Marc Flandreau
Clemens Jobst[1]

Describing and explaining the international circulation of currencies 1890-1910 – The underlying data

Please cite as:

- When using the network data for 1890, 1900 or 1910:
  Flandreau, M. and C. Jobst (2005), 'The ties that divide: a network analysis of the international monetary system 1890–1910', *Journal of Economic History*, vol. 65(4).

- When using the explanatory variables for 1900:
  Flandreau, M. and C. Jobst (2009), 'The empirics of international currencies: Networks, history and persistence', *The Economic Journal*, vol. 119(April).

Introduction

In the late nineteenth and early twentieth century every national financial centre featured a foreign exchange market where bankers bought and sold foreign currency, i.e. 'bills of exchange' or 'foreign exchange', against domestic currency. Foreign exchange market activity was monitored in local bulletins, which reported fixing prices when relevant. Availability of a quote reveals an underlying flow of transactions. The data base allows tracking the extent to which currencies circulated abroad and distinguishing between currencies with an international circulation from currencies without.

Data have been collected for the years 1890, 1900 and 1910. The exchange structure matrix is complete from an empirical point of view, including virtually all currencies of the world in 1890-1910. It also has the nice conceptual feature to identify two different exchange markets for a given currency pair, corresponding to the home countries of the two currencies involved (for a discussion on the operationalization of theories of international currencies see also Flandreau and Jobst 2009).

A currency is considered to be traded in a given foreign country if there is evidence of active trading in at least one financial centre within the foreign country:

(a) Evidence of active trading: Active trading means that transactions take place regularly. If a currency is listed in a stock exchange bulletin but there are never prices quoted or quoted prices do not change, the link is coded as 0.

(b) In at least one financial centre of the country: This is relevant for countries with several foreign exchange centres, which occasionally specialized on particular foreign currencies. Countries with several foreign exchange centres include e.g. Germany, British India, Italy or the United States. Giving data per foreign exchange centre (rather than country) is not feasible as a number of listings aggregate foreign markets (e.g. instead of "Antwerp" and "Brussels" they would quote "Belgian centres").

For further details on data collection and coding see Flandreau and Jobst (2005). In addition to the data on foreign exchange trading, available for 1890, 1900 and 1910, the data set

---

includes a number of explanatory variables used in the estimations in Flandreau and Jobst (2009). Unless stated otherwise all these explanatory variables refer to 1900.

Presentation of the data

The information on foreign exchange refers to ordered country pairs, i.e. for every country pair there are two observations: (1) whether the foreign exchange markets in the first country trade the second country's currency and (2) whether the foreign exchange markets in the second country trade the first country's currency. The data file is structured accordingly. The first two columns country_A and country_B identify the country pair, where country_A gives the location of the foreign exchange market and country_B the home country of the currency traded. There is information on 45 countries/currencies, yielding a total of 45*44 = 1980 country pairs.

Description of variables and data sources

A first set of variables, including in the data on foreign exchange markets, refers to ordered country pairs, i.e. the entry for these variables is potentially different for (country_A = i, country_B = j) and (country_A = j, country_B = i):

- **quote1890**, **quote1900** and **quote1910** are indicator variables, which are =1 if in country_A there is an active market for the currency of country_B in 1890, 1900 and 1910 respectively, and 0 otherwise.

- **colony** is an indicator variable = 1 if country_A is a colony of country_B and 0 otherwise.

A second set of the variables refers to unordered country pairs, i.e. the observation (country_A = i, country_B = j) is the same as (country_A = j, country_B = i).

- **dist** gives the log distance as the crow flies between the cities with foreign exchange markets in country_A and country_B. In case foreign exchange markets are situated in several cities in country_A or country_B (as e.g. in Germany or the U.S.A.) the shortest distance is chosen. For a list of financial centres per country see table below.

- **bitrade** gives total trade between country_A and country_B in thousand US dollars. Data for 1900 are taken from Department of Commerce and Labor (1909), available under http://archive.org/details/cu31924030388791). Adjustments have been made to ensure conformity between currency areas and territories reporting trade. If trade volumes refer to a group of countries (e.g. Austro-Hungarian trade statistics refer to "British Australasia" including both Australia and New Zeeland) trade is split up according to flows reported from partner countries (e.g. Australia and New Zeeland reporting trade with Austria-Hungary in this case) if available or the relative size of the partner countries as measured by total trade. Mirror flows (e.g. Austro-Hungarian imports from Australia and Australian exports to Austria-Hungary) are harmonized by using a simple average. If no data is reported for a particular country pair bilateral trade is set to zero in order to avoid a loss of observations due to missing data. While trade is not strictly zero in these cases this procedure gives a reasonable approximation as trade flows not attributed to specific countries in national statistics are usually very small.

A third set of variables covers individual country characteristics. In order to facilitate the use of the data set for econometric exercises the data set includes these variables twice where appropriate: once for country_A (without subscript, e.g. gold for gold standard adherence) and once for country_B (with subscript _B, e.g. gold_B). Unless otherwise stated observations for individual country variables come from Flandreau and Zumer (2004), available under http://eh.net/databases/Finance/, and complemented from various sources.

- **gold** is an indicator variable =1 if country_A has a currency convertible in gold in 1900 and 0 otherwise.

- **debtburden** is the ratio of government debt over government revenues in 1900.

- **rlong** is the secondary market yield for gold denominated government debt in 1900.

- **rshort1900** is the market rate for 3 month lending, in most cases the discount rate for 3 month commercial paper in 1900.

- **rshort1890** same as above for 1890.

- **rgdp** and **rgdpcap** give the log 1900 real gdp and the log real gdp per capita.

- **poldemo** reproduces the index of democracy (ID) of the Polyarchy dataset developed by Vanhanen (2000) for 1900.

- **coverage** is the logarithm of the number of currencies traded in country_A. Coverage is used to control for the fact that the extensiveness of coverage of the foreign exchange market varies marginally from one national source to the other.

Data sources for foreign exchange market data

The table below gives the list of centres examined for every country and the sources used (reproduced from Flandreau and Jobst 2005). TMC and SD refer respectively to Tate's Modern cambist and Sonndorfer followed by the year of the edition used:

Country	Markets examined	Sources
Argentina	Buenos Aires	La Nacion [1890-1910] Bolsa de Comercio de Buenos Aires. Boletin Quincenal de Precios Corrientes [1900] Memoria de la Camara Sindical de Bolsa de Comercio de Buenos Aires correspondiente al año de 1889, and Memoria [...] de 1890 [1890]
Australia	Adelaide, Melbourne, Sydney	The Australasian Insurance and Banking Record [1890-1910] TMC 1893, 1908
Austria-Hungary	Budapest	Pester Lloyd [1890-1900] A Budapesti Árú- és Értéktózsde Hivatalos Árjegyzó Lapja [1910]
Austria-Hungary	Vienna	Amtliches Cursblatt der Wiener Börse [1890-1910]
Belgium	Antwerp	Cote Officielle de la Bourse d'Anvers [1890-1910]
Belgium	Brussels	Cours Authentique. Seul officiel, publié par la commission instituée en vertu de la loi du 11 juin 1883 [1890, 1900, 1910]
Brazil	Rio de Janeiro	Jornal do Commercio [1890, 1900, 1910]
British India	Bombay	Times of India [1890, 1900, 1910 (mail edition)]
British India	Calcutta	TMC 1893, 1908
Canada	Montreal, Toronto	The Monetary Times [1890-1910] The Montreal Gazette

		TMC 1908
Ceylon	Colombo	SD 1889, 1900, 1905, 1912 TMC 1908
Chile	Valparaiso, Santiago	El Mercurio [Valparaiso 1890], El Ferrocarril [Santiago 1900, 1910]
China	Shanghai	North China Herald [1910]
Columbia	Bogotá	SD 1889, 1900 TMC 1893 1908
Cuba	Havana	SD 1889, 1900, 1905, 1912 TMC 1893 1908
Denmark	Copenhagen	Den danske Landsmandsbank Hypthek og Vekselbank i Kjøbenhavn. Börsenkurs d … [1890] Privatbanken i Kjøbenhavn (no title) [1900] Kjøbenhavns Handelsbank (no title) [1910]
Dutch East Indies (Java)	Batavia	Jaarcijfers uitgegeven door de Centrale Commissie voor de Statistiek. Kolonien [1890-1910, volume 1921 for exchange rates with Singapore 1910] SD 1889, 1900, 1905, 1912 TMC 1893, 1908
Ecuador	Guayaquil	SD 1889, 1900, 1905, 1912 TMC 1908
Egypt	Cairo	SD 1889, 1900, 1905, 1912 TMC 1893, 1908
Finland	Helsingfors	TMC 1893, 1908
France	Paris	L'Economiste Français [1890-1910] La Semaine Financière [1890-1910]
Germany	Berlin	Cours-Bericht (Verlag der Hertel'schen Cours-Berichte) [1890] Hertel'scher Cours-Bericht [1900, 1910]
Germany	Frankfurt	Oeffentliches Börsen-Coursblatt des Wechselmakler-Syndicats zu Frankfurt a. M. [1890] Öffentliches Börsen-Kursblatt der Maklerkammer zu Frankfurt a. M. [1910]
Germany	Hamburg	Amtlicher Kursbericht. Herausgegeben vom Börsenvorstand [1900, 1910]
Greece	Athens	ΧΡΗΜΑΤΙΣΤΙΡΙΟΝ ΑΘΗΝΩΝ [1890, 1900] SD 1889, 1900, 1905, 1912 TMC 1908
Hong Kong	Hong Kong	China Mail [1890-1910]
Indochina	Saigon	Bulletin de la Chambre de Commerce de Saigon [1900] TMC 1893, 1908
Italy	Florence	Estratto del Listino Officiale della Borsa [1890, 1900]
Italy	Genoa	Banca Commerciale Italiana. Corsi di chiusura della Borsa di Genova del … [1910] Listino Ufficiale della Borsa di Genova [1910]
Italy	Milan	Bollettino ufficiale della Borsa di Milano [1890] Bollettino ufficiale della Borsa [1900] Listino ufficiale della Borsa di Milano [1910]
Italy	Rome	Listino officiale della Borsa di Commercio di Roma [1890] Listino ufficiale [sic] della Borsa die Roma [1900, 1910]
Japan	Yokohama	Hundred Years Statistics of the Japanese Economy SD1889, 1900, 1905, 1912 TMC 1908
Mexico	Mexico	El Economista Mexicano [1890-1910]
Netherlands	Amsterdam	Cours-Officiel de la Bourse (Publié par le Comité) [1890-1900] Cours-Officiel de la Bourse d'Amsterdam (Publié par le Comité) [1910]
New Zealand	Dunedin	The Australasian Insurance and Banking Record [1890-1910]
Norway	Christiana	Thon, E. and R. Due. Kristiania Børs 1819-1919, Et tilbakeblikk ved 100 aars jubilæet. Christiania, 1919. Ramm, H. I næringslivets tjeneste. Christiania Børs 1819-1924. Oslo børs 1925-1969. Oslo, 1969.

		Rygg, N. Norges Banks historie, annen del. Oslo, 1954.
		Øyvind, E., J. T. Klovland and J. Qvigstad. "Historical Monetary Statistics for Norway 1819-2003." Norges Banks Occasional Papers 35. Oslo, 2004.
Ottoman Empire	Constantinople	SD1889, 1900, 1905, 1912 TMC 1893, 1908 (Additional information from the following newspapers: Die Freie Post [1899], Osmanischer Lloyd [1913], Iqtiham [1912])
Persia	Teheran, Bushire	TMC 1893, 1908
Peru	Lima, Callao	SD1889, 1900, 1905, 1912 TMC 1893, 1908
Philippines	Manila	SD1889, 1900, 1905, 1912 TMC 1893, 1908
Portugal	Lisbon	Jornal do Comercio [1890-1910]
Rumania	Bucharest	Bursa din Bucuresci. Serviciul "Curierului Financiar" [1900] Bursa din Bucuresci. Serviciul Jurnalului "Curierului Financiar" [1910] SD 1889
Russia	Moscow	Cote de la Bourse de Moscou. Edition du Comité de la Bourse de Moscou [1910]
Russia	Petersburg	Cote officielle de la Bourse de St. Pétersbourg [1890-1900]
Russia	Warsaw	Cote officielle de la Bourse de Varsovie [1890-1910]
Serbia	Beograd	SD1889, 1900, 1905, 1912
Siam	Bangkok	SD 1905, 1912 TMC 1893, 1908
Singapore	Singapore	TMC 1893, 1908
Spain	Barcelona	Cambios Corrientes dados por la Junta de Gobernio del Colegio de Corredores Reales de comercio de la plaza de Barcelona [1890-1900] Boletin Oficial de Cambios Corrientes dados por la Junta de Gobernio del Colegio de Corredores Reales de comercio de la plaza de Barcelona [1910]
Spain	Bilbao	Boletin de Cotizacion Oficial de la Bolsa de Comercio de Bilbao [1900-1910]
Spain	Madrid	Boletin de Cotizacion Oficial de la Bolsa de Comercio de Madrid [1890-1910]
Sweden	Stockholm	Post & Inrikes Tidning [1890-1910] (Aftonbladet, Dagens Nyheter occasionally)
Switzerland	Basel	Basler Börse: Oeffentliches Coursblatt der beeidigten Sensalen [1890] Bankverein Suisse. Cours official de la Bourse de Bâle [1900, 1910]
Switzerland	Geneva	Bourse de Genève [1890] Cote journalière de la Bourse de Genève publié par la Société des Agents de Change [1910]
Switzerland	Zurich	Kursblatt der Zürcher Effektenbörse [1900, 1910]
United Kingdom	London	The Economist [1880-1910]
United States	Chicago	Chicago Tribune [1891-1910]
United States	New Orleans	The Daily Picayune [1882, 1912]
United States	New York	Commercial and Financial Chronicle, New York Times, Wall Street Journal [all 1890-1910] SD1889, 1900, 1905, 1912
United States	San Francisco	The Bulletin [1890-1910]
Uruguay	Montevideo	SD 1889, 1900, 1905, 1912 TMC 1893, 1908
Venezuela	Caracas	SD 1889, 1900, 1905, 1912 TMC 1893, 1908

References

Department of Commerce and Labor (1909), *Statistical Abstract of Foreign Countries*, Washington.

Easton, H. T. (1908), *Tate's modern cambist: a manual of foreign exchanges and bullion with the monetary systems of the world and foreign weights and measures*. 24th edition. London: Effingham Wilson.

Flandreau, M. and C. Jobst (2005), 'The ties that divide: a network analysis of the international monetary system 1890–1910', *Journal of Economic History*, vol. 65(4).

Flandreau, M. and C. Jobst (2009), 'The empirics of international currencies: Networks, history and persistence', *The Economic Journal*, vol. 119(April).

Flandreau, M. and F. Zumer (2004), *The Making of Global Finance 1880–1914*, OECD Development Center monograph, Paris.

Schmidt, H. (1893), *Tate's modern cambist; a manual of foreign exchange and bullion, with the moneys and other mediums of exchange of all trading nations; also, tables of foreign weights and measures, with their equivalents in English and French*. 23rd edition. London: E. Wilson & Co.

Sonndorfer, R. (1889), *Die Technik des Welthandels. Handbuch der internationalen Handelskunde für Kaufleute*. Vienna: Hölder.

Sonndorfer, R. (1900), *Die Technik des Welthandels. Handbuch der internationalen Handelskunde für Kaufleute*, 2nd edition. Vienna: Hölder.

Sonndorfer, R. (1905), *Die Technik des Welthandels. Handbuch der internationalen Handelskunde für Kaufleute, Ex- und Importeure*. 3rd edition. Vienna: Hölder.

Sonndorfer, R. (1912), *Technik des Welthandels. Handbuch der internationalen Handelskunde*. 4th edition edited by Klemens Ottel. Vienna and Leipzig: Hölder.

Vanhanen, T. (2000), 'A new dataset for measuring democracy, 1810–1998', *Journal of Peace Research*, vol. 37(2).