Appendix for Online Publication

Reshaping Global Trade:
The Immediate and Long-Run Effects of Bank Failures

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A Additional Tables

The Discount Window data captures the distribution of trade financing during the crisis well because these loans were the main form of short-term liquidity that could be taken to the BoE for cash and all available collateral in the market made its way to the BoE. In normal times however, many fewer bills are discounted and the volumes are lower. This data limitation means that the full panel of trade financing by each bank in all locations around the world does not exist so that it is not possible to estimate the first stage relationship.

However, there is a strong pseudo first-stage relationship between exposure to bank failures and financing contractions at the bank-level, measured by lending on the balance sheet, shown in Table A1.[1]

Table A1: Bank-level relationship between failure and credit supply

	Δ Credit$_b$			
	(1)	(2)	(3)	(4)
Failure$_b$	-0.797***	-0.777***	-0.915***	-0.982***
	[0.106]	[0.107]	[0.185]	[0.129]
Weighting	none	Capital, 1865	Trade credit, 1865	Size, 1865
N	32	32	32	32
Adj. R^2	0.406	0.494	0.335	0.515

Notes: Table A1 shows the regression results for the pseudo first stage relationship between bank failure and the credit supplied. The dependent variable is the percent change in the trade credit supply of individual banks reported in bi-annual balance sheets. Banks that failed are given a trade credit supply of 0 in the post-crisis period. There are 32 banks that report the composition of their balance sheet with this information. Column 1 reports the baseline, unweighted regression. In columns 2–4, the regressions are weighted by different proxies for bank size. Robust standard errors in brackets. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

[1] Of the 95 joint-stock banks with balance sheet data, only 31 are disaggregated enough to show the total lending in the form of trade finance annually. The pseudo-first stage is calculated using this subset of banks. Table A2 shows that this subsample of banks is representative of the complete sample of all banks on all other observable dimensions.

Table A2: Comparison of banks in first stage sample to all banks

	All		In first stage		Not in first stage		Diff	
OG Connection	0.16	(0.37)	0.28	(0.46)	0.10	(0.31)	0.18	(0.08)**
Capital, authorized (£m)	1.42	(1.06)	1.64	(1.08)	1.31	(1.04)	0.33	(0.23)
Capital, paid up (£m)	0.58	(0.38)	0.62	(0.41)	0.56	(0.37)	0.06	(0.08)
Deposits (£m)	2.22	(2.73)	2.17	(2.81)	2.29	(2.66)	-0.12	(0.88)
Reserve fund (£m)	0.13	(0.12)	0.12	(0.13)	0.13	(0.12)	-0.01	(0.03)
Total size (£m)	4.76	(6.08)	4.54	(5.28)	4.93	(6.73)	-0.39	(1.46)
Leverage ratio	0.06	(0.05)	0.07	(0.05)	0.06	(0.04)	0.01	(0.02)
Reserve ratio	0.03	(0.02)	0.03	(0.03)	0.03	(0.02)	-0.00	(0.01)
Liquidity ratio	0.14	(0.11)	0.16	(0.14)	0.12	(0.07)	0.04	(0.03)*
N	100		32		68		100	

Notes: Table A2 presents balance sheet characteristics of the joint stock banks for those in the first stage sample and those outside of it. "In first stage" refers to the banks that are part of the sample in Table A1 while "Not in first stage" refers to the remaining banks. Means are reported first, and standard deviations are given in parentheses. "Diff" refers to the difference between groups. Standard errors are reported in parentheses for the "Diff" column. Significance is marked by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table A3: Bank balance on geographic exposure calculated as percent of assets

	All		Not Failed		Failed		Diff	
UK %	0.10	(0.22)	0.11	(0.23)	0.06	(0.17)	0.05	(0.05)
Brit. Emp. %	0.53	(0.42)	0.55	(0.42)	0.41	(0.38)	0.14	(0.10)
Europe %	0.34	(0.40)	0.31	(0.40)	0.46	(0.40)	-0.15	(0.10)
Asia %	0.24	(0.34)	0.23	(0.33)	0.29	(0.39)	-0.06	(0.08)
Africa %	0.09	(0.21)	0.09	(0.21)	0.10	(0.21)	-0.01	(0.05)
N. America %	0.14	(0.30)	0.15	(0.31)	0.07	(0.22)	0.08	(0.07)
S. America %	0.05	(0.17)	0.06	(0.18)	0.02	(0.04)	0.05	(0.04)
Australia %	0.12	(0.29)	0.13	(0.31)	0.06	(0.22)	0.07	(0.07)
N	128		107		21		128	

Notes: Table A3 presents an alternative calculation to the geographic exposure shown in Table **??** Panel B. Each variable is the bank's percentage exposure to a geographic exposure, calculated as the credit extended to each geography over the bank's total lending. "Not Failed" and "Failed" refers to whether a bank suspended or closed during the crisis. Means are reported first, and standard deviations are given in parentheses. "Diff" refers to the difference in means between groups. Standard errors are reported in parentheses for the "Diff" column. Significance is marked by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table A4: Robustness to controls: immediate effect of exposure to bank failures on country-level shipping

Panel A: Industry composition of exports

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\text{Fail}_o \times$ post	-0.669***	-0.715***	-0.623***	-0.652**	-0.571**	-0.654***	-0.642***
	[0.249]	[0.220]	[0.221]	[0.258]	[0.278]	[0.229]	[0.207]
Cotton raw × post	Y						
Cotton manu × post		Y					
Grains × post			Y				
Coffee × post				Y			
Alcohol × post					Y		
Tobacco × post						Y	
Share commod × post							Y
Country_o FE	Y	Y	Y	Y	Y	Y	Y
N	104	104	104	104	104	104	104
Clusters	52	52	52	52	52	52	52

Panel B: Monetary standard and conflict

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\text{Fail}_o \times$ post	-0.502*	-0.603**	-0.662**	-0.655**	-0.615***	-0.604**	-0.571***
	[0.262]	[0.227]	[0.252]	[0.253]	[0.203]	[0.230]	[0.213]
Share to UK × post	Y						
Gold × post		Y					
Silver × post			Y				
Bimetallic × post				Y			
Conflict (any) × post					Y		
Conflict (inter) × post						Y	
Conflict (extra) × post							Y
Country_o FE	Y	Y	Y	Y	Y	Y	Y
N	104	104	104	104	104	104	104
Clusters	52	52	52	52	52	52	52

Notes: Table A4 reports estimates from the difference-in-difference regressions from the two-period panel of country-level shipping activity in the year before and after the crisis. The dependent variable is the log of the number of ships departing from each country. Fail_o is the share of the country's banks that failed during the crisis. The mean of Fail_o is 0.11, and the standard deviation is 0.16. "*post*" is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. The time-invariant control variables are measured in 1865 and interacted with the post dummy. In Panel A, they include the log values of sugar, raw cotton, cotton manufactured goods, grains, tobacco, and coffee exports. The log values of industry exports are replaced with 0 if the country does not export those products. In Panel B, they include the size of the country proxied by the total value of exports, the monetary standard of the country, and engagement in conflict. Controls are added sequentially and the coefficients are stable. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table A5: Exporter substitution and effect of access to alternative sources of financing

	(1)	(2)	(3)	(4)
$\text{Fail}_{\text{po}} \times$ post	-0.755***	-0.877***	-0.987***	-0.940***
	[0.255]	[0.277]	[0.223]	[0.269]
$\text{Fail}_{\text{other, po}} \times$ post	0.0963	0.145		
	[0.0794]	[0.0879]		
non-Brit banks $\times \text{Fail}_{\text{po}} \times$ post			0.488**	0.495**
			[0.195]	[0.204]
Port controls $\times$ post		Y		Y
Port_{p} FE	Y	Y	Y	Y
$\text{Country}_{\text{o}} \times$ post FE			Y	Y
N	578	578	578	578
Ports	289	289	289	289
Clusters	54	54	54	54

Notes: Table A5 reports estimates of the effect of the rest of the country's exposure to bank failures and access to alternative forms of financing on shipping activity. The dependent variable is the log of the number of ships sailed. Fail_{po} is the share of the port's banks that failed during the crisis, Fail_{o} is the share of the country's banks that failed, and $\text{Fail}_{other,po}$ is the country-level share of bank failures outside of port p. "*non-Brit banks*" is the number of non-British banks in the port's city of financing in the pre-crisis year. All other variables are defined the same way as in Table **??**. Standard errors in brackets are clustered by the origin-country. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table A6: Elasticity of trade to physical distance

$$\ln(\text{EX}_{odt}) = \theta \ln(\text{distance})_{od} + \gamma_{ot} + \gamma_{dt} + \Gamma' X_{odt} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)
log distance $_{\text{od}}$	-1.298***	-1.201***	-1.149***	-1.401***	-1.247***
	[0.0776]	[0.0818]	[0.0868]	[0.0766]	[0.0855]
$\text{Country}_{\text{ot}}$ FE	Y	Y	Y	Y	Y
$\text{Country}_{\text{dt}}$ FE	Y	Y	Y	Y	Y
Common language $\times$ t		Y			Y
Common border $\times$ t			Y		Y
Common empire $\times$ t				Y	Y
N	70895	70157	70157	70895	70157
Clusters	120	120	120	120	120
Adj. R^2	0.535	0.549	0.537	0.565	0.568

Notes: Table A6 reports estimates for θ, the elasticity of trade to physical distance, from the above estimation. All specifications are estimated using the full panel of bilateral trade data from 1850–1914. The baseline specification is given in Column 1. Columns 2–5 control for standard gravity measurements of bilateral resistance. The dependent variable is the log value of exports from origin country o to destination country d. The origin country-year fixed effects effectively drop the countries that only appear in the trade data for one year. There are 9 such countries and therefore only 120 clusters. Standard errors in brackets are clustered by origin country. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A7: Robustness to different clustering: immediate effect of exposure to bank failures on country-level exports

$$\ln(\text{EX}_{odt}) = \beta_t \text{Fail}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)
β_{1865}	-0.274	-0.274	-0.274	-0.274	-0.274
	[0.213]	[0.172]	[0.192]	[0.193]	[0.553]
β_{1867}	-0.755*	-0.755	-0.755	-0.755	-0.755***
	[0.427]	[0.586]	[0.569]	[0.476]	[0.183]
β_{1868}	-1.801***	-1.801**	-1.801***	-1.801**	-1.801***
	[0.627]	[0.718]	[0.603]	[0.741]	[0.358]
β_{1869}	-1.643***	-1.643***	-1.643***	-1.643***	-1.643***
	[0.400]	[0.615]	[0.544]	[0.514]	[0.186]
β_{1870}	-1.910***	-1.910***	-1.910***	-1.910***	-1.910***
	[0.502]	[0.637]	[0.591]	[0.572]	[0.277]
Controls	Y	Y	Y	Y	Y
$\text{Country}_{\text{o}}$ FE	Y	Y	Y	Y	Y
I($\text{Brit bank}_{\text{ot}}$)	Y	Y	Y	Y	Y
$\text{Country}_{\text{dt}}$	Y	Y	Y	Y	Y
N	2919	2919	2919	2919	2919
Clustering	Orig country	Dest country	Orig-Dest pair	Multi: Orig, Dest	Multi: Orig, Dest, year
Adj. R^2	0.557	0.557	0.558	0.556	0.556

Notes: Table A7 reports estimates from the annual dynamic difference-in-difference regressions from the panel of country-level values of trade. The dependent variable is the ln value of exports from origin country o to destination country d. There are 83 exporting countries from 1865-1870. Fail_o is the share of the country's banks that failed. post is a dummy for the post-crisis years 1867-1870. Baseline controls are the log distance between country o and country d. Standard errors in brackets are clustered according to the row labeled "Clustering." $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table A8: Distribution of exposure for countries

	Count	Mean	25th	50th	75th	90th
Unconditional	55	0.09	0.00	0.03	0.15	0.27
Greater than 0	36	0.14	0.03	0.08	0.18	0.37

Notes: Table A8 reports the values of exposure for countries at the mean, 25th, 50th, 75th, and 90th percentiles. The first row labeled "Unconditional" includes all countries active in 1865. The second row labeled "Greater than 0" restricts the sample to countries with non-zero exposure. Figure B4b plots the full distribution.

Table A9: Long-term effects of exposure to bank failures and imports

(1) $\ln(\text{Ex}_{odt}) = \beta_t \text{Fail}_o + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$
(2) $\ln(\text{Ex}_{odt}) = \beta_t \text{Fail}_d + \gamma_d + \gamma_{ot} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$
(3) $\ln(\text{Ex}_{odt}) = \beta_t \text{Fail}_d + \beta_t \text{Fail}_o + \gamma_{od} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$

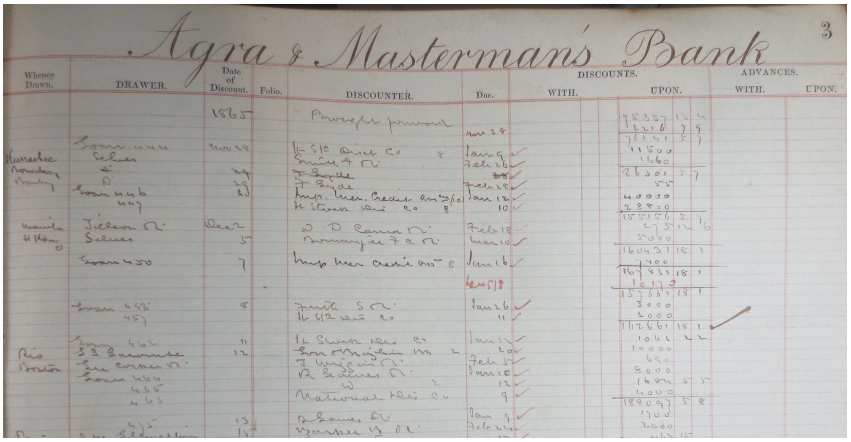
	(1)		(2)		(3)	
$\beta_{1850\text{-}1855}$ Fail_o	-0.567	[0.411]			-0.0930	[0.206]
$\beta_{1856\text{-}1860}$ Fail_o	-0.0460	[0.207]			0.000747	[0.133]
$\beta_{1866\text{-}1870}$ Fail_o	-1.396***	[0.395]			-0.793***	[0.287]
$\beta_{1871\text{-}1875}$ Fail_o	-1.907***	[0.508]			-1.018***	[0.333]
$\beta_{1876\text{-}1880}$ Fail_o	-1.948***	[0.538]			-1.207***	[0.363]
$\beta_{1881\text{-}1885}$ Fail_o	-1.573***	[0.559]			-0.930***	[0.315]
$\beta_{1886\text{-}1890}$ Fail_o	-1.186*	[0.608]			-0.532	[0.371]
$\beta_{1891\text{-}1895}$ Fail_o	-1.208**	[0.563]			-0.541	[0.413]
$\beta_{1896\text{-}1900}$ Fail_o	-1.340***	[0.491]			-0.634	[0.490]
$\beta_{1901\text{-}1905}$ Fail_o	-1.059*	[0.545]			-0.548	[0.654]
$\beta_{1906\text{-}1910}$ Fail_o	-0.655	[0.571]			-0.371	[0.758]
$\beta_{1911\text{-}1914}$ Fail_o	-0.589	[0.664]			-0.343	[0.838]
$\beta_{1850\text{-}1855}$ Fail_d			-1.011**	[0.437]	-0.588**	[0.294]
$\beta_{1856\text{-}1860}$ Fail_d			-0.162	[0.272]	-0.209	[0.215]
$\beta_{1866\text{-}1870}$ Fail_d			-0.191	[0.590]	0.0692	[0.320]
$\beta_{1871\text{-}1875}$ Fail_d			-0.687	[0.643]	-0.327	[0.376]
$\beta_{1876\text{-}1880}$ Fail_d			-0.258	[0.606]	-0.183	[0.332]
$\beta_{1881\text{-}1885}$ Fail_d			-0.346	[0.570]	-0.283	[0.300]
$\beta_{1886\text{-}1890}$ Fail_d			-0.196	[0.562]	-0.118	[0.335]
$\beta_{1891\text{-}1895}$ Fail_d			-0.0142	[0.542]	0.146	[0.326]
$\beta_{1896\text{-}1900}$ Fail_d			-0.576	[0.578]	-0.252	[0.329]
$\beta_{1901\text{-}1905}$ Fail_d			-0.430	[0.574]	-0.138	[0.366]
$\beta_{1906\text{-}1910}$ Fail_d			0.307	[0.577]	0.345	[0.373]
$\beta_{1911\text{-}1914}$ Fail_d			0.631	[0.583]	0.216	[0.382]
Controls	Y		Y		Y	
Country_o FE	Y					
Country_dt FE	Y					
Country_d FE			Y			
Country_ot FE			Y			
Country_od					Y	
N	70895		70895		70895	
Clusters	129		120		128	
Adj. R^2	0.532		0.536		0.820	

Notes: Table A9 reports estimates from the dynamic difference-in-difference regressions from the panel of country-level values of trade. The estimating equation for each regression is reported above the table. Column 1 is the baseline effect on exports; column 2 is the symmetric effect on imports; column 3 looks at the effect on exports while controlling for the exposure by importers. In that specification, the exposure varies by both exporter-year and destination-year and therefore it is not possible to include the country-level fixed effects. Instead, I include country-pair fixed effects that absorbs the average level of trade between countries in the time series. Baseline controls are the log distance between country o and country d. Standard errors in brackets are clustered by exporting country with the number reported in the row "Clusters." $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

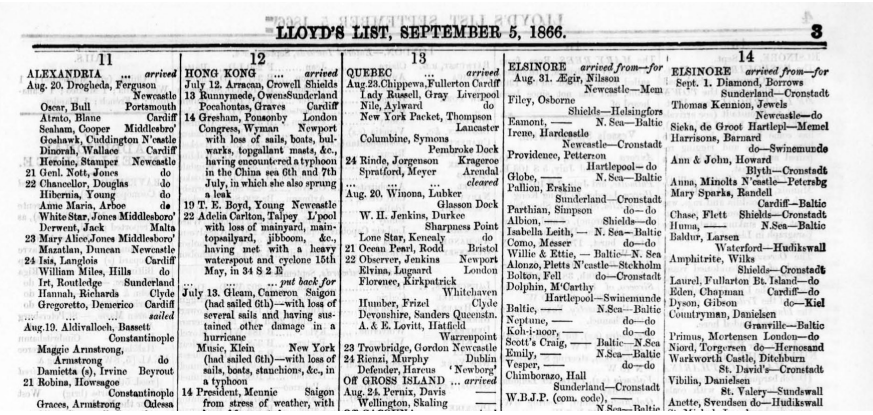
B Additional Figures

Figure B1: Data sources

(a) Excerpt of the Bank of England Discount Office ledgers



(b) Excerpt of the *Lloyd's List*


LLOYD'S LIST, SEPTEMBER 5, 1866. 3

11

ALEXANDRIA ... *arrived*
Aug. 20. Drogheda, Ferguson Newcastle
Oscar, Bull Portsmouth
Atrato, Blane Cardiff
Seaham, Cooper Middlesbro'
Goshawk, Cuddington N'castle
Dinorah, Wallace Cardiff
Heroine, Stamper Newcastle
21 Genl. Nott, Jones do
22 Chancellor, Douglas do
Hibernia, Young do
Anne Maria, Arboe do
White Star, Jones Middlesboro'
Derwent, Jack Malta
23 Mary Alice, Jones Middlesboro'
Mazatlan, Duncan Newcastle
24 Isis, Langlois Cardiff
William Miles, Hills do
Irt, Routledge Sunderland
Hannah, Richards Clyde
Gregoretto, Demerico Cardiff
... ... *sailed*
Aug. 19. Aldivalloch, Bassett Constantinople
Maggie Armstrong, Armstrong do
Damietta (s), Irvine Beyrout
21 Robina, Howsagoe Constantinople
Graces, Armstrong Odessa

12

HONG KONG ... *arrived*
July 12. Arracan, Crowell Shields
13 Runnymede, Owens Sunderland
Pocahontas, Graves Cardiff
14 Gresham, Ponsonby London
Congress, Wyman Newport
with loss of sails, boats, bulwarks, topgallant masts, &c., having encountered a typhoon in the China sea 6th and 7th July, in which she also sprung a leak
19 T. E. Boyd, Young Newcastle
22 Adelia Carlton, Talpey L'pool
with loss of mainyard, maintopsailyard, jibboom, &c., having met with a heavy waterspout and cyclone 15th May, in 34 S 2 E
... ... *put back for*
July 13. Gleam, Cameron Saigon
(had sailed 6th)—with loss of several sails and having sustained other damage in a hurricane
Music, Klein New York
(had sailed 6th)—with loss of sails, boats, stanchions, &c., in a typhoon
14 President, Meunic Saigon
from stress of weather, with

13

QUEBEC ... *arrived*
Aug. 23. Chippewa, Fullerton Cardiff
Lady Russell, Gray Liverpool
Nile, Aylward do
New York Packet, Thompson Lancaster
Columbine, Symons Pembroke Dock
24 Rinde, Jorgenson Kragerœ
Spratford, Meyer Arendal
... ... *cleared*
Aug. 20. Winona, Lubker Glasson Dock
W. H. Jenkins, Durkee Sharpness Point
Lone Star, Kenealy do
21 Ocean Pearl, Rodd Bristol
22 Observer, Jenkins Newport
Elvina, Leguard London
Florence, Kirkpatrick Whitehaven
Humber, Frizel Clyde
Devonshire, Sanders Queenstn.
A. & E. Lovitt, Hatfield Warrenpoint
23 Trowbridge, Gordon Newcastle
24 Rienzi, Murphy Dublin
Defender, Harcus 'Newborg'
Off GROSS ISLAND ... *arrived*
Aug. 24. Pernix, Davis ——
Wellington, Skaling ——

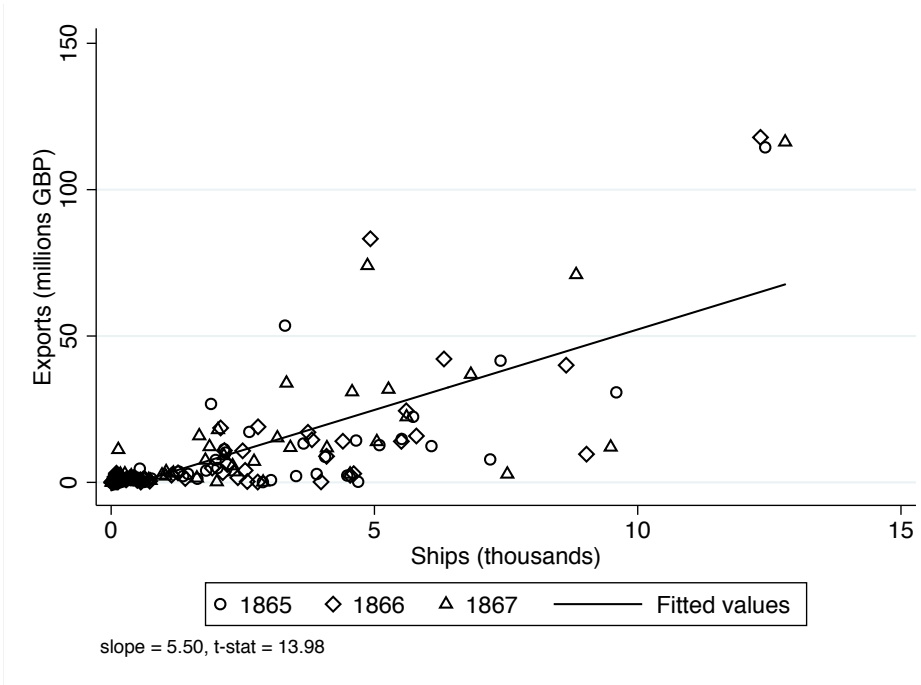
ELSINORE *arrived from—for*
Aug. 31. Ægir, Nilsson Newcastle—Mem
Filey, Osborne Shields—Helsingfors
Eamont, —— N. Sea—Baltic
Irene, Hardcastle Newcastle—Cronstadt
Providence, Petterson Hartlepool—do
Globe, —— N. Sea—Baltic
Pallion, Erskine Sunderland—Cronstadt
Parthian, Simpson do—do
Albion, —— Shields—do
Isabella Leith, — N. Sea—Baltic
Como, Messer do—do
Willie & Ettie, — Baltic—N. Sea
Alonzo, Pletts N'castle—Stckholm
Bolton, Fell do—Cronstadt
Dolphin, M'Carthy Hartlepool—Swinemunde
Baltic, —— N.Sea—Baltic
Neptune, —— do—do
Koh-i-noor, —— do—do
Scott's Craig, —— Baltic—N Sea
Emily, —— N.Sea—Baltic
Vesper, —— do—do
Chimborazo, Hall Sunderland—Cronstadt
W.B.J.P. (com. code), ——

14

ELSINORE *arrived from—for*
Sept. 1. Diamond, Borrows Sunderland—Cronstadt
Thomas Kennion, Jewels Newcastle—do
Sieka, de Groot Hartlepl—Memel
Harrisons, Barnard do—Swinemunde
Ann & John, Howard Blyth—Cronstadt
Anna, Minolts N'castle—Petersbg
Mary Sparks, Randell Cardiff—Baltic
Chase, Flett Shields—Cronstadt
Huma, —— N.Sea—Baltic
Baldur, Larsen Waterford—Hudiksvall
Amphitrite, Wilks Shields—Cronstadt
Laurel, Fullarton Bt. Island—do
Eden, Chapman Cardiff—do
Dyson, Gibson do—Kiel
Countryman, Danielsen Granville—Baltic
Primus, Mortensen London—do
Niord, Torgersen do—Hernosand
Warkworth Castle, Ditchburn St. David's—Cronstadt
Vibilia, Danielsen St. Valery—Sundswall
Anette, Svendsen do—Hudiksvall

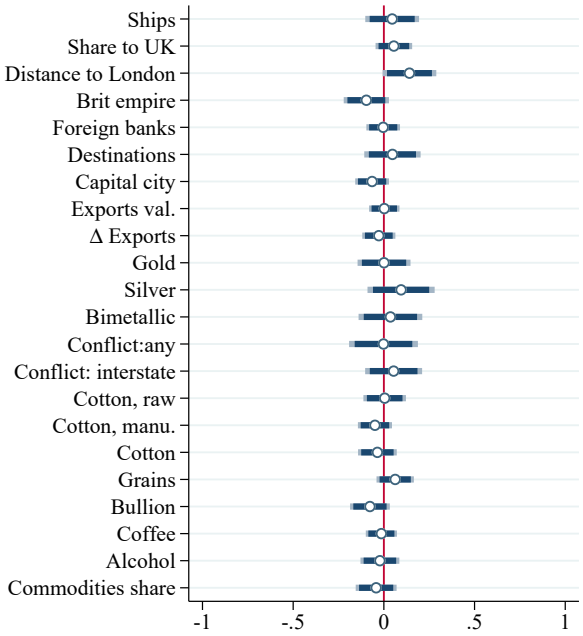
Notes: Data for Figure B1a come from Bank of England Archives C24/1. This is an example of the original records used to construct the financing data. The name of the bank, Agra and Masterman's, is written at the top. The column on the far left, "Whence Drawn," give the city where the credit was originally issued. The column on the far right, "Upon," gives the values of the loans.
Data for Figure B1b come from the British Library. This excerpt from the *Lloyd's List* of September 5, 1866 show the organization of the records and the typical information available. Under each port, ships are listed individually with their name, their captain's name, type of ship, whether they arrived to the port or sailed from it, the destination of their movements, and the date of the event. Coastal (i.e. domestic) trade was omitted from the records for non-British ports.

Figure B2: Positive correlation between country-level number of ships and exports values



Notes: Figure B2 shows the positive linear relationship between the number of ships leaving a country in a given calendar year (from the *Lloyd's List*) and the values of exports from that country. Three years around the crisis year are plotted. The line is fitted to the pooled sample of all years. The slope is 5.50 and the t-stat is 13.98.

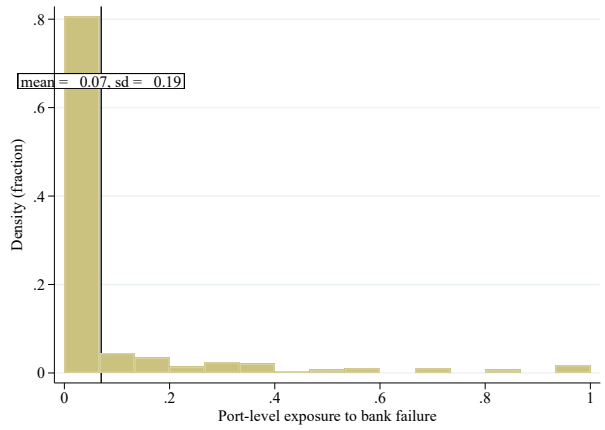
Figure B3: Joint significance of location level characteristics



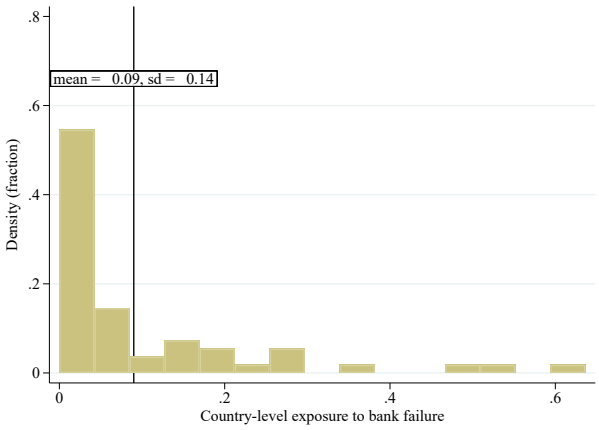
Notes: Figure B3 plots the coefficients and 90% and 95% confidence intervals of the correlation between bank failures and all pre-crisis location characteristics. The *F-stat* of joint significance is 1.14 with a p-value of 0.32.

Figure B4: Distribution of exposure to bank failure

(a) Ports

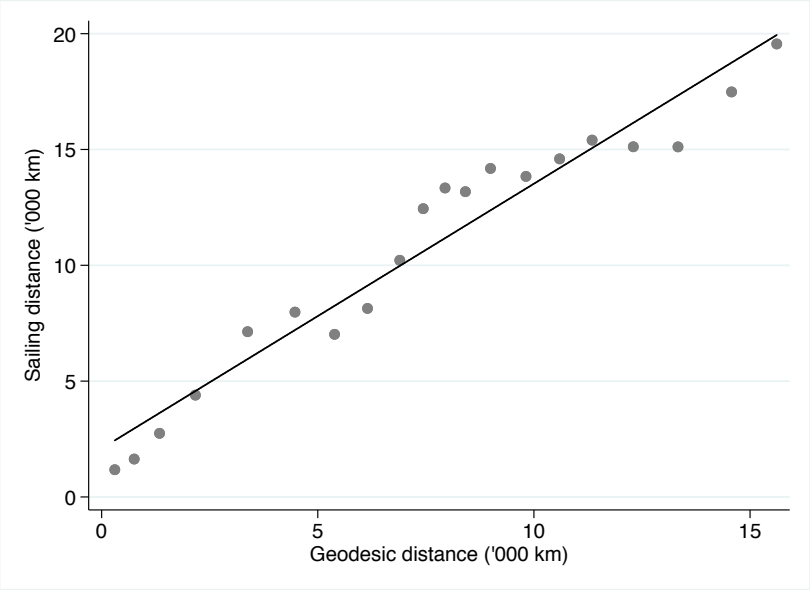


(b) Countries



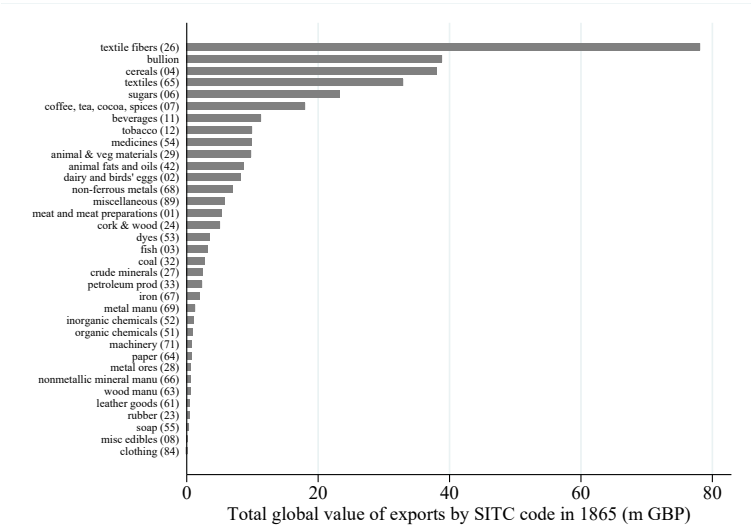
Notes: Figure B4 plots the histogram of port (n = 289) and country (n = 55) exposure to bank failures for the sample of ports and countries that were active in the pre-crisis year.

Figure B5: Positive correlation between sailing distance and geodesic distance



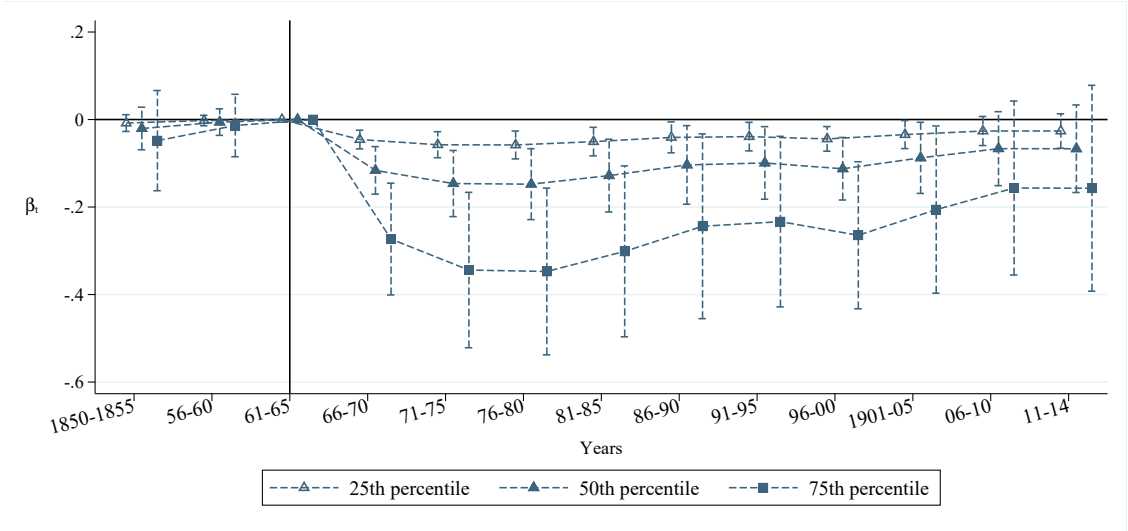
Notes: Figure B5 plots the binscatter relationship between ports' distance to each other measured geodesically in kilometers and sailing distance measured in kilometers. The data for sailing distance come from *Philips' Centenary Mercantile Marine Atlas II* published in 1935. Sailing distances are calculated without the Suez Canal route, which only opened in 1869. See Appendix H for a full discussion of the data source. Geodesic distances are calculated based on the port's longitude and latitude coordinates.

Figure B6: Industry composition of global exports in 1865



Notes: Figure B6 shows the total value of world exports across all countries by two-digit SITC categorization. The handcoded SITC category is given in parentheses next to the category name. Units are millions of pounds sterling in 1865. Sources: *Statistical Tables relating to Foreign Countries* and *Statistical Tables relating to the Colonial and Other Possessions of the United Kingdom* published in 1866.

Figure B7: Persistent effect on exporter market shares by percentiles of treatment

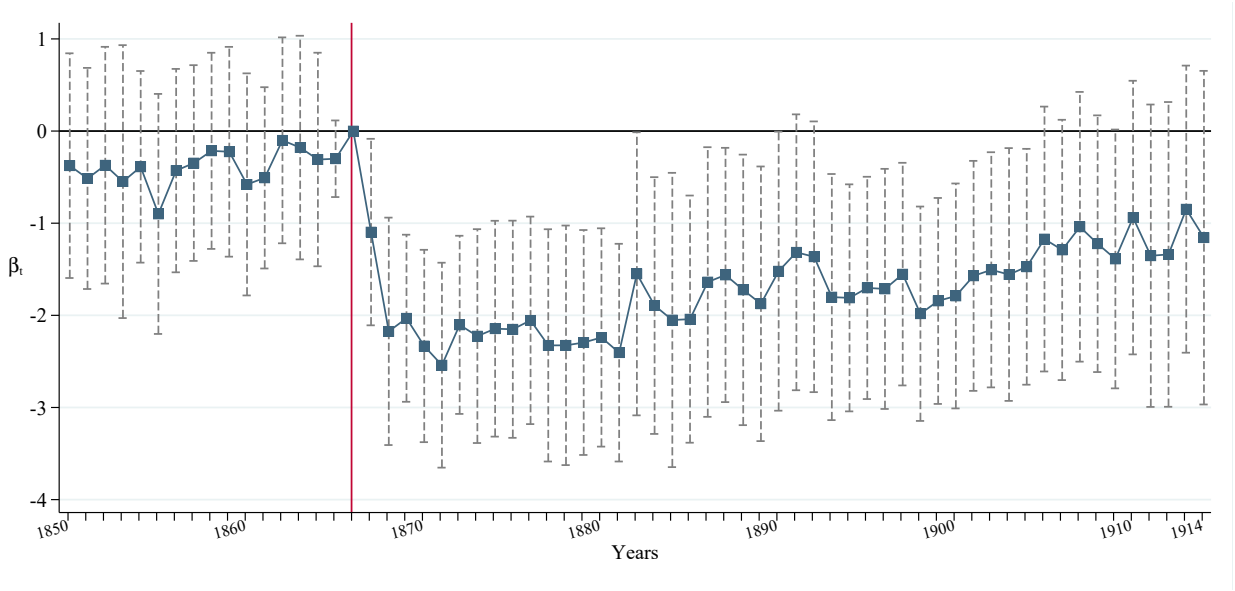


Notes: Figure B7 plots the coefficients and 95% confidence intervals of the baseline estimation where treatment coefficients and standard errors are scaled by the 25th, 50th, and 75th percentiles of exposure, conditional on positive exposure. Standard errors in brackets are clustered by the origin country. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

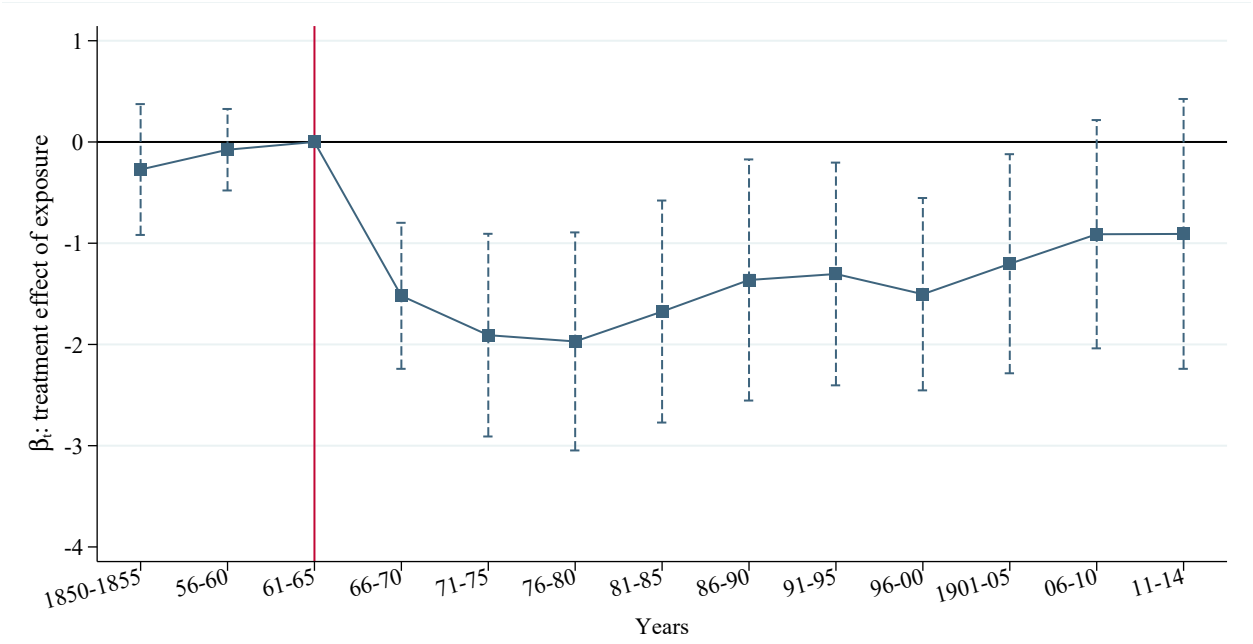
Figure B8: Persistent effect of financing shock on exporter market share

$$\ln(\text{EX}_{odt}) = \beta_t \text{Fail}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

(a) β_t estimated annually



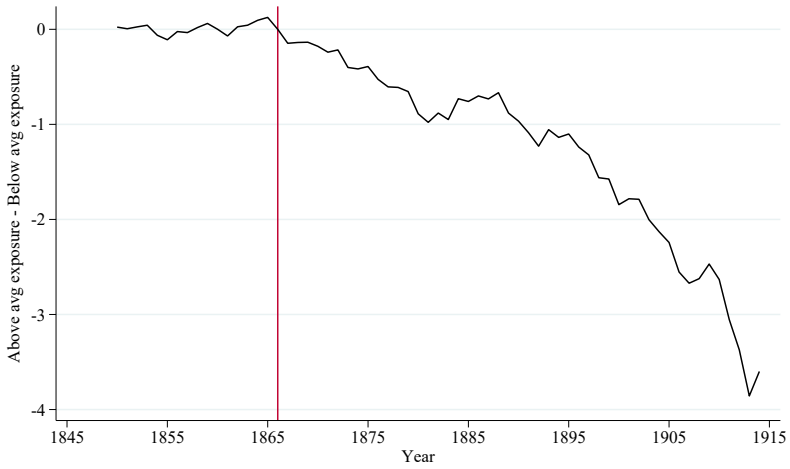
(b) β_t estimated every 5 years



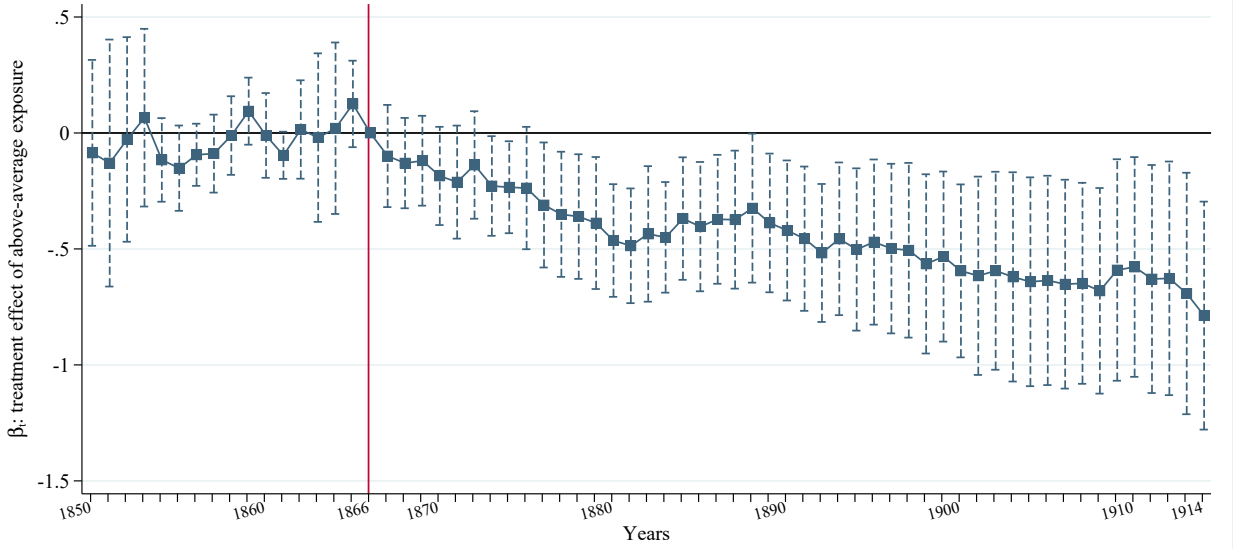
Notes: Figure B8 plots the β_t point estimates and 95 percent confidence intervals for the specification given in equation 8 estimated on the country-level panel of trade. β_t is the treatment coefficient on the effect of exposure to failed banks on exports in each group of years. Point estimates and standard errors are scaled by the mean of treatment, so the magnitudes should be interpreted as the effect for the average exporter. The dependent variable is the log value of exports. The specification includes origin country o FE, destination country-year dt FE, and time-varying controls for the bilateral distance between countries. Standard errors are clustered by the origin country. See Table G12 column 1 for the point estimates.

Figure B9: Effect of above average exposure to bank failure on total exports

(a) Difference between above- and below-average exposure



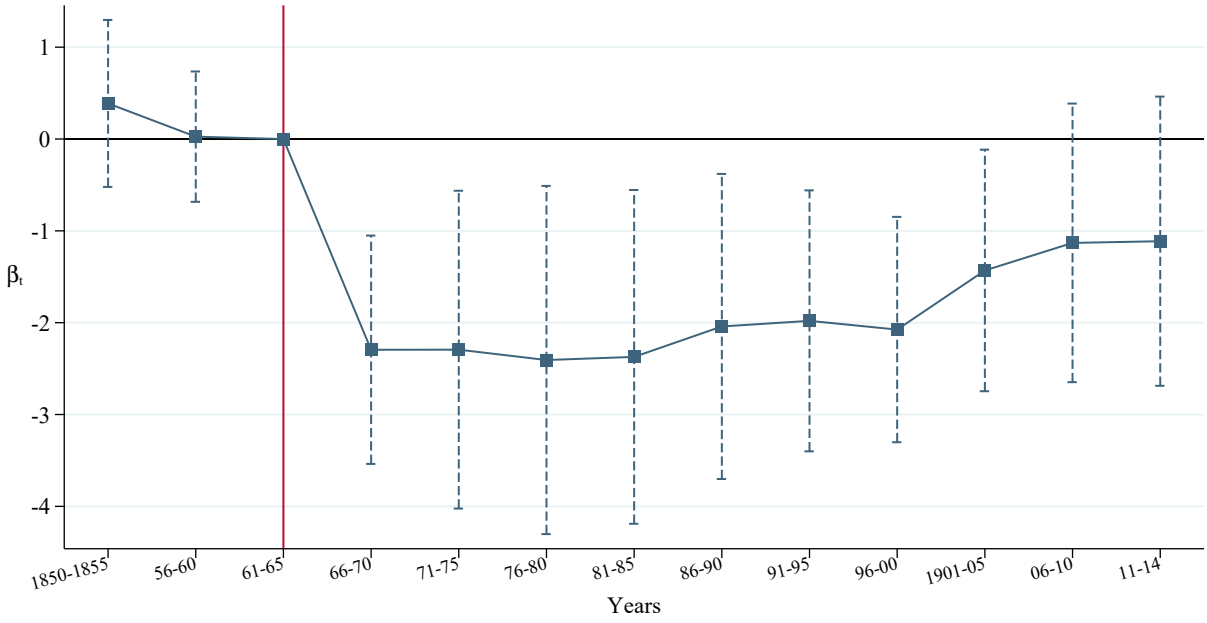
(b) Effect of above average exposure to bank failure on total exports
$\ln(\text{EX}_{ot}) = \beta_t \mathbb{I}(\text{Above avg exposure}_o) + \gamma_o + \gamma_t + \varepsilon_{ot}$



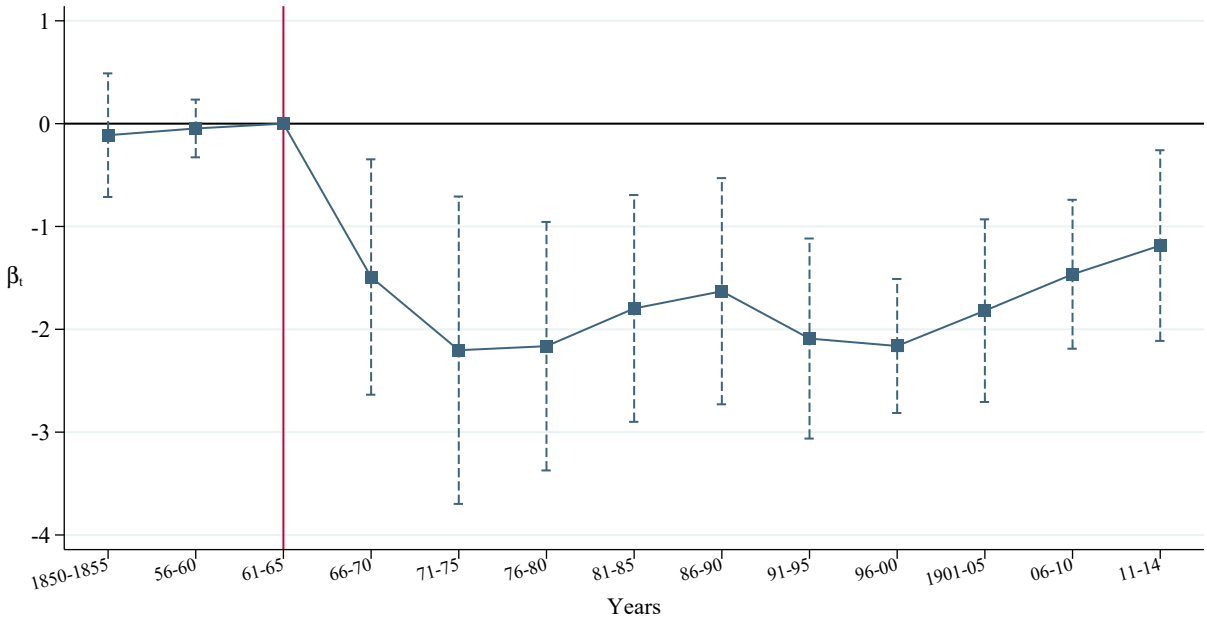
Notes: Figure B9a plots the raw data for the difference in the total value of exports by groups of countries from 1850–1914. Countries are binned into two categories: "Below avg failure" refers to countries that experienced below average exposure to bank failures in London, where the average rate was calculated in the cross-section of exporting countries in 1866. "Above avg failure" refers to countries that experienced above average exposure to bank failures. Exports values are normalized to equal 1 in 1866. Figure B9b plots β_t from 1860–1914 for the equivalent regression: $\ln(\text{EX}_{ot}) = \beta_t \mathbb{I}(\text{Above avg exposure}_o) + \gamma_o + \gamma_t + \varepsilon_{ot}$. The dependent variable is the log of the total value of exports for origin country o in year t. γ_o and γ_t are country and year fixed effects, respectively. The regressions are weighted by the number of trade partners in order to most closely mirror Figure B9a. The vertical line marks 1866.

Figure B10: Recovery within country groups

(a) Within SITC groups

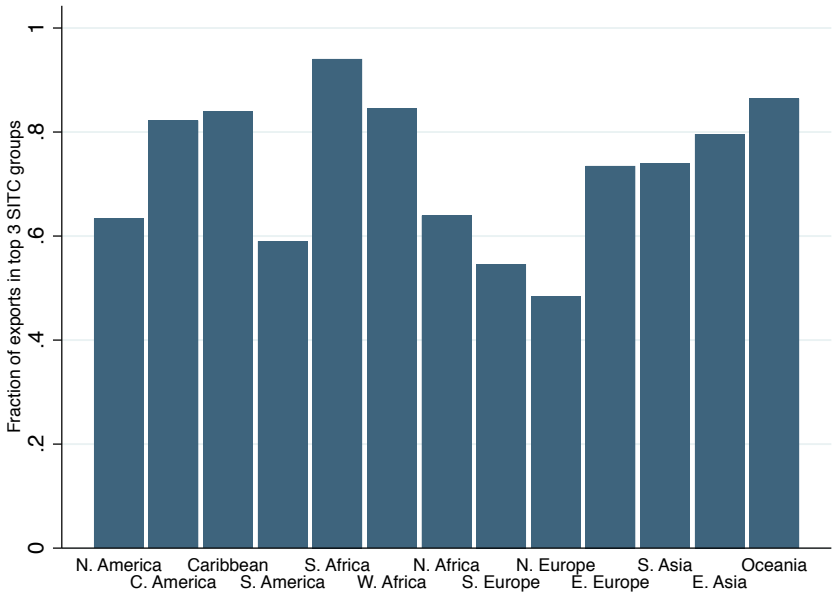


(b) Within regions using the same countries



Notes: Figure B10 plots the estimated coefficients from the regression specification below, which is the main specification in equation 8 including SITC-year fixed effects (Figure B10a) and region-year fixed effects (Figure B10b). Figure B10b is estimated on the same sample of countries as in Figure B10a, the countries for which data on exports composition in 1865 is available.

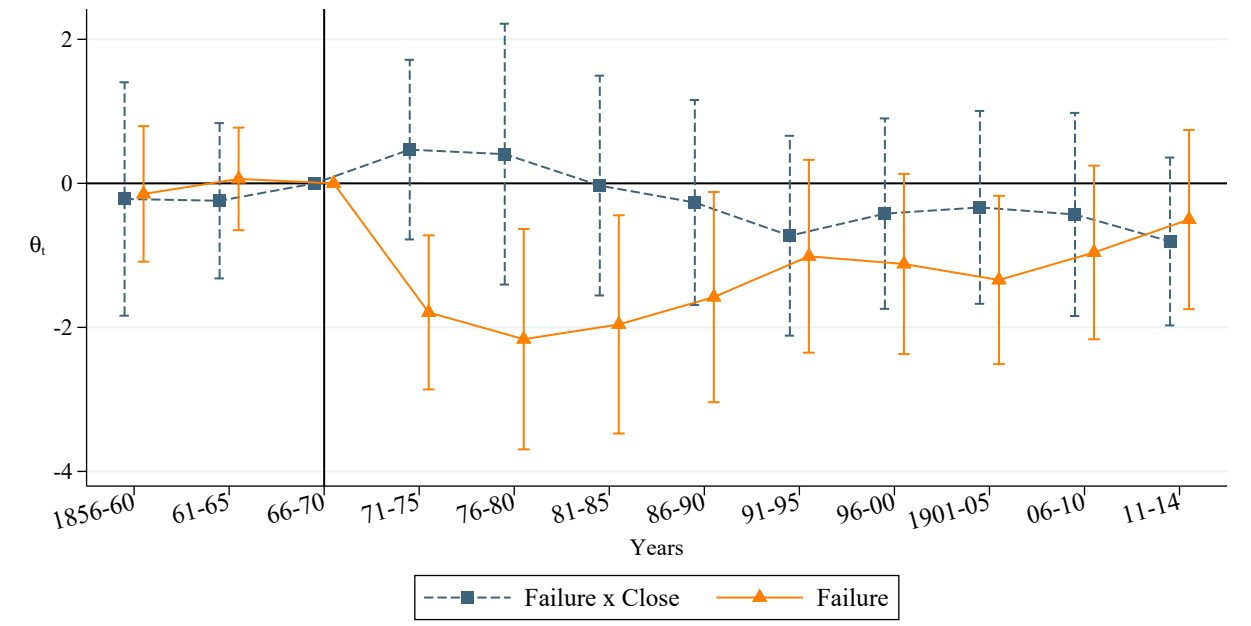
Figure B11: Exports correlation within country regions



Notes: Figure B11 plots the fraction of exports in the top 3 SITC groups for each region. Exports values are calculated from 1865. The full list of countries and their geographic regions are given in Appendix H.4. Regions are listed by geographic proximity, beginning in North America and traveling south and east.

Figure B12: Heterogeneity of recovery by trade distance

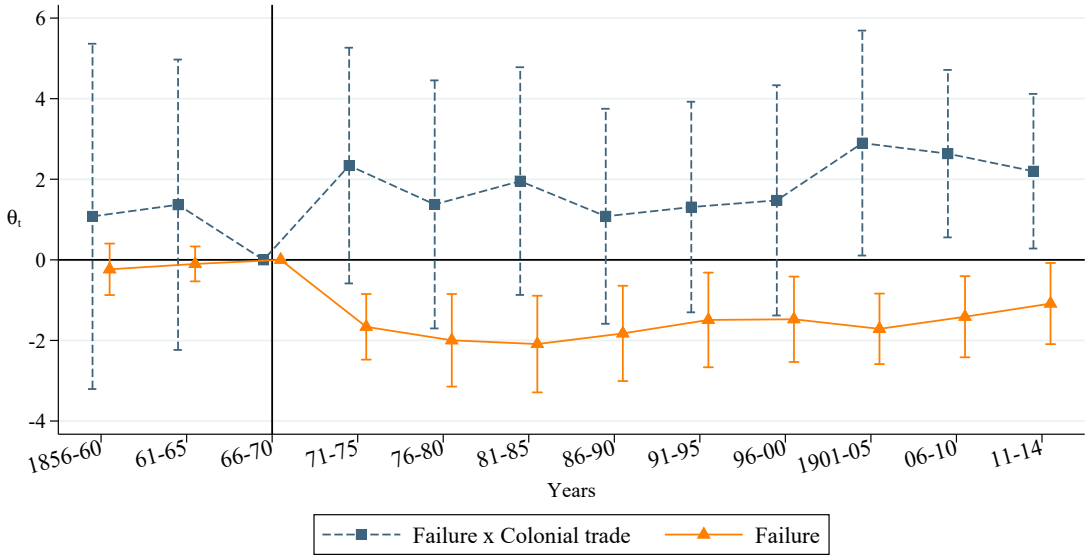
$$\ln(\text{EX}_{odt}) = \theta_{t,close}\text{Fail}_o \times \mathbb{1}(\text{Close}_{od}) + \beta_t \text{Fail}_o + \lambda_t \mathbb{1}(\text{Close}_{od}) + \Psi' X_{od} + \gamma_o + \gamma_{dt} + \varepsilon_{odt}$$



Notes: Figure B12 plots the plots the θ_t and β_t point estimates and 95% confidence intervals from the country-level panel of trade in the specification given above. The dependent variable is the log value of exports. The specification includes origin country o FE, destination country-year dt FE, and time-varying indicators for common land border, common European colony, and common language. "Failure × Close" is the treatment coefficient on the effect of exposure to failed banks on exports to countries that are less than the average distance away from the destination country, where the average is measured by 1865 bilateral trade flows. Standard errors are clustered by the origin country.

Figure B13: Heterogeneity for colonial trade

$$\ln(\text{EX}_{odt}) = \theta_t \text{Fail}_o \times \text{Colonial}_{od} + \beta_t \text{Fail}_o + \lambda_t \text{Colonial}_{od} + \Psi' X_{od} + \gamma_o + \gamma_{dt} + \varepsilon_{odt}$$



Notes: Figure B13 plots the plots the θ_t and β_t point estimates and 95% confidence intervals from the country-level panel of trade for the equation written above. The dependent variable is the log value of exports. The specification includes origin country o FE, destination country-year dt FE, and gravity controls. θ_t for "Fail $\times$ Colonial$_{od}$" is the coefficient on the effect of exposure to failed banks on for trade between a country and the rest of its empire. Standard errors are clustered by the origin country.

C Additional historical context

C.1 Trade finance

British multinational banks began being established in the 1830s both within and beyond the British Empire to facilitate international capital flows, with the specific purpose of increasing trade abroad. These banks were headquartered and raised capital in London by issuing deposits and shares, but they operated outside of Britain in offices around the world. The fact that they raised shares, issued deposits, and invested abroad signaled a new movement in banking. These were the first "universal banks" which then spread to Continental Europe in the subsequent decades (Cassis, 2016, p.96). They most often funded the British exporters already established in foreign ports. The lack of infrastructure in most countries was such that those merchants had to arrange for their own financing and insurance. Their local knowledge was invaluable to business, and the multinational bank subsidiary offices maintained close contact with these exporters (Jones, 2000, p.27). See Table C1 for examples of these banks and their operating regions.

The mechanics of trade finance in the 19th century were conducted through bills of exchange traded among the networks of banks and interbank lenders centered on London. Bills were short-term loans that became contractual obligations when the creditor "accepted" it by signing across it. In their simplest form, bills of exchange allowed for debts between two parties. They were orders written by the "drawer" (lender) that the "drawee" (borrower) would pay the face value of the bill (to the drawer, someone else, or the bearer) at some point in the future (maturity date). A check is a bill of exchange in the case when the drawee is the drawer's bank. A promissory note is a bill between the drawer and payee, where there is no drawee responsible for making the payment. Bills usually had a maturity of 3-6 months (Cassis, 2016, p.93).

British banks lent to their customers by "accepting" the customer's bills of exchange. British commercial law stipulated that the acceptor in turn became liable for the bill, such that if the original borrower defaulted, the acceptor was responsible for payment. This liability meant that acceptors essentially acted as guarantors and transformed the idiosyncratic risk of individual borrowers into their own credit risk. The rise of merchant banking in the United Kingdom is usually attributed to this aspect of the law, as it was profitable for the most established lenders with known reputations to "sell" their guarantee to lesser-known borrowers for a fee. This guarantee made it easier to re-sell (discount) the bills to another individual or financial institution on the London money market because the credit risk was easily observable (Jones, 2000, p.23). Discounts most resemble a modern-day repurchase agreement: the seller received the face value of the bill minus the discount rate (haircut) at the initiation of the transaction, and he paid the full face value in return for the security at its maturity. At maturity, the bill was presented to the original borrower via his accepting bank for repayment, and the debt was terminated.

The feature of joint liability protected the London money market from issues stemming from asymmetric information where acceptors knowingly passed on bad bills. It made their quality easily ascertainable, and bills were flexible and customizable, so they became useful debt and investment instruments around the world, analogous to commercial paper today. In fact, the Treasury Bill was proposed by Walter Bagehot in 1877 and modeled after

the commercial bill of exchange to allow the government to borrow at short maturities just as commercial parties were able to.

A concrete example of how the funds flowed when banks acted as acceptors is presented below in Figure C1. In the Exporting Location, the "drawer" (exporting firm) draws a bill, which is "accepted" by his bank, and the exporter is given credit to fund his operations during the period of shipment. The exporter ships goods to the importer (the one who will ultimately settle the bill) while his bank remits the bill to its London headquarters. In London, the bill is discounted on the money market, which provides the headquarters with fresh funding. In the final step, the importer's bank settles the bill as payment for goods when it matures.

Cassis described the financing of international trade the following way:

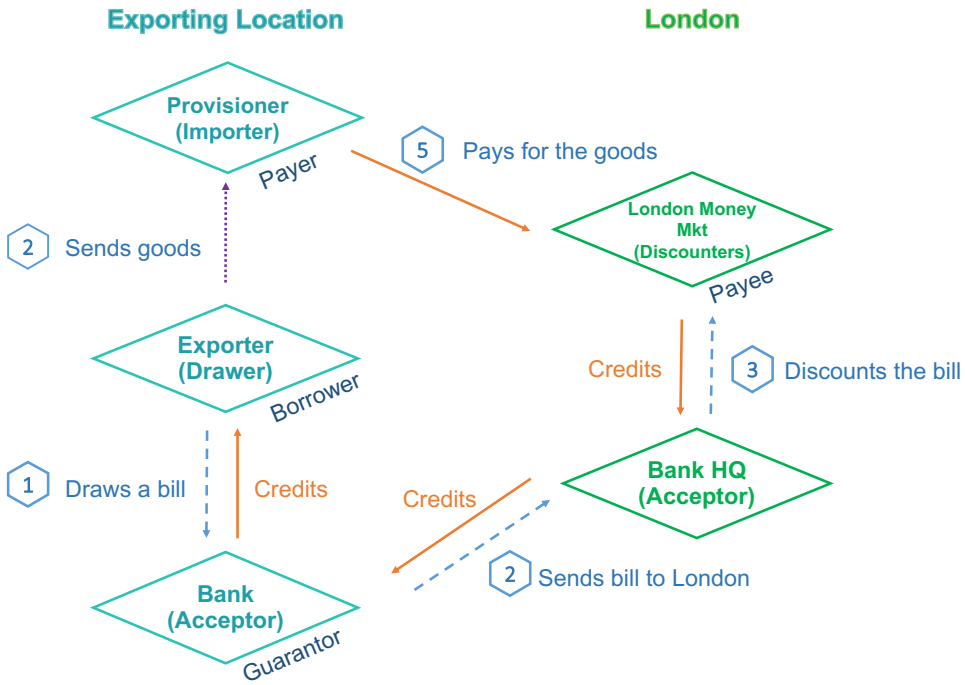
> *Finance required by the growth of international trade was supplied by private bankers, increasingly by a small group of largely London-based merchant bankers who specialized in trade credit by accepting bills of exchange and thus guaranteeing by their undoubted standing the payment of the bills involved. The merchant banks' backing was made clear by their acceptance on presentation of the international trade bills with which they were individually connected. These providers of commercial finance became known in the City as 'acceptance houses', and the paper involved as 'acceptances'. The bills were readily traded on the London market and so were liquid over the period, normally 60-90 days, between their acceptance and maturity.* (p. 93)

British multinational banks had accounts at the Bank of England, which in practice meant that any security originated by one of these multinational banks was considered high enough quality to be discounted at the Bank of England. Banks could obtain liquidity from the Bank of England by discounting the short-term liquid assets that they held.[2] These assets were predominantly the bills of exchange that had been extended by other banks abroad, reflecting the lending activity of those banks. Although bills could be used for any purpose, those that originated outside of the United Kingdom primarily financed trade and were collateralized by shipments. The London money market's liquidity came from the size of the foreign bills market, and banks almost never held their own bills until maturity (King, 1936).

In the modern trade finance literature (e.g., Antràs and Foley (2015); Schmidt-Eisenlohr (2013)), much attention has been paid to the nature of the contractual frictions that lead to differences in the method of payment. Cash-in-advance payment terms implies that the importer is implicitly financing the exporter during the period of shipment and is willing to take on the risk that the exporter will default on some or all of the value of goods contracted. However, the historical evidence points to banks not financing consumption and importers being worried about default risk, consistent with the interpretation that banks in this early period of globalization were focused on financing exporters.

[2]The term Discount Window in reference to the central bank originates from the fact that bills of exchange were "discounted" there.

Figure C1: Flowchart of life cycle of a bill of exchange



Notes: Figure C1 shows the flow of funds. Blue dashed lines indicate the passage of the bills of exchange; solid orange lines indicate the flow of credit, and dotted purple lines indicate the flow of goods. The steps in the process are numbered in the hexagons.

Table C1: Examples of Banks and Operating Regions

Bank	Founding Year	Operational Region
Anglo-Egyptian Bank	1864	Egypt, Mediterranean
Anglo-Italian Bank	1864	Italy, France
Bank of Australasia	1835	Australia, New Zealand
Bank of British North America	1836	Canada, USA
Chartered Mercantile Bank of India, London & China	1853	India, China, Canada, Australia, Indonesia, USA
Colonial Bank	1837	Caribbean
Imperial Bank	1862	Europe, Egypt, North America
Ionian Bank	1839	Greece
London Bank of Mexico & South America	1864	Mexico, Peru
Union Bank of London	1839	Australia, New Zealand, South America, Asia, North America

Notes: Table C1 lists a sample of the banks providing trade credit. The operational region is given as countries although city-level variation is used in many of the empirical estimations. Sources: Bank of England Archives C24/1, *Banker's Magazine*, select bank histories listed in Appendix H.

C.1.1 Additional qualitative evidence on British banking business

Jones (1995) describes the business of these British multinational banks in the following way: "The overseas banks were normally British-registered institutions with London-based boards of directors which presided over branches abroad. ...This institutional structure was well suited to international trade finance. The London-based boards and offices provided essential contacts with, and information about, British mercantile interests, who imported the commodities and minerals produced in the colonial economies, and exported the manufactured goods needed by them. London had a large secondary market specializing in bills. Surplus sterling credits accumulated during the exports seasons could be profitably employed on the London markets, while seasonal shortfalls could be covered in the same way. Meanwhile an overseas branch network could provide a British institution with valuable creditor information and a debt collection facility in overseas countries." (p. 16)

In addition: "As the names of the first banks demonstrated, each had its own geographical area of operation, although often several banks competed within the same region. This pattern continued, apart from a very few exceptions, as British overseas banks spread to Asia, Africa, and Latin America. Geographical specialization remained a characteristic feature of British multinational banking over the next 150 years. A number of influences explain the functional and geographical specialization in British multinational banking. The British financial system as a whole was evolving by the early 19th century into a system of specialist institutions... The geographical location of the first multinational banking investment was influenced by the merchant banks, which held first-mover advantages in the finance of British trade with continental Europe and the United States." (p. 17)

Lloyds (1957) describes the London and River Plate Bank the following way: "[It]

was above all a commercial bank, and a great part of its business consisted in the financing of exports and imports. It was always concerned to maintain a highly liquid position, and avoided tying up its funds in land investments and mortgages." (p. 6)

The description of British banking in India from Bagchi (1985) is: "The major staple of business of Anglo-Indian banking was trade, and especially, trade connected with exports and imports. This was again not necessitated by a shortage of capital, for even after leakages abroad, extravaganzas of the rich and the costs of the financing of trade, there remained a residue which could have been productively invested if Indians or Europeans had found it profitable to invest in industry or agriculture on a large scale. The meagre volume of modern manufacturing investment and still smaller fraction of it financed by joint-stock banks are a reflection of a *post facto*, downward adjustment of the supply of industrial finance to the demand for it, rather than the smallness of the potential, or even the actual, savings of the wealthy Indians or Europeans with Indian connections." (p. 100)

C.1.2 British banking dominance

In 1865, there were 318 unique non-British banks operating around the world, in comparison to the 128 British banks. However, the British banks were almost the only ones with an international network: the average British bank operated in 10.6 unique locations outside of the UK while the average non-British bank operated in 1.4 locations but almost entirely within their own countries.[3] In addition, cities with British banks were closer to major ports, so at the port-level, British banks account for **91%** of bank operations outside of the United Kingdom. Non-British banks account for the other 9%.

In summary:

a. Size of British activity relative to total size of the banking sector in local markets: British share is just over 90%. However, since these British banks were specialized in providing international trade financing while the non-British banks in this period were not known for that (since they did not use bills of exchange as readily and did not have a money market like London did), the rough estimate that they accounted for 90% of trade financing in 1865 is likely a lower bound.

b. British activity relative to other multinational activity: the remaining 9% of banks operating were almost entirely local banks (i.e. those of the same nationality as their operations). There are a few French, German, and Swiss exceptions that operated outside their own countries but these account for less than 1% of total banking activity measured in number of banks.

c. Business activity with multinationals versus local firms: while the loans data from the Bank of England ledgers do record the ultimate borrower (i.e. the local firm in the location requesting the credit), these parts of the records are very difficult to read and to analyze systematically since most borrowers appear to be individuals. Anecdotally, these British banks tended to be created by British merchants and bankers

[3]These data come from the *Banking Almanac and Directory* for 1865. This dataset covers 275 unique locations, and the vast majority of non-British banks only operate in one location.

in conjunction with local business interests, so they almost certainly were lending to local firms as well.[4]

C.2 Overend & Gurney

The firm Overend & Gurney specialized in brokering bills of exchange in the City of London. It was larger than the next three largest bills brokerages in combined. The firm dated back to 1775, when it began as merchants in the wool trade, before moving to finance. The Quaker family established a reputation for trustworthiness and wealth, and in the 19th century moved its operations to London. It was also one of the first bill brokers in London and quickly became the largest to the point that modern databases use Overend & Gurney's discount rate as a proxy for the market rate during this period.

Prior to its 1866 bankruptcy, Overend & Gurney had an uneasy relationship with the Bank of England, stemming from its attempt in 1860 to stage a mini run on the Bank. This event reduced the Bank of England's stock of bank notes by its depositors by 22%, of which Overend's share accounted for almost 60%. Overend finally redeposited the notes and apologized, and it is a primary factor attributed to the Bank's unwillingness to extend Overend credit in 1866 (Bagehot, 1873, p. 282).

Overend's bankruptcy was due to a court decision handed down on May 9th that a railway company that Overend and three other banks and discount houses had extended credit to, was not obliged to repay its debt to its creditors. Overend's stock prices dropped due to this news, and depositors ran on Overend itself. The run forced Overend to close its doors on May 10th.

C.2.1 Public connection to Overend & Gurney

The original shareholder list dated January 1866 is kept in the Royal Bank of Scotland Archives in Edinburgh. This is the most recent shareholder list to have been compiled before the crisis, and the one that circulated in London during the crisis. The list of the managers and directors of the banks were published in newspapers, almanacs, shareholder meetings, and other contemporary publications. Examples of these sources are below in Figure C2. I use the shareholder list to construct a binary measure for whether a bank has a manager or director that is an Overend & Gurney shareholder.

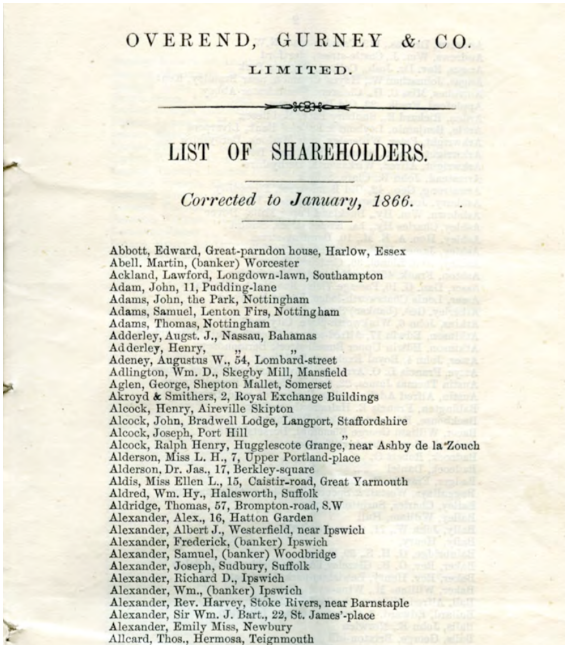
C.2.2 Transcript of the prospectus published on July 13, 1865

> THE COMPANY is formed for the purpose of carrying into effect an arrangement which has been made for the purchase from Messrs. Overend Gurney and Co., of their long established business as bill brokers and money dealers, and of the premises in which the business is conducted, the consideration for the goodwill being £500,000, one half being paid in cash and the remainder in shares of the

[4]See Geoffrey Jones' *British Multinational Banking, 1830–1990* chapter 2 on the foundations of these banks with summaries of individual bank histories.

Figure C2: Example of original shareholder and directors' lists

(a) Overend & Gurney shareholders



OVEREND, GURNEY & CO.

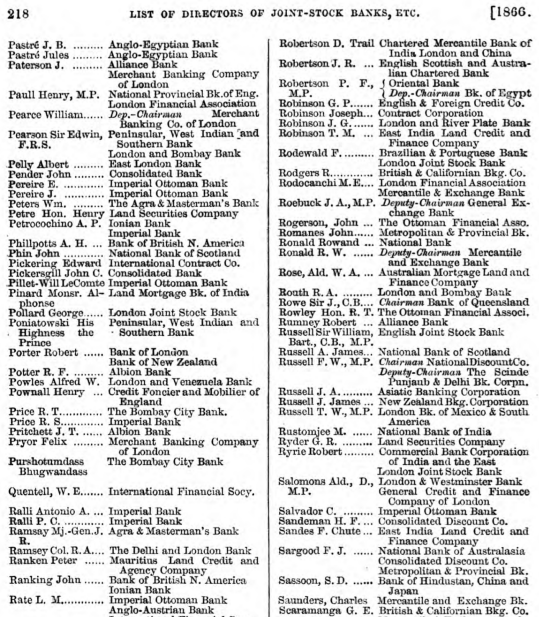
LIMITED.

LIST OF SHAREHOLDERS.

Corrected to January, 1866.

Abbott, Edward, Great-parndon house, Harlow, Essex
Abell, Martin, (banker) Worcester
Ackland, Lawford, Longdown-lawn, Southampton
Adam, John, 11, Pudding-lane
Adams, John, the Park, Nottingham
Adams, Samuel, Lenton Firs, Nottingham
Adams, Thomas, Nottingham
Adderley, Augst. J., Nassau, Bahamas
Adderley, Henry, " "
Adeney, Augustus W., 54, Lombard-street
Adlington, Wm. D., Skegby Mill, Mansfield
Aglen, George, Shepton Mallet, Somerset
Akroyd & Smithers, 2, Royal Exchange Buildings
Alcock, Henry, Aireville Skipton
Alcock, John, Bradwell Lodge, Langport, Staffordshire
Alcock, Joseph, Port Hill "
Alcock, Ralph Henry, Hugglescote Grange, near Ashby de la Zouch
Alderson, Miss L. H., 7, Upper Portland-place
Alderson, Dr. Jas., 17, Berkley-square
Aldis, Miss Ellen L., 15, Caistir-road, Great Yarmouth
Aldred, Wm. Hy., Halesworth, Suffolk
Aldridge, Thomas, 57, Brompton-road, S.W
Alexander, Alex., 16, Hatton Garden
Alexander, Albert J., Westerfield, near Ipswich
Alexander, Frederick, (banker) Ipswich
Alexander, Samuel, (banker) Woodbridge
Alexander, Joseph, Sudbury, Suffolk
Alexander, Richard D., Ipswich
Alexander, Wm., (banker) Ipswich
Alexander, Rev. Harvey, Stoke Rivers, near Barnstaple
Alexander, Sir Wm. J. Bart., 22, St. James'-place
Alexander, Emily Miss, Newbury
Allcard, Thos., Hermosa, Teignmouth

(b) Managers and directors of banks



218 LIST OF DIRECTORS OF JOINT-STOCK BANKS, ETC. [1866.

Pastré J. B.	Anglo-Egyptian Bank
Pastré Jules	Anglo-Egyptian Bank
Paterson J.	Alliance Bank
	Merchant Banking Company of London
Paull Henry, M.P.	National Provincial Bk.of Eng.
	London Financial Association
Pearce William	*Dep.-Chairman* Merchant Banking Co. of London
Pearson Sir Edwin, F.R.S.	Peninsular, West Indian and Southern Bank
	London and Bombay Bank
Pelly Albert	East London Bank
Pender John	Consolidated Bank
Pereire E.	Imperial Ottoman Bank
Pereire J.	Imperial Ottoman Bank
Peters Wm.	The Agra & Masterman's Bank
Petre Hon. Henry	Land Securities Company
Petrocochino A. P.	Ionian Bank
	Imperial Bank
Phillpotts A. H.	Bank of British N. America
Phin John	National Bank of Scotland
Pickering Edward	International Contract Co.
Pickersgill John C.	Consolidated Bank
Pillet-Will LeComte	Imperial Ottoman Bank
Pinard Monsr. Alphonse	Land Mortgage Bk. of India
Pollard George	London Joint Stock Bank
Poniatowski His Highness the Prince	Peninsular, West Indian and Southern Bank
Porter Robert	Bank of London
	Bank of New Zealand
Potter R. F.	Albion Bank
Powles Alfred W.	London and Venezuela Bank
Pownall Henry	Credit Foncier and Mobilier of England
Price R. T.	The Bombay City Bank.
Price R. S.	Imperial Bank
Pritchett J. T.	Albion Bank
Pryor Felix	Merchant Banking Company of London
Purshotumdass Bhugwandass	The Bombay City Bank
Quentell, W. E.	International Financial Socy.
Ralli Antonio A.	Imperial Bank
Ralli P. C.	Imperial Bank
Ramsay Mj.-Gen. J. R.	Agra & Masterman's Bank
Ramsey Col. R. A.	The Delhi and London Bank
Ranken Peter	Mauritius Land Credit and Agency Company
Ranking John	Bank of British N. America
	Ionian Bank
Rate L. M.	Imperial Ottoman Bank
	Anglo-Austrian Bank
Robertson D. Trail	Chartered Mercantile Bank of India London and China
Robertson J. R.	English Scottish and Australian Chartered Bank
Robertson P. F., M.P.	Oriental Bank *Dep.-Chairman* Bk. of Egypt
Robinson G. P.	English & Foreign Credit Co.
Robinson Joseph	Contract Corporation
Robinson J. G.	London and River Plate Bank
Robinson T. M.	East India Land Credit and Finance Company
Rodewald F.	Brazilian & Portuguese Bank
	London Joint Stock Bank
Rodgers R.	British & Californian Bkg. Co.
Rodocanchi M. E.	London Financial Association
	Mercantile & Exchange Bank
Roebuck J. A., M.P.	*Deputy-Chairman* General Exchange Bank
Rogerson, John	The Ottoman Financial Asso.
Romanes John	Metropolitan & Provincial Bk.
Ronald Rowand	National Bank
Ronald R. W.	*Deputy-Chairman* Mercantile and Exchange Bank
Rose, Ald. W. A.	Australian Mortgage Land and Finance Company
Routh R. A.	London and Bombay Bank
Rowe Sir J., C.B.	*Chairman* Bank of Queensland
Rowley Hon. R. T.	The Ottoman Financial Associ.
Rumney Robert	Alliance Bank
Russell Sir William, Bart., C.B., M.P.	English Joint Stock Bank
Russell A. James	National Bank of Scotland
Russell F. W., M.P.	*Chairman* National Discount Co. *Deputy-Chairman* The Scinde Punjaub & Delhi Bk. Corpn.
Russell J. A.	Asiatic Banking Corporation
Russell J. James	New Zealand Bkg. Corporation
Russell T. W., M.P.	London Bk. of Mexico & South America
Rustomjee M.	National Bank of India
Ryder G. R.	Land Securities Company
Ryrie Robert	Commercial Bank Corporation of India and the East
	London Joint Stock Bank
Salomons Ald., D., M.P.	London & Westminster Bank
	General Credit and Finance Company of London
Salvador C.	Imperial Ottoman Bank
Sandeman H. F.	Consolidated Discount Co.
Sandes F. Chute	East India Land Credit and Finance Company
Sargood F. J.	National Bank of Australasia
	Consolidated Discount Co.
	Metropolitan & Provincial Bk.
Sassoon, S. D.	Bank of Hindustan, China and Japan
Saunders, Charles	Mercantile and Exchange Bk.
Scaramanga G. E.	British & Californian Bkg. Co.

Notes: Figure C2a is the first page of the shareholder list of Overend & Gurney published in January, 1866 and kept in the Royal Bank of Scotland archives. Figure C2b is an excerpt from a public almanac that documents the list of directors of joint stock banks in London.

Table C2: Pre-crisis comparison of bank balance sheet characteristics by OG connection

	All		Not Failed		Failed		Diff	
Capital, authorized (£m)	1.42	(1.06)	1.36	(1.04)	1.75	(1.12)	-0.39	(0.29)
Capital, paid up (£m)	0.58	(0.38)	0.56	(0.37)	0.67	(0.42)	-0.10	(0.10)
Deposits (£m)	2.22	(2.73)	1.90	(2.14)	3.12	(3.97)	-1.22	(0.95)
Reserve fund (£m)	0.13	(0.12)	0.12	(0.11)	0.16	(0.16)	-0.04	(0.04)
Total size (£m)	4.76	(6.08)	4.77	(6.19)	4.70	(5.88)	0.07	(1.74)
Leverage ratio	0.06	(0.05)	0.07	(0.05)	0.06	(0.04)	0.01	(0.02)
Reserve ratio	0.03	(0.02)	0.03	(0.02)	0.03	(0.01)	0.00	(0.01)
Liquidity ratio	0.14	(0.11)	0.13	(0.10)	0.15	(0.14)	-0.02	(0.03)
Age	36.95	(53.22)	35.54	(50.46)	44.14	(66.51)	-8.60	(12.73)
N	128		107		21		128	

Notes: Table C2 shows bank-level balance across characteristics for banks that had a connection to Overend & Gurney (OG) and did not. All variables are measured at the end of 1865 before the crisis. Balance sheet variables were only published for publicly traded banks. Means are reported first, and standard deviations are given in parentheses. "Diff" refers to the difference in means between groups. Standard errors are reported in parentheses for the "Diff" column. £m denotes units of millions of pounds sterling. Leverage ratio is defined as capital (paid and reserves) divided by total assets. Reserve ratio is defined as reserve assets divided by deposit liabilities. Liquidity ratio is defined as cash, gold, and short-term bills divided by total assets. Significance is marked by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.
Sources: Bank of England Archives C24/1, *Banker's Magazine*, *The Economist*.

company with £15 per share credited thereon – terms which, in the opinion of the directors, cannot fail to ensure a highly remunerative return to the shareholders.

The business will be handed over to the new company on the 1st of August next, the vendors guaranteeing the company against any loss on the assets and liabilities transferred.

Three of the members of the present firm have consented to join the board of the new company, in which they will also retain a large pecuniary interest. Two of them (Mr. Henry Edmund Gurney and Mr. Robert Birkbeck) will also occupy the position of managing directors and undertake the general conduct of the business.

The ordinary business of the company will, under this arrangement, be carried on as heretofore, with the advantage of the co-operation of the board of directors, who also propose to retain the valuable services of the existing staff of the present establishment.

The directors will give their zealous attention to the cultivation of business of a first-class character only, it being their conviction that they will thus most effectually promote the prosperity of the company and the permanent interests of the shareholders. Copies of the company's Memorandum and Articles of Association, as well as the Deed of Covenant in relation to the transfer of the business, can be inspected at the offices of the solicitors of the company.

LONDON, July 12, 1865.

C.2.3 Shareholders' ignorance of the true state of affairs

Prior to the share issuance, *Banker's Magazine* wrote the following about Overend & Gurney:

> The transformation of Overend, Gurney and Co.'s far famed discount establishment into a joint stock company, marks another era in the history of limited liability...we may confidently anticipate that the position of the new company will be relatively as high as the standing of the house to whose business it succeeds.

After Overend and Gurney's failure, *The Money Market Review* periodically published accounts of the process of liquidation. The article entitled, "Overend, Gurney, and Co–the report of the liquidators and the further call of £5 per share" was published on Jan 30, 1869 and include the following excerpt (emphasis added):

> The liquidation of Overend, Gurney, and Company appears to be of pretty much the same character as the conduct of the old firm and the proceedings of the Limited Company...Its policy seems to have been concealment and suppression; the policy of "keeping things dark and making things pleasant." We have frequently felt constrained to animadvert upon its proceedings, but the disclosures during the pending prosecution at the Mansion-house and in this report seem to show that they have been worse than we had anticipated. *The shareholders have never been fully and truly informed as to the real state of their affairs.* Beyond the vaguest and most illusory statements, all the information which they required they have been compelled to extort from the liquidators—who are their servants and representatives—or to obtain from other sources as best they could.

C.2.4 Court case for fraud: Peek v. Gurney

During the court case following Overend & Gurney's failure, the following was said in Chancery by Vice-Chancellor Mallins about what was believed about the firm (emphasis added):

> The great firm of Overend, Gurney, and Co. is stated on all sides to have been founded towards the end of the last century, and it had consequently been in existence, in 1865, for at least sixty-five years. During that period it had attained the greatest commercial repute, and was *universally considered by those best informed on such subjects to be one of the most flourishing and money-making concerns in the greatest commercial city in the world.*

William Peek sued the surviving late directors of Overend & Gurney and the representatives of Mr. Gibbs, a deceased director, for the losses he sustained after purchasing 2000 shares in the company. The plaintiff alleged that he purchased the shares based on the prospectus, but that the defendants had "intentionally suppressed facts of vital importance, which, if disclosed, would have prevented him from making any such purchase," (p. 26).

The full write-up of the court case for the legal profession, published in *The Law Times: The Journal and Record of the Law and the Lawyers* Volume 52 in 1872, is printed below.

THIS was a suit instituted by William Peek the younger against the arriving late directors of Overend, Gurney, and Company (Limited), and the representatives of Mr. Gibbs, deceased director, praying for a declaration that the defendants were liable to make good to the plaintiff the loss he had sustained by reason of his having purchased 2000 shares in the company on the faith of the prospectus put forth by the directors, which, as he alleged, intentionally suppressed facts of vital importance, which, if disclosed, would have prevented him from making any such purpose. The evidence in the cause established in his Lordship's opinion that in May 1865 when Messrs. Gurney resolved on the formation of a company, if the firm had attempted to go on without assistance they must have speedily stopped payment, and that if they had stopped they would have paid only a very small dividend; that at that date the liabilities of the firm totally independent of its legitimate business were in round numbers, 4,000,000*l*, and its assets only 1,000,000*l*, that the firm was then hopelessly insolvent, and all the members of the firm were aware of that fact. In that state of affairs the members of the firm applied to the defendants Barclay, Gordon, Rennie, and Gibbs, explained to them the position of the firm, and induced them to join in the formation of the company. Accordingly on the 12th July, 1865, they issued the prospectus for the formation of the company to purchase the business of the firm for 500,000*l*, one half of which was to be paid in cash, and the other half in shares on which 15*l* per share was to be credited as fully paid up. The company was to consist of 100,000 shares of 50*l* each, of which 15*l* per share was intended to be called up. The plaintiff was not one of the original shareholders, but purchased shares in the market.

Lord ROMILLY was of opinion that the defendants had acted bond fide with the view of preserving the goodwill of the old business, and in the firm belief that the million and a half that would be obtained by the formation of the company would be sufficient to effect that purpose. The real object of the formation of the company was to preserve this goodwill which the partners and their families could not command money enough to preserve. It was essential to the formation of the company that this fact should be concealed as the public would not otherwise have taken shares. The honest belief of the directors in the probable success of the company exonerated them from liability in a criminal court, but not in a court of equity. The concealment of a most material fact, which concealment the concealer believes will be beneficial to himself and the man whom he induces thereby to join with him in a speculation does not, his Lordship thought, exonerate him from the consequences in a court of equity. Upon the concealed fact being known or not depended the whole scheme. The prosecution of the directors for a criminal offence was extremely ill-advised; they did not intentionally try to induce persons to put money into concern which they knew would fail; on the contrary they sincerely believed that it would succeed. But that was no excuse in equity, which requires not only that there should be an absence of any intention, or even of any motive to deceive but also that the truth should be told and that not only that there should be an absence of any intention, or even of any motive

to deceive, but also that the truth should be told and that not partially, but that the whole truth should be told. If anyone of the shareholders had, shortly after the shares had been allotted to him, discovered the facts and filed a bill to have the allotment cancelled and his money returned, the court would not have hesitated to give him the relief sought for, or, if that was impossible, make the directors personally liable to make good the loss he had sustained. There were, however, other considerations in the present case. Did the case of deception by the prospectus apply to the plaintiff, who was a transferee of shares, and not an allottee, and had the plaintiff come in sufficient time and with sufficient diligence to induce the court to interfere in his favour? With regard to the first question, his Lordship thought that if an allottee of shares was bound by time or condonation, a transferee was bound also by the same bar. As regards the other question when a man takes shares in a company he ought to ascertain at once whether the representations, on the faith of which he took his shares, are correct or not. In the present instance the shares were bought in Oct. 1865, and Jan. 1886, but the plaintiff never made any inquiry into the condition of the concern until after the failure in May 1866, and, but for the failure, would doubtless have made no inquiry at all. There was no conduct more rigidly reprobated in equity than the system of playing fast and loose—of adopting a company if successful, and repudiating it if it fails, and calling on the directors for indemnity. He was therefore of opinion that the plaintiff came too late for equity to assist him in this case. If before the failure an allottee had applied to the court either to cancel his shares, or to make the directors personally liable, he would have obtained a decree in his favour, but the time which had elapsed, and the order for the winding-up of the company, entirely precluded the plaintiff from obtaining the cancellation of the contract, according to the decision in Oakes v. Turquand (16L.T. Rep. N. 8. 642), and, in his Lordship's opinion, the plaintiff was precluded on similar grounds from requiring the personal indemnity of the directors. The lapse of time before filing the bill was fatal to the plaintiff's claim, and the bill must be dismissed, but without costs, on the ground that the directors, although they did not gain or seek to gain, any advantage by their concealment, were nevertheless highly culpable in a moral point of view, and had by their misconduct, occasioned the calamities caused by the failure of Overend, Gurney, and Company.

Bill accordingly dismissed without costs.
Solicitors for the plaintiff, W. A. Downing.
Solicitors for the defendants, Young, Jones and Co.; Bevan and Whitting; Wilson, Bristowe, and Carpmael, Young, Maples, Teasdal, and Co.; Uptons, Johnson, and Upton; Maynard and Son.

Kay, Q.C., Swanston, Q.C., and Joliffe, for the plaintiff.
Roxburgh, Q.C. and Lindley, for the defendants H. E. Gurney, J H. Gurney, and R Birkbeck.
Sir Roundell Palmer, Q.C., Fry, Q.C., and Sayer, for the defendant H. F. Barclay.
Fooks, Q.C. and W. C. Fooks for the defendant H.G. Gordon.

Jessel, Q.C, Macnaghten, and Medd, for the defendant W. Rennie.
Sir Richard Baggallay, Q.C., Macnaghten, and F.W. Maclean, for the representatives of J.C. Gibbs.
Ferrers, for the liquidators of the company.

C.2.5 Previous scholarship on Overend's failure

Walter Bagehot's account of Overend & Gurney's demise in *Lombard Street* blames the entirety of the failure on the directors:

> In six years [from 1860-1866], the immensely rich partners lost all their own wealth, sold the business to the company, and then lost a large part of the company's capital. And these losses were made in a manner so reckless and so foolish that one would think a child who had lent money in the City of London would have lent it better. (p. 19)

Anna Schwartz writes the following:

> Overend, Gurney in earlier years had been a solid conservative partnership, one of the pillars of the City. About 1860, a younger generation then in charge of the business became less circumspect in its lending operations, accepting equity interests for unrepayable loans extended to ironworks and shipping companies. Losses led to a decision to incorporate with the possibility of turning over a new leaf. The new company was launched in 1865 just after the conclusion of the US Civil War, when there was every reason to anticipate a strong revival of demand for British exports, but the new company did not live long enough to benefit from it.[...] when on 10 May Overend, Gurney shut down, the market was shaken. The next day panic broke loose. (p.273)

C.3 London banking crisis

C.3.1 Newspaper accounts in London

The Times reported on May 12, 1866:

> The doors of the most respectable banking houses were besieged...and throngs, heaving and tumbling about Lombard Street, made that narrow thoroughfare impassable. The excitement on all sides was such as has not been witnessed since the great crisis of 1825, if indeed the memory of the few survivors who shared that panic can be trusted when they compare it with the madness of yesterday. Nothing has happened since the day before to justify such a fear as was everywhere shown. Rumour, however, like the false woman in the Laureate's legend, 'ran riot amongst the noblest names,' and left no reputation unassailed. Each man exaggerated the susicions of his neighbor.

Revue des Deux Mondes reported:

> The 11th of May will be long remembered in London; it was a day of distress and terror, and seemed to be the signal of general ruin. No one was sure of any one else, or of himself, the moment it became known that the great house had closed its doors. It was by hundreds of millions that the engagements of that gigantic financial firm, whose fall made the very ground tremble, were counted. The settlement of a great portion of the commerce of the world is concentrated in England; the settlement of the commerce of England was concentrated in the City; and the house of Overend, Gurney, and Co, held one of the foremost places among the small number of establishments in whose houses is the settlement of the commerce of the City. For a long time it enjoyed immense credit; it disposed of enormous securities... Thus, the fatal Friday which witnessed the disaster continues to be popularly known as the 'Overend Friday.'

Bankers Magazine wrote the following in an article titled "The Panic of 1866" published in the June edition:

> About half-past three o'clock in the afternoon the great house at the "corner," of wider than European fame, shut its doors, and made confession of insolvency. The effect on the City was as the shock of an earthquake. It is impossible to describe the terror and anxiety which took possession of men's minds for the remainder of that and the whole of the succeeding day. No man felt safe. A run immediately commenced upon all the banks, the magnitude of which, especially on Friday, can hardly be conceived. As the fatal news penetrated into the country, local bankers rushed to their agents, some to withdraw their balances, others to make arrangements to meet any undue pressure; and from the Bank of England, notes and coin were despatched into the country with frantic haste, in order to keep the financial machine going there. By night time it was quite clear that, unless some palliative was instantly adopted under the authority of the Government, the crisis would become uncontrollable, and the stability of the Bank of England itself be seriously endangered.

Blackwood's Edinburgh Magazine wrote the following in an article titled "The Panic in the City" published in the July edition:

> At midday (12th May) the panic was at its height. Lombard Street was actually blocked up by the crowds of respectable persons who thronged the doors of the banks and other establishments. Lothbury, Bartholomew Lane, and adjoining streets were also thronged with excited knots of people. While depositors rushed to withdraw their money, a body of onlookers gathered before each bank or financial establishment, expecting to see it close its doors. Everyone was on the alert for bad news, and discussed only too freely the dangers which threatened the various establishments. A list of the shareholders of the fallen firm of Overend, Gurney, & Co, published at the high price of one shilling, was eagerly bought up at 2s 6d. The penny papers, in like manner, were bought at 3d—so great was the eagerness to hear the latest news or rumours.

C.3.2 Narrative evidence of effects abroad

The Bank of New Zealand shared the following in its ordinary general meeting in April 30, 1867:

> The effects of that panic were not immediately felt in the colonies, but they are now being felt. The shock which credit there received has reached even to New Zealand. It is felt in some parts more than others. We have felt those effects, and with these and other unfavourable circumstances in banking operations we have had to contend during the past half-year.

Colombo Overland Observer in Sri Lanka published an article titled "The Financial Panic in London" on May 16, 1866:

> Amongst the names connected with reports of failure or suspension, we regret to say, are those of such high repute and extensive operation as Overend and Gurney, Sir Morton Peto, and a recently formed institution, the Imperial Mercantile Credit Association. We sincerely trust matters may turn out not to be so bad as represented.

The Colonist in Belize published onJune 30, 1866:

> The subject of all others in Parliament last night that will command the most engrossing interest at the present moment was the Chancellor of the Exchequer's remarks about the financial panic that now reigns in the metropolis, caused by the fall of the great discounting-house of Messrs. Overend, Gurney, and Company—a panic, unless people exhibit sense and firmness, which may be extended to all the great, and even the small towns in the kingdom, for there are few communities of any size that have not a bank.

C.3.3 Bank of England response

In order to calm the London market, the Governor of the Bank of England appealed to the Chancellor of the Exchequer to suspend the Banking Act of 1844. The Banking Act of 1844 was the foundation of the gold standard in Britain and required that the Bank of England's currency supply was tied to the gold supply. Suspending it would allow the Bank of England to accommodate the demands for liquidity by issuing currency beyond the gold reserve at the Bank of England to meet the demands at its discount window. The government gave its permission, but the announcement alone was sufficient to calm the markets so that the gold standard remained in place. £5.6 million was lent to banks in just the first two days of the crisis, collateralized on the short-term securities that reflected London's lending relationships. Although £5.6 million almost drained the Bank of England of its gold reserves, it was small compared to the size of the banking sector, whose balance sheets were almost £5 million each. The Bank of England was praised for averting a deeper crisis, but the size of the intervention was small relative to the size of the market, and 12% of banks failed.

The Overend & Gurney failure has been written about extensively by historians and has been credited as the one that cemented the Bank of England's role as Lender of Last Resort. It was the event which led Walter Bagehot, the editor of *The Economist* at the

time, to argue that the monetary authority should, in times of crisis, discount bills of good quality in the amount demanded to creditable borrowers (Bagehot, 1873). Domestically, the 1866 banking crisis is attributed with causing the failure of over 200 firms. The shock on manufacturing led to protests and riots that ultimately contributed to the passing of the Reform Act of 1867, which greatly expanded the franchise. This was also known as the Second Reform Act (the first was in 1832) and roughly doubled the franchise among adult males in England and Wales.

Transcript of the Minutes of the Bank of England Court of Directors, Saturday May 12, 1866:
A Court of Directors at the Bank on Saturday, the 12 May 1866
Present: Henry Lancelot Holland, Esquire Governor; Thomas Newman Hunt, Esquire Deputy Governor [...]

The Governor laid before the Court the following correspondence:

> Bank of England, 11 May 1866.
>
> To: The Right Honourable, The Chancellor of the Exchequer, M. P.
>
> Sir,
>
> We consider it to be our duty to lay before the Government the facts relating to the extraordinary demands for assistance which have been made upon the Bank of England today in consequence to the failure of Messrs Overend Gurney & Co. We have advanced to the Bankers, Bill Brokers and Merchants in London during the day upwards of four million Sterling upon the Security of the Government Stock and Bills of Exchange – an unprecedented sum to lend in one day, and which,therefore, we suppose, would be sufficient to meet all their requirements; although the proportion of this sum which may have been sent to the Country must materially affect the question.
>
> We commenced this morning with a Reserve of £5,727,000—which has been drawn upon so largely that we cannot calculate upon having so much as £3,000,000 —this evening, making a fair allowance for what may be remaining at the Branches.
>
> We have not refused any legitimate application for assistance, and, unless the money taken from the Bank is entirely withdrawn from circulation, there is no reason to suppose that this Reserve is insufficient.
>
> We have honor to be, Sir, your obedient servants.
>
> H.L. Holland, Governor and T.M. Newman Hunt, Deputy Governor.

The Chancellor of the Exchequer's response:

> Downing Street, 11 May 1866.
> To: The Governor and the Deputy Governor of the Bank of England

Gentlemen,

We have the honour to acknowledge the receipt of your letter of this day to the Chancellor of the Exchequer, in which you state the course of action at the Bank of England under the circumstances of sudden anxiety which have arisen since the stoppages of Messrs Overend Gurney & Company (Limited) yesterday.

We learn with regret that the Bank reserve, which stood, so recently as last night, at a sum of about five millions and three quarters, has been reduced in a single day, by the liberal answer of the Bank to the demands of commerce during the hours of business, and by its just anxiety to avert disaster, to little more than one half of that amount, or sum (actual for London and estimated for Branches) not greatly exceeding three millions.

The accounts and representations, which have reached Her Majesty's Government during the day, exhibit the state of things in the City as one of extraordinary distress and apprehension. Indeed deputations composed of persons of the greatest weight and influence, and representing alike the private and the Joint Stock Banks of London, have presented themselves in Downing Street, and have urged with unanimity and with earnestness the necessity of some intervention on the part of the State, to allay the anxiety which prevails, and which appears to have amounted through great part of the day to absolute panic.

There are some important points in which the present crisis differs from those of 1847 and 1857. Those periods were periods of mercantile distress, but the vital consideration of banking credit does not appear to have been involved in them, as it is in the present crisis. Again, the course of affairs was then comparatively slow and measured, whereas the shock has in this instance arrived with intense rapidity and the opportunity for deliberation is narrowed in proportion. Lastly, the Reserve of the Bank of England has suffered a diminution without precedent relatively to the time in which it has been brought about, and, in view especially of this circumstance, Her Majesty's Government cannot doubt that it is their duty to adopt without delay the measures which seem to them best calculated to compose the public mind, and to avert the calamities which may threaten trade and industry.

Of them, the Directors of the Bank of England, proceeding upon the prudent rules of action by which their administration is usually governed, shall find that, in order to meet the wants of legitimate commerce, it is requisite to extend their discounts and advances upon approved securities so as to require issues of Notes beyond the limit fixed by law, Her Majesty's Government recommend that this necessity should be met immediately upon its occurrence, and in that event they will not fail to make application to Parliament for its sanction.

No such discount or advance, however, should be granted at a rate of interest less than ten per cent, and Her Majesty's Government reserve it to themselves to recommend, if they should see fit, the imposition of a higher rate. After deduction by the Bank of whatever it may consider to be fair charge for its risk, influences and trouble, the profits of these advances will accrue to the public.

We have the honor to be, Gentlemen, your obedient servants.

Russell Gladstone, Chancellor of the Exchequer

Resolved that the Governors be requested to inform the First Lord of the Treasury, and the Chancellor of the Exchequer that the Court is prepared to act in conformity with the letter addressed to them yesterday.

Resolved that the minimum rate of discount on Bills not having more than 95 days to run, be raised from 9 to 10%.

The archived minutes are available at: `https://www.bankofengland.co.uk/-/media/boe/files/minutes/1800-1900/1866/court-april-1866-november-1866.pdf` (Bank of England Archive G4/89)

C.4 Non-failed bank response

I provide two sources of evidence that show that banks operating in regions that were more exposed to the crisis actually *expanded* their business. This expansion means that retrenchment is unlikely to be magnifying the estimated effects, and that if anything, the estimated β understates the pure effect of the exposure to British bank failures.

C.4.1 Narrative evidence from transcripts of the annual shareholder meetings of surviving banks

Many banks that survived the crisis explicitly discussed how other banks' failures positively affected their own business because of the reduction in competition. Examples of how they discuss their business expanding are shown below (emphasis added).

"During the panic they had a *considerable accession of new business*, and that had continued down to this time. It illustrated, indeed, what he had already stated, that the strong got stronger by such events as had occurred."

–Union Bank of London; January 7, 1867 meeting

"*Not less than 911 new accounts had been opened in the course of the year.* As far as he was aware the bank had not lost one account that they were desirous of keeping, or the confidence of any of their customers in the least degree."

–City Bank; January 15, 1867 meeting

"The result of the suspension of 21 banks connected with the East had been to *reduce competition so that the remaining banks could make a better thing of it*."

–Chartered Bank of India, Australia, and China; April 17, 1867 meeting

"Whilst the lessened competition, consequent on the withdrawal of so many Indian banks, holds out a fair prospect for the firm. [...] *We are threatened with much less competition than we have had to contend with for many years. Our business will be safe and large.*"

–Oriental Bank; April 26, 1867 meeting

"While, however, this [panic] proved very disastrous to many banking institutions, it was the *means of securing a large accession of valuable business to this bank*, which, from its credit and position, continued to enjoy during the eventful period the undiminished confidence of the public."

–National Provincial Bank of England; May 9, 1867 meeting

"*Their bank, however, would gain*, as they had been able to pass through all the difficulties unscathed, which must create additional confidence to the confidence which was placed in a well-conducted and honest English enterprise."

–London Bank of Mexico and South America; April 10, 1866 meeting (referring to the failure of a Peruvian bank)

C.4.2 Quantitative evidence from the archival records of a major bank:

The Chartered Bank of India, Australia, and China—one of the predecessors to the modern Standard Chartered Bank—operated in 9 different cities in 1866. Its *disaggregated* bi-annual branch-level balance sheets for the years around the crisis are the only ones that I have found to still exist from this period.[5] I collected and digitized these balance sheets from the London Metropolitan Archives.

Using the balance sheets from December 1865 and December 1866, I show that the branches with *higher* exposure to bank failures actually grew (Figure C3a). Decomposing the total balance sheet further, it becomes clear from Figure C3b that these branches are not expanding by just growing deposits and expanding their cash holdings, but that they are increasing their lending both short-term (Figure C3c) and long-term (Figure C3d).

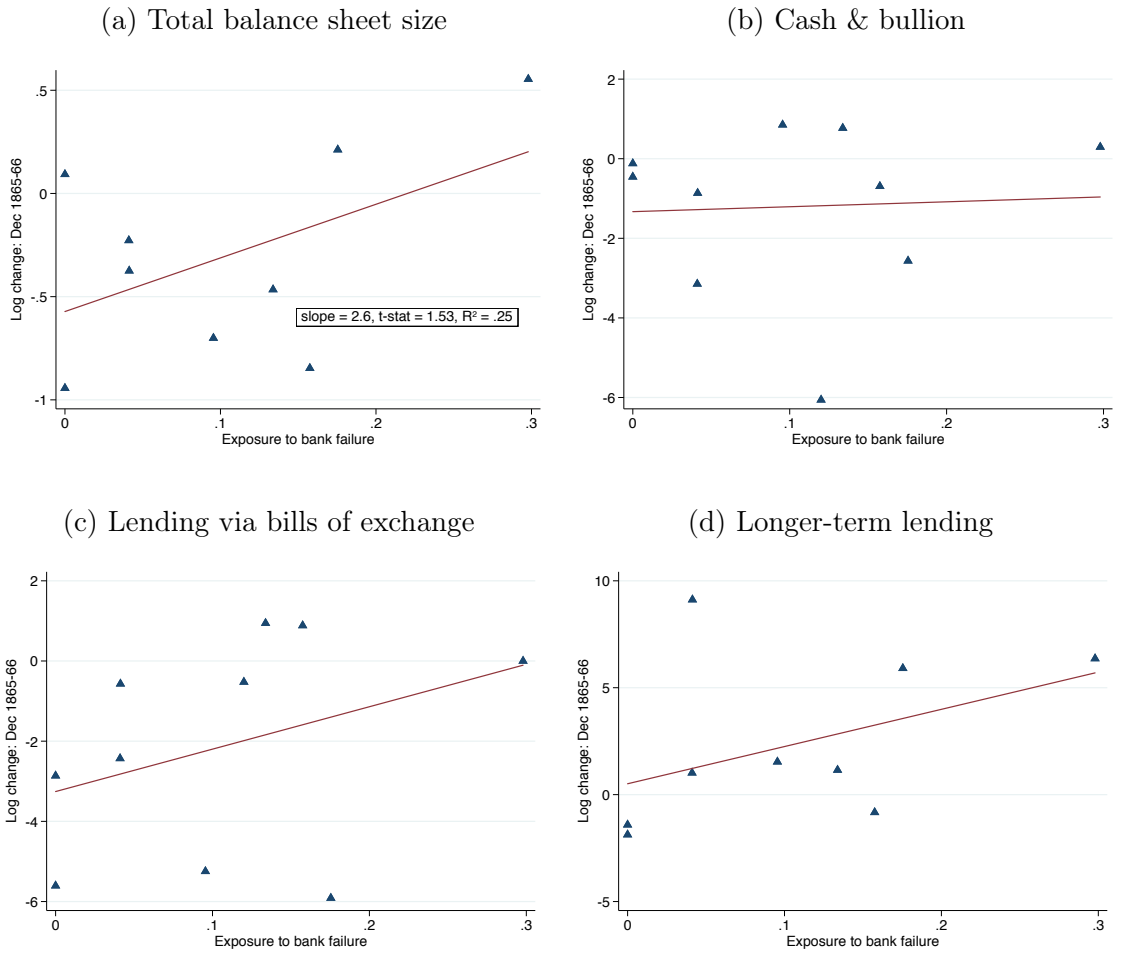
C.5 Measurement error from bills data

One concern is that the bills discounted by the Bank of England suffer from selection bias because worse banks may have held worse collateral, and those bills are under- or over-represented in the data. In this section, I provide several sets of evidence that sample selection at the Discount Window is not likely.

First, banks did not discount their own bills, so there is no mechanical relationship between a bank's own need for liquidity and the distribution of lending represented by the bills it brought to the Discount Window. Second, the legal doctrine governing bills of exchange and their feature of joint liability means that banks would not benefit from discounting lower-quality collateral since they would ultimately be liable for the BoE's losses on those bills. Third, only three bills were rejected by the BoE during the crisis and all evidence indicates that the BoE did not relax its standards and discount lower quality collateral during the

[5]British banks amalgamated substantially over the course the 19th and 20th centuries. Historians have noted that records were unlikely to survive these mergers, and that branch records abroad were particularly unlikely to to be shipped back to the UK.

Figure C3: Relationship between branch exposure to bank failures and balance sheet growth



Notes: Figure C3 plots the log difference in various balance sheet items for the 8 different active branches of the Chartered Bank of India, Australia, and China from December 1865 to December 1866 against the exposure to bank failures ($Fail_l$) experienced at each of those branch locations. Figure C3a plots the growth in the total balance sheet, Figure C3b plots the liquid cash & bullion holdings on the asset side, Figure C3c plots the bills of exchange accepted by each branch, and Figure C3d plots the longer-term lending by each branch.

crisis. Fourth, there is empirical evidence that BoE discounting policy did not change during the crisis, and disaggregated balance sheets from a major bank show that its location-level discounts was very correlatd with the loans that were discounted by the BoE. Therefore, any selection bias needs to have originated from the banks themselves and needs to have been towards only discounting *higher*-quality bills, despite the banking sector's pressing liquidity needs.

C.5.1 Banks do not discount their own bills

Banks discounted bills that had originally been accepted by *other* banks, which reflected the *other* banks' loans, so there is no mechanical relationship between the quality of the banks approaching the Discount Window and the quality of the bills that were then discounted. This is verifiable in the archival data because the Bank of England recorded both the bank that guaranteed the bill as well as the discounter who brought in the bill. In no case are these two entities the same. Therefore while it is possible that worse banks may have had more severe liquidity needs and therefore discounted more at the BoE, the collateral they brought in would not reflect their own (potentially worse) assets.

C.5.2 Legal structure of bills

Bills of exchange were guaranteed by each subsequent holder. The chain of liabilities is the exporter, the bank guarantor, and each subsequent holder of the bill in the London market. In practice, at a bill's maturity, the final discounter of the bill (in this case the BoE) approaches the first guarantor (in this case the British multinational bank) to settle the payment, and the guarantor (bank) then clears its accounts with its borrower (exporter abroad). In the case that the borrower (exporter) defaults, the guarantor (British multinational bank) absorbs the losses. The bank prices its loans to the exporter to account for default risk in the first place. In the case that the guarantor (bank) can no longer absorb the loss and therefore stops payment on all of its obligations, the BoE can approach every single agent that held the bill before it arrived at the Discount Window to fulfill the obligation, which protects it from losses. More generally, any holder of a bill can pursue payment in this manner. The fact that selling a bill onward entails being in line to guarantee it means that any known information about certain bill characteristics carrying higher default risk would stop it from circulating in equilibrium.

C.5.3 Rejection rate at Discount Window ≈ 0 and arbitrage opportunity

Using the daily discounts ledgers at the BoE archives, which shows the characteristics of the bills *rejected*, I find that very few were rejected, and the main reason bills were rejected were because of irregularities such as illegible handwriting. In all of the BoE's internal communications and ledgers, as well as historical accounts of the crisis, there is never mention of a policy of not discounting bills underwritten by certain banks or originating from certain locations. Bignon, Flandreau, and Ugolini (2012) similarly do not find any evidence that the BoE changed its discounting policy during any of the three crises in 1847, 1857, and 1866. Given the BoE's stringent monitoring of its customers' accounts and its policy of only discounting the bills guaranteed by its customers, the quality of collateral that it deemed

eligible should not have changed during the crisis. Therefore any selection on the bills' attributes would have to be generated by self-discrimination by banks themselves rather than by the BoE itself.

The money market was completely illiquid during the crisis, which makes it highly unlikely that bills eligible for discount were held back. The BoE's discount rate was 10%, but there was no price at which the private market was willing to provide cash for financial markets. The implied spread between financial assets that were discountable at the BoE versus those that were not was therefore infinite. Financial agents could make a large spread (likely well beyond the actual credit risk) by discounting eligible collateral at the BoE and using that cash to in turn discount non-eligible collateral at much higher rates for other agents. This arbitrage opportunity makes it highly unlikely that during the crisis, any bank held onto eligible collateral, given that the opportunity cost of doing so was much higher than the 10% Bank Rate.

C.5.4 Empirical evidence that BoE discounting policy did not change during the crisis

The BoE's discounting and monitoring policy during normal times ensured that it was well-informed on the quality of collateral. I use the characteristics of the bills discounted in the year before the crisis as a comparison group for the bills discounted during the crisis. Since it is highly unlikely that these banks dramatically changed their business or the underlying distribution of their lending behavior in the 6 months before the crisis, these figures indicate that the BoE did not appear to change their discounting policy (by either changing the banks or the locations that were eligible) during the crisis. Banks, locations, and bank-location pairs that are measured to be large in 1865 are also large in 1866 during the crisis. The bank-level distribution is particularly strong: a bank's acceptances discounted by the BoE as a share of total BoE discounts in 1865 is correlated with 99% of that share being discounted in 1866.

I also re-calculate the bank shares z_{lb} (the importance of each bank b to a location l) using just the bills that came in during the crisis itself since those bills reflect the most recent bank acceptance behavior. I plot the correlation between the two measures in Figure C7 of the bank shares—all of the bills on the y-axis and only the pre-crisis (1865) bills on the x-axis. There is a very strong positive correlation. The slope is 0.97 and the t-stat is 86.8 with an R^2 of 86%. The relative importance of banks to locations is also very stable, which again indicates that the BoE discounting policy was unlikely to have changed during the crisis, and that the bills data capture the true distribution of lending.

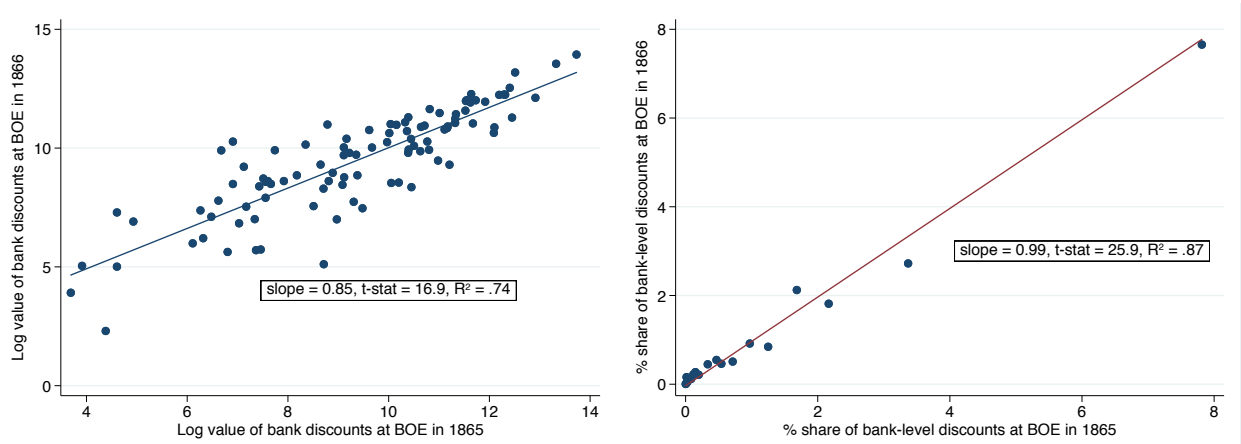
C.5.5 Disaggregated balance sheets from large bank

I was able to find the actual loan book for the Chartered Bank of India, Australia, and China in the London Metropolitan Archives, and these provide the branch-level disaggregated balance sheets bi-annually. The stock of loans outstanding in a pre-crisis period (December 1865) maps very strongly onto the flow that was discounted at the Bank of England during the crisis period. Figure C8 shows this relationship. One of the offices (Hankow) did not accept any bills, so lines of best fit are drawn with and without that point. The fit is very

Figure C4: Bank-level correlation between 1865 & 1866 discounts

(a) Log values

(b) Shares

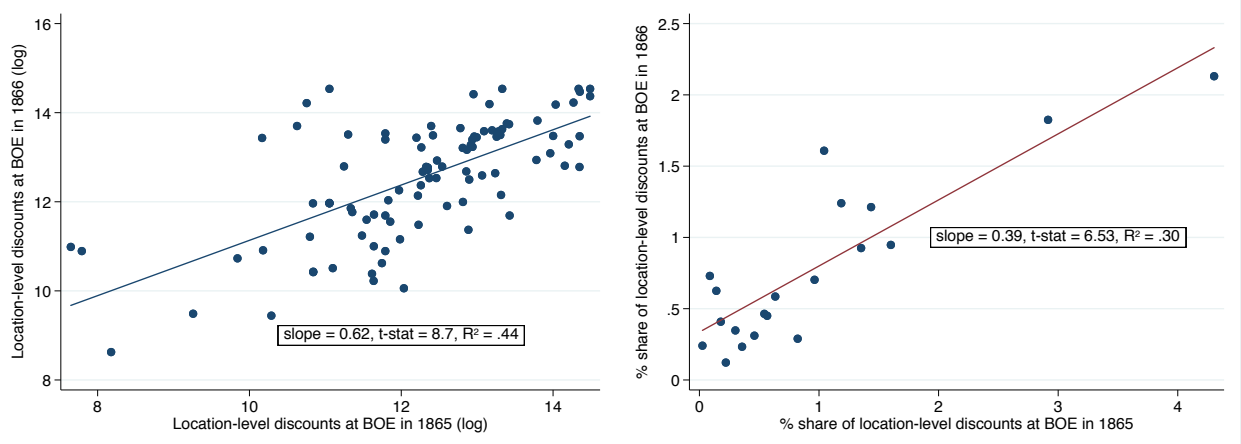


Notes: Figure C4 plots the correlation between the log value of bills accepted by each bank in 1865 and the log value of bills accepted in 1866. Subfigure (a) plots the raw correlation where each bank is an observation. Subfigure (b) plots the binscatter with each bank's acceptances scaled by the total volume of activity at the discount window each year.

Figure C5: Location-level correlation between 1865 & 1866 discounts

(a) Log values

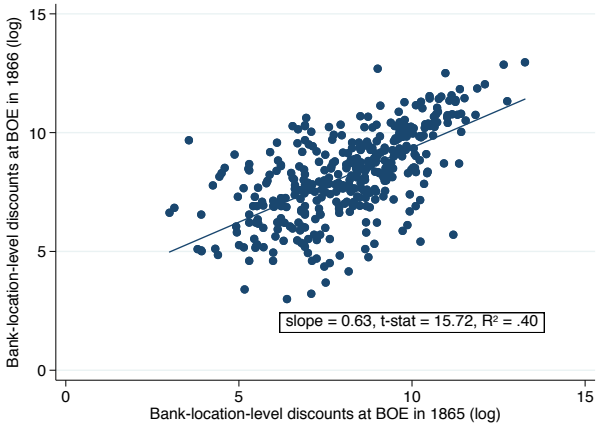
(b) Shares



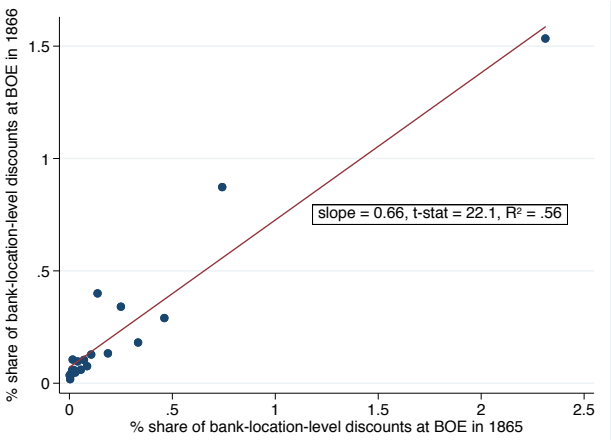
Notes: Figure C5 plots the correlation between the log value of bills accepted at each city location (by all banks) in 1865 and the log value of bills accepted in 1866. Subfigure (a) plots the raw correlation where each city is an observation. Subfigure (b) plots the binscatter with each location's acceptances scaled by the total volume of activity at the discount window each year.

Figure C6: Bank & location-level correlation between 1865 & 1866 discounts

(a) Log values

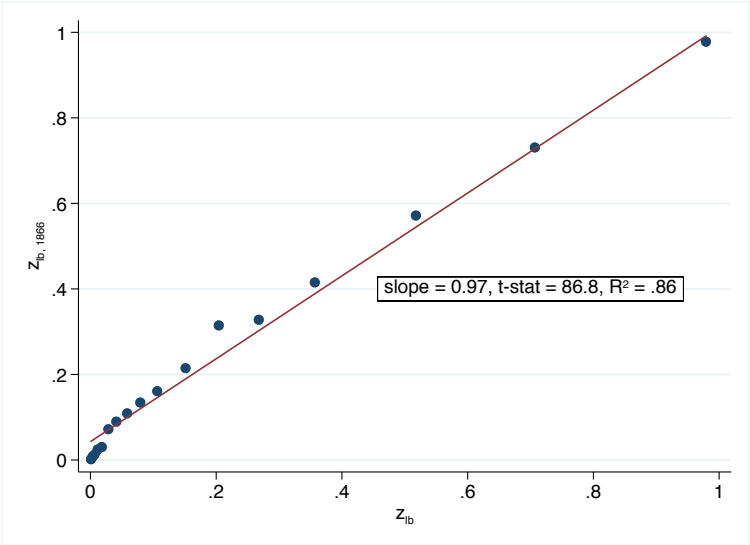


(b) Shares



Notes: Figure C6 plots the correlation between the log value of bills accepted by each bank-location pair in 1865 and the log value of bills accepted in 1866. Subfigure (a) plots the raw correlation where each bank-location pair is an observation. Subfigure (b) plots the binscatter with each pair's acceptances scaled by the total volume of activity at the discount window each year.

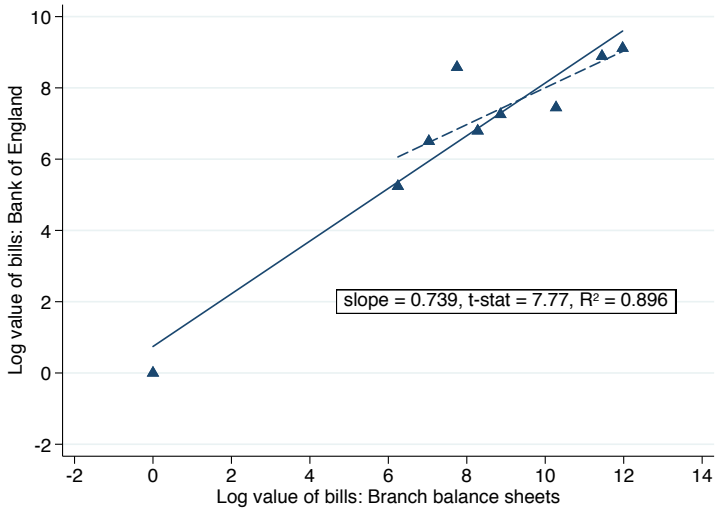
Figure C7: Correlation between bank shares z_{lb} calculated using all bills and 1866 bills



Notes: Figure C7 is a binscatter plot of the shares z_{lb} of the importance of each bank b to each city location l where $z_{lb} = \frac{\sum bills_{lb}}{\sum bills_l}$. z_{lb} is calculated using the full set of from 1865–the crisis while $z_{lb,1866}$ is calculated using only the bills from the crisis.

strong with an R^2 of almost 90% even without that point. This strong mapping from a bank where the loan volumes are observable to the BoE's discount window provides further assurance that the shares of the importance of each bank ot a location are not systematically mismeasured.

Figure C8: Relationship between bills accepted on branch balance sheets and BOE discount window



Notes: Figure C8 shows the correlation between the log value of bills accepted by individual branches as of December 1865 and the log value of bills in the Bank of England ledgers attributed to those branches. The solid line is fitted through all the points, including the one branch (Hankow) that did not have any acceptances on its balance sheet nor any bills attributed to it at the Bank of England. The dashed line is fitted through all the other branches.

C.6 Narrative evidence on bank failures

I gather thousands of pages of transcripts of shareholder meetings from archives and contemporary publications from the periods before (December 1865), during (June 1866), and after the crisis (December 1866). These come from *The Economist*, the *Banker's Magazine*, and individual bank histories. These transcripts provide additional *qualitative* evidence on the nature of each bank's business. I read through these transcripts and recorded instances when the managers, directors, or shareholders offered insights on either future prospects or reflected on past performance.

Overall, there is no evidence that differences in local economic conditions or bank risk-taking behavior affected their failure rates. Ex-ante risk-taking, local economic conditions, growth, and various other factors were not systematically different between banks that failed and did not fail during the crisis. Banks that failed did not appear to be more risk-taking, as measured by the amount of funds they added to their reserve, and their own assessment of the riskiness of their investments. The characterization of economic conditions and opportunities

in the markets they served also did not vary systematically based on bank failure rates. During the crisis, those that failed emphasized idiosyncratic circumstances such as instances of fraud or else the panic itself. Ex-post, banks that failed cited the panic conditions as the primary reason for closure.

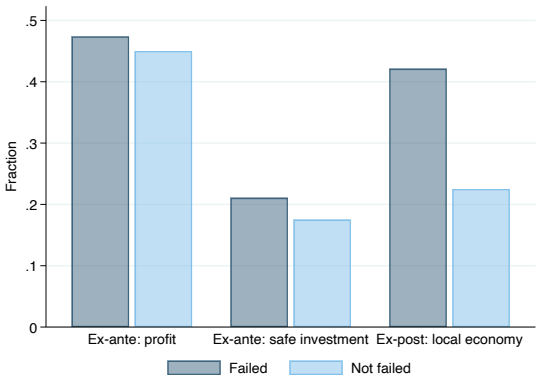
In Figure C9a, there is no statistically significant difference between the fraction of positive statements regarding the ex-ante assessment of likely profitability, the ex-ante assessment of the safety of the banks' investments, and ex-post assessment of local economic conditions. The last set of bars for the "ex-post local economy" are the most different, but in this case, the banks that failed reported better conditions than banks that did not fail. Similarly, in Figure C9b, there is no statistically significant difference in ex-ante assessments of investment uncertainty, or in ex-post descriptions of the amount of debt or negative local economic conditions. The differences in the "ex-post local economy" are the most difference but again banks that did not fail were more negative than those that did. Finally, Figure C9c shows that banks that failed discussed the panic and fraud, whereas non-failed banks discussed neither very much. The "Panic" variable is the only one where there is a statistically significant difference between the two groups of banks.

C.6.1 Examples of language

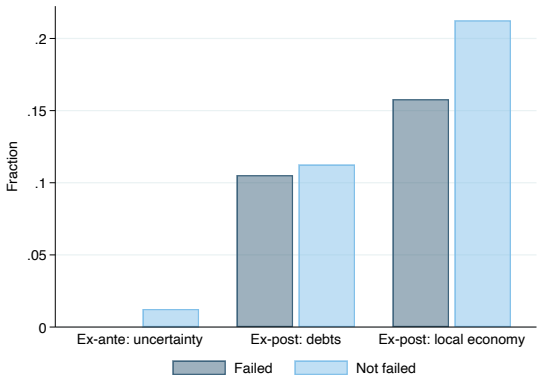
- Fraud: "[The Chairman] had no doubt that large sums had been expended in *rigging the market*, from which many of the proprietors had suffered as he had done."
- Panic: "The panic of 1866 has fallen with peculiar severity upon banking institutions. Some have been utterly ruined, others have lost a considerable portion of their capital, others again have had to sacrifice the whole or a large portion of their reserve fund, while those banks which have only been forced to forego the payment to their shareholders of one or more dividends, may be considered fortunate by comparison."
- Negative assessments about local economy: "The pastoral and agricultural interests of the Australian colonies have been subjected to a severe trial by a season of a long-continued and unusual drought."
- Positive assessments about local economy: "In New Zealand the Maori war was now brought practically to a conclusion, and trade was improving. New gold discoveries had been made at Okeliti on the west coast, which held out a fair prospect of becoming an additional source of wealth to the colony."

Figure C9: Narrative evidence on bank failures

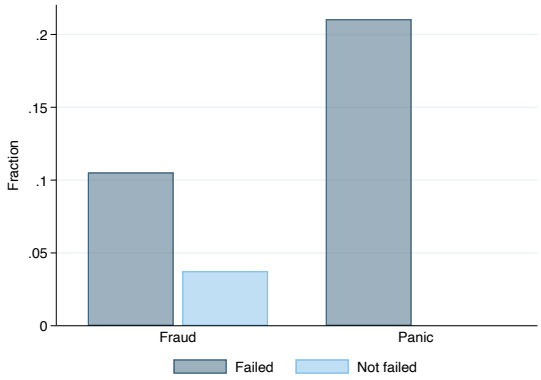
(a) Positive indicators



(b) Negative indicators



(c) Causes of failure



Notes: Figure C9a plots the fraction of statements with positive sentiment among failed and non-failed banks, Figure C9b plots the fraction of negative statements, and Figure C9c plots the fraction of statements describing the Panic situation or instances of fraud.

D Instrument derivation & validity

Instrument derivation

The relationship that we are interested in estimating is

$$\Delta Y_l = \alpha + \beta \frac{\Delta \text{Finance}_l}{\text{Finance}_l} + \varepsilon_l$$

where Y_l is the outcome of interest at location l and β is the semi-elasticity with respect to the growth rate of a location's trade finance ($\frac{\Delta \text{Finance}_l}{\text{Finance}_l}$), provided by banks. A location's trade finance growth obeys the following accounting identity, which is the inner product of bank shares and local bank growth rates:

$$\frac{\Delta \text{Finance}_l}{\text{Finance}_l} = \sum_b z_{lb} \frac{\Delta \text{Finance}_{lb}}{\text{Finance}_{lb}}$$

where $z_{lb} = \frac{\text{Finance}_{lb}}{\text{Finance}_l}$. We can decompose the local bank Finance growth into a bank-level-growth and an idiosyncratic component:

$$\frac{\Delta \text{Finance}_{lb}}{\text{Finance}_{lb}} = \frac{\Delta \text{Finance}_b}{\text{Finance}_b} + \frac{\Delta \tilde{\text{Finance}}_{lb}}{\text{Finance}_{lb}}$$

The instrument is the inner product of the bank shares in each location and the bank growth where the bank growth rate $\frac{\Delta \text{Finance}_b}{\text{Finance}_b}$ is assumed to be 0% or -100% depending on whether the bank failed or not:

$$\text{Fail}_l = \sum_b z_{lb} \frac{-\Delta \text{Finance}_b}{\text{Finance}_b} = \sum_b z_{lb} \mathbb{I}(\text{Failure}_b)$$

This proxy for bank trade finance growth rules out the possibility of positive growth, but if there were positive growth by non-failed banks that is erroneously attributed to being zero growth, this proxy should downward bias the estimated β.

Instrument decomposition

The estimated β captures the impact of British bank failures on exports. The share of British banking and the response by non-British banks is not observed, but the overall effect of both British bank failures and non-British bank failures can be bounded by deriving the conditions under which British bank failures is an instrument for changes in all trade finance.

The overall effect of financing is the following where Finance_l^{total} denotes the total change in Finance available in location l:

$$\Delta \ln(Y_l) = \beta_0 + \delta_1 (\Delta \text{Finance}_l^{total}) + \varepsilon_l \tag{D1}$$

The instrument for total change in trade financing using British bank failures has the

following first stage relationship and exogeneity requirements:

$$\Delta\text{Finance}_l^{total} = \gamma_0 + \gamma_B \text{Fail}_{l,B} + \nu_l$$
$$\varepsilon_p \perp 1, \text{Fail}_{l,B} \text{ and } \nu_l \perp 1, \text{Fail}_{l,B}$$

$\Delta\text{Finance}_l^{total}$ can be rewritten in terms of the share of total Finance from British banks α_b and the share from non-British banks $1 - \alpha_b$:

$$\Delta\text{Finance}_l^{total} = \alpha_b \Delta\text{Finance}_l^{Brit} + (1 - \alpha_b)\Delta\text{Finance}_l^{non-Brit}$$

This allows us to rewrite Equation D1 in the following way where $\beta_1 = \alpha_b\delta_1$ and $\beta_2 = (1 - \alpha_b)\delta_1$:

$$\Delta\ln(Y_l) = \beta_0 + \beta_1 \Delta\text{Finance}_l^{Brit} + \beta_2 \Delta\text{Finance}_l^{non-Brit} + \varepsilon_l \tag{D2}$$

since $\delta_1 < 0$ and $\alpha_b \geq 0$, $\beta_2 \leq 0$.

There is no indirect effect ($\delta_1 \longrightarrow \beta_1$) when:

- $\alpha_b \to 1$, so $\beta_2 \to 0$: there is no non-British trade finance OR
- $\text{Cov}[\Delta\text{Finance}_l^{non-Brit}, \text{Fail}_{l,B}] = 0$: the failure rates of British banks is not related to the change in non-British trade finance because either non-British Finance does not change or because it changes in uncorrelated ways.

The direct effect is smaller than the total effect ($\beta_1 < \delta_1$) when:

- $\text{Cov}[\Delta\text{Finance}_l^{non-Brit}, \text{Fail}_{l,B}] > 0$: non-British banks tend to grow when British banks fail. Narrative evidence suggests that this is the case so the estimated β is a lower bound (in magnitudes) of the total effect.

The direct effect is larger than the total effect ($\beta_1 > \delta_1$) when:

- $\text{Cov}[\Delta\text{Finance}_l^{non-Brit}, \text{Fail}_{l,B}] < 0$: non-British banks tend to contract lending when British banks fail

E Conceptual framework

The framework presented below closely follows Melitz (2003) with the addition of sunk costs and financing shocks in a two-country, two-sector setting.

There are two countries, Home and Foreign, each producing goods using only Labor as an input. The home country has a population L (L^* for foreign), and there are two sectors. One sector provides the homogeneous good that is freely traded, produced under constant returns to scale and will be the numeraire with price set at 1. Assume that each country produces the homogeneous good so wages are w and w^*. The other sector provides a continuum of differentiated goods, with each firm as a monopolist for its own variety.

Demand:
Everyone has CES preferences over the differentiated good with elasticity of substitution $\sigma < 1$, so the representative consumer has an isoelastic demand function for each variety. Consuming q_0 units of the homogeneous good and $q(x)$ units of each variety x (of which the set $x \in X$ is determined in equilibrium) has total utility U:

$$U \equiv q_0^{1-\mu} \left(\int_{x \in X} q(x)^{\frac{\sigma-1}{\sigma}} dx \right)^{\frac{\sigma}{\sigma-1}\mu} \tag{E1}$$

At each price $p(x)$ per variety, the ideal price index for differentiated goods in a market is:

$$P = \left(\int_{x \in X} p(x)^{1-\sigma} dx \right)^{\frac{1}{1-\sigma}} \tag{E2}$$

The representative consumer spends $r(x)$ on each variety x:

$$r(x) = \mu w L \left(\frac{p(x)}{P} \right)^{1-\sigma} \tag{E3}$$

Production:
Firms must pay a sunk entry cost to begin exporting, and they also face variable costs of transport and financing.[6] The sunk cost of entry to the foreign market is C_f and for simplicity is assumed to be paid in domestic wages and not subject to the financing constraint. The trade cost is an iceberg trade cost τ such that if one unit of the differentiated good is traded abroad, only a fraction $1/\tau$ arrives ($\tau \leq 1$). There is a financing availability parameter F that reflects the supply where a positive shock will reduce F to be below 1 (> 0). F is modeled as a variable cost because bills of exchange provided trade financing for the value of the shipment. This is not tied to firm productivity because the loan was collateralized with the shipment itself.

[6] It is also standard to assume that there is a fixed cost of producing for the domestic market, which means some firms will not be productive enough to produce at all. For simplicity, this margin is eliminated from this framework since it produces no relevant insights to the relevant dynamics, but it is equivalent to assuming all firms that are born are productive enough to meet those costs for the domestic market.

All firms have access to the same technology, and the marginal product of labor is constant. However, firms are heterogeneous in their productivity, and each firm producing differentiated goods draws a random unit labor productivity $x \geq 0$. For a firm with productivity x, the cost of producing q_f units for the foreign market is $c_f(q_f)$:

$$c_f(q_f) = q_f \frac{\tau w}{Fx} + wC_f \tag{E4}$$

Marginal costs per unit are increasing in trade costs τ and decreasing in the supply of financing F and productivity x.

Firms are price setters and optimal prices are a constant mark-up over the unit cost:

$$p_f(x) = \frac{\sigma}{\sigma - 1} \frac{\tau w}{Fx} \tag{E5}$$

More productive firms (higher x) and firms with better financing supply (higher F) have lower prices, which allows them to capture greater market share and have higher profits. This markup decreases as the elasticity of substitution increases: the more elastic the demand, the closer the economy to perfect competition and the closer prices are to marginal cost.

Foreign profits for a firm with productivity x and financing F are:

$$\pi_f(x) = \frac{r_f(x)}{\sigma} - wC_f = \frac{\mu}{\sigma} w^* L^* \left(\frac{\sigma}{\sigma - 1} \frac{\tau w}{xFP^*} \right)^{1-\sigma} - wC_f \tag{E6}$$

A zero-profit condition pins the productivity x^* necessary to export ($\pi_f(x^*) = 0$). Increasing productivity x, the supply of financing F, and the price index P^* (which comes from reducing the mass of varieties reaching a market), all increase the profitability of a firm and lowers the productivity threshold necessary to export.

Financing shock:
Firms with productivity $x \geq x^*$ are exporting to the foreign market before the financing shock. Firms that experience the shock have a lower $F_s < 1 = F$ which increases the optimal price they charge, which raises the price index in the foreign country $P_s > P_0$ and lowers the productivity cutoff necessary to export $x_s^* < x^*$.

- Prediction 1: exposed incumbents $F < 1$ will have lower exports on the intensive margin.
  - Incumbents are firms with $x \geq x^*$ who had been productive enough to export before the shock. Those that are exposed to the shock will now set price $p_s(x) > p(x)$. Higher prices makes them less competitive and causes them to lose market share and to become less profitable.
- Prediction 2: exposure will reduce the likelihood of entering new export markets, but it does not necessarily induce exit.
  - Assume that there is a new foreign destination that can be exported to. Any firm that is exposed to the financing shock will be less competitive (higher prices) and

will be less likely to meet the productivity cut-off necessary to enter, compared to a firm with similar productivity that is not exposed.

  - Incumbent firms have already paid the entry cost to existing destinations, so they operate off flow profits, which can be positive (although smaller) even with the financing shock. The fact that entry costs are sunk also generates option value for not exiting, even if the foreign flow profits are negative since there are profits from domestic sales.

- Prediction 3: the market share gains by unexposed firms persists after the shock ends.

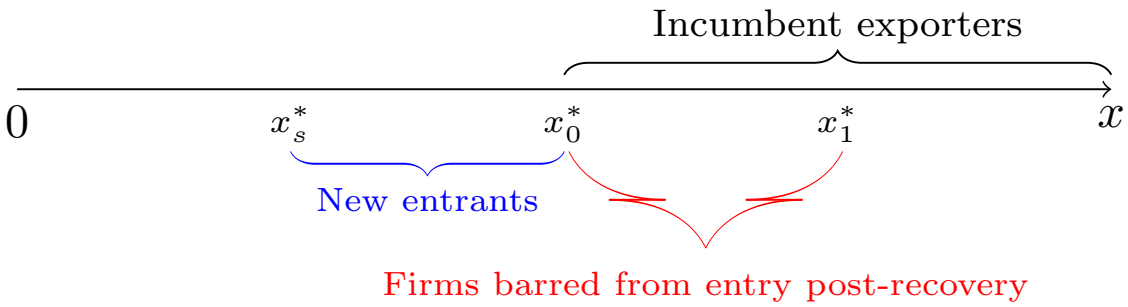
  - The new price index P_s is higher because $F < 1$ for exposed firms, which raises the profits for all firms and *lowers* the productivity frontier necessary to export to $x_s^* < x^*$. This allows a set of firms with productivity $x_s^* \leq x < x^*$ to begin exporting. The entry of these firms lowers the price index as the mass of firms increases.
  - After the shock ends and $F = 1$ for all firms, the exposed firms will lower their prices back to $p(x) < p_s(x)$, and the price index P_1 will be lower than before: $P_1 < P_0$. This new equilibrium can be supported because firms that entered during the shock have already paid the sunk entry cost while the incumbents did not exit. It also *raises* the new productivity level necessary to export to $x_1^* > x^* > x_s^*$.
  - Assuming that new firms are born over time, each with a random productivity draw, the likelihood that the new firms are productive enough to begin exporting and to lower the market shares of the incumbents will be lower than in the previous steady state case. Firms born in the productivity range $x_0^* < x < x_1^*$ would have been exporters before the recovery, but post-recovery are not productivity enough to export. The change in the competitiveness of the destination market from the shock's impact on the extensive margin of firms helps the entrants to maintain their advantage.

- Prediction 4: Unexposed firms producing substitutable goods with the exposed firms will experience larger market share gains from the financing shock.

  - The price pass-through of changes in marginal cost is more severe when the elasticity of substitution is high. A firm being exposed to a financing shock will pass on more of the price change, which will increase the difference between it and its competitors. Thus the relative loss in market share is more severe and the gains for unexposed firms bigger.
  - It is straightforward to augment the demand function into a nested CES with different types of goods where the elasticity of substitution for each variety *within* a type of good (σ) is higher than the elasticity of substitution between types of goods (μ). In this case, unexposed firms that produce varieties within the same type will experience a relatively larger drop in competition and be able to gain greater market share than unexposed firms that produce varieties of a different *type* of good.

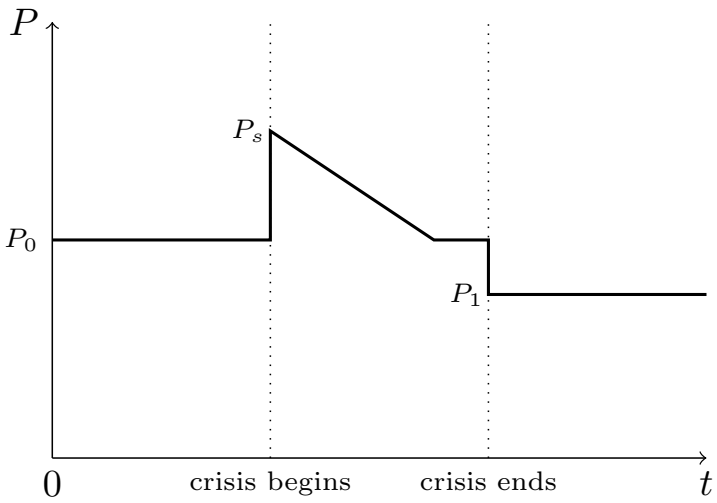
- Prediction 5: Heterogeneity that reduces the impact of being exposed to the financing shock (raising F) or relationships with lower trade costs (lower τ) will all dampen the effects of Predictions 1–3.

Figure E1: Productivity cut-offs for exporters



Notes: Figure E1 plots the firm-level productivity necessary to export during the three periods of the shock. In the initial pre-shock period, the required productivity is x_0^*; when the crisis begins, the productivity necessary drops to x_s^* because of the price changes in the destination market; post-recovery, the cut-off is higher than before at x_1^* because of the higher density of firms in the destination market.

Figure E2: Price dynamics in a destination market



Notes: Figure E2 plots the price dynamics over three periods within a given destination market. In the initial period, prices are P_0 and there is no firm entry. When the crisis begins, prices rise to P_s, reflecting the increase in marginal costs from the financing shock. The increase in prices induces entry until P_0 is attained again. After the crisis ends, prices fall to P_1 due to the drop in marginal costs.

Extensions:
Requiring that there is a period-by-period fixed cost of production (in addition to the sunk entry cost) will increase pressure on the flow profits. The implied productivity cutoff necessary to export in the first place will be higher, and exposed firms will be even more disadvantaged on the intensive margin. On the extensive margin, this fixed cost will increase the likelihood of firm exit. Assuming that the fixed costs are also partially financed by banks subject to the shock will further increase pressure on the flow profits in the same directions.

Assuming that the sunk costs of entry are partially financed by banks will similarly make it more difficult for exposed firms to enter into new destinations, exacerbating the extensive margin effects. If firms anticipate that the financing shock is temporary, then the option value of not exiting does not change relative to the baseline. If firms believe the financing shock may be long-lasting, then the option value of not exiting is even higher since re-entry in the future would also entail the extra financing cost.

Aggregation:
Redding and Weinstein (2017) provides a closed-form aggregation from micro trade data to macro trade data under the assumption that the demand system is invertible (including CES demand) without any restrictions on the supply system. Therefore they make it possible to aggregate trade patterns in this non-neoclassical framework with imperfect competition and increasing returns to scale. This allows me to write the framework in terms of firm-level heterogeneity to deliver the intuition but estimate the predictions using more macro variables of trade, such as exports by ports and cities.

One of the key objects is the exporter price index (equation 11) which summarizes the price of exporter i's goods (in sector g) delivered to importer country j at time t. Equation 22 ties these price indices to the comparative advantage across countries which then determine the patterns of trade. The relative comparative advantage (RCA) term defined in equation 21 captures an importer's relative cost of sourcing goods across countries and sectors. This insight that the price index ultimately reflects comparative advantage also underlies the intuition in the conceptual framework.

Equation 25 provides the decomposition for the aggregation of the overall changes in the share that importer j spends on goods from foreign exporter i, and which is the object that is estimated in the baseline long-run specification in this paper. The change in the share of expenditures breaks down into 10 terms reflecting: (i) average prices, (ii) average product demand, (iii) average firm demand, (iv) product price dispersion, (v) firm price dispersion, (vi) product variety, (vii) firm variety, (viii) country-sector variety, (ix) country-sector scale, (x) country-sector concentration.

The conceptual framework focuses on the first force (i) average prices, which increase due to the financing shock. All else equal, an exporter's share will decrease if its average prices fall less rapidly (or increase) relative to other exporters'. The second term (ii) is equal to zero by construction in the decomposition. The framework abstracts away from the third term (iii) which says that the exporter's share becomes higher quality or experiences more demand than other exporters in a given sector. In the empirical specification, I control for changes in an importer's aggregate demand. Terms (iv) and (v) capture dispersion; since firms are assumed to produce only one product, (iv) is constant. The process for firm birth across exporters is assumed to be the same so (v) is also the same across all exporters. Terms

(vi)–(viii) capture entry-exit dynamics that introduces or reduces the number of varieties where the increase in varieties raises export shares, as in the conceptual framework. The last two terms capture compositional effects across sectors, and given the lack of bilateral industry data are abstracted away for the empirical analysis. In summary, the main forces that remain operate through prices and varieties, and the financing shock has the same directional effect on both for exporters' shares in a market.

F Structural gravity

Structural gravity, as in for instance Anderson and Van Wincoop (2003), gives the following relationship for bilateral trade:

$$Ex_{odt} = \underbrace{\frac{Y_{ot}Y_{dt}}{Y_t^W}}_{\text{Size Term}} \underbrace{\left[\frac{\tau_{odt}}{P_{ot}P_{dt}}\right]}_{\text{Trade Cost Term}}^{1-\sigma} \tag{F1}$$

or in the more common log-linearized form:

$$\ln(EX)_{odt} = \ln(Y_{ot}) + \ln(Y_{dt}) - ln(Y_t) + (1-\sigma)[\ln(tau)_{odt} - \ln P_{ot} - \ln P_{dt}] \tag{F2}$$

Where EX_{odt} are exports from the origin country o to the destination country d in year t; Y_{ot} is the total GDP of the exporting country in year t, Y_{dt} is the total GDP of the importing country in year t, and Y_t^W is the total world GDP in year t. σ is the elasticity of substitution between goods, and τ_{odt} is the iceberg trade costs of slippery goods from o to d. P_{ot} and P_{dt} are the *multilateral resistance* terms for the origin and destination countries and account for the fact that in full general equilibrium, a change in the bilateral trade costs between any two countries will impact all other countries, even if everything else (for example, country size) remains the same. These are nonlinear functions of the full set of bilateral trade costs τ_{od} (time subscripts t suppressed for clarity):

$$P_o^{1-\sigma} = \sum_d \frac{\tau_{od}}{P_d}\theta_d$$
$$P_d^{1-\sigma} = \sum_o \frac{\tau_{od}}{P_o}\theta_o$$

Where $\theta_d \equiv \frac{Y_d}{Y_t^W}$ ($\theta_o \equiv \frac{Y_o}{Y_t^W}$) where Y_d (Y_o) are total expenditures and production in the destination (origin) country.

Taking logs and rearranging henceforth gives:

$$\ln(EX_{odt}) = \underbrace{\ln(Y_{ot}) - (1-\sigma)\ln(P_{ot})}_{\gamma_{ot}} + \underbrace{\ln(Y_{dt}) - (1-\sigma)\ln(P_{dt})}_{\gamma_{dt}} + (1-\sigma)\ln(\tau_{odt}) - \underbrace{\ln(Y_t^W)}_{\alpha_t} \tag{F3}$$

Estimating equation (F3) requires being able to measure the multilateral resistance terms, which are theoretical constructs not directly observable to the researcher. Using exporter and importer country fixed effects in cross-sectional estimations (Hummels, 2001; Feenstra, 2016) or exporter-year and importer-year fixed effects with panel data (Olivero and Yotov, 2012; Head and Mayer, 2014) delivers consistent estimations of trade cost variables. These time-varying country level fixed effects (γ_{ot} and γ_{dt}) also have the advantage of absorbing size variables (Y_{ot} and Y_{dt}) and any additional observative and unobservable country-specific characteristics that shift the overall level of exports and imports of a country. Note that the year fixed effect α_t that captures changes in the size of the would economy is redundant once γ_{ot} or γ_{dt} is included.

My analysis is interested in identifying the reduced-form impact of exporter financing constraints, and so my baseline estimation (equation 8 of the paper) includes this measure of exposure to bank failures in a gravity estimation. However, this specification deviates from a fully structural gravity estimation (Equation (F3)) above, since γ_{ot} is collinear with the origin-country exposure. I am, however, able to include γ_o, which accounts for the average origin country size and multilateral resistance over the sample time period. While it is unlikely that deviations from these average values over the time series drive the baseline results, I provide an estimation that is fully structural in the next subsection.

Following the adaptation of the methodology of Baier and Bergstrand (2009), which approximates the nonlinear multilateral resistance term with a first-order log-linear Taylor series expansion, by Berger et al. (2013), I instead derive an alternative specification that controls for the changes in multilateral resistance terms directly.

Rearranging equation (F3), I can express exports as:

$$\ln(E_{odt}) = \ln(Y_{ot}) + \ln(Y_{dt}) - \ln(Y_t^W) + (1-\sigma)\ln(\tau_{odt}) - (1-\sigma)\Big[\ln(P_{ot}) + \ln(P_{dt})\Big] \quad \text{(F4)}$$

Baier and Bergstrand (2009) show that the multilateral resistance terms $\Big[\ln(P_{ot}) + \ln(P_{dt})\Big]$ are given by:

$$\ln(P_{ot}) + \ln(P_{dt}) = \sum_{i=1}^{N} \theta_{it}\ln(\tau_{iot}) + \sum_{j=1}^{N} \theta_{jt}\ln(\tau_{jdt}) - \sum_{k=1}^{N}\sum_{m=1}^{N} \theta_{kt}\theta_{mt}\ln(\tau_{kmt}) \quad \text{(F5)}$$

$\theta_{it} \equiv \frac{1}{N}$ where N is the number of countries.[7]

In the baseline estimation, I assume that bilateral trade costs are given by $\tau \equiv e^{\mu \ln(dist_{od})}$. This gives:

$$\ln(P_{ot}) + \ln(P_{dt}) = \mu\Big[\sum_{i=1}^{N} \theta_{it}\ln(dist_{io}) + \sum_{j=1}^{N} \theta_{jt}\ln(dist_{jd}) - \sum_{k=1}^{N}\sum_{m=1}^{N} \theta_{kt}\theta_{mt}\ln(dist_{km})\Big] \quad \text{(F6)}$$

With this approximation, all the terms in (F4) can now be estimated with directly observable data. Including the financing constraint term and allowing the destination country and world GDP to be absorbed by fixed effects gives the following estimating equation:

$$\ln(EX_{odt}) = \beta_t Fail_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \psi\ln(Y_{ot}) + \phi\ln(dist_{od}) - \phi\Big[\ln(P_{ot}) + \ln(P_{dt})\Big] + \varepsilon_{odt} \quad \text{(F7)}$$

Guided by the theory, $\phi = \mu(1-\sigma)$ is constrained to be the same value with opposite signs for the coefficient on $\ln(dist_{od})$ and $[ln(P_{ot}) + \ln(P_{dt})]$. The specification allows for additional controls such as time-varying exporter characteristics (X_{ot}) and the time-invariant fixed effects (γ_o).

[7] Baier and Bergstrand (2009) uses GDP weights where $\theta_{it} = \frac{Y_{it}}{Y_t^W}$, but Brakman and Bergeijk (2010) introduces equal weighting as an alternative. Head and Mayer (2014) shows that in Monte Carlo estimates, the equally weighted version produces estimates that are much closer to the true parameters when there is missing data. Given the incompleteness in historical GDP data, I use the equal weighting.

Table F1: Long-run effects with multilateral resistance terms

(1) $\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$
(2) $\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$ if not missing GDP_o data
(3) $\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \gamma_o + \gamma_{dt} + \psi \ln(\text{GDP}_{ot}) + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$
(4) $\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \gamma_o + \gamma_{dt} + \psi \ln(\text{GDP}_{ot}) + \phi \ln(\text{dist}_{od}) - \phi\Big[\ln(P_{ot}) + \ln(P_{dt})\Big] + \varepsilon_{odt}$

	(1)	(2)	(3)	(4)
$\beta_{1850\text{-}1855}$	-0.272	-0.147	-0.128	-1.029
	[0.330]	[0.263]	[0.267]	[0.635]
$\beta_{1856\text{-}1860}$	-0.0775	-0.130	-0.136	-0.138
	[0.206]	[0.194]	[0.203]	[0.396]
$\beta_{1866\text{-}1870}$	-1.544***	-1.551***	-1.653***	-1.379**
	[0.368]	[0.325]	[0.352]	[0.610]
$\beta_{1871\text{-}1875}$	-1.944***	-2.092***	-2.266***	-2.603***
	[0.512]	[0.507]	[0.555]	[0.752]
$\beta_{1876\text{-}1880}$	-1.962***	-1.950***	-2.116***	-2.270***
	[0.549]	[0.551]	[0.597]	[0.732]
$\beta_{1881\text{-}1885}$	-1.703***	-1.670***	-1.879***	-2.018**
	[0.563]	[0.537]	[0.634]	[0.783]
$\beta_{1886\text{-}1890}$	-1.379**	-1.446**	-1.681**	-1.904**
	[0.609]	[0.548]	[0.663]	[0.878]
$\beta_{1891\text{-}1895}$	-1.318**	-1.410**	-1.662**	-1.805*
	[0.562]	[0.553]	[0.664]	[0.936]
$\beta_{1896\text{-}1900}$	-1.495***	-1.718***	-1.964***	-2.379**
	[0.485]	[0.444]	[0.547]	[1.091]
$\beta_{1901\text{-}1905}$	-1.163**	-1.505***	-1.815***	-2.313*
	[0.551]	[0.501]	[0.615]	[1.210]
$\beta_{1906\text{-}1910}$	-0.885	-1.122**	-1.434**	-1.974*
	[0.573]	[0.535]	[0.613]	[1.029]
$\beta_{1911\text{-}1914}$	-0.887	-1.128	-1.457**	-1.927*
	[0.678]	[0.673]	[0.712]	[1.021]
ψ			-0.0944	-0.308*
			[0.107]	[0.163]
ϕ				-0.145***
				[0.0248]
Distance	Y	Y	Y	
Country_o FE	Y	Y	Y	Y
I(Brit bank_o) × t	Y	Y	Y	Y
Country_dt FE	Y	Y	Y	Y
N	70895	47091	47091	47091
Clusters	129	36	36	36
Adj. R^2	0.532	0.574	0.574	0.498

Notes: Table F1 reports the β and standard errors for the specifications written at the top. Column 1 shows the baseline results for the entire sample. Column 2 estimates the same baseline specification but only on the subset of observations where GDP data is not missing. Column 3 controls for GDP directly. Column 4 is the specification with the multilateral resistance terms where theory restricts the estimated coefficients on distance and the multilateral resistance terms to be equal. In these estimations, I assume that bilateral trade costs are given by $\tau \equiv e^{\mu \ln(dist_{od})}$. The multilateral resistance terms are then characterized by:
$\ln(P_{ot}) + \ln(P_{dt}) = \mu\Big[\sum_{i=1}^{N} \theta_{it} \ln(dist_{io}) + \sum_{j=1}^{N} \theta_{jt} \ln(dist_{jd}) - \sum_{k=1}^{N} \sum_{m=1}^{N} \theta_{kt}\theta_{mt} \ln(\text{dist}_{km})\Big]$ Standard errors in brackets are clustered by country of origin. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

G Robustness

G.1 Immediate effects

G.1.1 Additional control variables

First I estimate the port-level regressions with controls added individually. These magnitudes are very similar to the country-level estimates. This table also reports the recommended bounds from Oster (2019) that shows that selection on location-level unobservable characteristics is minimal. These bounds are calculated using changes in the magnitude of the coefficient and the R^2 after controlling for observable characteristics. β^* is the inferred true coefficient if the unobserved bias is as large as the observed bias, and δ is the inferred bias that could induce the estimated β to be zero. I report these as β^* and δ in the last two rows. These calculations show that β^* is almost identical to the estimated β, and that the degree of unobservables bias would have to be approximately 40 times larger than the degree of observables bias.

Table G1: Additional controls: Immediate effect of bank failures on port-level shipping

$$\ln(S_{pot}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \gamma_{ot} + \varepsilon_{pot}$$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fail_{po} × post	-0.724***	-0.740***	-0.634***	-0.704***	-0.749***	-0.698***	-0.648***
	[0.167]	[0.170]	[0.177]	[0.195]	[0.195]	[0.183]	[0.221]
Capital city × post		Y					Y
Share to UK × post			Y				Y
Age of banks × post				Y			Y
OG connection × post					Y		Y
Non-Brit banks × post						Y	Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y	Y
N	578	578	578	578	578	578	578
Ports	289	289	289	289	289	289	289
Clusters	54	54	54	54	54	54	54
β^*	-.729	-.746	-.635	-.706	-.755	-.701	-.65
δ	41.89	43.84	39.79	33.74	43.17	38.49	33.18

Notes: Table G1 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis. The dependent variable is the log of the total number of ships departing in each period. Fail_{po} is the share of the port's banks that failed during the crisis. The mean of Fail_{po} is 0.07, and the standard deviation is 0.19. Post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. The time-invariant control variables are measured in 1865 and interacted with the post dummy. Results from implementing the Oster (2019) test of selection on unobservable characteristics are reported in the last two rows. These bounds are calculated using changes in the magnitude of the coefficient and the R^2 after controlling for observable characteristics. β^* is the inferred true coefficient if the unobserved bias is as large as the observed bias ($\delta = 1$), and δ is the inferred bias that could induce the estimated β to be zero, i.e. the degree of selection on unobservables necessary for the estimated coefficient to be 0. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Second, I expand the set of control variables to include all of the characteristics listed

in Table **??** Panel B, even those that are not statistically significant. Table G2 below presents those results and shows that the effects are virtually unchanged. Third, in Table G3, I use within-Empire variation instead in order to compare effects within versus outside of the British Empire. Fourth, in G4 I split the treatment to decompose the source of the overall effects. The omitted category is ports with exposure to failure equal to 0 but that are still within 500 km of a city of financing and therefore have a link to London. These results show that a large part of the overall effect is actually coming from the omitted category: being connected to London, even if $Fail_o = 0$. This result is very intuitive because after the crisis, interest rates in London remained at their punitive crisis-period highs for over three months Schneider (2021), and the banks that survived pursued a much more conservative business model. In addition to the baseline effect of having a London connection, ports with above median exposure experienced an additional effect.

Table G2: Robustness: Intensive margin effect of bank failures on shipping controlling for regional exposure

$$\ln(S_{pot}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \gamma_{ot} + \varepsilon_{pot}$$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fail_{po} × post	-0.727***	-0.684***	-0.669***	-0.692***	-0.726***	-0.730***	-0.732***
	[0.209]	[0.172]	[0.136]	[0.161]	[0.159]	[0.159]	[0.170]
OG exposure × post	Y						
Asia exposure × post		Y					
Africa exposure × post			Y				
N. Amer exposure × post				Y			
S. Amer exposure × post					Y		
Australia exposure × post						Y	
Europe exposure × post							Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y	Y
N	578	578	578	578	578	578	578
Ports	289	289	289	289	289	289	289
Clusters	54	54	54	54	54	54	54

Notes: Table G2 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis. The dependent variable is the log of the total number of ships departing in each period. Fail_{po} is the share of the port's banks that failed during the crisis. The mean of Fail_{po} is 0.07, and the standard deviation is 0.19. Post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. The time-invariant control variables are measured in 1865 and interacted with the post dummy. Each type of exposure is calculated as the share-weighted average bank exposure to a given variable in a location. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G3: Robustness: Intensive margin effect of bank failures on shipping using within-Empire variation

$$\ln(S_{pot}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \varepsilon_{pot}$$

	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Fail}_{\text{po}} \times$ post	-0.750***	-0.672**	-0.714***	-0.729***	-0.701***	-0.631***
	[0.243]	[0.277]	[0.248]	[0.258]	[0.249]	[0.197]
Port_{p} FE	Y	Y	Y	Y	Y	Y
British $\text{Emp}_{\text{p}} \times$ post FE	Y					
French $\text{Emp}_{\text{p}} \times$ post FE		Y				
Spanish $\text{Emp}_{\text{p}} \times$ post FE			Y			
Ottoman $\text{Emp}_{\text{p}} \times$ post FE				Y		
Portuguese $\text{Emp}_{\text{p}} \times$ post FE					Y	
Dutch $\text{Emp}_{\text{p}} \times$ post FE						Y
N	578	578	578	578	578	578
Ports	289	289	289	289	289	289
Clusters	54	54	54	54	54	54

Notes: Table G3 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis. The dependent variable is the log of the total number of ships departing in each period. Fail_{po} is the share of the port's banks that failed during the crisis. The mean of Fail_{po} is 0.07, and the standard deviation is 0.19. Post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. There are no country x post FE because those would be collinear with the within-Empire controls. The sample is restricted to ports active in both the pre- and post-period. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G4: Decomposition of short-run effects

$$\ln(\text{Ships}_{pot}) = \beta_1 \mathbb{I}(\text{Above median F}_{po}) \times \text{Post}_t + \beta_2 \mathbb{I}(\text{Below median F}_{po} \times \text{Post}_t + \beta_3 \mathbb{I}(\text{No London bank}_{po}) \times \text{Post}_t + \Gamma' X_{pot} + \gamma_{ot} + \varepsilon_{pot}$$

	(1)	(2)	(3)	(4)	(5)
Above median Fail_{po} × post	-0.299**	-0.294**	-0.259***	-0.274**	-0.293***
	[0.112]	[0.113]	[0.0903]	[0.132]	[0.0976]
Below median Fail_{po} × post	-0.0412	0.0143	-0.0522	-0.0129	-0.0447
	[0.103]	[0.121]	[0.115]	[0.107]	[0.111]
No London bank_{po} × post	0.140	0.169	0.138	0.136	0.135
	[0.137]	[0.140]	[0.152]	[0.135]	[0.140]
Capital city × post		Y			
Share to UK × post			Y		
Age of banks × post				Y	
OG connection × post					Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y
N	578	578	578	578	578
Ports	289	289	289	289	289
Clusters	54	54	54	54	54

Notes: Table G4 reports the coefficients and standard errors of the specification written above. The omitted category is port locations with $\text{Fail}_{po} = 0$. Standard errors in brackets are clustered by the origin country. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

G.1.2 Demand shocks from the UK and more generally

The baseline effects are also not due to demand shocks. Since the United Kingdom accounted for 30% of global trade during this period, a particular concern is that unobserved declines in UK demand are driving the results. First, I modify Equation 6 so that the dependent variable is $\ln(S_{podt})$ where S_{podt} is the number of ships sailing from port p in country o to destination country d in period t, and I include destination time-trends γ_{dt}. As in the long-run gravity specification, γ_{dt} will accommodate all aggregate demand shocks that might be confounding the effects, including those from the United Kingdom. In this specification, β is estimated off the variation across ports shipping to the same destination-country.[8] As before, I limit the sample to origin-destination pairs that ship in both periods to isolate the intensive margin effect. Table G5 column 5 reports a coefficient of -0.42, which is smaller than the baseline coefficient, but statistically significant at the 1 percent level as before.

I then focus on the importance of the UK as a destination by separately calculating the number of ships departing from ports with the UK as the destination and the number of ships going anywhere but the UK. Table G5 columns 3 and 4 show that shipping to non-UK destinations also significantly decreased, which is less likely to be due to a direct demand

[8]Destinations that only ship from single ports within origin countries are effectively dropped from the estimations. These singleton observations account for 5 of the 2,532 observations.

effect coming from the crisis in the UK.

Table G5: Immediate effect of bank failures on destination-specific shipping

$$\ln(S_{podt}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \gamma_{ot} + \gamma_{dt} + \varepsilon_{pot}$$

	Ships to UK		Ships not to UK		All ships	
	(1)	(2)	(3)	(4)	(5)	(6)
Fail_{po} × post	-0.705*	-0.818**	-0.791***	-0.766**	-0.420**	-0.428**
	[0.376]	[0.365]	[0.246]	[0.287]	[0.191]	[0.201]
$\text{Destination}_{\text{d}}$ × post FE					Y	Y
$\ln(\text{distance}_{\text{od}})$						Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y
Port controls × post		Y		Y		
N	452	452	506	506	2532	2532
Ports	226	226	253	253	207	207
Clusters	53	53	54	54	52	52

Notes: Table G5 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity and country-level shipping activity in the year before and after the crisis. The dependent variable in columns 1 and 2 is the log number of ships departing for the UK in each period; in columns 3 and 4 it is the log number of ships departing for all destinations except the UK in each period; in columns 5 and 6 it is the log number of ships departing for each destination in each period. Fail_{po} is the share of the port's banks that failed during the crisis, and post is a dummy for the post-crisis year. The port controls consist of an indicator for the port being a capital city within the country, the average age of banks, and the fraction of non-British banks interacted with the post dummy. The sample is restricted to ports active in both the pre- and post-period. The log distance between origin and destination is calculated using the geodesic distance. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

G.1.3 Excluding cotton-exporting countries

I also check that the results are robust to accounting for the world cotton trade. Although I have established that there is no systematic correlation between a bank's failure rate and its exposure to cotton exporters, I show in Table G6 that the estimated relationship is robust to completely excluding all cotton exporters, both individually and all together.

G.1.4 Accounting for news lags

In the baseline specifications, I assigned a single treatment date for all ports in the DD estimation. However, in reality there were long communication lags because the global telegraph network was not fully connected. Basing the post-crisis event date on May 11 for all ports around the world falsely attributes pre-crisis shipping events to the post-crisis period for ports far away from London, which could bias the difference-in-difference estimates.[9] An

[9]However, note that there is no significant correlation between a bank's failure rate and the distance of its operations from London so this bias is unlikely to be large.

Table G6: Robustness to removing cotton exporting countries: immediate effect of exposure to bank failures on port-level shipping

	All	excl USA	excl Brazil	excl Egypt	excl India	excl all cotton
	(1)	(2)	(3)	(4)	(5)	(6)
Fail_{po} × post	-0.656***	-0.609***	-0.649***	-0.614***	-0.652***	-0.554***
	[0.210]	[0.205]	[0.214]	[0.202]	[0.215]	[0.204]
Capital city × post	Y	Y	Y	Y	Y	Y
Share to UK × post	Y	Y	Y	Y	Y	Y
Age of banks × post	Y	Y	Y	Y	Y	Y
OG connection × post	Y	Y	Y	Y	Y	Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y
N	578	560	556	564	548	494
Ports	289	280	278	282	274	247
Clusters	54	53	53	53	53	50

Notes: Table G6 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis. The dependent variable is the log of the number of ships departing from each port. Fail_{po} is the share of the port's British banks that failed during the crisis. post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. The time-invariant control variables are measured in 1865 and interacted with the post dummy. In columns 2–5, ports from the United States, Brazil, Egypt, and India are excluded respectively. In column 6, ports from all four cotton exporting countries are excluded. Standard errors in brackets are clustered by country of origin. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

alternative method bases the event date of the crisis for each port on the date that news from London would have reached the port. For all ports, I calculate the average news lag between when shipping events occurred and when it was reported in the *Lloyd's List*.[10] For major cities, I validate these calculations with the first local newspaper reporting of the banking crisis.

Communication times are highly correlated with the geodesic distance, although there are outliers due to the burgeoning telegraph network. Figure G1 shows the relationship between (geodesic) distance to London and the average news lag in days. The last cities to receive the news were those in the interior of China and New Zealand. To allow for some flexibility in the effective arrival date, I mark the month of the news date as spanning two weeks on either side of the calculated news arrival date. I build a balanced panel of shipping activity around the news arrival date to that port. I validate the port-level results using the port-specific news arrival dates for the "Post" period and report the estimates in Table G7.

G.1.5 Limitations of the shipping data

The ship counts data are only a proxy and does not perfectly measure exports volumes. I show that the limitations do not affect the main results by re-estimating all the results with ships as the dependent variable using count data methods, and limiting the sample to

[10] Juhász and Steinwender (2019) use lags in the *Lloyd's List* reports to measure communication times to London before and after the global telegraph network was established.

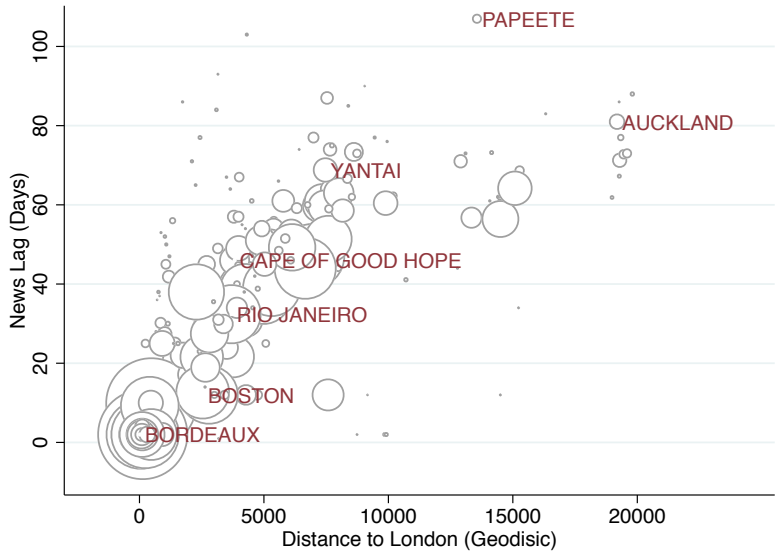
Table G7: Robustness to allowing for news lags: immediate effect of exposure to bank failures on port-level exports

$$\ln(S_{pot}) = \beta \text{Fail}_{po} \times \text{Post}_{pot} + \Gamma' X_{po} \times \text{Post}_{pot} + \alpha_p + \gamma_{ot} + \varepsilon_{pot}$$

	(1)	(2)	(3)	(4)	(5)	(6)
Fail_{po} × post	-0.701***	-0.715***	-0.613***	-0.665***	-0.719***	-0.592***
	[0.166]	[0.167]	[0.166]	[0.199]	[0.189]	[0.208]
Capital city × post		Y				Y
Share to UK × post			Y			Y
Age of banks × post				Y		Y
OG connection × post					Y	Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y
N	570	570	570	570	570	570
Ports	285	285	285	285	285	285
Clusters	54	54	54	54	54	54

Notes: Table G7 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis. The dependent variable is the log of the total number of ships departing in each period. Fail_{po} is the share of the port's banks that failed during the crisis. Post_{pot} is a port-specific dummy variatble for the post-crisis year that takes the value of 1 after news of the crisis reached the port and 0 otherwise. The time-invariant control variables are measured in 1865 and interacted with the post dummy. They include an indicator for the port being a capital city within the country, the average age of banks, and the fraction of shipping to the UK. The sample is restricted to ports active in both the pre- and post-period. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Figure G1: Positive correlation between news lag and geodesic distance to London



Notes: Figure G1 plots the relationship between the ports' physical distance to London (measured geodesically in kilometers) and the news lag in days that the ports received news of the banking crisis. The circles convey the pre-crisis size of the port. Select ports from each continent are named.

well-traveled routes to further diminish the impact of outliers.

a. **Count data methods**
I re-do all of the regressions that use the number of ships as a dependent variable using the Poisson regression advised by Cameron and Miller (2014). The results are qualitatively the same and the magnitude of the effects are again larger. Those tables are reproduced below.

Table G8 has the estimates from the Poisson specification for Table **??** in the paper with the controls with country fixed effects. The magnitude of the effect in Column 1 (-0.899) should be interpreted as meaning a 100% exposure to bank failures reduces shipping to 40% of the shipping for non-exposed ports ($e^{-0.899} = 0.4$), which is a 60% reduction. That is very similar to the coefficient of -0.71, which would be interpreted as a 71% reduction, in the OLS specification (Table **??** Column 2). The coefficients are very stable across the specifications, all estimating a semi-elasticity of roughly -0.6. Table G9 has the estimates for the Poisson specification for Table G5. The coefficients are again of very similar magnitudes. For example, the estimate in Column 4 of -.93 implies a reduction in exports of 61%, relative to the OLS estimate of 72% (Table G5 Column 4). In the last two columns which includes destination fixed effects, the Poisson estimates are even larger (65% reduction versus 39% reduction).

b. **Distribution of shipping routes and limiting to well-traveled routes**

Table G8: Poisson regression: Immediate effect of bank failures on port-level shipping

$$\ln(S_{pot}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \gamma_{ot} + \varepsilon_{pot}$$

	(1)	(2)	(3)	(4)	(5)	(6)
Fail_{po} × post	-0.891***	-0.898***	-0.899***	-0.907***	-0.926***	-0.966***
	[0.128]	[0.132]	[0.122]	[0.141]	[0.158]	[0.169]
Capital city × post		Y				Y
Share to UK × post			Y			Y
Age of banks × post				Y		Y
OG connection × post					Y	Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y
N	578	578	578	578	578	578
Ports	289	289	289	289	289	289
Clusters	54	54	54	54	54	54

Notes: Table G8 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis using a Poisson regression. The dependent variable is the the total number of ships departing in each period. Fail_{po} is the share of the port's banks that failed during the crisis. The mean of Fail_{po} is 0.07, and the standard deviation is 0.19. Post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. The time-invariant control variables are measured in 1865 and interacted with the post dummy. They include an indicator for the port being a capital city within the country, the average age of banks, and the fraction of shipping to the UK. The sample is restricted to ports active in both the pre- and post-period. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G9: Poisson regression: Immediate effect of bank failures on destination-specific shipping

$$\ln(S_{podt}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \gamma_{ot} + \gamma_{dt} + \varepsilon_{pot}$$

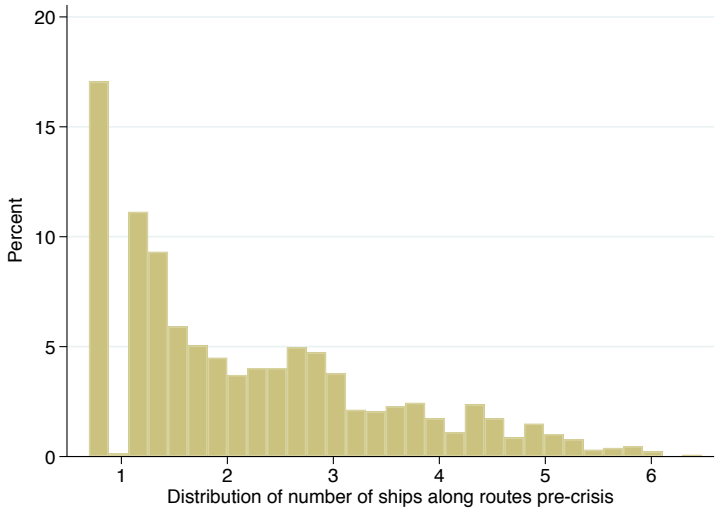
	Ships to UK		Ships not to UK		All ships	
	(1)	(2)	(3)	(4)	(5)	(6)
Fail_{po} × post	-0.992***	-1.146***	-1.012***	-1.182***	-0.944***	-1.049***
	[0.144]	[0.173]	[0.139]	[0.163]	[0.130]	[0.133]
$\text{Destination}_{\text{d}}$ × post FE					Y	Y
$\ln(\text{distance}_{\text{od}})$						Y
$\text{Country}_{\text{o}}$ × post FE	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y
Port controls × post		Y		Y		
N	452	452	506	506	2532	2532
Ports	226	226	253	253	207	207
Clusters	53	53	54	54	51	51

Notes: Table G9 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity and country-level shipping activity in the year before and after the crisis using a Poisson estimator. The dependent variable in columns 1 and 2 is the number of ships departing for the UK in each period; in columns 3 and 4 it is the number of ships departing for all destinations except the UK in each period; in columns 5 and 6 it is the number of ships departing for each destination in each period. Fail_{po} is the share of the port's banks that failed during the crisis, and post is a dummy for the post-crisis year. The port controls consist of an indicator for the port being a capital city within the country, the average age of banks, and the fraction of shipping to the UK interacted with the post dummy. The sample is restricted to ports active in both the pre- and post-period. The log distance between origin and destination is calculated using the geodesic distance. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

I restrict the estimation to the routes that are in the top 75th and 90th percentiles of the distribution of routes, and I recalculate the dependent variable as the number of ships that sailed conditional on those restrictions. I plot the distribution of the number of ships along routes in the pre-crisis period in Figure G2.

The results of the one-period difference-in-difference estimation both with and without destination fixed effects is shown in Table G10. Column 1 presents the baseline bilateral regression (with destination fixed effects) with all of the routes included. Columns 2 and 4 only includes ships that travel along routes that are in the top 90%-ile and 75%-ile of routes by traffic in the pre-crisis period, respectively. The number of observations goes down with each sample restriction because some port–destination linkages are not busy enough to be included. Columns 3 and 4 aggregate the shipping activity in each port across all destinations and estimates the baseline two-period regression (without destination fixed effects). Sample sizes are smaller here for the same reason that some ports only went to destinations with low traffic routes. The results across all of these columns shows that restricting the sample to busier routes *increases* the magnitudes of the estimated effects, which remain statistically significant across all specifications.

Figure G2: Distribution of routes by traffic



Notes: Figure G2 plots the distribution of the number of ships that sailed a given route during the pre-crisis year. The source data are from the *Lloyd's List*. Routes are between different origin ports sailing to different countries.

c. **Removing ports that are in island and entrepot countries**

Table G10: Port-level effects after restricting to busier shipping routes

	All routes	Top 90% routes		Top 75% routes	
	(1)	(2)	(3)	(4)	(5)
$\text{Fail}_{\text{po}} \times$ post	-0.420**	-0.690***	-0.589**	-0.893***	-0.685***
	[0.193]	[0.166]	[0.224]	[0.209]	[0.228]
$\text{Destination}_{\text{d}} \times$ post FE	Y	Y		Y	
$\text{Country}_{\text{o}} \times$ post FE	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y
N	2532	2100	406	1814	394
Ports	207	203	203	197	197
Clusters	51	51	51	51	51

Notes: Table G10 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis, with some specifications controlling for destination-specific shocks. The dependent variable is the total number of ships departing in each period. The count of the number of ships is determined by whether the ship sailed on a sufficiently busy route. Column 1 does not restrict the sample at all. Columns 2 and 3 restrict the sample to the top 90%-ile of the busiest routes (i.e. eliminating the bottom 10%-ile), and Columns 4 and 5 restrict the top 75%-ile of routes. Fail_{po} is the share of the port's banks that failed during the crisis. The mean of Fail_{po} is 0.07, and the standard deviation is 0.19. Post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. Standard errors in brackets are clustered by country of origin. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

I remove the observations that may exhibit unusual trade patterns because of their status as an island or entrepot. The list of islands are: the Azores, Bahrain, British West Indies, Ceylon, Channel Islands, Comoros, Cuba, Curacao, Cyprus, Danish West Indies, Dominican Republic, Falkland Islands, French Polynesia, French West Indies, Haiti, Hawaii, Iceland, Ireland, Jamaica, Japan, Java, Kiribati, Maldives, Malta, Mauritius, New Caledonia, New Zealand, Papua New Guinea, Puerto Rico, Reunion, Sao Tome and Principe, Seychelles, Solomon Islands, St Helena, St Pierre and Miquelon, Timor-Leste, Tonga, Trinidad and Tobago, and Vanuatu. The list of entrepots are: Hawaii, Hong Kong, St Helena, and Straits Settlements.

Table G11: Robustness: Short-run intensive margin effect without islands and entrepots

$$\ln(S_{pot}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \gamma_{ot} + \varepsilon_{pot}$$

	All		No islands		No entrepots	
	(1)	(2)	(3)	(4)	(5)	(6)
Fail_{po} × post	-0.656***	-0.774***	-0.614**	-0.727**	-0.656***	-0.782***
	[0.221]	[0.263]	[0.290]	[0.292]	[0.221]	[0.267]
Capital city × post	Y	Y	Y	Y	Y	Y
Share to UK × post	Y	Y	Y	Y	Y	Y
Age of banks × post	Y	Y	Y	Y	Y	Y
OG connection × post	Y	Y	Y	Y	Y	Y
Port_{p} FE	Y	Y	Y	Y	Y	Y
$\text{Country}_{\text{o}}$ × post FE	Y		Y		Y	
N	578	578	450	450	564	564
Ports	289	289	225	225	282	282
Clusters	54	54	39	39	51	51

Notes: Table G11 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis. Columns 1 and 2 do not restrict the sample at all. Columns 3 and 4 exclude islands, and columns 5 and 6 exclude entrepots. Fail_{po} is the share of the port's banks that failed during the crisis. The mean of Fail_{po} is 0.07, and the standard deviation is 0.19. Post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

G.2 Long-run effects

G.2.1 Additional control variables

Tables G12– G22 show the robustness of the long-run results to controlling for different initial conditions and contemporaneous macroeconomic shocks.

Table G12: Long-term effects of financing shock on country-level exports

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\beta_{1850\text{-}1855}$	0.0907	-0.272	-0.229	-0.173	-0.397	0.388	-0.112	-0.236
	[0.217]	[0.330]	[0.406]	[0.345]	[0.360]	[0.464]	[0.307]	[0.296]
$\beta_{1856\text{-}1860}$	-0.0141	-0.0775	-0.279	0.0819	-0.0788	0.0257	-0.0468	-0.0253
	[0.142]	[0.206]	[0.315]	[0.182]	[0.230]	[0.362]	[0.143]	[0.125]
$\beta_{1866\text{-}1870}$	-1.323***	-1.544***	-1.488***	-1.609***	-1.618***	-2.295***	-1.492**	-1.490***
	[0.292]	[0.368]	[0.420]	[0.413]	[0.382]	[0.634]	[0.584]	[0.457]
$\beta_{1871\text{-}1875}$	-1.697***	-1.944***	-1.876***	-1.955***	-2.115***	-2.294**	-2.203***	-2.221***
	[0.412]	[0.512]	[0.582]	[0.546]	[0.531]	[0.883]	[0.763]	[0.611]
$\beta_{1876\text{-}1880}$	-1.838***	-1.962***	-2.035***	-1.892***	-2.040***	-2.406**	-2.164***	-2.150***
	[0.474]	[0.549]	[0.664]	[0.551]	[0.576]	[0.967]	[0.617]	[0.511]
$\beta_{1881\text{-}1885}$	-1.537***	-1.703***	-1.673**	-1.589***	-1.785***	-2.372**	-1.797***	-1.590***
	[0.430]	[0.563]	[0.671]	[0.584]	[0.588]	[0.927]	[0.563]	[0.501]
$\beta_{1886\text{-}1890}$	-1.337***	-1.379**	-1.461**	-1.295**	-1.436**	-2.041**	-1.630***	-1.488***
	[0.457]	[0.609]	[0.705]	[0.650]	[0.627]	[0.848]	[0.561]	[0.553]
$\beta_{1891\text{-}1895}$	-1.242***	-1.318**	-1.528**	-1.109*	-1.491**	-1.980***	-2.090***	-1.634***
	[0.410]	[0.562]	[0.693]	[0.605]	[0.606]	[0.725]	[0.496]	[0.553]
$\beta_{1896\text{-}1900}$	-1.403***	-1.495***	-1.665**	-1.264**	-1.851***	-2.075***	-2.162***	-1.886***
	[0.343]	[0.485]	[0.656]	[0.532]	[0.495]	[0.626]	[0.332]	[0.427]
$\beta_{1901\text{-}1905}$	-1.077**	-1.163**	-1.426*	-0.863	-1.504**	-1.431**	-1.819***	-1.610***
	[0.423]	[0.551]	[0.779]	[0.577]	[0.559]	[0.671]	[0.453]	[0.494]
$\beta_{1906\text{-}1910}$	-0.798	-0.885	-1.187	-0.574	-1.254*	-1.131	-1.465***	-1.417***
	[0.494]	[0.573]	[0.769]	[0.594]	[0.624]	[0.774]	[0.369]	[0.427]
$\beta_{1911\text{-}1914}$	-0.803	-0.887	-1.141	-0.544	-1.167	-1.113	-1.186**	-1.548***
	[0.616]	[0.678]	[0.856]	[0.703]	[0.738]	[0.803]	[0.473]	[0.469]
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Country_o FE	Y	Y	Y	Y	Y	Y	Y	Y
$\ln(\text{cotton}_o) \times t$			Y					
$\ln(\text{cotton manu}_o) \times t$				Y				
$\ln(\text{population}_o) \times t$					Y			
$\text{SITC industry}_o \times t$						Y		
$\text{Region}_o \times t$							Y	Y
$\text{I(Brit bank}_o) \times t$	Y	Y	Y	Y	Y	Y	Y	Y
Country_d	Y							
Country_{dt}		Y	Y	Y	Y	Y	Y	Y
N	70895	70895	70895	70895	56352	50637	50637	70895
Clusters	129	129	129	129	45	48	48	129
Adj. R^2	0.530	0.532	0.532	0.532	0.558	0.561	0.559	0.535

Notes: Table G12 reports the point estimates for the long-term effects of the credit shock on the value of country-level exports. The dependent variable is the log value of exports from origin country o to destination country d. Baseline controls are the log distance between country o and country d. Cotton, cotton manufactured goods, and population are calculated in 1865 and interacted with the 5-year dummies. Countries that did not export cotton are given ln values of zero. Controlling for pre-crisis population and the SITC industry of exports reduces the sample size to countries that were exporting pre-crisis. Column 7 artificially restricts the sample to countries with SITC codes available. Standard errors in brackets are clustered by the origin country. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G13: Long-term effects: robustness to gravity measures of commonality

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{odt} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)	(6)
$\beta_{1850\text{-}1855}$	-0.359	-0.275	-0.263	-0.349	-0.277	-0.174
	[0.313]	[0.310]	[0.314]	[0.323]	[0.326]	[0.326]
$\beta_{1856\text{-}1860}$	-0.126	-0.0649	-0.110	-0.0875	-0.0591	-0.000202
	[0.216]	[0.203]	[0.224]	[0.209]	[0.207]	[0.185]
$\beta_{1866\text{-}1870}$	-1.541***	-1.587***	-1.248***	-1.619***	-1.601***	-1.249***
	[0.341]	[0.325]	[0.381]	[0.317]	[0.339]	[0.405]
$\beta_{1871\text{-}1875}$	-1.911***	-1.968***	-1.614***	-1.947***	-1.978***	-1.535***
	[0.481]	[0.499]	[0.548]	[0.442]	[0.506]	[0.558]
$\beta_{1876\text{-}1880}$	-1.899***	-1.967***	-1.652***	-1.947***	-1.974***	-1.567***
	[0.534]	[0.551]	[0.593]	[0.514]	[0.554]	[0.587]
$\beta_{1881\text{-}1885}$	-1.632***	-1.709***	-1.400**	-1.672***	-1.715***	-1.316**
	[0.567]	[0.567]	[0.580]	[0.573]	[0.573]	[0.578]
$\beta_{1886\text{-}1890}$	-1.342**	-1.405**	-1.041*	-1.423**	-1.412**	-0.954
	[0.584]	[0.588]	[0.584]	[0.590]	[0.594]	[0.592]
$\beta_{1891\text{-}1895}$	-1.283**	-1.367**	-1.016*	-1.333**	-1.379**	-0.916
	[0.540]	[0.547]	[0.543]	[0.550]	[0.554]	[0.560]
$\beta_{1896\text{-}1900}$	-1.462***	-1.532***	-1.177**	-1.544***	-1.544***	-1.070**
	[0.447]	[0.457]	[0.462]	[0.447]	[0.466]	[0.484]
$\beta_{1901\text{-}1905}$	-1.145**	-1.194**	-0.887	-1.239**	-1.208**	-0.764
	[0.526]	[0.533]	[0.548]	[0.529]	[0.538]	[0.554]
$\beta_{1906\text{-}1910}$	-0.882	-0.930*	-0.604	-0.973*	-0.948*	-0.471
	[0.554]	[0.547]	[0.565]	[0.564]	[0.547]	[0.572]
$\beta_{1911\text{-}1914}$	-0.962	-0.983	-0.614	-1.075	-1.007	-0.489
	[0.659]	[0.635]	[0.680]	[0.672]	[0.633]	[0.685]
Common language	1.045***					
	[0.158]					
Common border		0.908***				
		[0.189]				
Common empire			1.874***			
			[0.181]			
Controls	Y	Y	Y	Y	Y	Y
Country_o FE	Y	Y	Y	Y	Y	Y
Common language × t				Y		
Common border × t					Y	
Common empire × t						Y
I(Brit bank_o) × t	Y	Y	Y	Y	Y	Y
Country_dt	Y	Y	Y	Y	Y	Y
N	70157	70157	70895	70157	70157	70895
Clusters	129	129	129	129	129	129
Adj. R^2	0.546	0.535	0.561	0.546	0.535	0.561

Notes: Table G13 reports the coefficients every five years. The control variables are time-invariant and time-varying measures of distance standard to gravity estimations, such as common language. Standard errors in brackets are clustered by the origin country. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G14: Long-term effects: robustness to monetary standard and conflict

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\beta_{1850\text{-}1855}$	-0.147	-0.322	-0.278	-0.285	-0.282	-0.259	-0.270
	[0.432]	[0.322]	[0.386]	[0.451]	[0.343]	[0.331]	[0.338]
$\beta_{1856\text{-}1860}$	-0.218	-0.0857	-0.0540	0.101	0.0247	-0.0540	-0.0677
	[0.282]	[0.212]	[0.263]	[0.273]	[0.181]	[0.216]	[0.200]
$\beta_{1866\text{-}1870}$	-1.519***	-1.645***	-1.705***	-1.493***	-1.470***	-1.539***	-1.532***
	[0.451]	[0.374]	[0.382]	[0.446]	[0.419]	[0.364]	[0.368]
$\beta_{1871\text{-}1875}$	-1.953***	-2.143***	-2.129***	-1.877***	-1.794***	-1.923***	-1.929***
	[0.616]	[0.499]	[0.497]	[0.545]	[0.573]	[0.516]	[0.512]
$\beta_{1876\text{-}1880}$	-2.049***	-2.150***	-2.153***	-1.898***	-1.814***	-1.943***	-1.946***
	[0.686]	[0.535]	[0.563]	[0.616]	[0.595]	[0.557]	[0.550]
$\beta_{1881\text{-}1885}$	-1.750**	-1.907***	-1.882***	-1.638**	-1.552***	-1.690***	-1.687***
	[0.686]	[0.535]	[0.631]	[0.658]	[0.592]	[0.566]	[0.562]
$\beta_{1886\text{-}1890}$	-1.345*	-1.489**	-1.559**	-1.313*	-1.231*	-1.359**	-1.363**
	[0.730]	[0.617]	[0.687]	[0.685]	[0.634]	[0.613]	[0.606]
$\beta_{1891\text{-}1895}$	-1.318*	-1.379**	-1.501**	-1.272**	-1.174*	-1.299**	-1.302**
	[0.701]	[0.577]	[0.628]	[0.642]	[0.596]	[0.571]	[0.563]
$\beta_{1896\text{-}1900}$	-1.500**	-1.530***	-1.659***	-1.419**	-1.352**	-1.475***	-1.480***
	[0.647]	[0.493]	[0.551]	[0.559]	[0.524]	[0.493]	[0.486]
$\beta_{1901\text{-}1905}$	-1.210	-1.152**	-1.323**	-1.081*	-1.028*	-1.145**	-1.148**
	[0.726]	[0.550]	[0.639]	[0.646]	[0.574]	[0.560]	[0.554]
$\beta_{1906\text{-}1910}$	-0.934	-0.868	-1.062	-0.798	-0.718	-0.873	-0.868
	[0.716]	[0.555]	[0.660]	[0.652]	[0.574]	[0.576]	[0.574]
$\beta_{1911\text{-}1914}$	-0.939	-0.874	-1.076	-0.827	-0.702	-0.876	-0.875
	[0.768]	[0.665]	[0.737]	[0.735]	[0.665]	[0.680]	[0.680]
Controls	Y	Y	Y	Y	Y	Y	Y
$\text{Country}_{\text{o}}$ FE	Y	Y	Y	Y	Y	Y	Y
$\text{Gold standard}_{\text{o}} \times \text{t}$	Y						
$\text{Silver standard}_{\text{o}} \times \text{t}$		Y					
$\text{Conflict (any)}_{\text{o}} \times \text{t}$			Y				
$\text{Conflict (interstate)}_{\text{o}} \times \text{t}$				Y			
$\text{Conflict (other)}_{\text{o}} \times \text{t}$					Y		
$\text{Country}_{\text{ot}}$ war						Y	
$\text{Country-pair}_{\text{odt}}$ war							Y
$\text{I(Brit bank}_{\text{o}}) \times \text{t}$	Y	Y	Y	Y	Y	Y	Y
$\text{Country}_{\text{dt}}$	Y	Y	Y	Y	Y	Y	Y
N	62497	62497	70895	70895	70895	70895	70895
Clusters	65	65	129	129	129	129	129
Adj. R^2	0.542	0.542	0.532	0.531	0.532	0.532	0.532

Notes: Table G14 reports the coefficients every five years. The monetary and conflict variables are binary variables taking a value of 1 if the exporting country had that characteristic in 1865 or 1866 and are interacted with year dummies. Column 6 controls for war in the origin country (including civil war) in any year, and Column 7 controls for war between dyadic pairs of countries in any year. Standard errors in brackets are clustered by the origin country. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G15: Long-term effects: robustness to industry composition of exports

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)	(6)
$\beta_{1850\text{-}1855}$	-0.403	-0.221	-0.342	-0.405	-0.270	-0.202
	[0.389]	[0.342]	[0.409]	[0.396]	[0.323]	[0.307]
$\beta_{1856\text{-}1860}$	-0.321	-0.0281	-0.285	-0.166	-0.211	-0.134
	[0.240]	[0.208]	[0.250]	[0.227]	[0.224]	[0.202]
$\beta_{1866\text{-}1870}$	-1.574***	-1.617***	-1.455***	-1.683***	-1.273**	-1.484***
	[0.473]	[0.386]	[0.454]	[0.407]	[0.503]	[0.355]
$\beta_{1871\text{-}1875}$	-1.989***	-2.001***	-1.861***	-2.123***	-2.097***	-1.906***
	[0.621]	[0.515]	[0.630]	[0.562]	[0.611]	[0.501]
$\beta_{1876\text{-}1880}$	-2.134***	-2.034***	-1.878***	-2.165***	-1.953***	-1.947***
	[0.697]	[0.506]	[0.691]	[0.603]	[0.636]	[0.528]
$\beta_{1881\text{-}1885}$	-1.957***	-1.783***	-1.666**	-1.929***	-1.729***	-1.709***
	[0.712]	[0.570]	[0.670]	[0.624]	[0.608]	[0.529]
$\beta_{1886\text{-}1890}$	-1.635**	-1.520**	-1.411**	-1.623**	-1.304**	-1.331**
	[0.772]	[0.614]	[0.677]	[0.670]	[0.619]	[0.598]
$\beta_{1891\text{-}1895}$	-1.576**	-1.403**	-1.342**	-1.533**	-1.439**	-1.272**
	[0.744]	[0.549]	[0.641]	[0.657]	[0.545]	[0.548]
$\beta_{1896\text{-}1900}$	-1.782***	-1.463***	-1.412**	-1.690***	-1.652***	-1.464***
	[0.664]	[0.480]	[0.575]	[0.572]	[0.463]	[0.463]
$\beta_{1901\text{-}1905}$	-1.600**	-1.117**	-0.929	-1.280**	-1.198**	-1.079**
	[0.724]	[0.520]	[0.628]	[0.622]	[0.550]	[0.540]
$\beta_{1906\text{-}1910}$	-1.359*	-0.738	-0.609	-1.009	-1.043*	-0.820
	[0.723]	[0.565]	[0.670]	[0.684]	[0.557]	[0.561]
$\beta_{1911\text{-}1914}$	-1.349*	-0.794	-0.599	-1.043	-1.026	-0.832
	[0.799]	[0.680]	[0.790]	[0.794]	[0.689]	[0.671]
Controls	Y	Y	Y	Y	Y	Y
Country_o FE	Y	Y	Y	Y	Y	Y
$\ln(\text{grains}_\text{o}) \times$ t	Y					
$\ln(\text{bullion}_\text{o}) \times$ t		Y				
$\ln(\text{alcohol}_\text{o}) \times$ t			Y			
$\ln(\text{tobacco}_\text{o}) \times$ t				Y		
$\text{Commodities share}_\text{o} \times$ t					Y	
$\text{Export share to UK}_\text{o} \times$ t						Y
$\text{I(Brit bank}_\text{o}) \times$ t	Y	Y	Y	Y	Y	Y
Country_dt	Y	Y	Y	Y	Y	Y
N	70895	70895	70895	70895	54857	70895
Clusters	129	129	129	129	46	129
Adj. R^2	0.533	0.532	0.533	0.533	0.549	0.532

Notes: Table G15 reports the coefficients every five years. The industry-level exports are calculated in 1865 and interacted with the 5-year dummies. Countries that did not export a commodity are given ln values of zero. The Commodities share of exports is the fraction of goods exported in 1865 that are categorized as raw or primary products. Standard errors in brackets are clustered by the origin country. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G16: Correlation between bank failures and pre-crisis location characteristics: additional industries

Panel A: SITC industries

	Medicines (54)	Animal & veg materials (29)	Animal fats (42)	Non-ferrous metals (68)	Misc (89)	Meat (1)
	(1)	(2)	(3)	(4)	(5)	(6)
	-0.0295	0.0731**	0.0324	0.0300	-0.0178	-0.0266
	[0.0277]	[0.0289]	[0.0300]	[0.0279]	[0.0277]	[0.0305]
N	122	122	122	122	122	122

Panel B: SITC industries, continued

	Cork & wood (24)	Dyes (53)	Fish (3)	Coal (32)	Crude minerals (27)	Petroleum prod (33)	Iron (67)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	-0.00683	0.000190	-0.0257	0.0366	-0.0544**	-0.0418	0.0444
	[0.0304]	[0.0297]	[0.0299]	[0.0348]	[0.0250]	[0.0319]	[0.0294]
N	122	122	122	122	122	122	122

Panel C: SITC industries, continued

	Metal manu (69)	Inorganic chem (52)	Organic chem (51)	Machinery (71)	Paper (64)	Metal ores (28)
	(1)	(2)	(3)	(4)	(5)	(6)
	0.0400	-0.0406	-0.0619**	0.0626***	0.00443	-0.0593**
	[0.0303]	[0.0233]	[0.0273]	[0.0203]	[0.0224]	[0.0285]
N	122	122	122	122	122	122

Panel D: SITC industries, continued

	Nonmetallic mineral manu (66)	Wood manu (63)	Leather goods (61)	Rubber (23)	Soap (55)	Clothing (84)
	(1)	(2)	(3)	(4)	(5)	(6)
	-0.00739	-0.0458	-0.0374	-0.0335	-0.0737**	-0.0273
	[0.0242]	[0.0296]	[0.0308]	[0.0189]	[0.0287]	[0.0215]
N	122	122	122	122	122	122

Notes: Table G16 reports estimates from the bank-level regression of bank exposure to location characteristics pre-crisis on bank failure rates. The dependent variable is $\mathbb{I}(\text{Failure}_b)$, the measure of bank failure. The independent variable of interest $\bar{X}_b$ is the share-weighted exposure of banks to location characteristics, normalized to have zero mean and unit variance. The coefficients are interpreted as the increase in the probability that a bank fails given a standard deviation increase in the average bank exposure to a particular characteristic. Regressions are weighted by each the average location's exposure to bank b. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G17: Long-term effects: robustness to SITC industries

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)
$\beta_{1850\text{-}1855}$	-0.433	-0.226	-0.475	-0.567*	-0.535*
	[0.310]	[0.340]	[0.297]	[0.333]	[0.318]
$\beta_{1856\text{-}1860}$	-0.123	-0.00248	-0.126	-0.106	-0.0980
	[0.225]	[0.197]	[0.214]	[0.221]	[0.215]
$\beta_{1866\text{-}1870}$	-1.351***	-1.303***	-1.589***	-1.460***	-1.490***
	[0.382]	[0.397]	[0.417]	[0.371]	[0.361]
$\beta_{1871\text{-}1875}$	-1.824***	-1.615***	-1.890***	-1.890***	-1.908***
	[0.594]	[0.507]	[0.579]	[0.609]	[0.587]
$\beta_{1876\text{-}1880}$	-1.971***	-1.728***	-2.006***	-2.007***	-1.925***
	[0.700]	[0.579]	[0.670]	[0.699]	[0.657]
$\beta_{1881\text{-}1885}$	-1.936***	-1.472***	-2.081***	-2.008***	-1.828***
	[0.646]	[0.544]	[0.649]	[0.650]	[0.635]
$\beta_{1886\text{-}1890}$	-1.578**	-1.177**	-1.803***	-1.733***	-1.598**
	[0.641]	[0.586]	[0.642]	[0.621]	[0.619]
$\beta_{1891\text{-}1895}$	-1.454**	-1.111**	-1.482***	-1.584***	-1.429**
	[0.615]	[0.561]	[0.563]	[0.597]	[0.614]
$\beta_{1896\text{-}1900}$	-1.414**	-1.324**	-1.547***	-1.471***	-1.423***
	[0.552]	[0.521]	[0.526]	[0.527]	[0.522]
$\beta_{1901\text{-}1905}$	-1.225*	-1.255**	-1.349**	-1.137*	-1.051*
	[0.673]	[0.632]	[0.682]	[0.654]	[0.634]
$\beta_{1906\text{-}1910}$	-1.149	-1.129*	-1.305*	-1.118	-1.017
	[0.699]	[0.599]	[0.712]	[0.681]	[0.647]
$\beta_{1911\text{-}1914}$	-1.196	-1.175*	-1.300	-1.228	-1.093
	[0.829]	[0.633]	[0.811]	[0.829]	[0.787]
Controls	Y	Y	Y	Y	Y
I(Brit bank$_o$) × t	Y	Y	Y	Y	Y
Country$_o$ FE	Y	Y	Y	Y	Y
Country$_{dt}$	Y	Y	Y	Y	Y
Coal (32)$_o$ × t	Y				
Iron (67)$_o$ × t		Y			
Metal manu (69)$_o$ × t			Y		
Machinery (71)$_o$ × t				Y	
Paper (64)$_o$ × t					Y
N	70895	70895	70895	70895	70895
Clusters	129	129	129	129	129
Adj. R^2	0.532	0.533	0.532	0.532	0.532

Notes: Table G17 reports the coefficients every five years. The industry-level exports are calculated in 1865 and interacted with the 5-year dummies. Countries that did not export a commodity are given ln values of zero. The SITC categories chosen are ones significantly correlated with bank failures from Table G16. Standard errors in brackets are clustered by the origin country. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table G18: Long-term effects: robustness to excluding cotton exporting countries

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\beta_{1850\text{-}1855}$	0.0778	-0.319	0.106	-0.250	0.126	-0.204	0.0657	-0.281
	[0.235]	[0.357]	[0.221]	[0.327]	[0.208]	[0.314]	[0.216]	[0.330]
$\beta_{1856\text{-}1860}$	0.0231	0.0773	-0.0222	-0.0841	0.00509	-0.0341	-0.0110	-0.0767
	[0.150]	[0.198]	[0.144]	[0.208]	[0.144]	[0.198]	[0.143]	[0.206]
$\beta_{1866\text{-}1870}$	-1.371***	-1.592***	-1.291***	-1.518***	-1.278***	-1.475***	-1.288***	-1.557***
	[0.319]	[0.422]	[0.294]	[0.371]	[0.275]	[0.372]	[0.299]	[0.363]
$\beta_{1871\text{-}1875}$	-1.634***	-1.790***	-1.672***	-1.937***	-1.643***	-1.868***	-1.720***	-2.033***
	[0.444]	[0.606]	[0.421]	[0.515]	[0.387]	[0.507]	[0.429]	[0.493]
$\beta_{1876\text{-}1880}$	-1.730***	-1.720***	-1.823***	-1.969***	-1.784***	-1.878***	-1.852***	-2.042***
	[0.504]	[0.616]	[0.482]	[0.551]	[0.445]	[0.537]	[0.488]	[0.529]
$\beta_{1881\text{-}1885}$	-1.443***	-1.493**	-1.552***	-1.732***	-1.493***	-1.621***	-1.511***	-1.723***
	[0.454]	[0.627]	[0.436]	[0.565]	[0.422]	[0.558]	[0.439]	[0.557]
$\beta_{1886\text{-}1890}$	-1.270***	-1.173*	-1.338***	-1.390**	-1.289***	-1.298**	-1.287***	-1.374**
	[0.479]	[0.686]	[0.461]	[0.613]	[0.462]	[0.609]	[0.461]	[0.611]
$\beta_{1891\text{-}1895}$	-1.157***	-1.120*	-1.247***	-1.340**	-1.202***	-1.246**	-1.171***	-1.279**
	[0.437]	[0.644]	[0.416]	[0.567]	[0.415]	[0.565]	[0.412]	[0.569]
$\beta_{1896\text{-}1900}$	-1.327***	-1.291**	-1.400***	-1.504***	-1.356***	-1.417***	-1.341***	-1.474***
	[0.369]	[0.575]	[0.349]	[0.490]	[0.349]	[0.487]	[0.346]	[0.483]
$\beta_{1901\text{-}1905}$	-0.961**	-0.883	-1.072**	-1.176**	-1.017**	-1.078*	-1.014**	-1.147**
	[0.435]	[0.603]	[0.431]	[0.556]	[0.428]	[0.547]	[0.427]	[0.545]
$\beta_{1906\text{-}1910}$	-0.682	-0.625	-0.802	-0.906	-0.733	-0.788	-0.719	-0.855
	[0.491]	[0.619]	[0.499]	[0.578]	[0.507]	[0.568]	[0.495]	[0.572]
$\beta_{1911\text{-}1914}$	-0.694	-0.625	-0.874	-0.987	-0.726	-0.781	-0.735	-0.854
	[0.607]	[0.713]	[0.620]	[0.680]	[0.628]	[0.672]	[0.615]	[0.676]
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Country_o FE	Y	Y	Y	Y	Y	Y	Y	Y
excluding USA	Y	Y						
excluding Brazil			Y	Y				
excluding Egypt					Y	Y		
excluding India							Y	Y
I(Brit bank_o) × t	Y	Y	Y	Y	Y	Y	Y	Y
Country_d	Y		Y		Y		Y	
Country_dt		Y		Y		Y		Y
N	67364	67364	69834	69834	70092	70092	68427	68427
Clusters	128	128	128	128	128	128	128	128
Adj. R^2	0.521	0.522	0.531	0.533	0.530	0.532	0.533	0.534

Notes: Table G18 reports the coefficients every five years. Exports from the USA, Brazil, Egypt, and India are excluded in columns 1–2, 3–4, 5–6, and 7–8, respectively. Standard errors in brackets are clustered by the origin country. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table G19: Long-term effects: robustness to contemporaneous financial crises

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\beta_{1850\text{-}1855}$	-0.302	-0.288	-0.306	-0.298	-0.286	-0.290	-0.288	-0.268
	[0.331]	[0.340]	[0.330]	[0.333]	[0.337]	[0.336]	[0.329]	[0.325]
$\beta_{1856\text{-}1860}$	-0.0762	-0.0582	-0.0829	-0.0750	-0.0587	-0.0591	-0.0379	-0.0218
	[0.213]	[0.205]	[0.202]	[0.213]	[0.214]	[0.214]	[0.214]	[0.215]
$\beta_{1866\text{-}1870}$	-1.478***	-1.467***	-1.472***	-1.475***	-1.485***	-1.481***	-1.484***	-1.511***
	[0.397]	[0.405]	[0.397]	[0.398]	[0.390]	[0.393]	[0.401]	[0.388]
$\beta_{1871\text{-}1875}$	-2.045***	-2.021***	-2.056***	-2.046***	-2.091***	-2.046***	-2.045***	-2.024***
	[0.548]	[0.550]	[0.551]	[0.553]	[0.553]	[0.551]	[0.553]	[0.559]
$\beta_{1876\text{-}1880}$	-2.007***	-1.990***	-2.017***	-2.010***	-2.028***	-1.971***	-1.999***	-1.967***
	[0.568]	[0.565]	[0.566]	[0.575]	[0.581]	[0.568]	[0.569]	[0.576]
$\beta_{1881\text{-}1885}$	-1.693***	-1.666***	-1.690***	-1.693***	-1.708***	-1.673***	-1.713***	-1.714***
	[0.565]	[0.563]	[0.566]	[0.566]	[0.562]	[0.558]	[0.567]	[0.565]
$\beta_{1886\text{-}1890}$	-1.365**	-1.340**	-1.371**	-1.364**	-1.408**	-1.391**	-1.367**	-1.366**
	[0.619]	[0.617]	[0.620]	[0.619]	[0.612]	[0.614]	[0.621]	[0.616]
$\beta_{1891\text{-}1895}$	-1.340**	-1.322**	-1.357**	-1.346**	-1.375**	-1.361**	-1.320**	-1.298**
	[0.581]	[0.575]	[0.584]	[0.578]	[0.569]	[0.572]	[0.578]	[0.581]
$\beta_{1896\text{-}1900}$	-1.641***	-1.623***	-1.646***	-1.642***	-1.655***	-1.645***	-1.645***	-1.638***
	[0.498]	[0.495]	[0.500]	[0.498]	[0.492]	[0.495]	[0.500]	[0.502]
$\beta_{1901\text{-}1905}$	-1.427**	-1.403**	-1.432**	-1.427**	-1.446**	-1.434**	-1.420**	-1.416**
	[0.572]	[0.565]	[0.573]	[0.572]	[0.556]	[0.559]	[0.573]	[0.571]
$\beta_{1906\text{-}1910}$	-1.085*	-1.059*	-1.098*	-1.085*	-1.124*	-1.107*	-1.082*	-1.066*
	[0.590]	[0.582]	[0.594]	[0.590]	[0.576]	[0.578]	[0.594]	[0.592]
$\beta_{1911\text{-}1914}$	-0.974	-0.950	-0.982	-0.971	-1.016	-0.998	-0.979	-0.964
	[0.688]	[0.683]	[0.690]	[0.689]	[0.672]	[0.674]	[0.687]	[0.684]
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Country_o FE	Y	Y	Y	Y	Y	Y	Y	Y
$\text{Currency crisis}_{ot}$	Y							
$\text{Inflation crisis}_{ot}$		Y						
$\text{Stock mkt crisis}_{ot}$			Y					
$\text{Sovereign debt (domestic)}_{ot}$				Y				
$\text{Sovereign debt (external)}_{ot}$					Y			
$\text{Sovereign debt (any)}_{ot}$						Y		
$\text{Banking crisis}_{ot}$							Y	
Any crisis_{ot}								Y
$\text{I(Brit bank}_o) \times \text{t}$	Y	Y	Y	Y	Y	Y	Y	Y
Country_{dt}	Y	Y	Y	Y	Y	Y	Y	Y
N	58173	58173	58173	58173	58173	58173	58173	58173
Clusters	61	61	61	61	61	61	61	61
Adj. R^2	0.545	0.545	0.545	0.545	0.546	0.546	0.545	0.546

Notes: Table G19 reports the coefficients every five years. Different types of financial crises are binary variables, which take the value of 1 if the exporting country is experiencing it in any given year. These are contemporaneous measures taken from Reinhart and Rogoff (2009). Data limitations reduce the number of observations. Standard errors in brackets are clustered by the origin country. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Table G20: Long-term effects: robustness to financial crises in 1865

$$\ln(\text{Ex}_{odt}) = \beta_t \text{F}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

	(1)	(2)	(3)	(4)	(5)
$\beta_{1850\text{-}1855}$	-0.210	-0.347	-0.284	-0.306	-0.209
	[0.324]	[0.362]	[0.328]	[0.339]	[0.350]
$\beta_{1856\text{-}1860}$	-0.0298	-0.142	-0.152	-0.201	-0.209
	[0.200]	[0.261]	[0.221]	[0.218]	[0.238]
$\beta_{1866\text{-}1870}$	-1.409***	-1.502***	-1.416***	-1.486***	-1.450***
	[0.432]	[0.424]	[0.424]	[0.400]	[0.432]
$\beta_{1871\text{-}1875}$	-1.976***	-2.275***	-1.993***	-2.095***	-2.010***
	[0.563]	[0.456]	[0.559]	[0.534]	[0.554]
$\beta_{1876\text{-}1880}$	-1.915***	-2.294***	-2.025***	-2.065***	-1.973***
	[0.570]	[0.443]	[0.567]	[0.553]	[0.563]
$\beta_{1881\text{-}1885}$	-1.647***	-1.910***	-1.732***	-1.714***	-1.668***
	[0.573]	[0.566]	[0.556]	[0.562]	[0.578]
$\beta_{1886\text{-}1890}$	-1.311**	-1.530**	-1.361**	-1.361**	-1.339**
	[0.642]	[0.626]	[0.624]	[0.620]	[0.642]
$\beta_{1891\text{-}1895}$	-1.224**	-1.535***	-1.399**	-1.331**	-1.308**
	[0.594]	[0.558]	[0.571]	[0.581]	[0.598]
$\beta_{1896\text{-}1900}$	-1.523***	-1.826***	-1.660***	-1.636***	-1.597***
	[0.511]	[0.454]	[0.505]	[0.501]	[0.516]
$\beta_{1901\text{-}1905}$	-1.304**	-1.626***	-1.516***	-1.415**	-1.390**
	[0.575]	[0.549]	[0.565]	[0.574]	[0.588]
$\beta_{1906\text{-}1910}$	-0.901	-1.274**	-1.136*	-1.070*	-1.023
	[0.587]	[0.598]	[0.606]	[0.592]	[0.625]
$\beta_{1911\text{-}1914}$	-0.767	-1.147	-1.001	-0.948	-0.906
	[0.689]	[0.709]	[0.704]	[0.690]	[0.741]
Controls	Y	Y	Y	Y	Y
Country_o FE	Y	Y	Y	Y	Y
Inflation $\text{crisis}_o \times$ t	Y				
Stock mkt $\text{crisis}_o \times$ t		Y			
Sovereign debt $\text{crisis}_o \times$ t			Y		
Banking $\text{crisis}_o \times$ t				Y	
Any $\text{crisis}_o \times$ t					Y
I(Brit bank_o) $\times$ t	Y	Y	Y	Y	Y
Country_{dt}	Y	Y	Y	Y	Y
N	58173	58173	58173	58173	58173
Clusters	61	61	61	61	61
Adj. R^2	0.546	0.545	0.545	0.546	0.545

Notes: Table G20 reports the coefficients every five years. Different types of financial crises are binary variables, which take the value of 1 if the exporting country is experiencing it in 1865, taken from Reinhart and Rogoff (2009), and interacted with year dummies. No country experienced a currency crisis or domestic sovereign debt crisis in 1865 so these are not reported. Standard errors in brackets are clustered by the origin country. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G21: Long-run effects with Suez

	No Suez effect (1)	Suez effect: sailing distance (2)	Suez effect: steam distance (3)
$\beta_{1850\text{-}1855}$	-0.272	-0.279	-0.251
	[0.330]	[0.350]	[0.339]
$\beta_{1856\text{-}1860}$	-0.0775	-0.141	-0.101
	[0.206]	[0.214]	[0.208]
$\beta_{1866\text{-}1870}$	-1.544***	-1.844***	-1.611***
	[0.368]	[0.356]	[0.366]
$\beta_{1871\text{-}1875}$	-1.944***	-2.297***	-2.030***
	[0.512]	[0.453]	[0.490]
$\beta_{1876\text{-}1880}$	-1.962***	-2.314***	-2.048***
	[0.549]	[0.484]	[0.522]
$\beta_{1881\text{-}1885}$	-1.703***	-2.054***	-1.788***
	[0.563]	[0.555]	[0.554]
$\beta_{1886\text{-}1890}$	-1.379**	-1.731***	-1.463**
	[0.609]	[0.619]	[0.607]
$\beta_{1891\text{-}1895}$	-1.318**	-1.670***	-1.403**
	[0.562]	[0.557]	[0.552]
$\beta_{1896\text{-}1900}$	-1.495***	-1.846***	-1.579***
	[0.485]	[0.471]	[0.472]
$\beta_{1901\text{-}1905}$	-1.163**	-1.514***	-1.248**
	[0.551]	[0.540]	[0.540]
$\beta_{1906\text{-}1910}$	-0.885	-1.236**	-0.969*
	[0.573]	[0.583]	[0.568]
$\beta_{1911\text{-}1914}$	-0.887	-1.239*	-0.972
	[0.678]	[0.695]	[0.674]
Geodesic dist	Y	Y	Y
Suez: sailing dist		Y	
Suez: steam dist			Y
Country_{o} FE	Y	Y	Y
I(Brit bank_{o}) $\times$ t	Y	Y	Y
Country_{dt}	Y	Y	Y
N	70895	70895	70895
Clusters	129	129	129
Adj. R^2	0.532	0.531	0.531

Notes: Table G21 reports the coefficients every five years. The Suez distance is separately calculated pre-and post-1869 using data from Pascali (2017). The distance using both steam and sailing technologies are included. Standard errors in brackets are clustered by the origin country. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table G22: Long-run effects excluding islands and entrepots

$$\ln(S_{pot}) = \beta \text{Fail}_{po} \times \text{Post}_t + \Gamma' X_{po} \times \text{Post}_t + \alpha_p + \gamma_{ot} + \varepsilon_{pot}$$

	All	No Island$_o$	No Island$_d$	No Entrepot$_o$	No Entrepot$_d$	Exclude all
	(1)	(2)	(3)	(4)	(5)	(6)
$\beta_{1850\text{-}1855}$	-0.272	-0.262	-0.225	-0.300	-0.273	-0.254
	[0.330]	[0.320]	[0.327]	[0.334]	[0.330]	[0.323]
$\beta_{1856\text{-}1860}$	-0.0775	0.0114	-0.134	-0.107	-0.0760	-0.0754
	[0.206]	[0.201]	[0.214]	[0.209]	[0.205]	[0.213]
$\beta_{1866\text{-}1870}$	-1.544***	-1.517***	-1.230***	-1.585***	-1.550***	-1.165**
	[0.368]	[0.398]	[0.442]	[0.367]	[0.374]	[0.501]
$\beta_{1871\text{-}1875}$	-1.944***	-1.873***	-1.968***	-1.951***	-1.944***	-1.795***
	[0.512]	[0.536]	[0.537]	[0.515]	[0.516]	[0.588]
$\beta_{1876\text{-}1880}$	-1.962***	-1.793***	-1.870***	-1.967***	-1.974***	-1.589***
	[0.549]	[0.547]	[0.524]	[0.552]	[0.557]	[0.545]
$\beta_{1881\text{-}1885}$	-1.703***	-1.641***	-1.576***	-1.717***	-1.694***	-1.367**
	[0.563]	[0.555]	[0.558]	[0.566]	[0.570]	[0.559]
$\beta_{1886\text{-}1890}$	-1.379**	-1.425**	-1.177*	-1.394**	-1.368**	-1.061*
	[0.609]	[0.619]	[0.596]	[0.611]	[0.613]	[0.616]
$\beta_{1891\text{-}1895}$	-1.318**	-1.285**	-1.244**	-1.321**	-1.298**	-1.046*
	[0.562]	[0.573]	[0.543]	[0.563]	[0.564]	[0.567]
$\beta_{1896\text{-}1900}$	-1.495***	-1.527***	-1.392***	-1.513***	-1.488***	-1.277**
	[0.485]	[0.492]	[0.474]	[0.483]	[0.484]	[0.493]
$\beta_{1901\text{-}1905}$	-1.163**	-1.270**	-1.013*	-1.183**	-1.160**	-1.012*
	[0.551]	[0.557]	[0.556]	[0.552]	[0.552]	[0.571]
$\beta_{1906\text{-}1910}$	-0.885	-0.977*	-0.833	-0.915	-0.880	-0.827
	[0.573]	[0.559]	[0.615]	[0.573]	[0.568]	[0.601]
$\beta_{1911\text{-}1914}$	-0.887	-0.933	-0.939	-0.932	-0.886	-0.929
	[0.678]	[0.658]	[0.694]	[0.675]	[0.671]	[0.668]
Controls	Y	Y	Y	Y	Y	Y
Country$_o$ FE	Y	Y	Y	Y	Y	Y
I(Brit bank$_o$) × t	Y	Y	Y	Y	Y	Y
Country$_{dt}$	Y	Y	Y	Y	Y	Y
N	70895	61472	60915	69646	69618	51116
Clusters	129	91	128	126	129	89
Adj. R^2	0.532	0.542	0.542	0.532	0.530	0.554

Notes: Table G22 reports estimates from the difference-in-difference regressions from the two-period panel of port-level shipping activity in the year before and after the crisis. The dependent variable is the log of the total number of ships departing in each period. Fail$_{po}$ is the share of the port's banks that failed during the crisis. The mean of Fail$_{po}$ is 0.07, and the standard deviation is 0.19. Post is a dummy for the post-crisis year that takes the value of 1 after May 1866 and 0 otherwise. The time-invariant control variables are measured in 1865 and interacted with the post dummy. They include an indicator for the port being a capital city within the country, the average age of banks, and the fraction of shipping to the UK. The sample is restricted to ports active in both the pre- and post-period. Standard errors in brackets are clustered by country of origin. $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

G.2.2 Dropping countries individually

Figure G3 plots the distribution of the estimated coefficients as well as the distribution of the associated p-values in estimations of the baseline long-run regression dropping countries individually.

Figure G3: Robustness to dropping each country individually

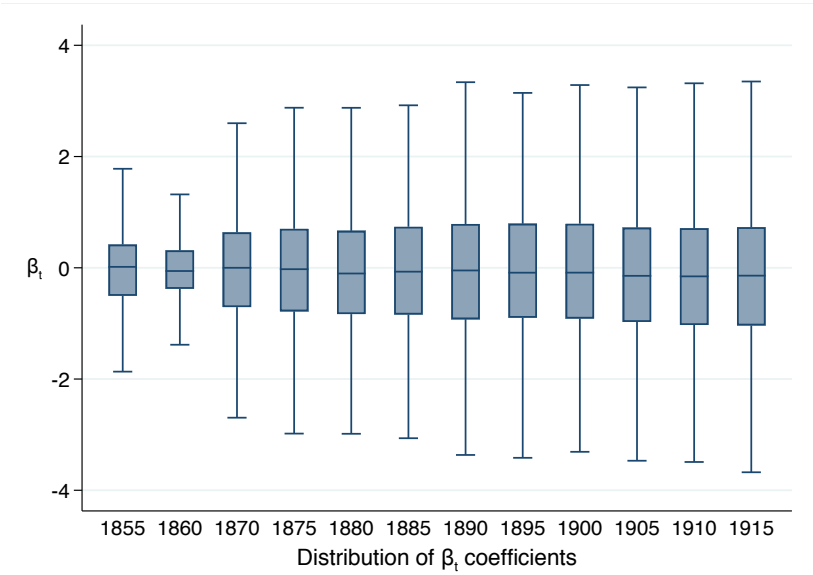
(a) β_t (b) p-values

Notes: Figure G3 plots the median, 25th and 75th percentile (edges of the box), and lower and upper adjacent values for the frequency distribution of estimates of β_t from running 128 regressions, dropping one exporting country at a time in each regression. The end year for each β's range of year is given on the x-axis (for instance, 1855 refers to $\beta_{1850-1855}$).

G.2.3 Placebo test

Figure G4 plots the distribution of coefficients for the placebo estimation where the true treatment is randomized and simulated in 1,000 regressions.

Figure G4: Treatment placebo

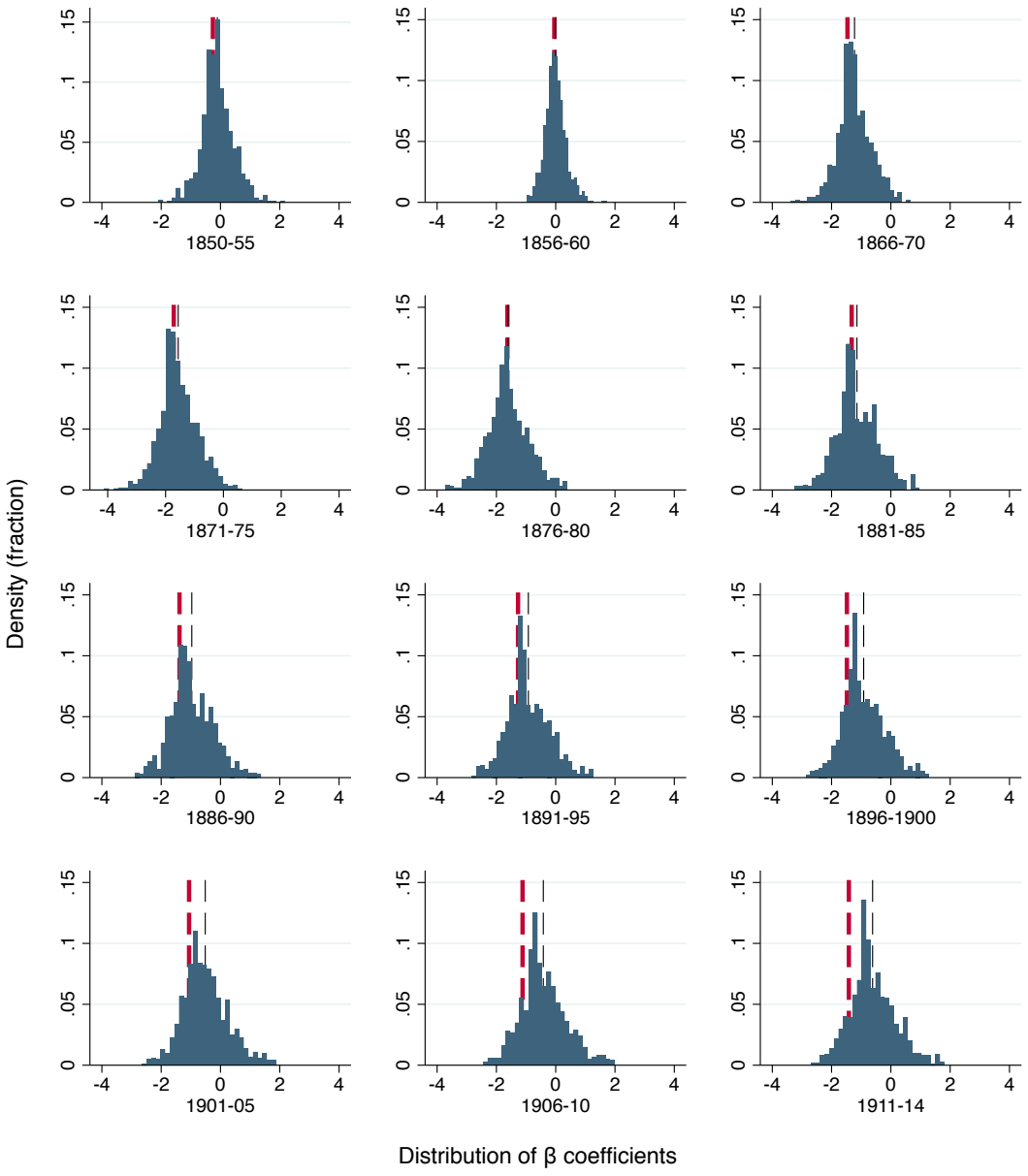


$$\ln(\text{EX}_{odt}) = \beta_t \text{Fail}_o + \Gamma' X_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

Notes: Figure G4 plots the median, 25th and 75th percentile (edges of the box), and lower and upper adjacent values for the frequency distribution of estimates of β_t from running 1,000 regressions on simulated data corresponding to equation 8 (above). The simulated data are generated from randomly replacing the country-level exposure to failure Fail_o with the exposure from another country. The end year for each β's range of year is given on the x-axis (for instance, 1855 refers to $\beta_{1850-1855}$).

G.2.4 Robustness of within-region effects

Figure G5: Country region placebo



$$\ln(\text{EX}_{odt}) = \beta_t \text{Fail}_o + \Gamma' \text{Region}_{ot} + \gamma_o + \gamma_{dt} + \theta_t \ln(\text{dist})_{od} + \varepsilon_{odt}$$

Notes: Figure G5 plots the frequency distribution of estimates of β_t from running 1,000 regressions corresponding to equation 8 (above) including origin-country region-year fixed effects, where the origin-country is randomly assigned to a geographic region. The x-axis of each subfigure plots the magnitude of the estimates for each group of years. The baseline impact of exposure to bank failures on exports, estimated in column 8 of Table G12, is plotted as the thicker red dashed line, while the mean placebo estimate (averaging across the 1,000 estimates) is plotted as the thin black dashed line.

H Data sources & definitions

H.1 Index of variables

Variable	Definition	Construction	Data sources
z_{lbt}	Importance of bank b's bills in location l at time t	$\frac{bills_{lbt}}{\sum_b bills_{lbt}}$	BoE discount ledgers
Fail_b	Failure rate of bank b	Indicator	Newspapers
Fail_o	Failure rate of banks in origin country o	$\sum_b z_{ob,pre} \times I(\text{Failure}_b)$	BoE discount ledgers
Fail_{po}	Failure rate of banks in port p in origin country o	$\sum_b z_{pob,pre} \times I(\text{Failure}_b)$	BoE discount ledgers
$\text{Fail}_{other,o}$	Average failure rate of other ports in country o for given port p	Average($\text{Fail}_{p'o}$ for $p' \neq p$, $p \in o$)	BoE discount ledgers
S_{ot}	Exports (proxied by number of ships) from origin country o in period t	Count of number of ships in period	Lloyd's List
S_{pot}	Exports (proxied by number of ships) from origin port p in country o in period t	Count of number of ships in period	Lloyd's List
EX_{odt}	Value of exports from origin country o to destination country d in year t	Value in nominal pounds sterling	Historical trade database

H.2 Data constructed

Bank financial characteristics

I gathered the banks' 1865 and 1866 balance sheets and histories from annual reports published in *Banker's Magazine*, *Banking Almanac and Directory*, and *The Economist*. These data include their age, capital (equity financing), leverage ratio, and reserve ratio. Publicly traded banks did not consistently publish balance sheets until 1890, and even then only half the private banks did so (Michie, 2016). Prior to that legislation, banks had complete freedom over whether they publicly disseminated their balance sheets, so this information is not available for all banks.

Bank qualitative characteristics

The narrative evidence on bank management practices, risk-taking, and account of the crisis come from thousands of pages of summaries and transcripts of bi-annual general shareholder meetings published in *Banker's Magazine* and *The Economist* in the years 1865–1867.

Overend & Gurney shareholder connection

The full shareholder list for Overend & Gurney was obtained from the Lloyds Banking Group archives in Edinburgh, Scotland and dates from January 1, 1866. This was the last list to be published before the firm's bankruptcy, and it is the one that was disseminated during the crisis. The names of the managers and directors of the banks were obtained from the shareholder meeting records and newspaper advertisements published in *Banker's Magazine*, *Banking Almanac and Directory*, and *The Economist*.

Port-level panel of trade

The source for the port-level is the daily publications of the *Lloyd's List* newspaper. *Lloyd's* employed agents in ports around the world to gather information on international shipping activity to send back to London. The primary consumers of this newspaper were insurance agents, merchants, and family members of ship crews. The reporting in *Lloyd's List* is organized by port, based on the distance to London spiraling outwards. Under each port, ships are listed individually with their name, their captain's name, type of ship, whether they arrived to the port or sailed from it, the destination of their movements, and the date of the event. Coastal (i.e. domestic) trade was omitted from the records for non-British ports. *Lloyd's* also usually listed the date the intelligence was sent, as there was often a lag between then and when it would have been received for publication.

Processing the scans of the original prints required a labor-intensive combination of OCR (Optical Character Recognition), python word processing, and manual data entry. Almost 420,000 unique shipping events were processed. *Lloyd's List* is very geographically precise, so ports located within 10 kilometers of each other are aggregated into one port unit. An example is that Cape of Good Hope is distinguished from Cape of Good Hope Point, which are in the same bay. Ports that were aggregated into the same geographic unit are matched to the same city for banking services.

Country-level panel of trade

The country-level panel of bilateral trade includes over 68,000 observations for 130 countries from 1850-1914. The sources are Pascali (2017), Dedinger and Girard (2017), and Fouquin and Hugot (2016), along with the *Statistical Tables* published by the United Kingdom and United States. Measures of bilateral resistance between countries, such as common language, land border, and common colonial background were taken from Fouquin and Hugot (2016). I recalculate geodesic distance based on the center of the standardized pre-WWI country borders. Measures of GDP and population from Fouquin and Hugot (2016) were also recalculated to reflect those borders.

Industry composition of exports

I collected the composition of exports by country pre-crisis from the *Statistical Tables relating to Foreign Countries* and *Statistical Tables relating to the Colonial and Other Possessions of the United Kingdom* published in 1866. Values of exports by types of goods were converted from various currencies into nominal pounds sterling as necessary. The types of goods were manually standardized according to Standard International Trade Classification (SITC) codes version 4. Appendix figure B6 lists the value of exports by SITC category.

Sailing distances between ports

The sailing distance between ports is reported in nautical miles in the *Philips' Centenary Mercantile Marine Atlas II* published in 1935. Distances for different sailing routes are given, but I exclude the Suez Canal route because it was not open until 1869. The routes that are allowed include the Kiel Canal, Cape of Good Hope, Strait of Magellan, Cape Horn, and Torres Strait.

City-level panel of banks

I gathered the names and city-level locations of all banks operating around the world from 1850-1913 using the annual editions of the *Banking Almanac*. The data from 1861-1867 are annual; for the rest of the period I digitized almanacs at 5-year intervals. These records make it possible to observe the operations of non-British banks throughout the entire period. Nationalities are not given in the original source, so I assign bank nationalities based on the locations of their headquarter offices (when known), the source of their capital (usually given in their individual histories), and their names and areas of operation. This dataset contains over 55,000 unique bank-location observations.

H.3 Data collected

Conflicts

I use Sarkees and Wayman (2010) from the Correlates of War project for data on inter-state, intra-state, and extra-state conflicts from 1850–2014 to document conflicts within the exporter-country and between country-pairs. For inter-state wars, I standardize country borders to coincide with pre-WWI borders, the same way as in the panel of trade data. Wars that occurred within one country's borders (for instance, the Second Italian War of Independence in which regions of Italy fought each other) are included as a conflict for the exporting country, but is not included in the dyadic war variable because the outcomes do not include own-country trade. Intra-state conflicts are recorded as a war within the state where it is occurring (for instance the United States for the US Civil War). Extra-state conflicts are recorded as a war for the official state and are not included in the dyadic calculations of conflict.

In the pre-period balance checks in Table **??**, I include all conflicts that occurred or were ongoing in 1865 and 1866. There are 11 countries involved in inter-state conflicts, 3 in intra-state conflicts, and 2 in extra-state conflicts. These include the Paraguayan War (Paraguay, Argentina, Brazil, Uruguay), Austro-Prussian War (Austria-Hungary, Germany), Chincha Islands War (Spain, Peru, Chile), Second French intervention in Mexico (France, Mexico), Third Italian War of Independence (Italy, Austria-Hungary), Taiping Rebellion (China), Cretan Revolt (Ottoman Empire), United States Civil War (USA), Polish Rebellion in Siberia (Russia), Bhutan War (United Kingdom).

Monetary standard

I gathered the data on the monetary standard of each country in 1866 using published monetary histories or the wikipedia article for each country's historical currency. In cases, like

in the British West Indies, when the official currency (pegged to the pound in gold) circulated alongside unofficial currencies (like the Spanish pieces of eight in silver), I categorized the country as being "bimetallic." The results are not sensitive to being categorized by the official currency (gold in this case).

Crises

The sovereign debt, currency, and banking crises used in the controls come from Reinhart and Rogoff (2009).

H.4 Country abbreviations

Country	ISO code	Region	British Empire
Australia	AUS	OCEA	1
Austria-Hungary	AUTHUN	ESTEUR	0
Azores	AZORES	STHEUR	0
Belgium	BEL	NWEUR	0
Brazil	BRA	STHAM	0
British Guiana	GUY	STHAM	1
British West Indies	GBRWINDIES	CARIB	1
Canada	CAN	NORAM	1
Cape of Good Hope	ZAF	STHAFR	1
Ceylon	LKA	STHASI	1
Chile	CHL	STHAM	0
China	CHN	ESTASI	0
Colombia	COL	STHAM	0
Cuba	CUB	CARIB	0
Curacao	ANT	CARIB	0
Danish West Indies	VIR	CARIB	0
Denmark	DNK	SCANDI	0
Egypt	EGY	NORAFR	0
France	FRA	NWEUR	0
Germany	DEU	NWEUR	0
Gibraltar	GIB	STHEUR	1
Greece	GRC	STHEUR	0
Guatemala	GTM	CTRAM	0
Hong Kong	HKG	ESTASI	1
India - British Possessions	GBRIND	STHASI	1
Italy	ITA	STHEUR	0
Jamaica	JAM	CARIB	1
Japan	JPN	ESTASI	0
Java	IDN	STHASI	0
Malta	MLT	STHEUR	1
Mauritius	MUS	STHAFR	1
Mexico	MEX	CTRAM	0

Netherlands	NLD	NWEUR	0
New Zealand	NZL	OCEA	1
Norway Sweden	SWENOR	SCANDI	0
Panama	PAN	CTRAM	0
Persia	IRN	MIDEST	0
Peru	PER	STHAM	0
Philippines	PHL	STHASI	0
Poland	POL	ESTEUR	0
Portugal	PRT	STHEUR	0
Puerto Rico	PRI	CARIB	0
Romania	ROU	ESTEUR	0
Russia	RUS	ESTEUR	0
Siam	THA	STHASI	0
Sierra Leone	SLE	WSTAFR	1
Spain	ESP	STHEUR	0
St Helena	SHN	STHAFR	1
Straits Settlements	STRAITS	STHASI	1
Trinidad and Tobago	TTO	CARIB	1
Turkey	OTTO	MIDEST	0
USA	USA	NORAM	0
Uruguay	URY	STHAM	0
Venezuela	VEN	STHAM	0

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