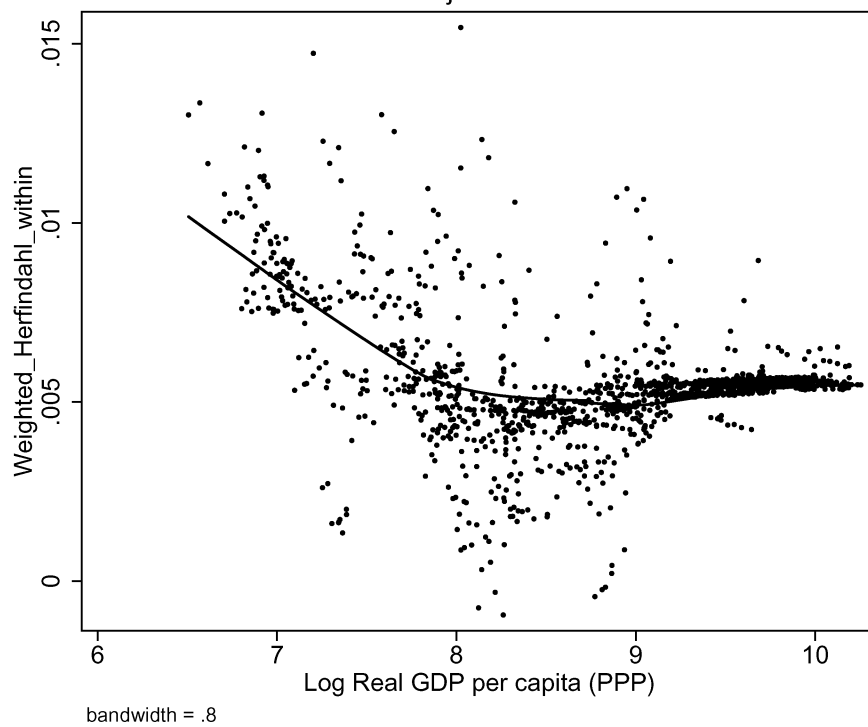


Figure 6: Unweighted\_Herfindahl  
Mean adjusted smooth

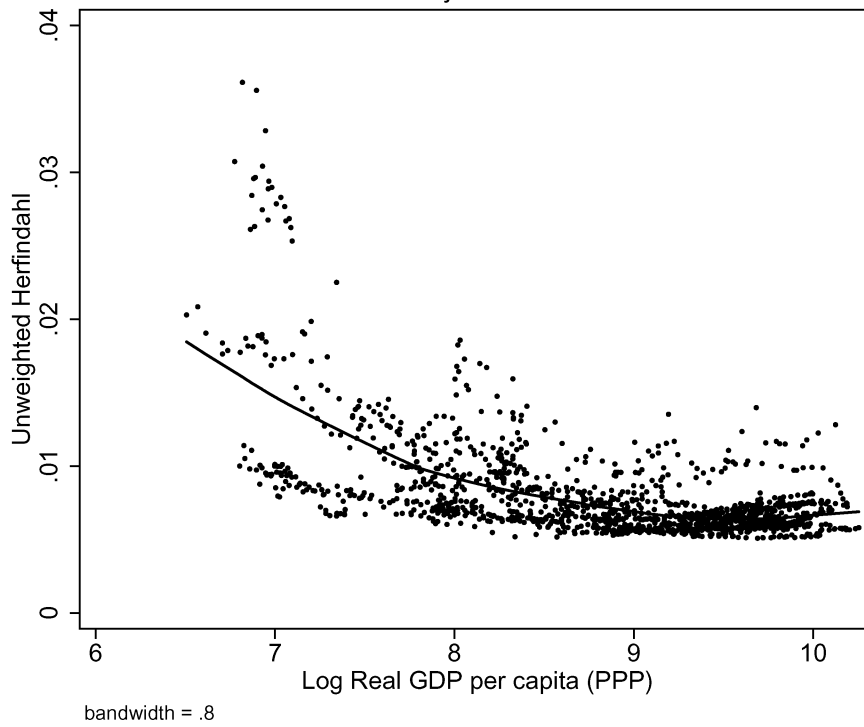


Figure 7: Unweighted\_Herfindahl (within)  
Mean adjusted smooth

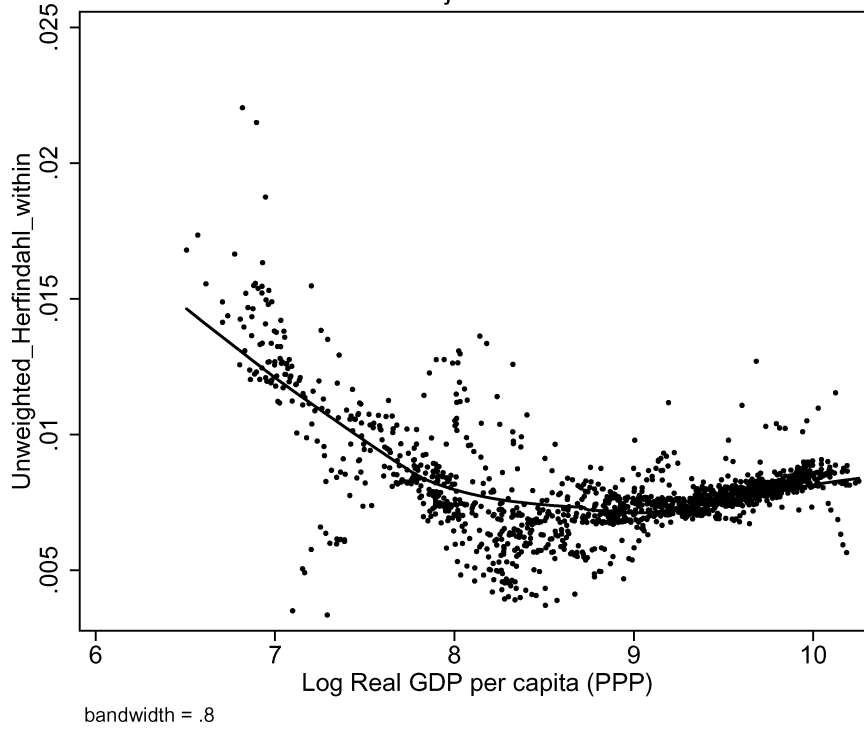


Figure 8: Textiles  
Mean adjusted smooth

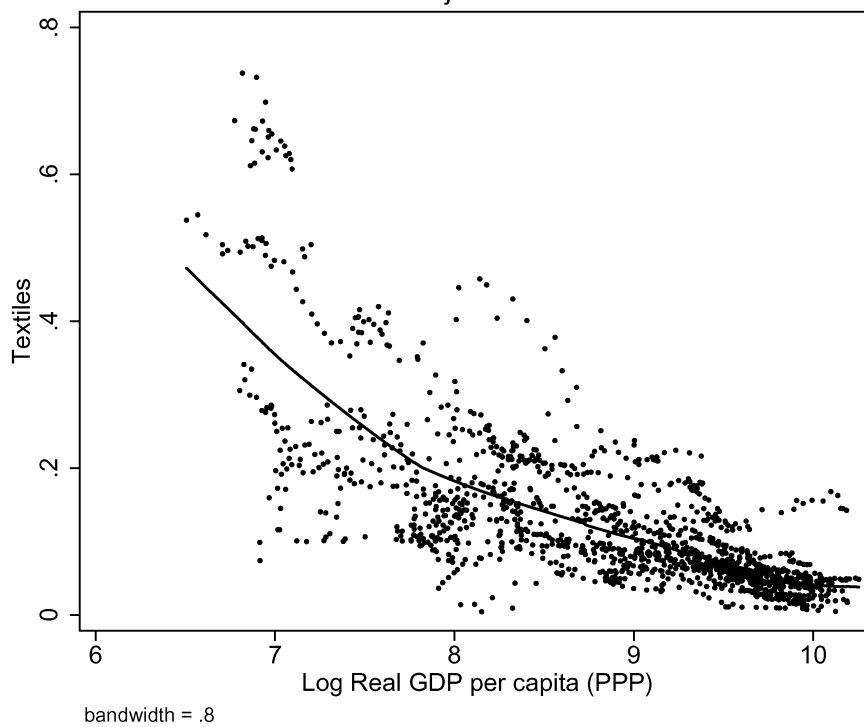


Figure 9: Textiles (within)  
Mean adjusted smooth

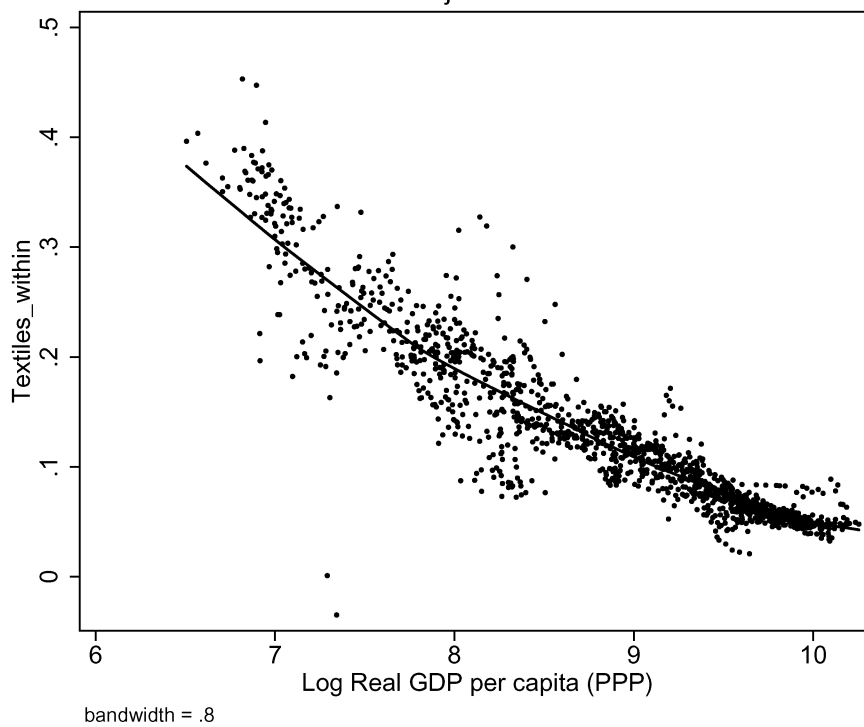


Figure 10: Electric\_Machinery  
Mean adjusted smooth

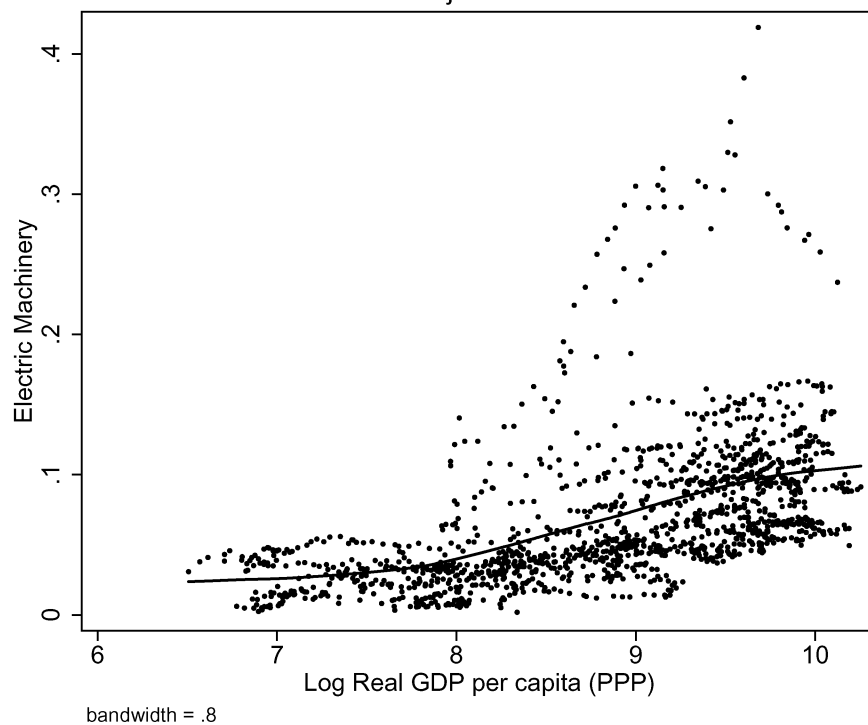


Figure 11: Electric\_Machinery (within)  
Mean adjusted smooth

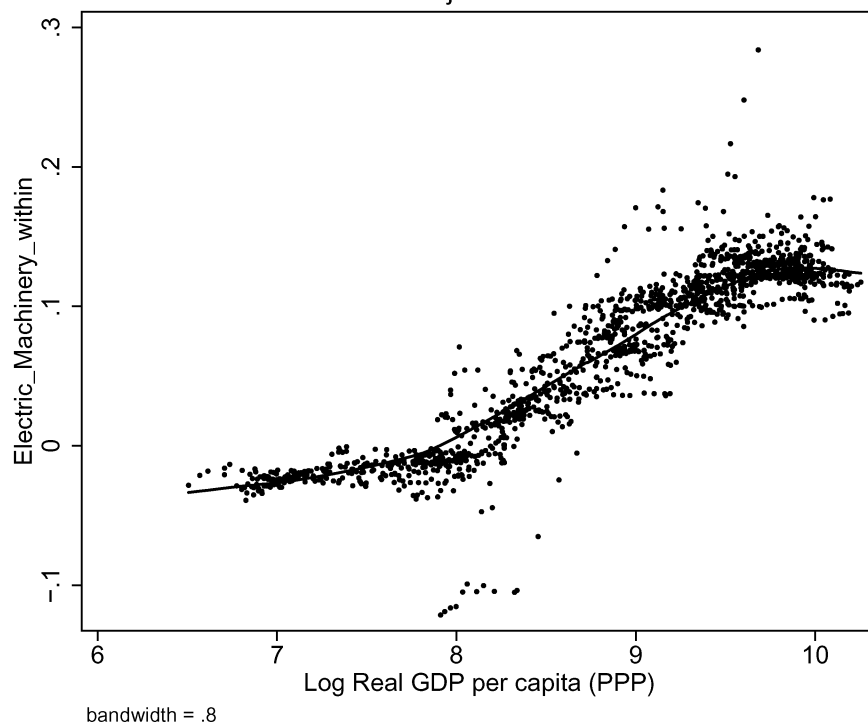


Figure 12: Country\_Risk (1980)

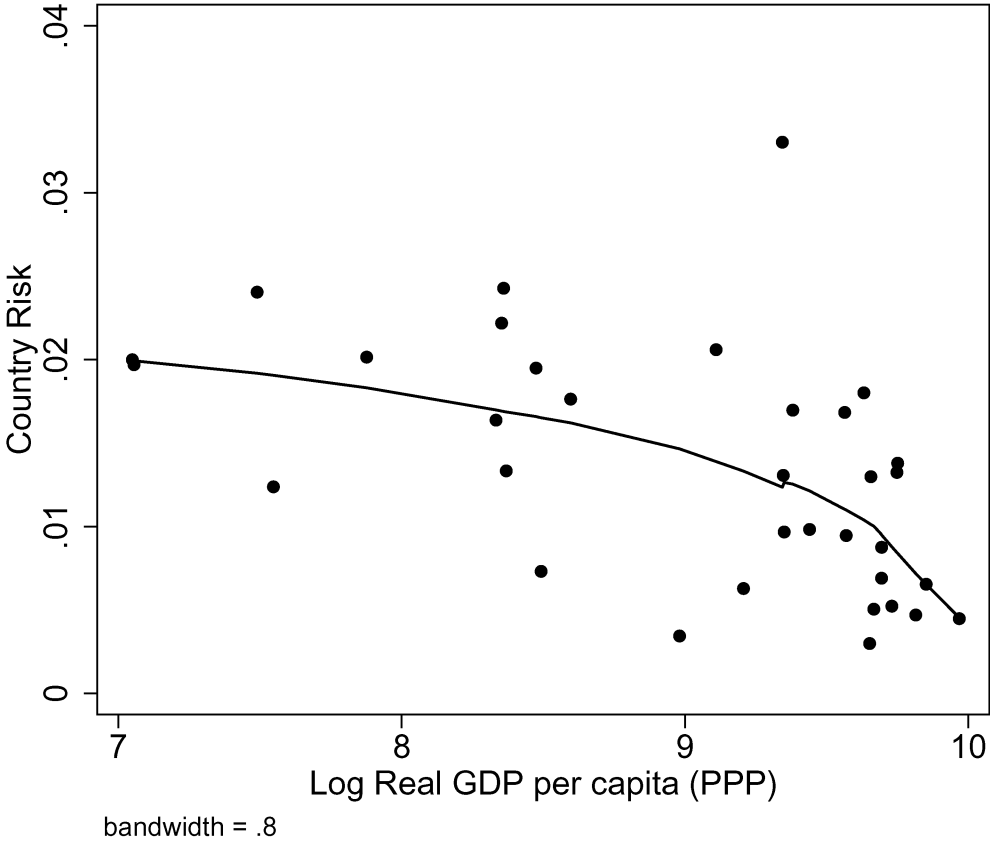


Figure 13: Sector\_Country\_Covariance  
Mean adjusted smooth

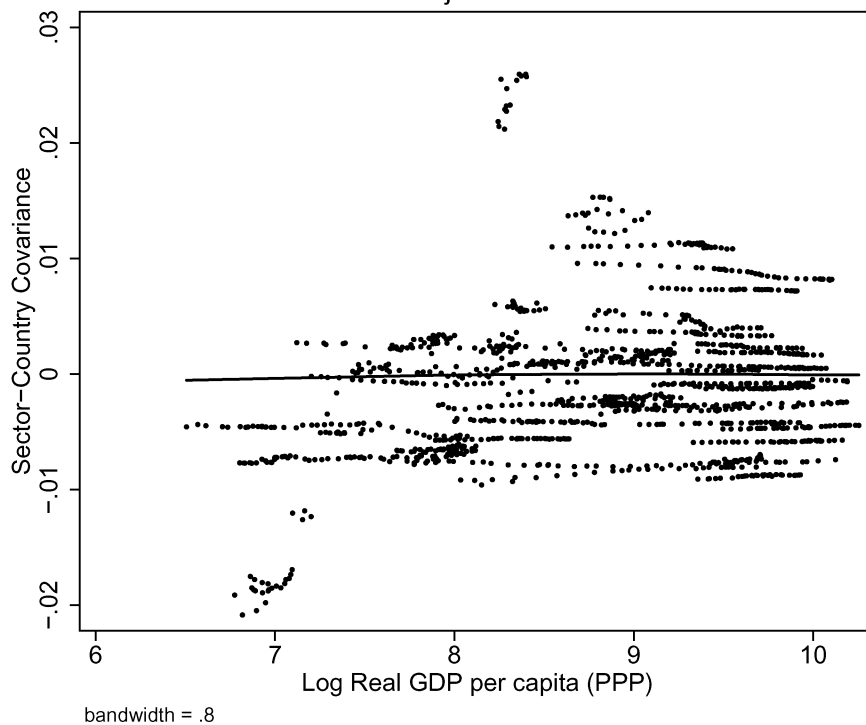


Figure 14: Sector\_Country\_Covariance (within)  
Mean adjusted smooth

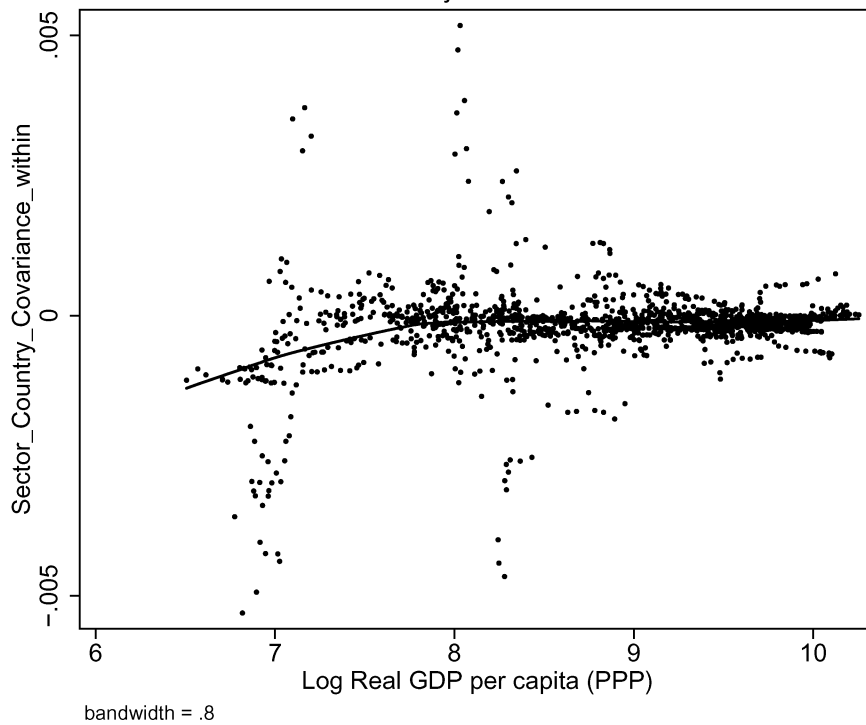




Figure 15: Dist\_to\_Own\_Frontier

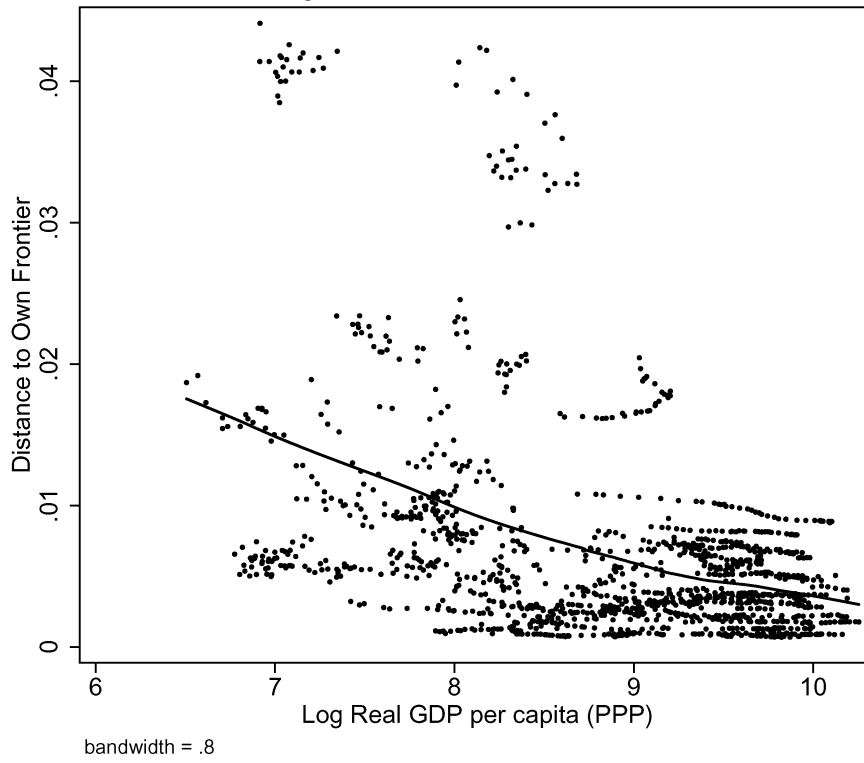
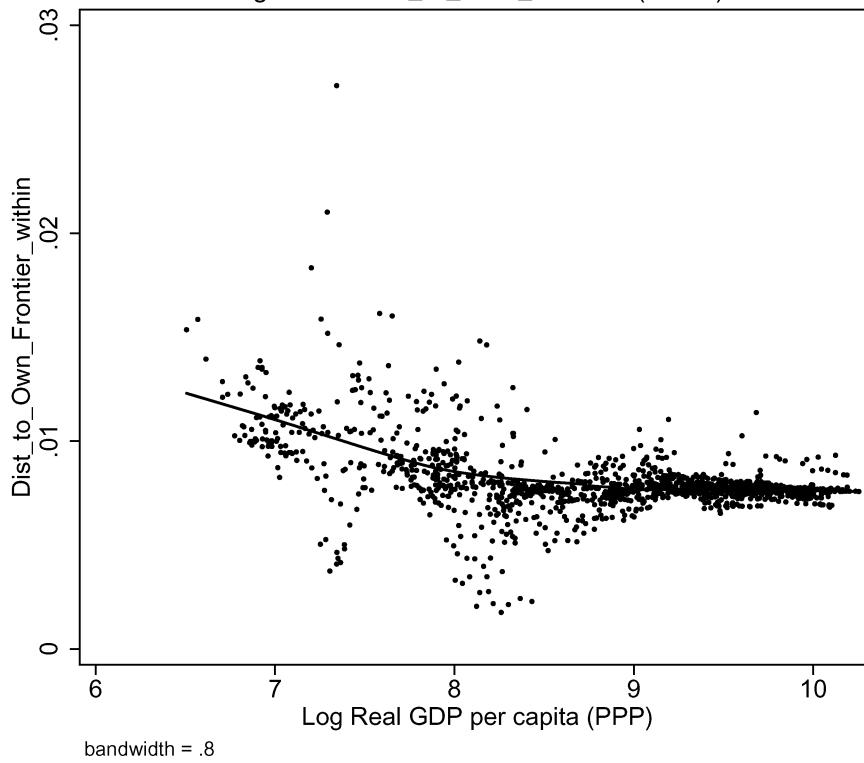


Figure 16: Dist\_to\_Own\_Frontier (within)



Distance of Own to World Frontier

Log Real GDP per capita (PPP)

bandwidth = .8

bandwidth = .8

Figure 18: Sectoral\_Risk  
Agriculture, Manufacturing, and Services

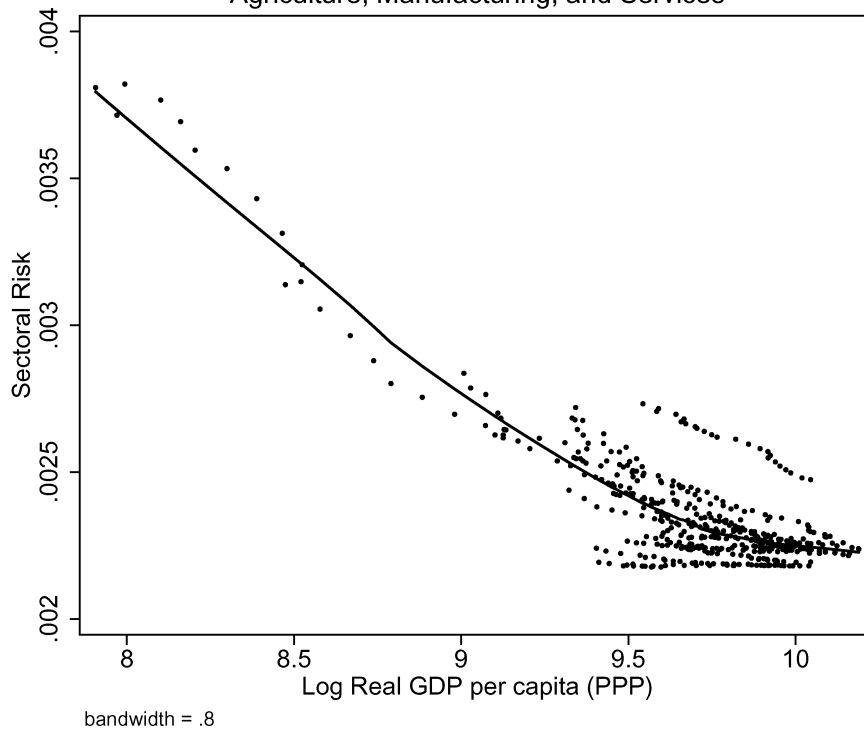


Figure 19: Sectoral\_Risk (within)  
Agriculture, Manufacturing, and Services

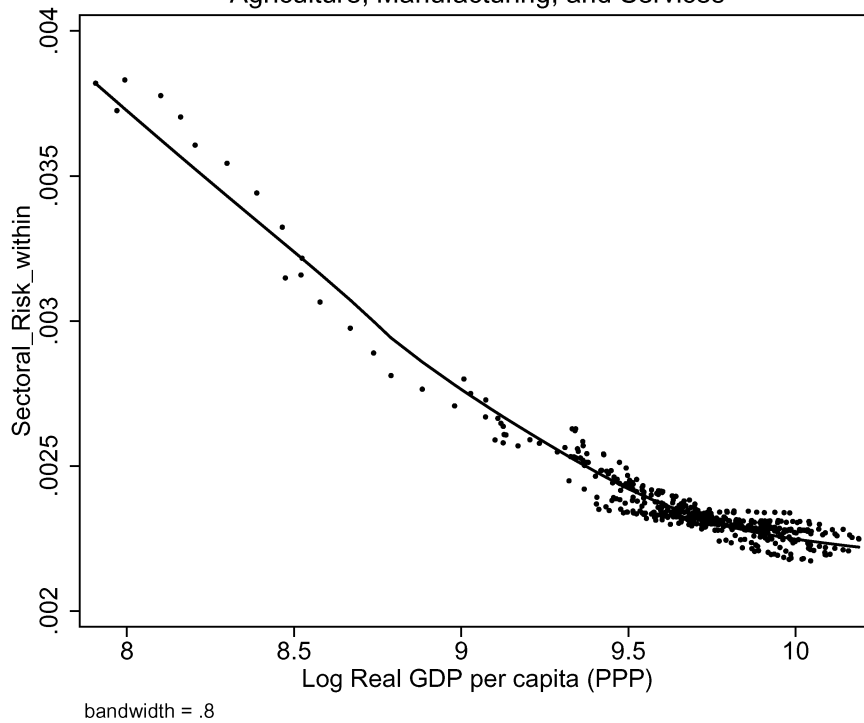


Figure 20. Sectoral Risk Before and After 1980

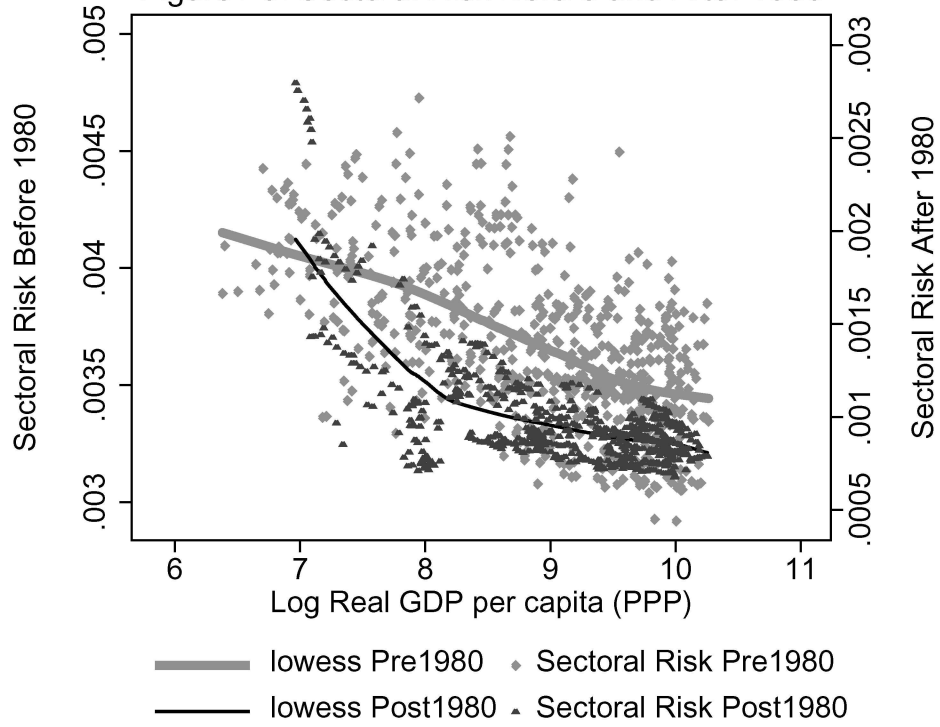
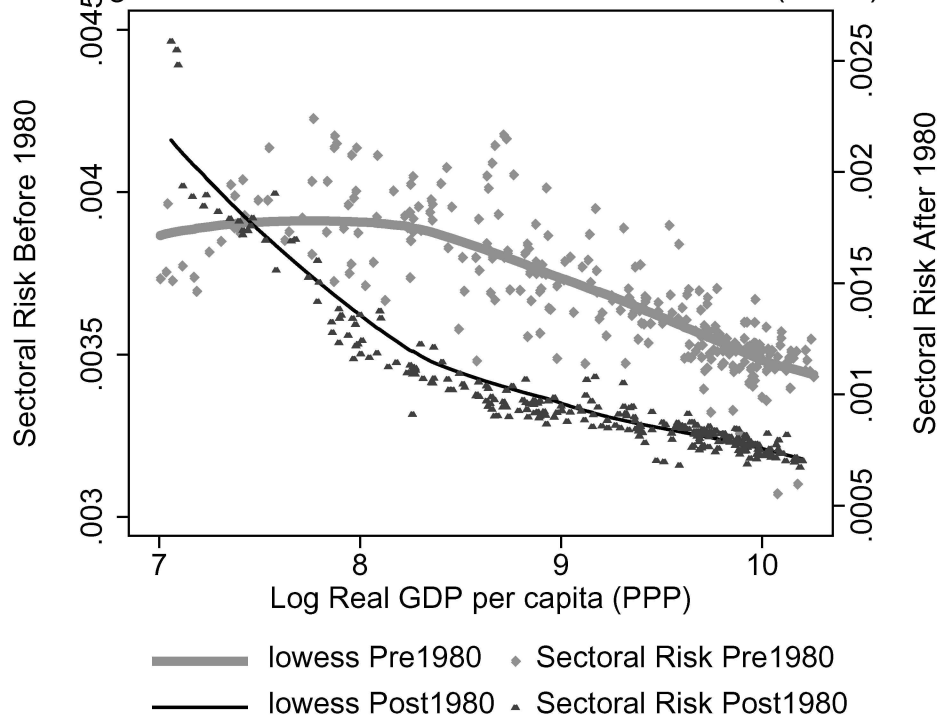


Figure 21. Sectoral Risk Before and After 1980 (within)



**Table 1. List of Countries**

Australia	Greece	Norway
Austria	Guatemala	Pakistan
Bangladesh	Hungary	Philippines
Belgium	India	Poland
Canada	Indonesia	Portugal
Chile	Iran	Singapore
China, Hong Kong	Ireland	South Africa
China, Taiwan	Israel	Spain
Colombia	Italy	Sri Lanka
Czechoslovakia	Japan	Sweden
Denmark	Kenya	Turkey
Ecuador	Korea, Republic of	United Kingdom
Egypt	Malaysia	United States of America
El Salvador	Netherlands	Venezuela
Finland	New Zealand	Yugoslavia
France	Nicaragua	Zimbabwe

**Table 2. List of Sectors**

1 Food products; Beverages; Tobacco
2 Textiles
3 Wearing apparel, except footwear
4 Leather products
5 Footwear, except rubber or plastic
6 Wood products, except furniture
7 Furniture, except metal
8 Paper and products
9 Printing and publishing
10 Industrial chemicals; Petroleum refineries; Petroleum and coal products
11 Rubber products
12 Plastic products
13 Pottery, china, earthenware; Glass; Other non-metallic mineral prod.
14 Iron and steel; Non-ferrous metals
15 Fabricated metal products; Machinery, except electrical
16 Machinery, electric
17 Transport equipment
18 Professional & scientific equipment
19 Other manufactured products

**Table 3. Different Dimensions of Risk, by Country, 1980.**

Country	Sectoral Risk (1)	Weighted Herfindah Index (2)	Country Risk (3)	Sector-Country Beta (4)	Overall Risk (5)
Australia	0.0037	0.0006	0.0132	-0.3309	0.0088
Austria	0.0036	0.0008	0.0051	0.0626	0.0101
Bangladesh	0.0059	0.0158	0.1625	-0.0574	0.1655
Bolivia	0.0041	0.0327	0.0704	-0.0431	0.1011
Canada	0.0037	0.0007	0.0065	-0.4478	0.0052
Chile	0.0041	0.0035	0.0176	0.0294	0.0263
Colombia	0.0036	0.0019	0.0133	-0.2086	0.0132
Denmark	0.0031	0.0009	0.0047	-0.1239	0.0075
Ecuador	0.0037	0.0117	0.0222	0.0569	0.0401
Egypt, Arab Rep.	0.0048	0.0254	0.0719	0.0007	0.1022
El Salvador	0.0040	0.0119	0.0164	0.1856	0.0383
Finland	0.0036	0.0012	0.0030	-0.7058	0.0035
France	0.0035	0.0005	0.0069	0.5300	0.0182
Ghana	0.0045	0.0184	0.2499	0.0868	0.3162
Greece	0.0038	0.0013	0.0170	0.3346	0.0334
Hong Kong, China	0.0029	0.0014	0.0098	-0.1438	0.0113
Hungary	0.0035	0.0079	0.1238	0.0082	0.1371
India	0.0044	0.0054	0.0197	-0.1807	0.0224
Indonesia	0.0042	0.0157	0.0124	-0.0238	0.0317
Iran, Islamic Rep.	0.0040	0.0096	0.5356	0.0029	0.5524
Ireland	0.0032	0.0017	0.0063	-0.2160	0.0085
Israel	0.0032	0.0013	0.0330	0.0684	0.0420
Italy	0.0038	0.0010	0.0180	-0.0296	0.0218
Japan	0.0034	0.0005	0.0130	0.3386	0.0257
Korea, Rep.	0.0038	0.0021	0.0195	-0.2008	0.0176
Malaysia	0.0037	0.0032	0.0073	-0.1786	0.0116
Netherlands	0.0032	0.0009	0.0088	0.0189	0.0132
New Zealand	0.0034	0.0019	0.0168	-0.2219	0.0147
Nicaragua	0.0039	0.0120	0.2081	0.0735	0.2546
Norway	0.0037	0.0014	0.0052	-0.0768	0.0096
Pakistan	0.0050	0.0171	0.0200	-0.1155	0.0374
Philippines	0.0037	0.0086	0.0710	-0.0470	0.0766
Portugal	0.0040	0.0041	0.0206	-0.0737	0.0257
Singapore	0.0029	0.0055	0.0131	-0.3131	0.0133
South Africa	0.0038	0.0017	0.0034	-0.3811	0.0063
Spain	0.0037	0.0016	0.0097	0.1854	0.0186
Sri Lanka	0.0039	0.0110	0.0240	-0.0999	0.0342
Sweden	0.0037	0.0009	0.0138	0.0691	0.0203
Turkey	0.0044	0.0039	0.0243	-0.0823	0.0285
United Kingdom	0.0035	0.0007	0.0095	0.1289	0.0161
United States	0.0033	0.0004	0.0045	-0.5147	0.0035
Uruguay	0.0037	0.0096	0.0573	0.0110	0.0719
Venezuela, RB	0.0037	0.0051	0.0406	-0.0264	0.0474
Zimbabwe	0.0039	0.0044	0.0202	0.0730	0.0314
<b>Median</b>	0.0037	0.0026	0.0169	-0.0364	0.0240
<b>Standard Deviation</b>	0.0055	0.0073	0.0924	0.2223	0.0995

**Table 4. Different Dimensions of Risk Relative to Overall Risk, by Country, 1980.**

Country	Sectoral Risk (1)	Weighted Herfindah Index (2)	Country Risk (3)	Sector-Country Covariance (4)	Overall Risk (5)
Australia	0.4175	0.0725	1.5084	-0.9983	1.0000
Austria	0.3579	0.0794	0.5000	0.0626	1.0000
Bangladesh	0.0354	0.0955	0.9818	-0.1128	1.0000
Bolivia	0.0402	0.3237	0.6961	-0.0600	1.0000
Canada	0.7227	0.1449	1.2693	-1.1369	1.0000
Chile	0.1558	0.1338	0.6711	0.0394	1.0000
Colombia	0.2710	0.1416	1.0079	-0.4204	1.0000
Denmark	0.4108	0.1146	0.6310	-0.1563	1.0000
Ecuador	0.0919	0.2914	0.5536	0.0630	1.0000
Egypt, Arab Rep.	0.0472	0.2484	0.7034	0.0010	1.0000
El Salvador	0.1035	0.3107	0.4273	0.1586	1.0000
Finland	1.0054	0.3434	0.8474	-1.1962	1.0000
France	0.1933	0.0260	0.3790	0.4017	1.0000
Ghana	0.0144	0.0581	0.7904	0.1372	1.0000
Greece	0.1126	0.0378	0.5090	0.3406	1.0000
Hong Kong, China	0.2582	0.1243	0.8668	-0.2493	1.0000
Hungary	0.0254	0.0573	0.9026	0.0147	1.0000
India	0.1955	0.2427	0.8797	-0.3179	1.0000
Indonesia	0.1314	0.4966	0.3906	-0.0186	1.0000
Iran, Islamic Rep.	0.0073	0.0174	0.9696	0.0057	1.0000
Ireland	0.3823	0.1971	0.7404	-0.3199	1.0000
Israel	0.0754	0.0298	0.7871	0.1077	1.0000
Italy	0.1730	0.0479	0.8282	-0.0491	1.0000
Japan	0.1332	0.0187	0.5057	0.3424	1.0000
Korea, Rep.	0.2178	0.1177	1.1105	-0.4461	1.0000
Malaysia	0.3194	0.2749	0.6312	-0.2255	1.0000
Netherlands	0.2412	0.0682	0.6654	0.0251	1.0000
New Zealand	0.2331	0.1296	1.1455	-0.5083	1.0000
Nicaragua	0.0151	0.0473	0.8173	0.1202	1.0000
Norway	0.3906	0.1455	0.5480	-0.0842	1.0000
Pakistan	0.1335	0.4558	0.5342	-0.1234	1.0000
Philippines	0.0477	0.1128	0.9266	-0.0871	1.0000
Portugal	0.1550	0.1607	0.8026	-0.1183	1.0000
Singapore	0.2153	0.4171	0.9835	-0.6159	1.0000
South Africa	0.5944	0.2758	0.5458	-0.4160	1.0000
Spain	0.1987	0.0863	0.5217	0.1934	1.0000
Sri Lanka	0.1144	0.3230	0.7031	-0.1406	1.0000
Sweden	0.1812	0.0466	0.6784	0.0938	1.0000
Turkey	0.1535	0.1350	0.8516	-0.1401	1.0000
United Kingdom	0.2153	0.0446	0.5884	0.1517	1.0000
United States	0.9354	0.1024	1.2819	-1.3197	1.0000
Uruguay	0.0517	0.1333	0.7975	0.0175	1.0000
Venezuela, RB	0.0790	0.1084	0.8579	-0.0453	1.0000
Zimbabwe	0.1253	0.1394	0.6416	0.0937	1.0000
<b>Median</b>	0.1644	0.1270	0.7637	-0.0546	1.0000
<b>Standard Deviation</b>	0.2236	0.1228	0.2465	0.3904	0.0000

**Table 5. Variance and Correlations, by Sector**

Sector	Standard Deviation	Average Correlation
1 Food products; Beverages; Tobacco	0.0723	0.5821
2 Textiles	0.0885	0.6752
3 Wearing apparel, except footwear	0.0575	0.5905
4 Leather products	0.0835	0.6491
5 Footwear, except rubber or plastic	0.0904	0.6695
6 Wood products, except furniture	0.0881	0.7152
7 Furniture, except metal	0.0609	0.5835
8 Paper and products	0.1008	0.5339
9 Printing and publishing	0.0524	0.7238
10 Industrial chemicals; Petroleum refineries; Petroleum and coal products	0.0662	0.6192
11 Rubber products	0.0976	0.6440
12 Plastic products	0.0760	0.6977
13 Pottery, china, earthenware; Glass; Other non-metallic mineral prod.	0.0663	0.6925
14 Iron and steel; Non-ferrous metals	0.1310	0.6388
15 Fabricated metal products; Machinery, except electrical	0.0510	0.7072
16 Machinery, electric	0.0598	0.5746
17 Transport equipment	0.0905	0.5320
18 Professional & scientific equipment	0.0598	0.5203
19 Other manufactured products	0.0749	0.6443



**Table 6. Different Dimensions of Risk and Economic Development, 1963-1998**

Linear Relation		Dependent Variable:							
	Sectoral risk		Weighted Herfindahl Index		Country risk	Sector-country beta		Overall risk	
	Overall	Within	Overall	Within	Overall	Overall	Within	Overall	Within
Log GDP per capita	-0.00043**	-0.00049**	-0.00497**	-0.00028*	-0.03094*	-0.01381	0.00614**	-0.03646**	-0.00064**
(constant PPP \$)	(0.00006)	(0.00001)	(0.00081)	(0.00014)	(0.01151)	(0.03352)	(0.00084)	(0.01279)	(0.00016)
R-squared	0.570	0.460	0.480	0.000	0.050	0.000	0.040	0.060	0.010

Quadratic Relation		Dependent Variable:							
	Sectoral risk		Weighted Herfindahl Index		Country risk	Sector-country beta		Overall risk	
	Overall	Within	Overall	Within	Overall	Overall	Within	Overall	Within
Log GDP per capita	-0.00243*	-0.00068**	-0.00927	-0.01604**	0.31883	0.52797	0.00987	0.33743	-0.01339**
(constant PPP \$)	(0.00100)	(0.00017)	(0.01291)	(0.00156)	(0.35344)	(0.44234)	(0.01036)	(0.38025)	(0.00183)
Log GDP per capita	0.00012*	0.00001	0.00025	0.00089**	-0.02031	-0.03141	-0.00031	-0.02175	0.00072**
squared	(0.00006)	(0.00001)	(0.00073)	(0.00009)	(0.02054)	(0.02663)	(0.00058)	(0.02207)	(0.00010)
R-squared	0.600	0.480	0.480	0.070	0.060	0.010	0.020	0.080	0.050
Critical Point	34118.36	3.96E+13	95369641.00	8040.20	2561.85	4469.78	6511969.00	2339.18	10892.42
S.E. of Critical Point	(27544.50)	(7.60e+14)	(2.65e+09)	(585.49)	(2068.19)	(1998.94)	(2691222.00)	(2130.34)	(1352.27)

Note: Constants included---not reported. Clustered standard errors in parentheses. \* significant at 5%; \*\* significant at 1%. Number of countries: 46. Standard errors for turning points computed with Delta method. Number of observations=1427.

**Table 7. Risk-Return Frontier, 1980**

Country	Mean (1)	Overall Risk (2)	Own Min Variance (3)	World Min Variance (4)	Dist to Own Frontier (5)=(2)-(3)	Dist from Own to World Frontier (6)=(3)-(4)
Australia	22.9397	0.0088	0.0051	0.0019	0.0037	0.0034
Austria	25.6378	0.0101	0.0068	0.0018	0.0033	0.0051
Bangladesh	6.3192	0.1655	0.1594	0.0030	0.0063	0.0014
Canada	40.7767	0.0052	0.0042	0.0017	0.0010	0.0025
Chile	51.2758	0.0263	0.0246	0.0021	0.0017	0.0224
Colombia	31.7987	0.0132	0.0121	0.0017	0.0011	0.0105
Denmark	21.1585	0.0075	0.0061	0.0020	0.0013	0.0045
Ecuador	25.8521	0.0401	0.0352	0.0018	0.0049	0.0335
Egypt, Arab Rep.	9.4068	0.1022	0.0815	0.0028	0.0212	0.0011
El Salvador	25.1740	0.0383	0.0315	0.0018	0.0068	0.0299
Finland	21.1884	0.0035	0.0027	0.0020	0.0008	0.0010
France	25.4345	0.0182	0.0101	0.0018	0.0082	0.0084
Ghana	8.1426	0.3162	0.2755	0.0029	0.0407	0.2739
Greece	22.5571	0.0334	0.0261	0.0019	0.0072	0.0245
Hong Kong, China	17.8622	0.0113	0.0093	0.0021	0.0021	0.0076
Hungary	15.7853	0.1371	0.1206	0.0023	0.0165	0.1189
India	8.4743	0.0224	0.0156	0.0028	0.0067	0.0012
Indonesia	14.2262	0.0317	0.0206	0.0024	0.0111	0.0007
Iran, Islamic Rep.	12.1252	0.5524	0.5206	0.0025	0.0344	0.0009
Ireland	43.9543	0.0085	0.0061	0.0018	0.0024	0.0043
Israel	22.1156	0.0420	0.0361	0.0019	0.0065	0.0003
Italy	34.4091	0.0218	0.0146	0.0017	0.0071	0.0130
Japan	37.7062	0.0257	0.0160	0.0017	0.0097	0.0143
Korea, Rep.	34.6033	0.0176	0.0154	0.0017	0.0021	0.0138
Malaysia	21.0488	0.0116	0.0089	0.0020	0.0027	0.0072
Netherlands	32.3246	0.0132	0.0096	0.0017	0.0036	0.0079
New Zealand	16.7913	0.0147	0.0086	0.0022	0.0061	0.0070
Norway	23.2408	0.0096	0.0064	0.0019	0.0032	0.0047
Pakistan	13.7450	0.0374	0.0228	0.0024	0.0150	0.0008
Philippines	20.5728	0.0766	0.0692	0.0020	0.0074	0.0675
Portugal	19.3095	0.0257	0.0226	0.0021	0.0031	0.0210
Singapore	25.4647	0.0133	0.0092	0.0018	0.0041	0.0075
South Africa	24.4271	0.0063	0.0053	0.0018	0.0010	0.0037
Spain	26.7758	0.0186	0.0152	0.0018	0.0034	0.0001
Sri Lanka	11.7718	0.0342	0.0256	0.0026	0.0086	0.0239
Sweden	28.1124	0.0203	0.0151	0.0017	0.0053	0.0001
Turkey	38.9237	0.0285	0.0254	0.0017	0.0031	0.0237
United Kingdom	29.3940	0.0161	0.0088	0.0017	0.0073	0.0071
United States	43.1835	0.0035	0.0018	0.0018	0.0017	0.0000
Uruguay	27.1270	0.0719	0.0674	0.0018	0.0044	0.0658
Venezuela, RB	35.4876	0.0474	0.0449	0.0017	0.0024	0.0433
Zimbabwe	19.7212	0.0314	0.0212	0.0020	0.0102	0.0195
<b>Median</b>	22.5571	0.0224	0.0156	0.0019	0.0063	0.0072
<b>Standard Deviation</b>	3.2677	0.0082	0.0075	0.0001	0.0013	0.0091

**Table 8. Distance to the Frontiers and Economic Development, 1963-1998**

Linear Relation	Dependent Variable:		
	Distance to Own Frontier		Distance from Own to World Frontier
	Overall	Within	Overall
Log GDP per capita (constant	-0.00365**	-0.00061**	-0.01596*
	(0.00126)	(0.00014)	(0.00946)
R-squared	0.070	0.011	0.090

Quadratic Relation	Dependent Variable:		
	Distance to Own Frontier		Distance from Own to World Frontier
	Overall	Within	Overall
Log GDP per capita (constant	0.00660	-0.01109**	0.05060
PPP \$)	(0.03652)	(0.00170)	(0.18605)
Log GDP per capita squared	-0.00060	0.00059**	-0.00387
	(0.00210)	(0.00010)	(0.01040)
R-squared	0.070	0.040	0.100
Critical Point	252.78	11727.64	688.15
S.E. of Critical Point	(2827.14)	(1723.14)	(4482.75)

Note: Constants included---not reported. Clustered standard errors in parentheses. \* significant at 5%; \*\* significant at 1%. Number of countries: 46. Standard errors for turning points computed with Delta method. Number of observations=1427.