

Appendix III: Explanatory Variable Sources

Ad-valorem (*time-variant*): Average ad-valorem tariff rates (specific tariff divided by average price) on wheat imposed by city-pairs in a given time period. The following sources were used to construct—and verify—prevailing rates:

- Amé, P. (1876), *Étude sur les tarifs de douanes et sur les traités de commerce*. Paris: Imprimerie Nationale.
- Arnauné, A. (1911), *Le commerce extérieur et les tarifs de douane*. Paris: Félix Alcan.
- Ashley, P. (1910), *Modern Tariff History*, London: John Murray.
- Bairoch, P. (1989), "European Trade Policy, 1815-1914," in P. Mathias and S. Pollard (Eds.), *Cambridge Economic History of Europe*, vol. 8, Cambridge: Cambridge University Press, 1-160.
- Barnes, D.G. (1961), *A History of the English Corn Laws*. New York: Augustus M. Kelley.
- Bosse, E. (1916), *Norwegens Volkswirtschaft vom Ausgang der Hansaperiode bis zur Gegenwart*. Jena: Verlag von Gustav Fischer.
- Coppa, F.J. (1970), "The Italian Tariff and the Conflict between Agriculture and Industry: The Commercial Policy of Liberal Italy, 1860-1922," *Journal of Economic History* 30(3), 742-769.
- Drachman, P. (1915), *The Industrial Development and Commercial Policies of the Three Scandinavian Countries*, Oxford: Oxford University Press.
- Falkus, M. E. (1966), "Russia and the International Wheat Trade, 1861-1914." *Economica* 33, 416-429.
- Fay, C.R. (1932), *The Corn Laws and Social England*, Cambridge: Cambridge University Press.
- Federico, G. and A. Tena (1998), "Was Italy a protectionist country?" *European Review of Economic History* 2, 73-97.
- Gerschenkron, A. (1966), *Bread and Democracy in Germany*. New York: Howard Fertig.
- Good, D.F. (1984), *The Economic Rise of the Hapsburg Empire*. Berkeley: University of California Press.
- Malenbaum, W. (1953), *The World Wheat Economy*, Cambridge: Harvard University Press.
- Matis, H. (1973), "Leitlinien der österreichischen Wirtschaftspolitik," in A. Brusatti, ed., *Die Hasburgermonarchie*. Vienna: Verlag der OAW, 29-67.
- Offelen, Jacques van (1945), *La lutte d'Anvers pour la liberté du commerce des céréales de 1832 a 1845*. Liège: Geogres Thone.
- O'Rourke, K.H. (1994), "The Repeal of the Corn Laws and Irish Emigration," *Explorations in Economic History* 31, 120-38.
- Pena, D. and N. Sanchez-Albornoz (1984), "Wheat Prices in Spain, 1857-1890," *Journal of European Economic History* 13, 353-373.
- Price, R. (1983), *The Modernization of France*. London: Hutchinson.
- Serrano Sonz, J.M. (1987), *El viaje proteccionista en la restauracion*. Madrid: Siglo Veintiuno.

- Smith, M.S. (1980), *Tariff Reform in France, 1860-1900*. Ithaca: Cornell University Press.
- Toniolo, G. (1990), *An Economic History of Liberal Italy 1850-1918*. London: Routledge.
- Tracy, M. (1989), *Government and Agriculture in Western Europe 1880-1988*. New York: Harvester Wheatsheaf.
- Webb, S.B. (1982), "Agricultural Protection in Wilhelminian Germany: Forging an Empire with Pork and Rye," *Journal of Economic History* 42(2), 309-326.
- Williamson, J.G. (1990), "The Impact of the Corn Laws Just Prior to Repeal," *Explorations in Economic History* 27, 123-56.
- Wright, H.R.C. (1955), *Free Trade in Protection in the Netherlands*. Cambridge: Cambridge University Press.

Canal indicators (time-variant): The following sources were used to construct route maps of canal. Please note that cities were coded as being connected by canals whenever the possibility of an all-water route arises, rather than by a direct inter-city service being established.

- Buyst, E., S. Dercon, and B. van Campenhout (2000), "Road Expansion and Market Integration in the Austrian Low Countries during the Second Half of the 18th Century." Center for Economic Studies, University of Leuven.
- Crompton, G. (1996), *Canals and Inland Navigation*. Aldershot: Scolar. and Rolt, L.T.C. (1971), *Navigable Waterways*. London: Longman.
- Fogel, W.F. (1964), *Railroads and American Economic Growth*. Baltimore: Johns Hopkins University Press.
- Geiger, R.G. (1994), *Planning the French Canals*. Newark: University of Delaware Press.
- Goodrich, C. (1961), *Canals and American Economic Development*. New York: Cambridge University Press.
- Kunz, A. (1994), "Transnational Traffic Flows on Central European Inland Waterways in the late 19th and early 20th Centuries." In *European Networks, 19-20th Century*. Milan: Universita Bocconi, 105-118.
- Kunz, A. (1996), *Statistik der Binnenschifffahrt in Deutschland 1835-1989*. Berlin: St. Katharinen.

Distance (time-invariant): Intrationally calculated as the linear distance between two cities using ESRI ArcView; internationally calculated as the sum of the linear distance to the nearest port and the trade-route specific (nonlinear) distance between departure ports taken from Philip, G. (1935), *Philip's Centenary Mercantile Marine Atlas*. London: Philip George & Son.

Exchange rates (time-variant): Taken from Brian Taylor, *Global Financial Database*.

Gold standard (time-variant): The variable is continuously defined as the portion of a time period in which both cities were on the gold standard. Defined according to the database underlying Meissner, C. (*forthcoming*), "A New World Order: Explaining the Diffusion

of the Gold Standard,” *Journal of International Economics*, which was kindly provided by Dr. Beck Meissner.

Intrastate conflict (civil war) variables (time-variant): Variables are continuously defined as the portion of a time period in which both cities were engaged in intrastate conflict. The criteria for inclusion was a minimum of 1000 related casualties. Accordingly, the following conflicts were included:

1st Carlist War: Spain, October 1833 to July 1840

2nd Carlist War: Spain, September 1846 to May 1849

Hungarian Uprising: Austria-Hungary, March 1848 to March 1849

American Civil War: United States, February 1861 to May 1865

3rd Carlist War: Spain, April 1872 to February 1876

Revolt of 1905: Russia, January to December 1905

Interstate conflict variables (time-variant): Variables are continuously defined as the portion of a time period in which one or both cities were engaged in interstate conflict. Coded according to the Correlates of War Militarized Interstate Disputes database. The criteria for inclusion was the existence of (non-colonial) open conflict with a minimum of 1000 casualties. Accordingly, the following conflicts were included:

Napoleonic Wars: Belgium/France vs. Austria-Hungary/United Kingdom, January 1800 to June 1815; Spain coded as sided with Belgium/France from March 1803 to May 1813 and with Austria-Hungary/United Kingdom from June 1813 to June 1815.

War of 1812: United Kingdom vs. United States, June 1812 to February 1815

French-Spanish War: France vs. Spain, September 1822 to November 1823

Mexican-American War: United States, May 1843 to July 1848

1st War of Italian Unification: Austria-Hungary, January 1848 to March 1849

Crimean War: France and United Kingdom allied, March 1853 to April 1856

2nd War of Italian Unification: Austria-Hungary vs. France, January to July 1859

Seven Weeks War: Austria-Hungary vs. Germany, April 1865 to July 1866; Italy coded as sided with Germany from March 1866 to July 1866.

Franco-Prussian War: France vs. Germany, July 1870 to May 1871

Spanish-American War: Spain vs. United States, January to August 1898

Russo-Japanese War: Russia, June 1903 to September 1905

Port indicators (time-invariant): Equal to one if both cities in the city-pair are oceanic ports.

Prohibition (time-variant): Average portion of time in which cities imposed bans on the import of wheat in a given time period. Derived from sources used to construct the *ad valorem* variable.

Railroad indicators (time-variant): The following sources were used to construct route maps of railroads. Please note that cities were coded as being connected by railroads whenever the possibility of an all-rail route arises, rather than by a direct inter-city service being

established (e.g., Marseilles and Bordeaux were coded as connected in 1855 with the completion of the Marseilles-Paris line, as the Bordeaux-Paris line was established in 1853).

- Acworth, W.M. (1889), *The Railways of England*. London: John Murray.
- Board of Trade (1910), *Railways in Belgium, France, and Italy*. London: Darling & Son.
- Cordero, R. and F. Merendez (1978), "El sistema ferroviario español." In M. Artola (Ed.), *Los ferrocarriles en España, 1844-1943, Vol. I*. Madrid: Banco de España, 163-340.
- Fenoaltea, S. (1983), "Italy." In P. O'Brien (Ed.), *Railways and the Economic Development of Western Europe, 1830-1914*, London: MacMillan Press, 49-120.
- Ferrovie dello Stato (1940), *Il Centenario delle Ferrovie Italiane, 1839-1939*. Rome: Istituto Geografico de Agostini.
- Gasiorowski, Z.J. (1950), *The System of Transportation in Poland*. University of California-Berkeley, Ph.D. dissertation.
- Joanne, A. (1858), *Atlas Historique et Statistique des Chemins de Fer Francais*. Paris: Librairie de L. Hachette.
- Komlos, J. (1983), *The Habsburg Monarchy as a Customs Union*. Princeton: Princeton University Press.
- Laffut, M. (1983), "Belgium." In P. O'Brien (Ed.), *Railways and the Economic Development of Western Europe, 1830-1914*. London: MacMillan Press, 203-226.
- Leclercq, Y. (1987) *Le Reseau Impossible*. Geneva: Librairie Droz.
- Martin, A. (1992), *Railroads Triumphant*. New York: Oxford University Press.
- Milward, A.S. and S.B. Saul (1973), *The Economic Development of Continental Europe 1780-1870*. London: Geogre Allen & Unwin.
- Milward, A.S. and S.B. Saul (1977), *The Development of the Economies of Continental Europe, 1850-1914*. London: George Allen & Unwin.
- Mitchell, A. (2000), *The Great Train Race: Railways and the Franco-German Rivalry, 1815-1914*. New York: Berghahn Books.
- The Oxford Companion to British Railway History from 1603 to the 1990s*. J. Simmons and G. Biddle (Eds.), New York: Oxford University Press.
- Plaschka, R.G., A.M. Drabek, and B. Zaar (1993), *Eisenbahnbau und Kapitalinteressen in der Beziehung der Österreichischen mit der Südslawischen Ländern*. Vienna: Verlag der Österreichischen Akademic der Wissenschaften.
- Price, R. (1983), *The Modernization of France*. London: Hutchinson.
- Section de Statistique et de Cartograhie du Ministere de voies de communication (1900), *Aperçu Statistique des Chemins de Fer et des Voies Navigables de la Russie*. St Petersburg: Imprimerie du Ministere des voies de communication.
- Stover, J.F. (1961), *American Railroads*. Chicago: University of Chicago Press.
- Stover, J.F. (1999), *The Routledge Historical Atlas of the American Railroads*. New York: Routledge.
- Taylor, G.R. and I.D. Neu (1956), *The American Railroad Network*. Cambridge: Harvard University Press.
- Szabad, G. (1961), "Das Anwachsen der Ausgleichstendenz der Produktenpreise im

Habsburgerreich um die Mitte des 19. Jahrhunderts.” In V. Sándor and P. Hanák (Eds.), *Studien zur Geschichte der Österreichisch-Ungarischen Monarchie*. Budapest: Akadémiai Kiadó, 213-235.

Ville, S.P. (1990), *Transport and the Development of the European Economy, 1750-1918*. London: MacMillan Press.

River indicators (*time-invariant*): Equal to one if both cities in the city-pair are connected by a navigable river system.