

table AIIb, col. 8, change in business inventories, millions of dollars. Data from 1929 to 1945 are from United States, Bureau of the Census 1975, 230, series F60, total net change in business inventories, current prices.

### **Current Account**

Data for 1869 to 1945 from United States, Bureau of the Census 1975, 866–868, series U15, balance on goods and services, plus series U16 and U17, net private and government unilateral transfers. Data from 1869 to 1899 are for fiscal year ended June. Data are converted to calendar year basis by adding each year to subsequent year and dividing by two. For instance, fiscal year data for 1869 are added to fiscal year data for 1870 and divided by two, yielding data for calendar year 1869. Data from 1900 are for calendar year. Data to 1873 include exports and imports of gold. Data from 1874–1945 include nonmonetary gold exports. Data for nongold current account for 1869–1873 are calculated by taking the current account balance less net exports of gold. Data for nongold current account for 1874–1945 are calculated by taking the current account balance less net exports of gold less change in the monetary gold stock (equivalent to subtracting nonmonetary gold exports).

### **Gold**

Exports: Data for 1869 to 1914 are from the National Bureau of Economic Research, series 14112, net gold exports, thousands of dollars, monthly data. Annual data are derived by adding the sum of monthly net exports for each year (fiscal or calendar). Data from 1915 to 1945 from United States, Bureau of the Census 1975, 884–885, series U197 less U198, gold exports less imports, calendar year, millions of dollars.

Monetary gold stock data for 1869 to 1878 are from United States, Bureau of the Census 1975, 993, series X417, billions of dollars, annual average. Monthly data from 1879 to 1945 are supplied by the National Bureau of Economic Research, series 14076, billions of dollars. To construct our own annual data we select the December level of the monetary gold stock.

### **Notes**

We are grateful to Tamim Bayoumi, Walter Beckert, Galina Borisova Hale, Lisa Cook, Marc Flandreau, Lars Jonung, Jan Tore Kløvland, Ian McLean, Marinella Moscheni, Christine Nagorski, Stefan Palmqvist, Giovanni Peri, David Pope, Pierre Sicsic, and Giuseppe Tattara for assistance with data and sources. We have benefited from helpful

suggestions from Tamim Bayoumi, Michael Bordo, Barry Eichengreen, Marc Flandreau, Steve Golub, Kevin O'Rourke, and Alan M. Taylor. Jay Shambaugh provided excellent research assistance. All errors, omissions, and interpretations are our own. Research support from a National Science Foundation grant to the National Bureau of Economic Research (NBER) and from the Center for German and European Studies at the University of California, Berkeley, is gratefully acknowledged. The authors can be reached via e-mail at [hcmj@ibm.net](mailto:hcmj@ibm.net) and [obstfeld@econ.berkeley.edu](mailto:obstfeld@econ.berkeley.edu). The data from this paper, along with the spreadsheets for constructing it, are available in electronic format at <http://www.nber.org/jones-obstfeld.html>.

1. See Obstfeld 1995 for a survey.
2. See appendix 9.1 for a discussion of this point.
3. The thirteen countries in our sample are Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Norway, Russia, Sweden, the United Kingdom, and the United States. Finland was a province of Russia until 1917, when it declared independence. Even before independence, however, Finland had a high degree of economic autonomy, having its own currency and central bank. For further details on sources and methods, see appendix 9.2. Our study is very much in the spirit of Bloomfield (1968), who assembled the available data on net capital movements for a sample of countries that partially overlaps our sample.
4. France, a leading bimetallic power, suspended specie payments in 1870, then ended the free coinage of silver in September 1873 by limiting the daily coinage. Silver coinage was fully suspended in 1876. In January 1878, gold specie payments resumed. See Flandreau 1996 for details. For the United States, we do not consider the period from 1873 to 1878 when the Coinage act of 1873 was in force to be a true bimetallic standard. The act did not allow for unlimited coinage of silver, and excluded the standard silver dollar from the definition of acceptable coinage. Furthermore, no silver coin was to be legal tender beyond the limit of five dollars. According to Friedman (1990, 1165), "The omission of any mention of the standard silver dollar in the Coinage Act of 1873 ended the legal status of bimetallism in the United States." Notwithstanding our own decision to adjust only for gold flows, our data appendix (appendix 9.2) in several cases describes sources for relevant silver data we have encountered, in case other researchers should wish to attempt a full correction of historical current account figures for silver as well as gold flows. These data are available on the NBER website mentioned in the introductory footnote. Where the standard national current account data exclude silver flows, we make no systematic attempt in this paper to reintroduce data on silver shipments into the current account.
5. This example draws on Gardner 1953.
6. Clearly, we are abstracting from costs of turning an ounce of gold ore into an ounce of bullion.
7. This accounting convention is the one recommended by the International Monetary Fund. For further details, see Inter-Secretariat Working Group on National Accounts 1993.
8. Morgenstern (1955) argued forcefully that monthly and quarterly historical data on bilateral gold flows are too inaccurate to be useful. Thus it might seem pointless (and at worst harmful) to adjust the standard series using data on international gold flows. Goodhart (1969), after examining 1900–1912 data on bilateral flows between the United States and United Kingdom, concludes that Morgenstern overstated the case. We use

annual data on each country's total gold flows, which presumably are less subject to error than bilateral monthly data.

9. See appendix 9.2 For a detailed description of the data sources and methods used in this paper. We have attempted to assemble estimated data for all of the components of equation (9.2) for each country, even when not all of them are strictly necessary to adjust the standard current account numbers. The extended data set allows an assessment of the bias that results from alternative current account definitions.

10. See Sinclair 1993 for details. Urquhart's estimates of net dividends and interest payments are based on direct estimates of asset and liability stocks. In contrast, Viner and Hartland used cumulated current account balances to estimate net foreign asset income.

11. We are forced to include data on silver shipments for France before 1870 because of the lack of information that would allow us to separate silver from gold movements.

12. Italy adopted the use of gold and silver as legal tender throughout the country on March 23, 1862. Legislation dated August 24, 1862 gave silver limited legal tender. As Fratianni and Spinelli (1997, 65–66) argue, this had the effect of making gold the only metal of exchange in international dealings, and "introduced a gold-based monometallism in disguise." A government decree of May 1, 1866 proclaimed banknotes no longer convertible into gold or silver, effective May 2, 1866. Inconvertible banknotes circulated until 1884, when gold convertibility was restored, but Italy remained on the gold standard only until 1894. For Japan, the New Coinage Act of 1871 declared the gold yen as the standard unit of value and legal tender for transactions of any value. Silver coins were relegated to subsidiary money, legal tender up to 10 yen. However, the act also declared the silver Yen Trade Dollar as legal tender within the confines of treaty ports. An amendment in May 1878 made the silver Trade Dollar legal tender throughout the Empire of Japan. Thus both gold and silver were legal tender within Japan and for all foreign transactions from 1878 to 1897. It wasn't until the Coinage Act of 1897 declared the gold yen as the standard unit of value and legal tender that Japan officially adopted the gold standard. The coinage of the Yen Trade Dollar ceased, and they were gradually withdrawn from circulation.

13. Net national product is used in place of GDP for Germany and Russia.

14. Nonmonetary gold exports can be calculated as the sum of net gold shipments,  $SG$ , plus the change in the monetary gold stock,  $\Delta MG$ . The ratio of nonmonetary gold exports to GDP for 1885–1913 is Australia: 4.2%, Canada: 0.7%, Denmark: 0.0%, Finland: –0.0%, France: –0.5%, Germany: –0.0% (of NNP), Italy: 0.0%, Japan: 0.5%, Norway: 0.0%, Russia: 0.6% (of NNP), Sweden: –0.1%, the U.K.: –0.1%, the U.S.: 0.2%.

15. Eichengreen (1992a) added inventory data for Canada and the United Kingdom to the countries for which Mitchell (1983) reports inventory changes. Our coverage expands Eichengreen's by adding inventory data for Australia, Finland, France, Japan, Russia, and Sweden.

16. In our 1885 to 1913 sample, omitting data on inventories raises the estimated slope coefficient in the Feldstein-Horioka regression by more than 20 percent, and lowers the standard deviation of the slope coefficient by more than 30 percent. Thus it appears that including estimates of changes in stocks or inventories is an important consideration in any analysis of saving-investment correlations. See appendix 9.1 for a full discussion of the effect of removing stocks/inventories data. For Finland, inventory data are not reported separately but are summed with the statistical discrepancy. We use that total as a proxy for inventories.

17. The regression thus tests the hypothesis that an increase in national saving, net of the increase in monetary gold holdings, flows completely into domestic investment. To see this another way, observe from equations (9.1) and (9.3) that  $CA^O = CA^{NG} + SG = CA - \Delta MG$ . Thus  $CA^O$  equals the difference between an economy's total outward shipments of goods, services, and gold and its total inward shipments, which must equal its net accumulation of nongold foreign claims. This follows from the balance of payments identity that the true current account surplus plus the nongold capital account surplus equals monetary gold acquisitions. Therefore, the Feldstein-Horioka hypothesis implies that  $CA^O = S - \Delta MG - I = 0$ .

18. Regression estimates of the specification in equation (9.7) are presented in appendix 9.1, third section.

19. See Obstfeld 1995 for a discussion of recent data. Taylor 1996 reviews the behavior of the saving-investment correlation over time since the nineteenth century.

20. On interwar capital controls, see Obstfeld and Taylor 1998.

21. Bayoumi's sample of countries consisted of Australia, Canada, Denmark, Germany, Italy, Norway, Sweden, and the United Kingdom. Eichengreen added the United States. Our data set adds Finland, France, Japan, and Russia.

22. In recomputing Eichengreen's (1992a) estimates using the Mitchell 1992 data (with our Australian, Canadian, and U.S. data, without gold adjustments) and Eichengreen's specification, we found a slope coefficient of 0.656 for 1880–1913, 0.529 for 1880–1890, 0.778\*\* for 1891–1901, 0.749 for 1902–1913, 0.873\*\*\* for 1924–1936, and 0.853\*\*\* for 1925–1930. When Eichengreen uses alternative data for the United States compiled by Roger Ransom and Richard Sutch, he finds a slope coefficient of 0.58\* for 1925–1930. (The asterisks denote alternative significance levels of estimates. See note to table 9.3 for definitions.)

23. See appendix 9.1, fifth section, for more details.

24. For the full sample period, the time-series correlation between net gold shipments and the current account exclusive of all gold flows was negative for Australia, Finland, France, Italy, Japan, Norway, the United Kingdom, and the United States (eight out of our thirteen countries). For the 1885–1913 sub-period, the correlation was negative for Denmark, France, Germany, Italy, Japan, Norway, Sweden, the United Kingdom, and the United States (nine out of our thirteen countries).

25. Expressed as a percentage of gross domestic or net national product.

26. An alternative method to test the sensitivity of the parameter estimates to the sample of countries is to perform bootstrap regressions. Bayoumi (1990) calculates bootstrap estimates for his sample of eight countries and finds parameter estimates quite similar to his least squares calculations.

27. The dates we use for gold standard adherence are as follows. Australia: 1852–1915, 1925–1929; Canada: 1853–1914, 1926–1931; Denmark: 1873–1914, 1927–1931; Finland: 1877–1914, 1926–1931; France: 1878–1914, 1928–1936; Germany: 1871–1914, 1924–1931; Italy: 1862–1866, 1884–1894, 1927–1936; Japan: 1897–1917, 1930–1931; Norway: 1875–1914, 1928–1931; Russia: 1897–1914; Sweden: 1873–1914, 1924–1931; United Kingdom: 1821–1914, 1925–1931; United States: 1879–1933. See Bordo and Kydland 1995, Bordo and Schwartz 1996, and Eichengreen 1992b for surveys of gold standard participation.

28. Net national product if GDP is unavailable.
29. See the notes on capital formation in Australia for a discussion of this point.

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