

## ONLINE APPENDIX

Table A1: List of Countries in Our Sample

Argentina	Malaysia
Australia	Mexico
Austria	Morocco
Bahrain	Nigeria
Belgium	Netherlands
Brazil	Norway
Canada	New Zealand
Chile	Oman
China	Pakistan
Colombia	Peru
Czech Republic	Philippines
Denmark	Poland
Egypt	Portugal
Finland	Russian Federation
France	Saudi Arabia
Germany	Singapore
Greece	Slovak Republic
Hong Kong	South Africa
Hungary	Spain
Indonesia	Sri Lanka
India	Sweden
Ireland	Switzerland
Iceland	Thailand
Israel	Turkey
Italy	Taiwan
Japan	United States
Jordan	United Kingdom
Korea	Venezuela
Luxembourg	Zimbabwe

## Table A2: ISIC Manufacturing Sectors

Food manufacturing  
Beverage industries  
Tobacco manufactures  
Textiles  
Wearing apparel, except footwear  
Leather and products of leather, leather substitutes and fur, except footwear and wearing apparel  
Footwear, except vulcanized or moulded rubber or plastic footwear  
Wood and wood and cork products, except furniture  
Furniture and fixtures, except primarily of metal  
Paper and paper products  
Printing, publishing and allied industries  
Industrial chemicals  
Other chemical products  
Petroleum refineries  
Miscellaneous products of petroleum and coal  
Rubber products  
Plastic products not elsewhere classified  
Pottery, china and earthenware  
Glass and glass products  
Other non-metallic mineral products  
Iron and steel basic industries  
Non-ferrous metal basic industries  
Fabricated metal products, except machinery and equipment  
Machinery except electrical  
Electrical machinery apparatus, appliances and supplies  
Transport equipment  
Professional and scientific and measuring and controlling equipment not elsewhere classified  
Other Manufacturing Industries

Figure A1: Stock Indices for Various Country-Pairs

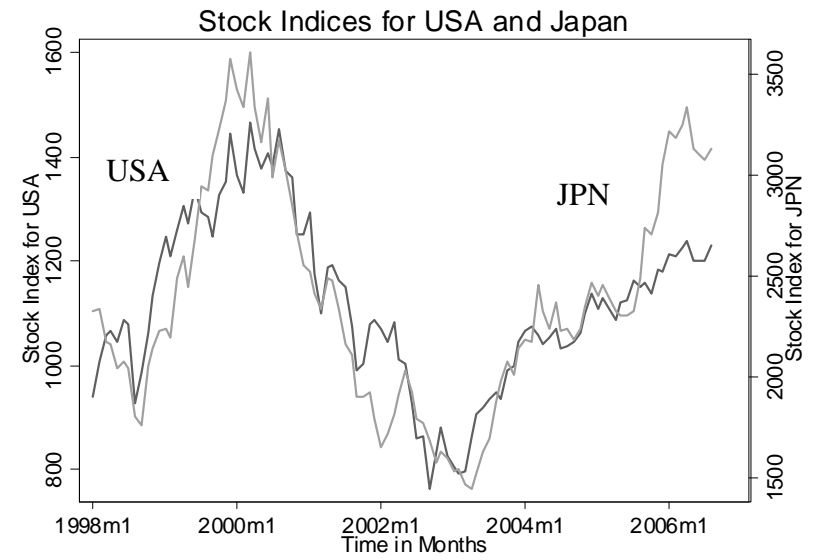
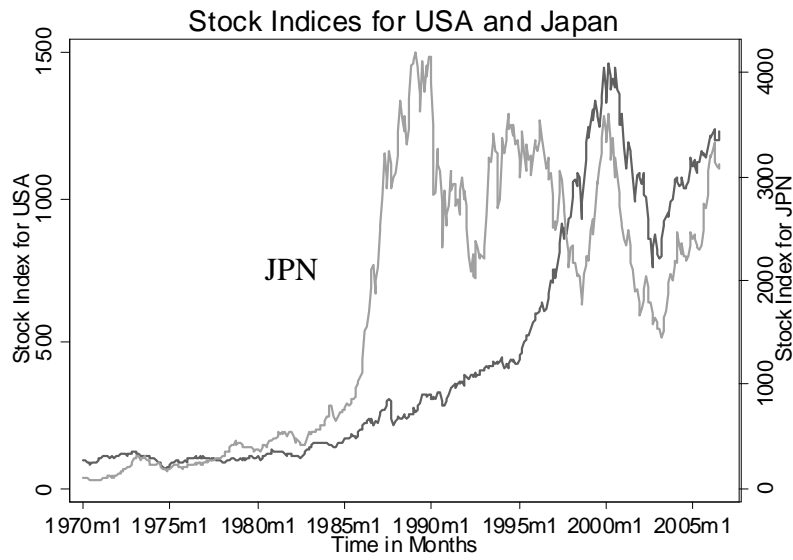
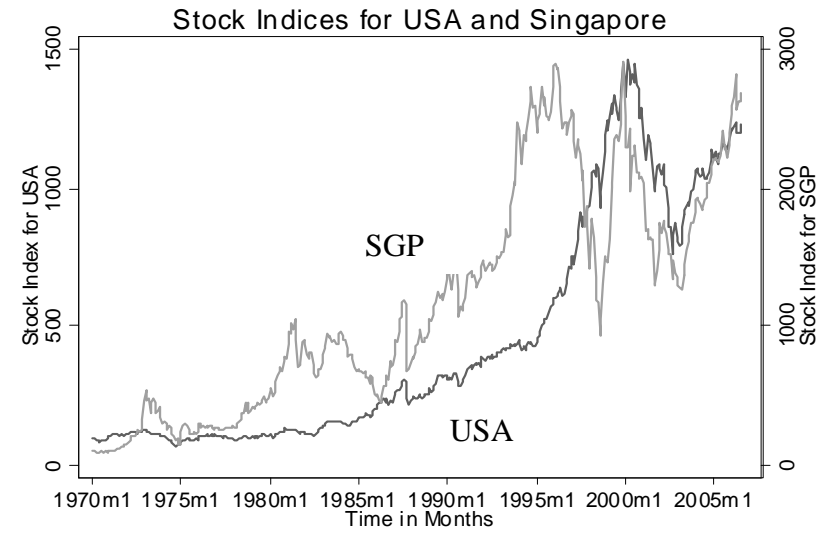
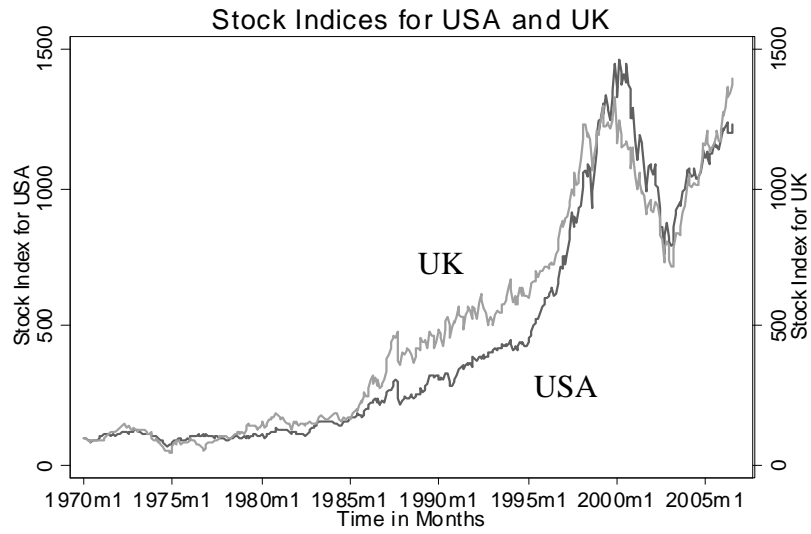


Figure A2: Distribution of Stock Correlations (1985 and 1995)

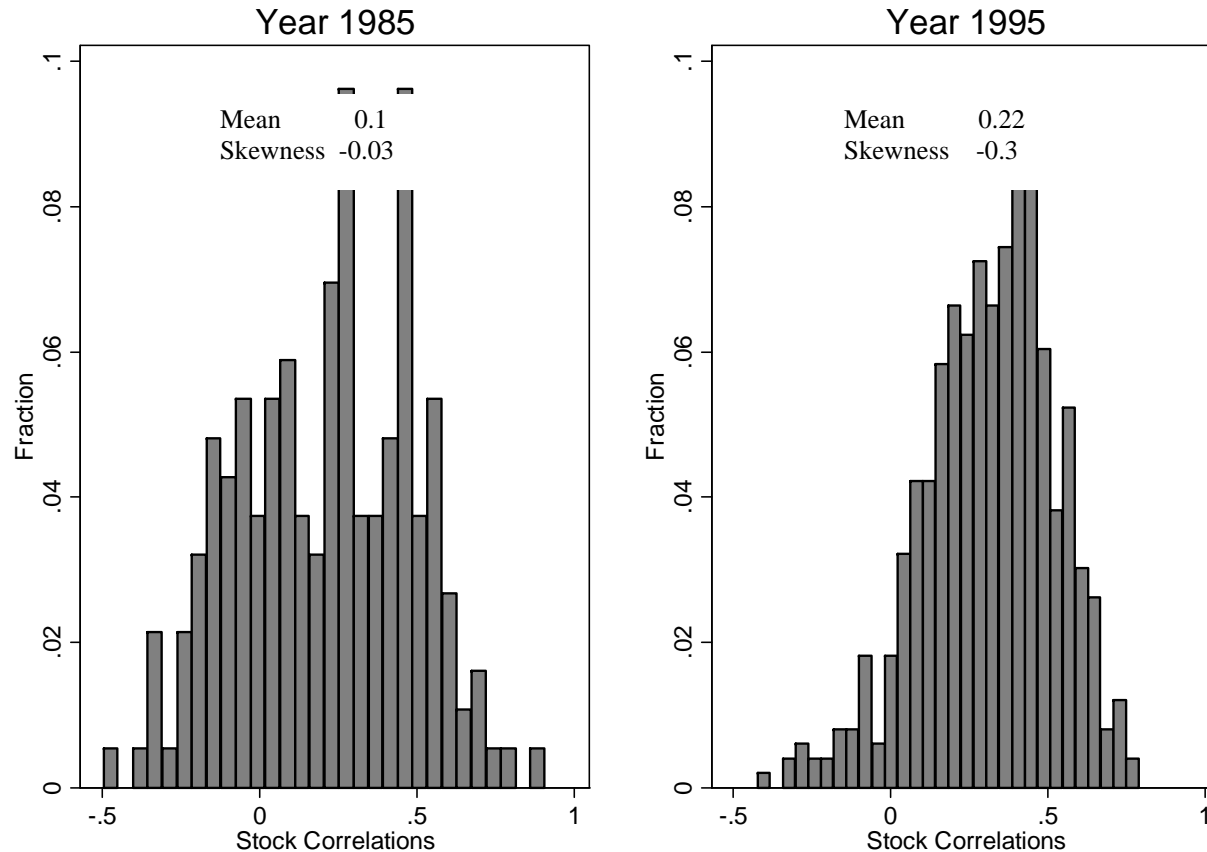
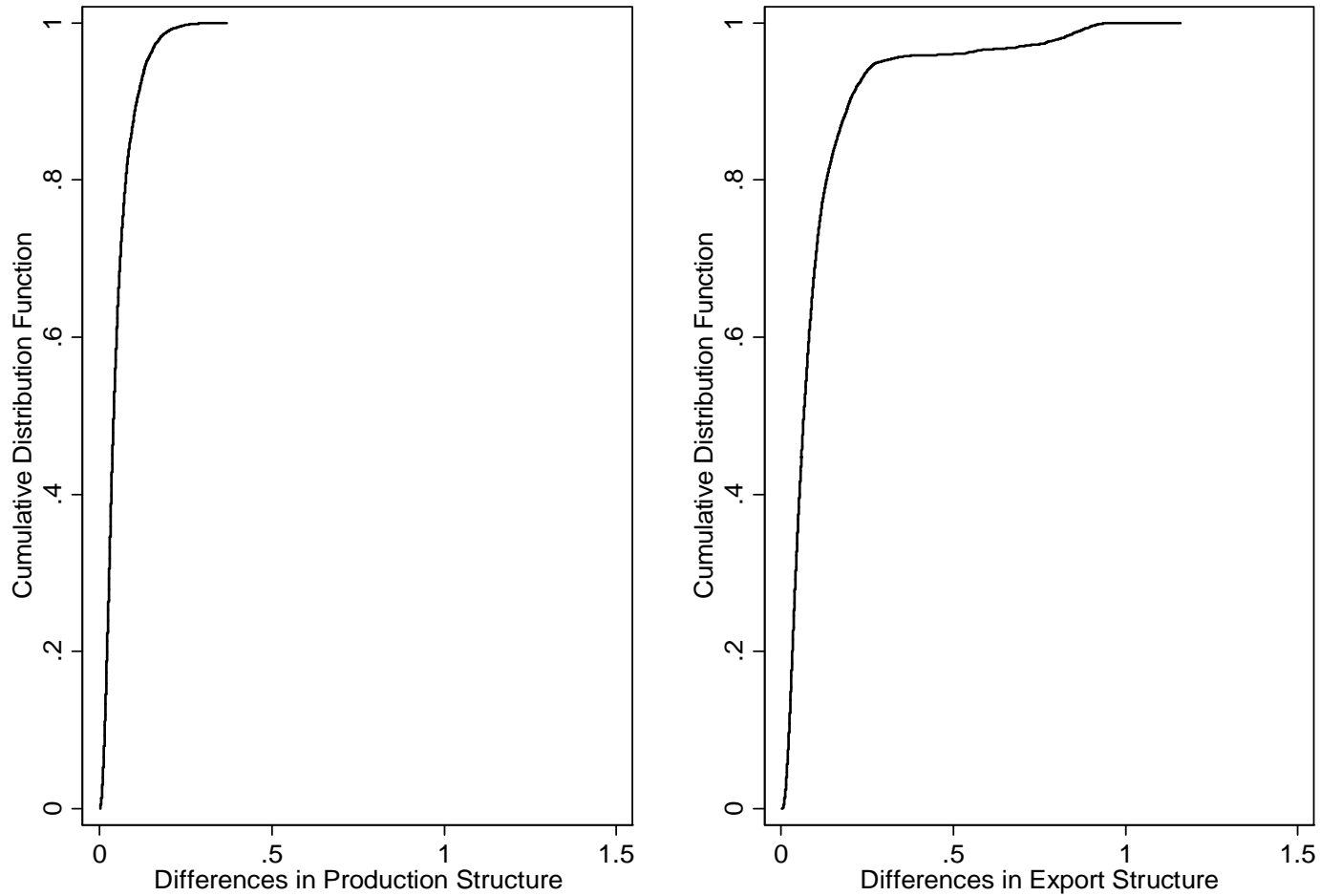


Figure A2 shows the distribution of the annual unconditional correlations (along with the mean) for two years - 1985 and 1995. In 1985, this ranges from a low of -0.82 between New Zealand and Philippines to a high of 0.98 between Malaysia and Singapore. In 1995, the highest correlation is between Netherlands and Belgium and lowest between Nigeria and France. Comparing the distributions for the two time periods, we observe a doubling of the mean unconditional correlations. Second, both distributions are negatively skewed - while the skewness measure in 1985 is -0.03, in 1995 there is a ten-fold jump in the skewness measure (in absolute terms) to -0.33.

Figure A3: Empirical Distribution Function for Differences in Production and Export Structure



In Figure A3, comparing the empirical distribution for production and trade structure, we find that for 80% of the sample, the variable "difference is production structure" takes the value less than 0.1, while for the variable "difference in export structure" only 60% of the sample shows a value of less than 0.1. We also tested whether the distribution of differences in industrial structure in 1995 is

significantly different from the same in 1985. We also performed a Kolmogorov-Smirnov test for non-parametric test for equality of distribution functions.

**Kolmogorov-Smirnov Non-Parametric Test**

Group	D	p-value
<b>1985:</b>	0.0682	0.003
<b>1995:</b>	-0.0001	0.893
<b>Combined K-S:</b>	0.0682	0.005

The first line tests the hypothesis that the differences in production structure in 1985 are smaller than those in 1995. The largest difference between the distribution functions is 0.0682. The approximate p-value for this is 0.003, which is significant so the hypothesis is rejected. The second line tests the hypothesis that the differences in production structure in 1985 are larger than those in 1995. The largest difference between the distribution functions in this direction is 0.0001. The p-value for this difference is 0.893. So we cannot reject this null. A combined test suggests the same – that the difference in production structure was larger in 1985 than in 1995.

Figure A4: Distribution of Difference in Production Structure in 1985 and 1995

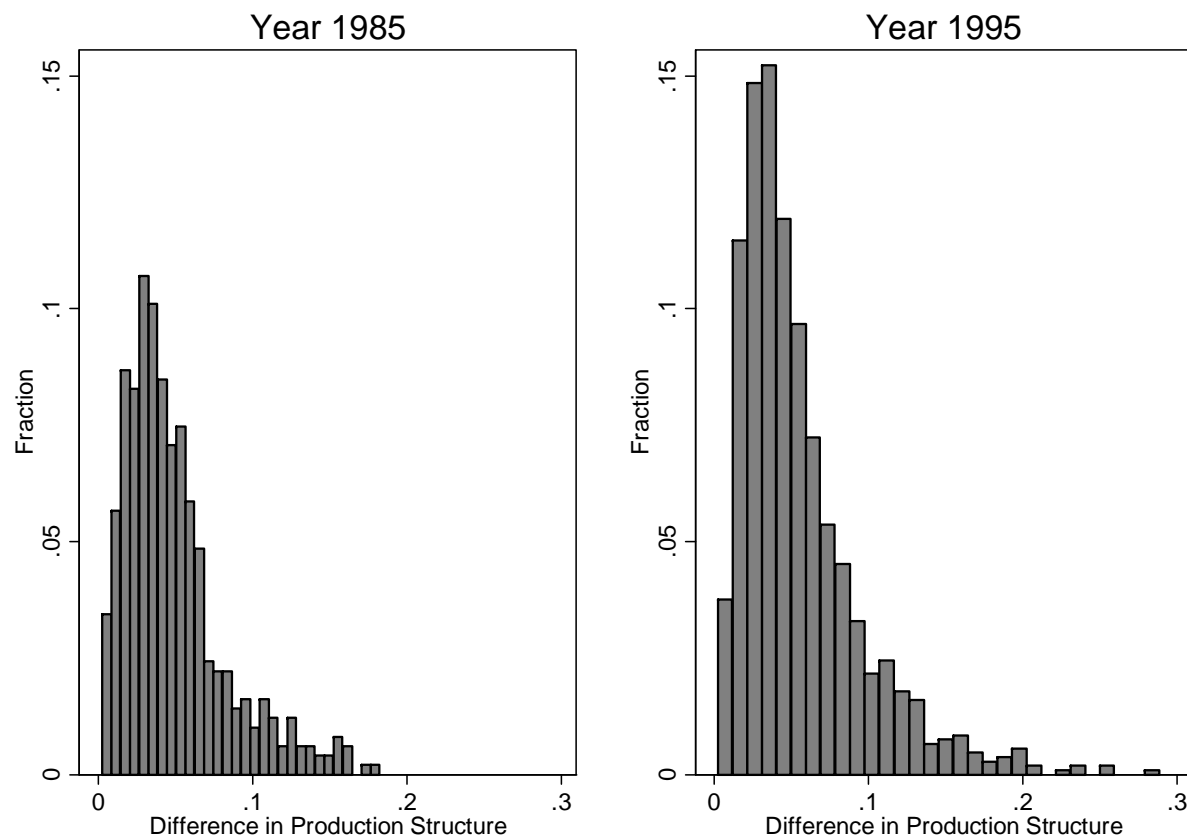
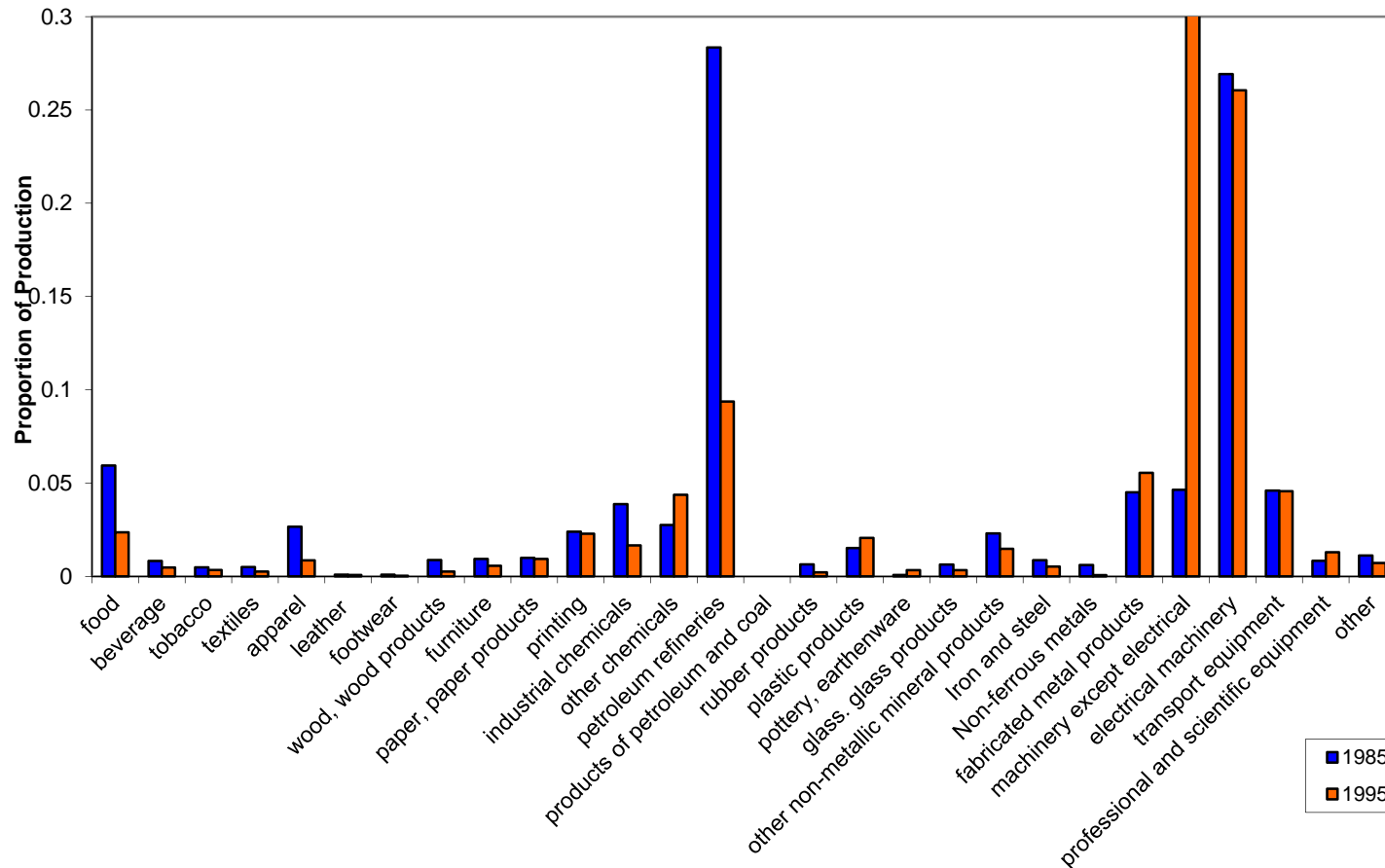


Figure A4 provides a snapshot of the evolution of differences in production structure by plotting its distribution for the two years, 1985 and 1995. We plot the variable only for country-pairs for which data is available for both 1985 and 1995. By construction, both distributions are right-skewed with an increase in skewness from 1.4 in 1985 to 1.5 in 1995. More interestingly, we see an increase in the mass of the distribution close to 0, for the year 1995 as compared to 1985, which suggests that at least for some proportion of our sample, there has been a convergence in industry structure. In addition, some proportion of the sample in 1995 takes values in excess of 0.2 which is not true in 1985, suggesting that there have been some divergence in the structure of production as well.

Figure A5: Production Structure in Singapore in 1985 and 1995



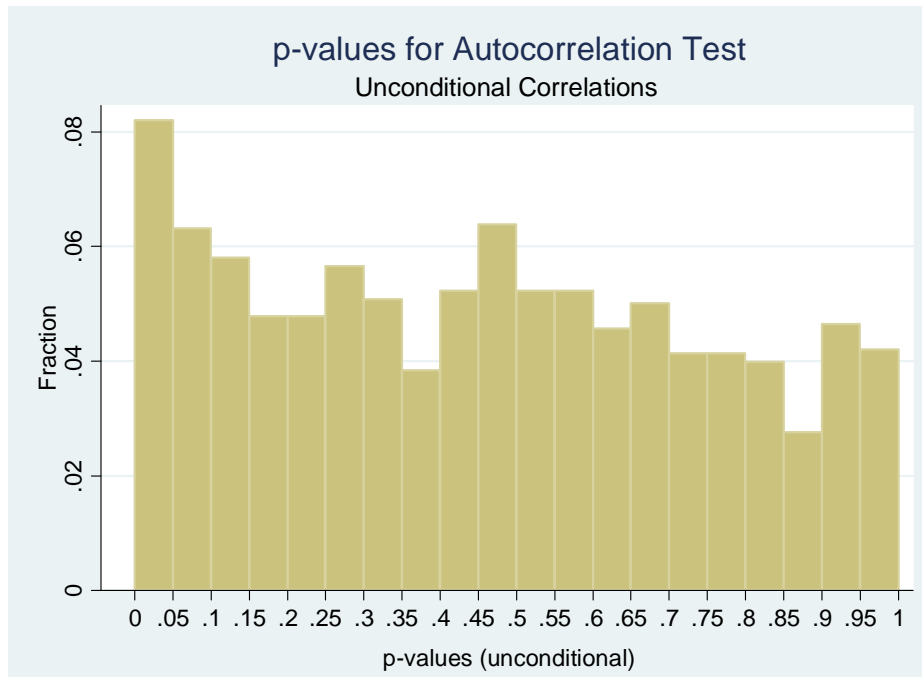
We examined the set of country-pairs whose production differences exceed 0.2 in 1995 and found Singapore in each of these country-pairs. The countries paired up with Singapore are Jordan, Colombia, Chile and Pakistan. As is well known, Singapore has been one of the few growth miracles in last 30 years or so, and has been remarkably successful in transforming its economy into a high-skill manufacturing and service based economy. A partial snapshot of the transformation of the industry structure in Singapore is provided in figure 5, which plots production share of each of the 28 manufacturing sectors for the years 1985 and 1995. The biggest differences are discernible in petroleum refineries (a sharp decline from 0.28 in 1985 to 0.09 in 1995) and manufacturing of machinery, except electrical (a substantial jump in production share from 0.05 to 0.33).



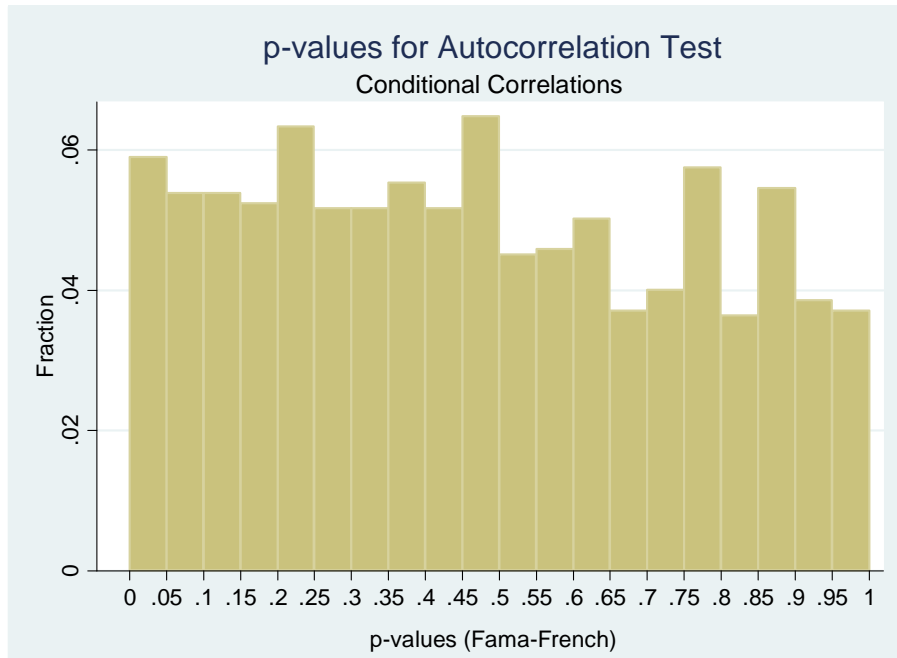
## Autocorrelation

The presence of autocorrelation in our stock market correlations may generate a spurious significant relationship. To check for this, we performed the Portmanteau test for white noise for the stock correlation of each of the country-pairs. We calculated the p-values for this test and plotted histograms of p-values for unconditional stock return correlations as well as the two conditional stock return correlations. We find very little evidence for autocorrelation as shown in the figures below. In the case of unconditional correlations, only 8% of the country-pairs exhibit significant auto-correlation. These numbers decline to less than 6% for the conditional correlations.

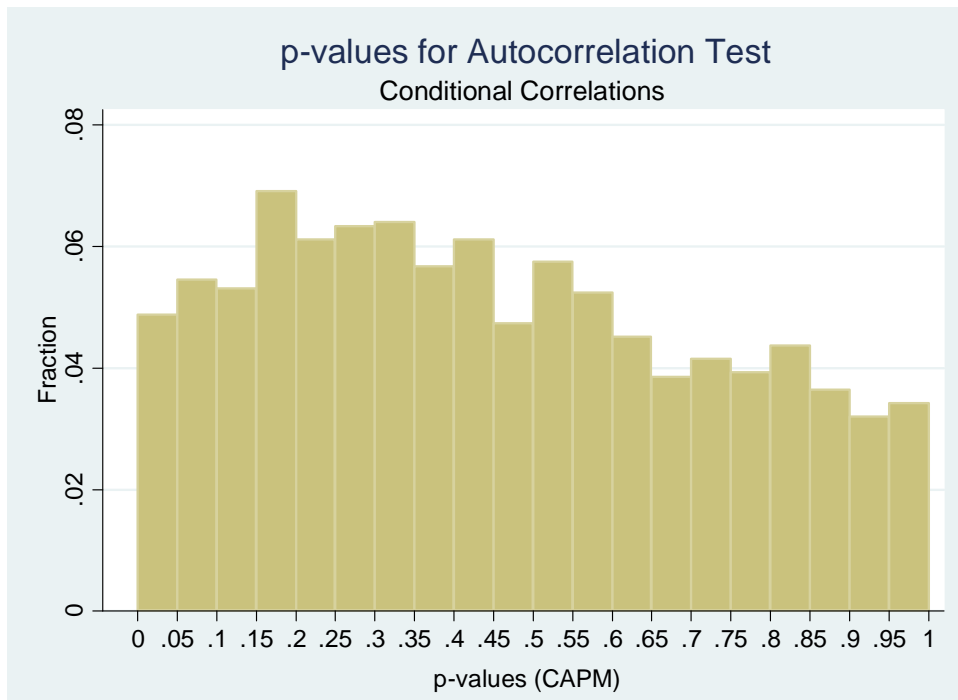
**Figure A6: Histogram of p-values for Autocorrelation Test (Unconditional Stock Market Correlations)**



**Figure A7: Histogram of p-values for Autocorrelation Test (Fama-French Conditional Stock Market Correlations)**



**Figure A8: Histogram of p-values for Autocorrelation Test (International + Regional CAPM Conditional Stock Market Correlations)**



Next, to further assure us that these are not the observations that are driving our results, we re-ran all our regressions dropping country-pairs where the p-value for the null of no-autocorrelation is less than 5%. These are shown in Tables A3-A5 below. Comparing these to our main results, we find that the coefficients in terms of signs, significance and magnitude are remarkably similar to the ones in the main paper (which includes all observations).

Table A3: Unconditional Stock Market Correlations and Structure of Production for Restricted Sample

	(1)	(2)	(3)	(4)	(5)	(6)
	Unconditional correlation	Unconditional correlation	Unconditional correlation	Unconditional correlation	Unconditional correlation	Unconditional correlation
difference in production structure	-0.128* (0.074)	-0.279** (0.115)	-0.209 (0.146)			
risk-adjusted difference in production structure				-0.355*** (0.065)	-0.181** (0.076)	-0.212*** (0.074)
product of stock market capitalization	0.029*** (0.002)	0.021*** (0.004)	0.021*** (0.004)	0.030*** (0.002)	0.018*** (0.004)	0.019*** (0.004)
difference in per capita GDP	-0.044*** (0.004)	-0.053*** (0.005)	0.012 (0.021)	-0.043*** (0.004)	-0.052*** (0.004)	-0.006 (0.021)
both democracies	0.072*** (0.007)	0.043*** (0.011)	0.038*** (0.012)	0.061*** (0.007)	0.036*** (0.011)	0.033*** (0.012)
average of bilateral export shares	0.399*** (0.058)	0.301*** (0.072)	0.212 (0.180)	0.391*** (0.057)	0.299*** (0.072)	0.160 (0.180)
free trade area	0.119*** (0.011)	0.043*** (0.012)	0.042** (0.021)	0.117*** (0.011)	0.043*** (0.012)	0.043** (0.021)
distance	-0.005 (0.004)	-0.025*** (0.006)		-0.008* (0.004)	-0.026*** (0.006)	
same region	0.066*** (0.009)	0.037*** (0.012)		0.057*** (0.009)	0.032*** (0.012)	
Observations	13196	13196	13196	13196	13196	13196
R-squared	0.21	0.28	0.35	0.22	0.29	0.35
Joint significance test	133.93***	49.33***	37.64***	131.63***	49.50***	38.20***
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	No	Yes	No	No	Yes	No
Pair fixed effects	No	No	Yes	No	No	Yes
Time-varying regional fixed effects	No	No	Yes	No	No	Yes

Standard errors in parentheses are adjusted for clustering on country-pairs; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

The dependent variable is the unconditional correlation of monthly stock market excess returns over each year. For each year, the correlation for country-pairs is calculated over a 12-month horizon. Columns 4-6 include a variable  $(\sigma_i^2 + \sigma_j^2) / \sigma_i \sigma_j$  where  $\sigma_i$  is the standard deviation of the returns. All columns include a constant (not shown).

Table A4: Conditional Stock Market Correlations (Fama-French) and Structure of Production for Restricted Sample

	(1)	(2)	(3)	(4)	(5)	(6)
	Conditional correlations	Conditional correlations	Conditional correlations	Conditional correlations	Conditional correlations	Conditional correlations
difference in production structure	-0.362*** (0.081)	-0.430*** (0.138)	-0.619*** (0.202)			
risk-adjusted difference in production structure				-0.902*** (0.114)	-0.584*** (0.135)	-0.745*** (0.142)
product of stock market capitalization	0.040*** (0.002)	0.032*** (0.005)	0.030*** (0.005)	0.042*** (0.002)	0.028*** (0.005)	0.026*** (0.005)
difference in per capita GDP	-0.047*** (0.005)	-0.052*** (0.005)	0.009 (0.035)	-0.048*** (0.004)	-0.047*** (0.005)	0.004 (0.035)
both democracies	0.021** (0.009)	0.083*** (0.016)	0.075*** (0.017)	0.020** (0.008)	0.089*** (0.016)	0.086*** (0.017)
average of bilateral export shares	0.325*** (0.057)	0.287*** (0.071)	0.245 (0.182)	0.329*** (0.056)	0.280*** (0.071)	0.182 (0.181)
free trade area	0.116*** (0.011)	0.054*** (0.012)	0.046** (0.020)	0.111*** (0.011)	0.053*** (0.012)	0.044** (0.020)
distance	0.003 (0.005)	-0.017*** (0.007)		-0.001 (0.005)	-0.019*** (0.007)	
same region	0.071*** (0.010)	0.040*** (0.012)		0.057*** (0.010)	0.031** (0.012)	
Observations	10625	10625	10625	10625	10625	10625
R-squared	0.23	0.31	0.39	0.24	0.32	0.39
Joint significance test	127.70***	45.67***	39.79***	129.60***	46.44***	41.11***
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	No	Yes	No	No	Yes	No
Pair fixed effects	No	No	Yes	No	No	Yes
Time-varying regional fixed effects	No	No	Yes	No	No	Yes

Standard errors in parentheses are adjusted for clustering on country-pairs; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Columns 4-6 include a variable  $(\sigma_i^2 + \sigma_j^2) / \sigma_i \sigma_j$  where  $\sigma_i$  is the standard deviation of the Fama-French residuals. All columns include a constant (not shown). We estimate the following 3-factor Fama-French model country-by-country and calculate the correlation of residuals for country-pairs over a 12-month horizon.

Table A5: Conditional Stock Market Correlations (International + Regional CAPM) and Structure of Production

	(1)	(2)	(3)	(4)	(5)	(6)
	Conditional correlations	Conditional correlations	Conditional correlations	Conditional correlations	Conditional correlations	Conditional correlations
difference in production structure	-0.325*** (0.080)	-0.386*** (0.137)	-0.599*** (0.200)			
risk-adjusted difference in production structure				-0.778*** (0.153)	-0.376** (0.187)	-0.512*** (0.141)
product of stock market capitalization	0.042*** (0.002)	0.032*** (0.005)	0.029*** (0.005)	0.043*** (0.002)	0.027*** (0.005)	0.025*** (0.005)
difference in per capita GDP	-0.048*** (0.004)	-0.053*** (0.005)	0.001 (0.034)	-0.048*** (0.004)	-0.049*** (0.005)	-0.011 (0.034)
both democracies	0.021** (0.009)	0.080*** (0.016)	0.067*** (0.017)	0.021** (0.008)	0.088*** (0.016)	0.080*** (0.017)
average of bilateral export shares	0.355*** (0.055)	0.315*** (0.068)	0.305* (0.181)	0.361*** (0.055)	0.309*** (0.067)	0.254 (0.180)
free trade area	0.111*** (0.011)	0.060*** (0.012)	0.064*** (0.019)	0.106*** (0.011)	0.059*** (0.012)	0.064*** (0.019)
distance	-0.002 (0.005)	-0.017*** (0.006)		-0.005 (0.005)	-0.018*** (0.006)	
same region	0.071*** (0.010)	0.042*** (0.012)		0.057*** (0.010)	0.035*** (0.012)	
Observations	10895	10895	10895	10895	10895	10895
R-squared	0.23	0.31	0.39	0.24	0.32	0.39
Joint significance test	131.90***	47.00***	41.13***	132.24***	47.76***	42.29***
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	No	Yes	No	No	Yes	No
Pair fixed effects	No	No	Yes	No	No	Yes
Time-varying regional fixed effects	No	No	Yes	No	No	Yes

Standard errors in parentheses are adjusted for clustering on country-pairs; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Columns 4-6 include a variable  $(\sigma_i^2 + \sigma_j^2) / \sigma_i \sigma_j$  where  $\sigma_i$  is the standard deviation of the CAPM residuals. All columns include a constant (not shown). We estimate the following 2-factor GARCH equation country-by-country and calculate the correlation of residuals for country-pairs over a 12-month horizon.