

## Appendix I

This appendix is intended to address the concern that by only using commodities with exact matches we are over-weighting the experience of the United Kingdom. Here, we consider the commodity price evidence for other, (much) less exact commodity matches. We are able to find ten additional commodity city-pair matches along with the required information on nominal exchange rates. The matches are summarized in the table below.

Commodity	Type 1	Type 2	Years
Barley	Home grown, in Berlin	Merchantable quality, in Prague	1927-1932
Butter	Fresh creamery, 92 Score, in Chicago	With quality mark, weighted average, in Hamburg	1927-1932
Linseed	No.1 northern, in Duluth	Bold, in Bombay	1927-1932
Oats	Home grown, in Berlin	Home grown, in Paris	1927-1932
Rye	No. 2, in Minneapolis	South Russian, in Rotterdam	1927-1932
Rye	Home grown, in Berlin	Home grown, in Warsaw	1927-1932
Rye	Home grown, in Berlin	Home grown, in Budapest	1927-1932
Sugar	Raw, Cura Centrifugal 96 degree, in New York	Raw, 88 degree, in Prague	1927-1932
Wheat	Home grown, in Berlin	Home grown, in Paris	1927-1932
Wheat	Home grown, in Berlin	Home grown, in Milan	1927-1932

**Table A1. Commodity Coverage**

We are limited to a consideration of the years between 1927 and 1932. However, since this is the critical juncture spanning the onset of the Great Depression, little harm is done. Rather than repeat the exercise of estimating (and reporting) trade costs from a TAR model for every year and every city-pair, we simply report the average weekly price gap for the periods from 1927 to 1929 and from 1930 to 1932, as these act as upper bounds for the trade cost estimates.

			Price gap in 1927-1929 (share of (dest. price))	Price gap in 1930-1932 (share of (dest. price))	Ratio of 1930-1932 to 1927-1929
Commodity	City 1	City 2			
Barley	Berlin	Prague	0.09	0.16	1.71
Butter	Chicago	Hamburg	0.14	0.16	1.13
Linseed	Bombay	Duluth	0.17	0.20	1.18
Oats	Berlin	Paris	0.11	0.16	1.43
Rye	Minneapolis	Rotterdam	0.18	0.13	0.72
Rye	Berlin	Warsaw	0.21	0.41	1.98
Rye	Berlin	Budapest	0.21	0.51	2.46
Sugar	New York	Prague	0.11	0.19	1.77
Wheat	Berlin	Paris	0.08	0.13	1.50
Wheat	Berlin	Milan	0.18	0.13	0.75
<b>Average across commodities</b>					<b>1.46</b>

**Table A2. Average Price Gaps for Inexact Matches**

Obviously, price gaps were on the rise over the period from 1927 to 1932 for the vast majority of commodity city-pairs. On average, the rise was 46% between 1927-1929 and 1930-1932. We can also compare these results to those for our preferred sample.

			Price gap in	Price gap in	
			1927-1929	1930-1932	Ratio of
			(share of	(share of	1930-1932 to
Commodity	City 1	City 2	<u>(dest. price)</u>	<u>(dest. price)</u>	<u>1927-1929</u>
Butter	Copenhagen	London	0.09	0.13	1.44
Coffee	Rio de Janeiro	New York City	0.13	0.24	1.85
Coffee	Santos	New York City	0.18	0.35	1.94
Cotton	New Orleans	Liverpool	0.11	0.14	1.27
Cotton	Alexandria	Liverpool	0.05	0.09	1.80
Cottonseed	Alexandria	London	0.13	0.17	1.31
Eggs	Copenhagen	London	0.23	0.36	1.57
Groundnuts	Madras	London	0.12	0.18	1.50
Jute	Calcutta	London	0.23	0.22	0.96
Linseed	Buenos Aires	London	0.13	0.16	1.23
Linseed	Bombay	London	0.15	0.17	1.13
Maize	Buenos Aires	London	0.23	0.28	1.22
Maize	Buenos Aires	Rotterdam	0.19	0.25	1.32
Oats	Buenos Aires	London	0.50	0.55	1.10
Rapeseed	Karachi	London	0.13	0.16	1.23
Rice	Burma	London	0.21	0.25	1.19
Rye	Minneapolis	Hamburg	0.16	0.16	1.00
Silk	Yokohama	New York City	0.10	0.12	1.20
Wheat	Winnipeg	London	0.17	0.23	1.35
Wheat	Chicago	London	0.10	0.10	1.00
Wheat	Buenos Aires	London	0.14	0.16	1.14
<b>Average across commodities</b>					<b>1.32</b>

**Table A3. Average Price Gaps for Exact Matches**

Again, the upswing in average price gaps is clear, as these stand some 32% higher in 1930-1932 than in 1927-1929. This is a lower average increase than in the case of the inexact matches. The comparison suggests that the results presented in the main body of the paper may be interpreted as lower bound estimates of the disintegrative tendencies witnessed in the interwar period, as was hypothesized in the text.

## Appendix II

Commodity:	Butter	Butter	Coffee	Coffee	Cotton	Cotton	Cotton
Source:	Copenhagen	Leeuwarden	Rio	Santos	New Orleans	Bombay	Alexandria
Destination:	London	London	NYC	NYC	Liverpool	Liverpool	Liverpool
Units:	s/cwt	s/cwt	c/lb	c/lb	p/lb	p/lb	p/lb
1913	126.98		10.78		7.01	6.42	9.91
1919			17.90		19.85		
1920			11.94		23.31		
1921			8.34		9.28		
1922			10.25		12.40		
1923			11.41		16.50		
1924			16.81		16.31		
1925			20.43		12.70		
1926			18.84		10.20		
1927	180.75		14.80	18.41	9.54		16.82
1928	192.87		16.48	23.15	10.94		19.27
1929	185.74		15.74	22.16	10.29		17.09
1930	153.74		8.72	13.22	10.29		17.11
1931	133.19		6.10	8.67	5.03		7.81
1932	122.62		7.64	9.67	4.98		6.81
1933	103.90	103.51	7.60	9.30	5.54		
1934	98.44	80.35	9.86	11.22	6.67		
1935	112.79	93.53	7.21	8.94	6.71		
1936	118.91	97.91	7.46	9.47	6.70		
1937	127.75	110.27	8.72	11.02	6.32		
1938	129.83	113.89	5.27	7.82	4.94		
Commodity:	Cottonseed I	Cottonseed II	Eggs	Groundnuts	Jute	Linseed	Linseed
Source:	Alexandria	Alexandria	Copenhagen	Madras	Calcutta	Buenos Aires	Bombay
Destination:	London	London	London	London	London	London	London
Units:	£/long ton	£/long ton	s/18 lb	£/long ton	£/long ton	£/long ton	£/long ton
1913			12.49		30.43	11.59	12.80
1919					55.92		
1920					55.98		
1921					30.94		
1922							
1923					27.79		
1924					34.14		
1925					51.26		
1926					58.43		
1927		9.66	18.38	21.97	36.53	15.59	18.61
1928		10.48	18.39	21.05	36.86	15.73	18.40
1929		9.37	19.71	18.94	32.74	18.24	20.74
1930		9.41	19.70	14.49	21.38	15.12	17.80
1931		5.74	14.02	12.15	17.09	8.74	11.65
1932		5.89	11.52	15.69	16.92	8.14	11.42
1933	5.99		12.91	10.98	15.58	9.62	11.28
1934	4.93		12.31	9.60	15.47	10.07	11.90
1935	6.70		12.47	14.40	18.60	9.66	12.28
1936	7.78		12.72	14.61	18.46	11.34	13.81
1937	7.53		12.34	14.11	20.45	12.85	15.30
1938	6.31		12.42	10.40	18.57	11.55	13.18

Table A4a. Destination Market Prices

Commodity:	Maize	Maize	Maize	Oats	Oats	Rapeseed	Rice
Source:	Buenos Aires	Buenos Aires	Chicago	Winnipeg	Buenos Aires	Karachi	Burma
Destination:	London	Rotterdam	London	London	London	London	London
Units:	s/quarter	f/2000 kg	s/480 lbs	s/320 lbs	s/320 lbs	£/long ton	s/cwt
1913	23.40		23.30	18.51	15.82		9.86
1919							
1920							
1921				27.75			
1922	36.77		32.34	28.78	24.85		
1923	35.61		35.92	26.10	21.79		
1924	39.60		40.46	27.63	23.15		
1925	38.94		41.42	29.37	24.76		
1926	29.39		30.71	26.44	24.04		
1927	30.92	178.98			38.16	19.82	14.56
1928	38.85	227.42			42.75	18.92	13.68
1929	36.36	203.57			34.61	18.91	13.04
1930	23.13	136.24			19.78	13.87	10.84
1931	15.55	84.13			18.88	11.04	7.72
1932	18.32	79.85			23.05	11.30	8.74
1933	16.57	68.04				10.31	6.53
1934	19.29	70.52				10.12	6.69
1935	16.77	61.00				13.08	7.65
1936	19.40	74.40				12.85	7.80
1937	26.54	111.30				14.52	9.20
1938	27.21	109.90				11.69	8.23
Commodity:	Rice	Rye	Silk	Wheat	Wheat	Wheat	
Source:	Saigon	Minneapolis	Yokohama	Winnipeg	Chicago	Buenos Aires	
Destination:	London	Hamburg	New York City	London	London	London	
Units:	s/cwt	RM/metric ton	\$/lb	s/quarter	s/quarter	s/quarter	
1913				35.81	34.17	35.52	
1919							
1920							
1921							
1922				54.11	50.15	51.44	
1923				45.79	44.27	44.62	
1924				53.80	50.30	51.06	
1925				62.30	57.88	59.27	
1926				59.43	54.42	55.20	
1927	13.97	206.26	5.49	59.03	51.20	51.30	
1928	12.89	214.61	5.15	52.37	47.60	46.28	
1929	13.22	182.09	5.07	52.67	43.97	42.36	
1930	11.36	116.04	3.64	39.04	35.16	34.31	
1931	8.01	75.33	2.52	26.48	23.94	21.14	
1932	8.77	84.35	1.66	29.46	26.88	25.54	
1933	6.75			26.24		21.04	
1934	6.24			28.79		20.33	
1935	7.41			32.01		24.76	
1936	8.02			35.97		34.81	
1937	9.20			51.53		41.54	
1938	8.43			39.11		31.58	

Table A4b. Destination Market Prices

Commodity:	Butter	Butter	Coffee	Coffee	Cotton	Cotton	Cotton
Source:	Copenhagen	Leeuwarden	Rio	Santos	New Orleans	Bombay	Alexandria
Destination:	London	London	NYC	NYC	Liverpool	Liverpool	Liverpool
1913	(5.85, 8.57)		(0.62, 1.37)		(0.64, 0.65)	(0.17, 0.73)	(0.22, 0.50)
1919					(1.84, 2.25)		
1920					(0.98, 3.44)		
1921					(0.15, 0.19)		
1922			(1.41, 1.86)		(1.33, 1.63)		
1923			(1.55, 2.35)		(1.71, 2.09)		
1924			(2.46, 3.37)		(0.48, 0.57)		
1925			(2.21, 2.71)		(0.87, 1.07)		
1926			(1.00, 1.21)		(0.91, 1.11)		
1927	(14.38, 19.46)		(1.67, 2.69)	(2.63, 4.67)	(1.12, 1.27)		(0.70, 1.28)
1928	(11.51, 13.91)		(1.06, 2.20)	(3.30, 3.33)	(1.18, 1.52)		(0.59, 1.24)
1929	(12.68, 21.71)		(1.84, 2.52)	(3.16, 3.86)	(1.01, 1.22)		(0.44, 0.54)
1930	(12.07, 14.67)		(1.69, 1.96)	(2.46, 3.00)	(1.04, 1.22)		(0.48, 1.25)
1931	(12.56, 21.36)		(0.74, 2.67)	(3.56, 4.36)	(0.24, 1.10)		(0.91, 1.11)
1932	(16.82, 30.08)		(2.40, 2.94)	(4.12, 5.04)	(0.78, 0.99)		(0.85, 1.03)
1933	(24.09, 26.09)	(24.76, 30.26)	(3.55, 4.34)	(4.15, 5.07)	(0.59, 0.62)		
1934	(24.63, 26.05)	(28.81, 29.74)	(3.80, 5.30)	(4.52, 6.17)	(0.70, 0.91)		
1935	(24.47, 25.36)	(24.90, 30.44)	(3.69, 4.51)	(4.11, 5.03)	(0.91, 0.95)		
1936	(23.85, 25.46)	(18.22, 24.67)	(3.31, 4.01)	(3.98, 4.86)	(0.72, 0.88)		
1937	(24.58, 25.13)	(18.55, 23.37)	(3.79, 4.63)	(4.46, 5.45)	(0.73, 0.97)		
1938	(24.44, 25.98)	(17.24, 21.07)	(1.83, 2.38)	(3.16, 3.57)	(0.51, 0.78)		
Commodity:	Cottonseed I	Cottonseed II	Eggs	Groundnuts	Jute	Linseed	Linseed
Source:	Alexandria	Alexandria	Copenhagen	Madras	Calcutta	Buenos Aires	Bombay
Destination:	London	London	London	London	London	London	London
1913						(0.73, 1.64)	(1.70, 2.17)
1919							
1920							
1921							
1922							
1923							
1924							
1925							
1926							
1927		(0.96, 1.47)	(3.86, 4.72)	(2.24, 3.97)	(9.80, 11.98)	(1.92, 2.34)	(2.86, 3.08)
1928		(0.97, 1.00)	(2.18, 6.58)	(0.98, 1.20)	(6.25, 8.68)	(1.89, 2.12)	(2.83, 2.89)
1929		(1.15, 1.51)	(8.83, 10.79)	(2.78, 3.40)	(6.06, 7.40)	(2.29, 2.35)	(2.88, 3.07)
1930		(1.12, 1.51)	(3.96, 12.79)	(1.08, 1.32)	(3.49, 4.75)	(1.72, 2.10)	(1.89, 2.34)
1931		(1.15, 1.41)	(2.39, 2.66)	(2.38, 2.90)	(3.52, 4.31)	(1.51, 1.85)	(1.67, 1.89)
1932		(0.83, 1.07)	(5.52, 6.74)	(2.97, 3.63)	(3.70, 4.64)	(1.33, 1.66)	(2.17, 2.66)
1933	(1.03, 1.46)			(2.79, 3.41)	(4.09, 4.99)	(3.85, 4.71)	(2.20, 3.02)
1934	(0.96, 1.18)			(2.02, 2.46)	(3.93, 4.53)	(1.36, 1.66)	(2.22, 2.25)
1935	(0.94, 0.96)			(1.53, 1.87)	(3.93, 4.68)	(1.12, 1.20)	(2.41, 2.95)
1936	(1.18, 1.74)			(2.39, 2.93)	(4.32, 4.51)	(1.56, 1.90)	(2.66, 3.26)
1937	(1.29, 1.68)			(2.49, 3.42)	(3.91, 4.77)	(2.09, 2.19)	(3.19, 3.89)
1938	(1.08, 1.35)			(1.81, 2.33)	(4.46, 4.96)	(1.61, 1.75)	(2.52, 3.08)

**Table A4c. 95% Confidence Intervals for Trade Cost Estimates**

Commodity:	Maize	Maize	Maize	Oats	Oats	Rapeseed	Rice
Source:	Buenos Aires	Buenos Aires	Chicago	Winnipeg	Buenos Aires	Karachi	Burma
Destination:	London	Rotterdam	London	London	London	London	London
1913	(2.29, 2.79)		(1.66, 4.69)	(5.18, 6.33)	(0.67, 2.69)		(3.16, 3.71)
1919							
1920							
1921							
1922	(9.11, 9.68)		(6.46, 9.45)	(8.51, 8.67)	(6.36, 6.46)		
1923	(8.49, 8.81)		(3.75, 4.59)	(7.29, 8.91)	(4.61, 5.63)		
1924	(11.65, 14.23)		(3.92, 4.80)	(6.01, 6.75)	(4.04, 5.10)		
1925	(6.30, 8.63)		(6.12, 7.48)	(7.18, 8.67)	(3.66, 5.02)		
1926	(4.21, 5.08)		(0.43, 0.53)	(8.32, 8.43)	(4.88, 8.40)		
1927	(6.53, 9.46)	(29.01, 47.27)			(17.66, 21.09)	(2.06, 2.82)	(2.84, 3.13)
1928	(6.96, 9.44)	(27.13, 61.88)			(17.50, 24.28)	(2.05, 2.83)	(2.84, 2.91)
1929	(5.02, 10.88)	(39.47, 48.24)			(14.96, 19.26)	(2.12, 2.77)	(2.42, 3.07)
1930	(4.02, 6.38)	(20.26, 24.76)			(9.14, 12.31)	(2.08, 2.54)	(1.84, 2.24)
1931	(4.07, 4.69)	(29.70, 36.29)			(11.46, 12.62)	(2.13, 2.61)	(2.29, 2.50)
1932	(4.79, 4.91)	(15.39, 27.01)			(11.08, 12.87)	(1.92, 2.34)	(1.93, 2.63)
1933	(5.23, 8.03)	(27.23, 33.29)				(2.15, 2.63)	(1.95, 2.39)
1934	(3.38, 4.44)	(9.85, 12.03)				(1.63, 1.88)	(1.94, 2.41)
1935	(3.16, 3.71)	(14.33, 15.81)				(1.96, 2.67)	(1.42, 1.68)
1936	(5.66, 6.92)	(19.48, 23.80)				(2.12, 2.59)	(1.93, 2.63)
1937	(7.69, 8.88)	(30.21, 36.93)				(2.83, 3.37)	(3.36, 3.53)
1938	(4.78, 6.92)	(8.95, 22.41)				(2.00, 2.13)	(2.65, 2.86)
Commodity:	Rice	Rye	Silk	Wheat	Wheat	Wheat	
Source:	Saigon	Minneapolis	Yokohama	Winnipeg	Chicago	Buenos Aires	
Destination:	London	Hamburg	New York City	London	London	London	
1913				(7.58, 9.26)	(4.05, 5.10)	(4.66, 5.70)	
1919							
1920							
1921							
1922				(8.00, 12.59)	(3.45, 4.21)	(7.32, 7.43)	
1923				(6.21, 7.59)	(3.44, 6.57)	(7.32, 7.43)	
1924				(5.84, 10.98)	(6.01, 6.06)	(5.75, 7.03)	
1925				(7.54, 8.57)	(2.35, 6.21)	(5.54, 7.75)	
1926				(8.83, 10.97)	(3.24, 3.96)	(4.74, 5.79)	
1927		(34.78, 47.08)	(0.35, 0.40)	(8.29, 12.19)	(6.10, 6.19)	(6.36, 6.47)	
1928		(31.36, 42.18)	(0.59, 0.73)	(7.80, 9.54)	(2.84, 3.48)	(4.76, 6.81)	
1929		(22.73, 27.78)	(0.58, 0.64)	(7.22, 10.06)	(1.95, 4.76)	(4.80, 5.86)	
1930		(24.13, 31.17)	(0.21, 0.48)	(8.16, 9.19)	(1.90, 4.45)	(1.94, 2.38)	
1931		(6.40, 7.82)	(0.16, 0.44)	(5.40, 6.60)	(1.52, 1.86)	(3.01, 5.48)	
1932		(17.51, 21.41)	(0.10, 0.14)	(7.89, 9.65)	(1.86, 3.36)	(3.50, 5.23)	
1933	(1.62, 1.98)			(4.32, 6.02)		(4.31, 8.44)	
1934	(1.83, 2.23)			(3.60, 5.57)		(2.82, 3.44)	
1935	(1.73, 2.11)			(3.24, 3.96)		(2.63, 3.21)	
1936	(1.41, 2.10)			(4.32, 5.83)		(5.66, 6.15)	
1937	(2.46, 2.91)			(6.63, 8.11)		(6.06, 7.24)	
1938	(1.87, 2.29)			(4.71, 8.07)		(6.23, 7.61)	

**Table A4d. 95% Confidence Intervals for Trade Cost Estimates**

### Appendix III

Here, we decompose the variance observed in the trade cost-to-price ratio into three parts: the variance in trade costs, the variance in prices, and their covariance. We make use of the following transformation:

$$\frac{\text{Trade costs } (tc)}{\text{Destination price } (p)} \rightarrow \ln\left(\frac{\text{Trade costs } (tc)}{\text{Destination price } (p)}\right) = \ln(tc) - \ln(p)$$

$$\text{var}\left(\ln\left(\frac{tc}{p}\right)\right) = \text{var}(\ln(tc) - \ln(p)) = \text{var}(\ln(tc)) + \text{var}(\ln(p)) - 2\text{cov}(\ln(tc), \ln(p))$$

The table below summarizes the decomposition for the 27 series under consideration.

Commodity:	Source:	Destination:	Var(ln(tc/p))	Var(ln(tc))	Var(ln(p))	Cov(ln(tc),ln(p))	Var(ln(tc))/Var(ln(p))
Butter	Copenhagen	London	0.2162	0.0817	0.0511	-0.0383	<b>1.60</b>
Butter	Leeuwarden	London	0.0837	0.0314	0.0160	-0.0151	<b>1.96</b>
Coffee	Rio	NYC	0.4810	0.1879	0.1755	-0.0554	<b>1.07</b>
Coffee	Santos	NYC	0.2310	0.0344	0.1414	-0.0253	<b>0.24</b>
Cotton	New Orleans	Liverpool	0.1311	0.2177	0.2217	0.1464	<b>0.98</b>
Cotton	Bombay	Liverpool	N/A	N/A	N/A	N/A	
Cotton	Alexandria	Liverpool	0.5355	0.1007	0.2099	-0.0937	<b>0.48</b>
Cottonseed, Egyptian	Alexandria	London	0.0342	0.0527	0.0277	0.0192	<b>1.90</b>
Cottonseed, Sakellaris	Alexandria	London	0.0918	0.0293	0.0720	0.0040	<b>0.41</b>
Eggs	Copenhagen	London	0.4846	0.5268	0.0483	0.0377	<b>10.91</b>
Groundnuts	Madras	London	0.2374	0.1593	0.0707	-0.0034	<b>2.25</b>
Jute	Calcutta	London	0.0264	0.0969	0.1034	0.0797	<b>0.94</b>
Linseed	Buenos Aires	London	0.1278	0.0969	0.0687	0.0173	<b>1.41</b>
Linseed	Bombay	London	0.0410	0.0290	0.0488	0.0168	<b>0.59</b>
Maize	Buenos Aires	London	0.0835	0.1353	0.1157	0.0788	<b>1.17</b>
Maize	Buenos Aires	Rotterdam	0.1213	0.1908	0.2070	0.1267	<b>0.92</b>
Maize	Chicago	London	0.0765	0.0591	0.0175	0.0000	<b>3.37</b>
Oats	Winnipeg	London	0.0157	0.0109	0.0026	-0.0009	<b>4.13</b>
Oats	Buenos Aires	London	0.2204	0.3240	0.0723	0.0800	<b>4.48</b>
Rapeseed	Karachi	London	0.0312	0.0175	0.0576	0.0201	<b>0.30</b>
Rice	Burma	London	0.0759	0.0541	0.0767	0.0252	<b>0.71</b>
Rice	Saigon	London	0.0092	0.0123	0.0207	0.0099	<b>0.59</b>
Rye	Minneapolis	Hamburg	0.1227	0.3514	0.2137	0.1843	<b>1.64</b>
Silk	Yokohama	New York City	0.0947	0.4804	0.2296	0.2563	<b>2.09</b>
Wheat	Winnipeg	London	0.0761	0.1090	0.0923	0.0590	<b>1.18</b>
Wheat	Chicago	London	0.0550	0.1581	0.0838	0.0849	<b>1.89</b>
Wheat	Buenos Aires	London	0.3746	0.2651	0.1336	0.0114	<b>1.98</b>

**Table A5. Variance Decomposition of Trade Costs and Prices**

Of particular interest in this respect is the last column, which gives the ratio of the variance of the two series,  $tc$  and  $p$ . On average, there is almost twice as much variation in the former than the latter (excluding the observation for eggs, the former exhibits almost 60% more variation). The results suggest that, once the covariance between the two series is accounted for, it is variance in the trade cost series which dominates the variance in the trade cost-to-price ratio.