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Supplemental appendix to “Lightning, IT Diffusion, and Economic Growth Across U.S. States” by Thomas Barnebeck Andersen, Jeanet Bentzen, Carl-Johan Dalgaard, and Pablo Selaya, *Review of Economics and Statistics*, Vol. 94, No. 4 (November 2012), pp. 903–924.

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URL: [http://www.mitpressjournals.org/doi/abs/10.1162/REST\\_a\\_00316](http://www.mitpressjournals.org/doi/abs/10.1162/REST_a_00316)

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## Web Appendix

**Lightning.** Our main measure of lightning density, originating from ground-based flash sensors, is from the US National Lightning Detection Network Database (NLDN). The NLDN consists of more than 100 remote, ground-based lightning sensors, which instantly detect the electromagnetic signals appearing when lightning strikes Earth's surface. The data is available as an average over the period 1996-2005 for the 48 contiguous US states from Vaisala's website: <http://www.vaisala.com>.

We find that lightning is not statistically different from a constant plus white noise (see main text for analysis). Therefore, we extend Vaisala's data to the period 1977-2007.

To investigate the time-series properties of lightning, we use data on the number of thunder days (TD) per year by state, available for the period 1901-1995. These data are collected as part of the Climate Change Detection and Attribution Program at the National Oceanic and Atmospheric Administration (NOAA). The raw data comes from 734 cooperative observer stations and 121 first order stations (see Changnon, 2001 for a detailed description). The data consists of monthly and yearly TD totals for 38 US states over the period 1901-1995, 40 states over the period 1906-1995 and 42 states over the period 1951-1995. It is available for purchase from the Midwestern Regional Climate Center:

[http://mrcc.isws.illinois.edu/prod\\_serv/tstorm\\_cd/tstorm1.html](http://mrcc.isws.illinois.edu/prod_serv/tstorm_cd/tstorm1.html).

From these data, we calculated the average yearly number of thunder days per state. Ultimately, we are interested in average *flash density* (FD) by state rather than thunder days per year. FDs are defined as the number of ground strikes per sq km per year. We converted yearly TDs into FDs using the following formula (Chisholm, 2000):

$$FD = 0.04 * TD^{1.25}$$

**Temperature and Precipitation.** Data from the United States Historical Climatology Network (USHCN) project, developed at NOAA's National Climatic Data Center (NCDC)

to assist in the detection of regional climate change across the US. The USHCN project has produced a dataset of daily and monthly records of basic meteorological variables (maximum and minimum temperature, total precipitation, snowfall, and snow depth) from over 1000 stations across the 48 contiguous US states for the period 1900-2006.

The precipitation data we use is corrected by USHCN for the presence of outlier daily observations, time of data recording, and time series discontinuities due to random station moves and other station changes. The temperature data we use is additionally corrected for warming biases created by urbanization, and the replacement of liquid-in-glass thermometers by electronic temperature measurement devices during the mid 1980s.

We construct yearly average temperatures (expressed in degrees Celsius) and yearly average precipitation totals (expressed in cm per year) for each state, as simple averages of monthly data from 1221 stations across the country. The data is available at:

<http://cdiac.ornl.gov/epubs/ndp/ushcn/newushcn.html>.

**Latitude.** Latitude at the center of the state, calculated from geographic coordinates from the US Board on Geographic Names. The data is available at:

[http://geonames.usgs.gov/domestic/download\\_data.htm](http://geonames.usgs.gov/domestic/download_data.htm).

**Altitude.** Approximate mean elevation by state. Data source: US Geological Survey, Elevations and Distances in the United States, 1983. Available from the US Census Bureau at:

<http://www.census.gov/prod/2004pubs/04statab/geo.pdf>.

**Tornadoes, Wind, and Hail.** The Storm Prediction Center of NOAA's National Weather Service Center provides data for tornadoes, wind, and hail for the period 1950-2007.

Data is available for the tornado occurrences and their damage categories in the Enhanced Fujita (EF) scale (assigning 6 levels from 0 to 5). We construct a measure of tornado intensity as the average damage category for all tornado occurrences during a

year. For all the estimations, we rescale the EF categories from the original 0 to 5 scale to a 1 to 6 scale.

Wind is measured as the yearly average of wind speed, expressed in kilometers per hour.

Hail is measured as the average size of hail in centimeters.

The data is available at <http://www.spc.noaa.gov/climo/historical.html>.

**Humidity, Sunshine and Cloudiness.** Data from the “Comparative Climatic Data for the United States through 2007”, published by NOAA.

(Relative) humidity is the average percentage amount of moisture in the air, compared to the maximum amount of moisture that the air can hold at the same temperature and pressure.

Cloudiness is measured as the average number of days per year with 8/10 to 10/10 average sky cover (or with 7/8 to 8/8 average sky cover since July 1996).

Sunshine is the total time that sunshine reaches the Earth’s surface compared to the maximum amount of possible sunshine from sunrise to sunset with clear sky conditions.

The data is available at <http://www1.ncdc.noaa.gov/pub/data/ccd-data/CCD-2007.pdf>.

**GSP per worker.** Gross Domestic Product by state (GSP) per worker in chained 2000 US\$.

US Bureau of Economic Analysis (BEA) offers two series of real GSP. The first is for the period 1977-1997, where industry classification is based on the Standard Industrial Classification (SIC) definitions. The second series covers the period 1997-2007 and

relies on industrial classification based on the North American industrial Classification System (NAICS). Both GSP series are available at <http://www.bea.gov/regional/gsp/>.

We build a single measure of real GSP, extending levels of the series based on the SIC system with the yearly growth rates of the series based on the NAICS. This is equivalent to assuming that from 1997 onwards, the growth rate of GSP per worker calculated with the SIC system equals the growth rate of real GSP calculated with the NAICS definitions.<sup>i</sup> Based on this estimate for real GSP, we construct a yearly series of real GSP per employed worker dividing real GSP by the number of employees per state. The growth rate is measured in percentages. State-by-state data for the number of employed workers is provided by the State Personal Income accounts at the US BEA (available at: <http://www.bea.gov/regional/spi>).

**Computers and Internet.** Percentage of households with computer and percentage of households with Internet access at home in 2003. Data collected in a supplement to the October 2003 US Current Population Survey, available at:

<http://www.census.gov/population/socdemo/computer/2003/tab01B.xls>.

**Manufacturing firms' IT investments.** Capital expenditures on machinery and equipment for firms in the manufacturing sector are comprised by the following three categories: (1) Expenditures on automobiles, trucks, etc. for highway use. (2) Computers and peripheral data processing equipment. This item includes all purchases of computers and related equipment. (3) All other expenditures for machinery and equipment excluding automobiles and computer equipment. The variable we use is  $(2)/[(1)+(2)+(3)] \equiv$  Capital expenditures on computers and peripheral data processing equipment as a % of total capital expenditures on machinery and equipment of manufacturing firms. Data is from US Census Bureau, 2007 Economic Census. Detailed statistics for the manufacturing sector, by State, 2007 [http://factfinder.census.gov/servlet/IBQTable?\\_bm=y&-geo\\_id=&-ds\\_name=EC0731A2&-lang=en](http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-ds_name=EC0731A2&-lang=en)

### Additional variables used in the paper

Variable	Definition and source
<b>Human capital variables</b>	This extended list of human capital variables is downloaded from <a href="http://www.allcountries.org">www.allcountries.org</a> .
Enrollment rate	<p>Public elementary and secondary school enrollment as a percentage of persons 5-17 years old.</p> <p>From “Digest of Education Statistics”, National Center of Education Statistics (NCES), Institute of Education Sciences, US Department of Education, <a href="http://nces.ed.gov/programs/digest/">http://nces.ed.gov/programs/digest/</a>.</p> <p>Available at:  <a href="http://www.allcountries.org/uscensus/266_public_elementary_and_secondary_school_enrollment.html">http://www.allcountries.org/uscensus/266_public_elementary_and_secondary_school_enrollment.html</a>.</p>
High school degree or higher	<p>Persons with a high school degree or higher as a percentage of persons 25 years and over.</p> <p>From “Digest of Education Statistics”, National Center of Education Statistics (NCES), Institute of Education Sciences, US Department of Education,  <a href="http://nces.ed.gov/programs/digest/d03/tables/dt011.asp">http://nces.ed.gov/programs/digest/d03/tables/dt011.asp</a>.</p>
Bachelor's degree or higher	<p>Persons with a bachelor's degree or higher as a percentage of persons 25 years and over.</p> <p>Same source as high school degree or higher.</p>
College degree or higher	<p>Persons with a college degree or higher as a percentage of persons 25 years and over.</p> <p>Same source as high school degree or higher and bachelor's degree or higher.</p>
Graduate or professional	Persons with a graduate or professional degree as a percentage of persons 25 years and over.

degree	Same source as high school degree or higher, bachelor's degree or higher, and college degree or higher.
<b>Additional determinants of IT diffusion</b>	In addition to human capital, Caselli and Coleman (2001) suggest the following set of determinants of computer technology diffusion across countries: real income, GDP shares of different sectors, stock of human capital, amount of trade, and degree of integration to the world economy. We gathered similar data for US states, described below.
Shares of agriculture production, manufacturing production, and government spending in GSP	<p>Agriculture, forestry, fishing, and hunting production as % of GSP; manufacturing production as % of GSP, total government spending as % of GSP.</p> <p>The 3 variables constructed from US BEA's data of GSP by industry, in millions of current US\$. Available at: <a href="http://www.bea.gov/regional/gsp/">http://www.bea.gov/regional/gsp/</a>.</p>
Agricultural exports per capita	<p>Agricultural exports per capita (US\$). Total value of agricultural exports by state, from US Department of Agriculture, divided by population. Available at: <a href="http://www.ers.usda.gov/Data/StateExports/2006/SXHS.xls">http://www.ers.usda.gov/Data/StateExports/2006/SXHS.xls</a></p> <p>Population data from US Census Bureau.</p>
FDI per capita	<p>Gross value of Property, Plant, and Equipment (PPE) of Nonbank US Affiliates, per capita (US\$).</p> <p>Data on PPE available from US BEA for the period 1999-2006 available at: <a href="http://bea.doc.gov/international/xls/all_gross_ppe.xls">http://bea.doc.gov/international/xls/all_gross_ppe.xls</a>. For the year 1981 and the period 1990-1997 available at: <a href="http://allcountries.org/uscensus/1314_foreign_direct_investment_in_the_u.html">http://allcountries.org/uscensus/1314_foreign_direct_investment_in_the_u.html</a>.</p> <p>Population data from US Census Bureau.</p>

<b>Institutional and historical determinants of productivity</b>	All variables are taken from Mitchener and McClean (2003).
% workforce in mining, 1880	Percentage of the workforce employed in mining in 1880.
Average no. cooling degree days	The average number of cooling degree days is computed as the number of days in which the average air temperature rose above 65 degrees Fahrenheit (18 degrees Celsius) times the number of degrees on those days which the average daily air temperature exceeded 65 over the year.
% of 1860 population in slavery	The total number of slaves as a percentage of the total population of each state in 1860.
% of 1860 population on large slave plantations	The number of slaves owned by slaveholders having more than 20 slaves as a percentage of the total population of each state in 1860.
Access to navigable water	An indicator variable that takes the value of one if a state borders the ocean/Great Lake /river, and zero otherwise.
Settler origin	A series of indicator variables which take on positive values if a state, prior to statehood, had ties with that colonial power.
Average annual soldier mortality in 1829-1838, 1839-1854, %	Soldier mortality rates at the state level are derived using US soldier mortality data for individual forts. Quarterly data were collected by the US Surgeon General and Adjutant General's Offices 1829-1838 and by the US Surgeon General's Office for 1839-1854. Mitchener and McClean obtained the yearly mortality rates by dividing the number of deaths each year by the average annual "mean strength" of soldiers.
<b>Socio-demographic indicators</b>	Data on religiousness, race and ethnicity, urbanization and age structure of the population; from various sources.
Church attendance,	Data from a Gallup Poll analysis, conducted between January 2004 and March 2006, based on responses to the question, "How often do you



average 2004-2006	attend church or synagogue – at least once a week, almost every week, about once a month, seldom, or never?" Available at: <a href="http://www.gallup.com/poll/22579/church-attendance-lowestnew-england-highest-south.aspx#2">http://www.gallup.com/poll/22579/church-attendance-lowestnew-england-highest-south.aspx#2</a>
% of white population, black population, and population of Hispanic origin	Data for race and Hispanic origin for the US, regions, divisions, and states (100-Percent Data). Source: US Census Bureau. Available at: <a href="http://www.census.gov/population/www/documentation/twps0056/tabA-03.xls">http://www.census.gov/population/www/documentation/twps0056/tabA-03.xls</a> (for 1980), and <a href="http://www.census.gov/population/www/documentation/twps0056/tabA-01.xls">http://www.census.gov/population/www/documentation/twps0056/tabA-01.xls</a> (for 1990).
% of urban population	Rural and Urban population 1900-1990 (released 1995). Source: US Census Bureau. Available at: <a href="http://www.census.gov/population/www/censusdata/files/urpop0090.txt">http://www.census.gov/population/www/censusdata/files/urpop0090.txt</a>
% of population 15 years or less, and % of population between 15-64 years	Population by broad age group. "Demographic Trends in the 20th Century", Table 7, parts D and E. Source: US Census Bureau. Available at: <a href="http://www.census.gov/prod/2002pubs/censr-4.pdf">http://www.census.gov/prod/2002pubs/censr-4.pdf</a>

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<sup>i</sup> BEA warns against merging the *level* of the two series of real GSP directly, since the discontinuity in the industrial classification system will obviously affect level and growth rate estimates. Our choice of merging the *growth rates* of the two series can be justified recalling both the SIC and the NAICS aim to classify production of all industries in each state, so that the growth rate of both GSP series in levels is comparable. As a check, we computed the correlation between the growth rate of aggregate US GDP and gross domestic income (GDI), since GDP corresponds to the NAICS-definition and GDI corresponds to the SIC-definition (BEA, <http://www.bea.gov/regional/gsp/>). The correlation is higher than 0.99 for different periods between 1929 and 2007.

Table A1. Tests for whether lightning is a constant plus white noise

	Breusch-Godfrey test			Runs test	
	test-statistic	p-value	N of lags*	test-statistic	p-value
Aggregate US	0,02	0,88	1	0,46	0,65
Alabama	0,61	0,43	1	-0,22	0,82
Arizona	0,16	0,69	1	-0,13	0,90
Arkansas	0,16	0,69	1	1,67	0,09
California	0,48	0,49	1	-0,12	0,91
Colorado	0,12	0,73	1	0,25	0,80
Florida	0,02	0,90	1	-0,70	0,49
Georgia	0,00	0,95	1	0,25	0,80
Idaho	0,02	0,90	1	0,72	0,47
Illinois	0,20	0,65	1	-1,64	0,10
Indiana	1,67	0,20	1	-0,22	0,82
Iowa	0,20	0,66	1	-0,22	0,82
Kansas	0,58	0,44	1	0,84	0,40
Kentucky	0,24	0,62	1	0,25	0,80
Louisiana	0,06	0,81	1	-0,70	0,49
Maine	1,05	0,31	1	0,25	0,80
Maryland	0,01	0,94	1	0,25	0,80
Massachusetts	1,29	0,26	1	0,72	0,47
Michigan	0,33	0,56	1	-0,70	0,49
Minnesota	0,00	0,98	1	-1,64	0,10
Mississippi	0,98	0,32	1	-2,12	0,03
Missouri	0,19	0,66	1	0,36	0,72
Montana	0,71	0,40	1	-2,12	0,03
Nebraska	0,22	0,64	1	-0,70	0,49
Nevada	0,02	0,88	1	0,72	0,47
New Mexico	1,25	0,26	1	-0,22	0,82
New York	7,52	0,02	2	0,36	0,72
North Carolina	0,74	0,39	1	-1,45	0,15
North Dakota	5,30	0,07	2	-0,22	0,82
Ohio	0,03	0,85	1	-0,70	0,49
Oklahoma	2,97	0,09	1	-1,64	0,10
Oregon	0,64	0,42	1	-1,45	0,15
Pennsylvania	5,25	0,07	2	0,72	0,47
South Carolina	0,23	0,63	1	-0,22	0,82
South Dakota	2,93	0,09	1	1,33	0,18
Tennessee	0,22	0,64	1	-0,22	0,82
Texas	3,79	0,05	1	-0,22	0,82
Utah	4,54	0,03	1	-0,70	0,49
Virginia	4,68	0,03	1	-0,22	0,82
Washington	0,48	0,49	1	-0,61	0,54
West Virginia	4,56	0,03	1	0,72	0,47
Wisconsin	0,57	0,45	1	-1,17	0,24
Wyoming	0,09	0,77	1	-0,22	0,82

Notes. The residuals are obtained from regressing lightning on a constant for each of the 42 states over the period 1977-1995.  $H_0$ : Residuals are not serially correlated. Lightning is average number of flashes per year per square km, measured at weather stations.

\*: Number of lags selected by Schwarz's information criteria.

Table A2. Correlations: Lightning and US Bureau of Economic Analysis' 8 Economic Areas

Dependent variable:	Lightning		(log) Lightning	
	(1)	(2)	(3)	(4)
Far West	0.29*** [0.10]	(dropped) .	-1.43*** [0.32]	(dropped) .
Great lakes	3.85*** [0.74]	3.56*** [0.75]	1.26*** [0.22]	2.69*** [0.39]
Mid East	2.57*** [0.28]	2.29*** [0.30]	0.92*** [0.11]	2.35*** [0.34]
New England	0.94*** [0.12]	0.65*** [0.16]	-0,11 [0.14]	1.32*** [0.35]
Plains	2.99*** [0.54]	2.71*** [0.55]	1.00*** [0.18]	2.43*** [0.37]
Rocky Mountain	1.15*** [0.24]	0.86*** [0.26]	0,021 [0.26]	1.45*** [0.41]
Southeast	6.00*** [0.64]	5.71*** [0.65]	1.74*** [0.10]	3.17*** [0.34]
Southwest	3.72*** [0.66]	3.43*** [0.67]	1.26*** [0.18]	2.69*** [0.37]
Constant	. .	0.29*** [0.10]	. .	-1.43*** [0.32]
Observations	48	48	48	48
R-squared	.	0,69	.	0,84

Notes: OLS regressions. Lightning is the average (1996-2005) number of flashes per year per square km, measured by flash-detectors. 8 economic areas defined by the US BEA. Robust standard errors in brackets. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10%, respectively.

Table A3. Growth, lightning, and regional fixed effects (BEA economic areas) - controlling for human capital

Dependent variable:	Average annual growth in GSP per worker over periods of 10 years (1977 - 1987, 1987 - 1997, 1997 - 2007)							
	Far West	Great Lakes	Mid East	New England	Plains	Rocky Mountain	Southeast	Southwest
BEA economic area:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(log, initial) Real GSP per worker	-1.85*** [0.41]	-1.80*** [0.43]	-1.86*** [0.44]	-1.71*** [0.42]	-1.78*** [0.43]	-1.82*** [0.41]	-1.80*** [0.41]	-1.80*** [0.41]
(log) Lightning × $t_{77-87}$	-0,098 [0.13]	-0,12 [0.11]	-0,12 [0.11]	-0,10 [0.11]	-0,13 [0.11]	-0,11 [0.12]	-0,12 [0.11]	-0,11 [0.11]
(log) Lightning × $t_{87-97}$	-0,092 [0.099]	-0,12 [0.083]	-0,12 [0.083]	-0,098 [0.084]	-0,12 [0.084]	-0,11 [0.085]	-0,12 [0.085]	-0,11 [0.085]
(log) Lightning × $t_{97-07}$	-0.18* [0.10]	-0.21** [0.080]	-0.21** [0.079]	-0.19** [0.084]	-0.21*** [0.078]	-0.21*** [0.078]	-0.22*** [0.080]	-0.21** [0.079]
BEA economic area	0,11 [0.20]	-0,0093 [0.14]	0,09 [0.24]	0,16 [0.17]	0,026 [0.17]	-0,33 [0.22]	0,054 [0.15]	-0,091 [0.099]
Observations	144	144	144	144	144	144	144	144
R-squared	0,44	0,44	0,44	0,45	0,44	0,46	0,44	0,44
Human capital controls (enrollment, high school or higher, BA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Pooled OLS estimates. The dependent variable is the yearly growth rate of GSP per worker over the periods 1977-1987, 1987-1997, and 1997-2007. Lightning is the average number of flashes per year per square km, measured by flash-detectors. The different proxies for human capital (enrollment rates, % of population with high school or higher, or BA degree) are described in the appendix, and measured at the beginning of each 10-year period (1977, 1987 and 1997), except for enrollment rates (measured in 1980 instead of 1977 for the first period) and the % of population with a highschool degree or higher (measured in 1980, 1990 and 2000 instead of 1977, 1987 and 1997 for each respective period), due to data availability. The set of region fixed effects accounts for the 8 US Bureau of Economic Analysis' economic areas. All regressions include a constant and a full set of time-dummies. Robust standard errors in brackets, adjusted for clustering at the state level. Asterisks \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10%, respectively.

Table A4. Correlations: Lightning and geographic/climate variables

Dependent variable:	(log) Lightning											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(log) Temperature (C degrees)	1.20*** [0.17]										0,091 [0.36]	0,056 [0.39]
(log) Precipitation (cm/year)		0,084 [0.49]									-0,24 [0.30]	-0,22 [0.27]
(log) Tornado intensity (av EF-scale)			0,088 [0.33]								0,78** [0.32]	0,76** [0.28]
(log) Hail size (cm)				2.30* [1.24]							1,68 [1.16]	1,54 [0.99]
(log) Wind speed (km/h)					-0,077 [0.31]						0,046 [0.20]	0,036 [0.17]
(log) Humidity (% moisture in air)						-0,32 [1.25]					-1,39 [1.49]	-1,37 [1.42]
(log) Cloudiness (days/year)							-1.04** [0.47]				0,68 [1.13]	0,88 [0.73]
(log) Sunshine (days/year)								1.39*** [0.49]			-0,31 [0.98]	
(log) Elevation (m above sea level)									-0.20** [0.078]		-0,097 [0.11]	-0,096 [0.074]
(log) Latitude (degrees)										-4.30*** [0.61]	-5.40*** [1.19]	-5.47*** [1.12]
Observations	48	48	48	48	48	48	48	47	48	48	47	48
R-squared	0,90	0,84	0,84	0,85	0,84	0,84	0,87	0,87	0,86	0,93	0,96	0,96
Regional fixed effects												
(8 BEA economic regions)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H <sub>0</sub> : Regional FEs = 0 (p value)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Notes. OLS regressions. All regressions include a constant and control for the 8 BEA economic regions (Far West excluded). Robust standard errors in brackets. Lightning is the average number of flashes per year per square km, measured by flash-detectors. Temperature, precipitation, tornado intensity, hail size and wind speed are averages over the period 1997-2007. Humidity, cloudiness and sunshine are state averages through 2007, as reported by the US National Oceanic and Atmospheric Administration (NOAA). Data sources and definitions for all variables are provided in the Data appendix. Data for all variables are available for the 48 contiguous US states, except sunshine, which has missing data for Delaware. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10%, respectively.

Table A5. Correlations: Lightning, historical and trade variables

Dependent variable:	(log) Lightning												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
<b>Controls for history:</b>													
% of workforce in mining, 1880	-0,56 [1.36]												-0,52 [1.32]
Average no. of cooling degree days		0.030* [0.017]											0,025 [0.018]
% of 1860 population in slavery			1.40*** [0.36]										0,52 [1.43]
Access to navigable water				0,038 [0.30]									-0,17 [0.26]
% of 1860 population on large slave plantations					1.76*** [0.53]								-0,035 [1.84]
Settler origin: English						-0,28 [0.18]							0,012 [0.18]
Settler origin: French							0,17 [0.16]						0,26 [0.17]
Settler origin: Spanish								0,24 [0.21]					-0,027 [0.19]
Settler origin: Dutch									-0,14 [0.18]				-0,17 [0.26]
Average annual soldier mortality in 1829-1838, 1839-1854, %										29.2*** [5.17]			20.3** [9.19]
<b>Controls for trade:</b>													
(log) Agricultural exports per capita												-0,11 [0.097]	-0,14 [0.093]
(log) FDI per capita												0.27* [0.16]	0,083 [0.16]
Observations	48	48	48	48	48	48	48	48	48	48	48	48	48
R-squared	0,84	0,87	0,86	0,84	0,85	0,85	0,85	0,85	0,84	0,88	0,85	0,85	0,91
Regional fixed effects													
(8 BEA economic regions)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H <sub>0</sub> : Regional FEs = 0 (p value)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Notes. OLS regressions. All regressions include a constant and control for the 8 BEA economic regions (Far West excluded). Robust standard errors in brackets. Lightning is the average number of flashes per year per square km, measured by flash-detectors. Historical variables taken from Mitchener and McLean (2004). Agricultural exports and FDI per capita are averages taken over the periods 1997-2007. Sources and definitions are provided in the Data appendix. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10%, respectively.

Table A6. Correlations: Lightning, initial GSP per worker, and human capital

Dependent variable:	(log) Lightning				
	(1)	(2)	(3)	(4)	(5)
(log) Real GSP per worker, 1991	1.06** [0.45]				1.11** [0.53]
Enrollment rate, 1991		-0,025 [0.030]			-0,019 [0.028]
High school degree or higher, 1990			-0,0089 [0.026]		-0,014 [0.030]
Bachelor's degree or higher, 1991				0,0096 [0.030]	-0,0032 [0.036]
Observations	48	48	48	48	48
R-squared	0,86	0,85	0,84	0,84	0,86
Regional fixed effects (8 BEA economic regions)	Yes	Yes	Yes	Yes	Yes
H <sub>0</sub> : Regional FEs = 0 (p value)	0,00	0,00	0,00	0,00	0,00

Notes. OLS regressions. All regressions include a constant and control for the 8 BEA economic regions (Far West excluded). Robust standard errors in brackets. Lightning is the average number of flashes per year per square km, measured by flash-detectors. Sources and definitions for the human capital variables are provided in the Data appendix. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10%, respectively.



Table A7. Correlations: Lightning and Caselli and Coleman's (2001) additional determinants of IT diffusion

Dependent variable:	(log) Lightning																
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Share of agriculture in GSP, 1991	-0.11*** [0.035]																-0.17* [0.087]
Share of government in GSP, 1991		-0.058** [0.026]															-0.039 [0.034]
Share of manufacturing in GSP, 1991			-0,0058 [0.017]														-0.025 [0.016]
(log) FDI per capita, 1991				0,20 [0.14]													-0,18 [0.21]
(log) Agricultural exports per capita, 1991					-0,068 [0.11]												0,16 [0.11]
(log) Population, 1991						0,078 [0.084]											-0,21 [0.13]
Soldier mortality, 1829-1854							0,29*** [0.052]										0,19 [0.12]
% of workforce in mining, 1880								-0,0056 [0.014]									-0,002 [0.012]
% of slavery, 1860									0,014*** [0.0036]								0,0026 [0.012]
% population attending a church or a sinagogue almost every week, av. 2004-2006										-2,21 [4.49]							1,01 [4.22]
% white population, 1990											-1,79** [0.67]						1,00 [4.55]
% black population, 1990												2,76*** [0.78]					2,69 [6.13]
% Hispanic origin population, 1990													0,66 [1.28]				0,50 [2.33]
% urban population, 1990														1,27** [0.48]			0,41 [0.66]
% population 15 years or less, 1990															-4,03 [4.73]		-9,93* [5.50]
% population 15-64 years, 1990																4,71 [5.02]	-4,27 [4.85]
Observations	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
R-squared	0,87	0,86	0,84	0,85	0,85	0,85	0,88	0,84	0,86	0,84	0,86	0,87	0,84	0,87	0,85	0,85	0,94
Regional fixed effects (8 BEA economic regions)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H <sub>0</sub> : Regional FEs = 0 (p value)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Notes. OLS regressions. All regressions include a constant and control for the 8 BEA economic regions (Far West excluded). Robust standard errors in brackets. Lightning is the average number of flashes per year per square km, measured by flash-detectors. The set of additional determinants of IT diffusion is chosen following the relevant group of variables in Caselli and Coleman (2001). Sources and definitions for all the data are provided in the Data appendix. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10%, respectively.