

Table B-1. Summary Confrontation of Methods Used in Constructing Historical National Accounts for 16 Advanced Capitalist Countries

Main Authors	Value Added Approach	Expenditure Approach	Income Approach
AUSTRALIA			
N.G. Butlin, 1986	1788-1827, VA, 1828-1860, VAVOP		
N.G. Butlin, 1962	1861-1939, 13 sectors, VAVOP	1861-1939, 4 categories of investment, VAVOP	
N.G. Butlin, 1977		1900-74, 9 categories, VAVOP	
AUSTRIA			
A. Kausel, 1979	1830-1913, 5 sectors, VAVOP		
A. Kausel, 1965	1913, 1920, 1937 and 1946-1950, 11 branches, VAVOP	1913, 1924, 1937 and 1948-1950, 6 categories, VAVOP	1913, 1924 and 1948-1950, 8 categories, VA
BELGIUM			
J. Gadisseur, 1973	1846-1913, 2 sectors (ag. and ind.), VO. I made a crude service proxy for 1846-1913, even cruder proxies for 1830-1846 using Gadisseur for industry and Goossens for agriculture		
C. Carbonnelle, 1959	1920-1938, 6 branches, VO. I made a crude service interpolation		
CANADA			
O.J. Firestone, 1957	1851-70, 8 sectors, VAVOP		
O.J. Firestone, 1958	1867-1953, 8 sectors, VAVOP. Detailed analysis for benchmark years at decade intervals. Rougher annual estimates	1867-1953, substantial detail by category, VAVOP	
M.C. Urquhart, 1986 and 1993	1870-1926, 18 sectors on an annual basis and benchmark estimates for 2 distributive sectors. Substantial branch details for agriculture and manufacturing, VA. Deflation only for GNP aggregate	1870-1926 partial: investment for 7 sectors, government expenditure and exports, VA	
Statistics Canada	1926 onwards, 15 sectors, VA	1926 onwards, 14 categories VAVOP	1926 onwards, 11 categories, VA

Main Authors	Value Added Approach	Expenditure Approach	Income Approach
DENMARK			
S.A. Hansen, 1974	1818-1950, 23 branches, VAVOP	1844-1950, 3 categories, VAVOP	
FINLAND			
R. Hjerpe, 1989	1860-1985, 13 branches, VAVOP	1860-1985 5 categories VAVOP	1860-1985, 5 categories of wages and salaries.VA. Cost of living and wholesale price index
FRANCE			
M. Levy-Leboyer & F. Bourguignon, 1985	1820-1913, 5 sectors, VAVOP.I used only the industry measure for 1820-70	1820-1913, 13 categories, VA	1820-1913 wages, VA
J.C. Toutain, 1987	1815-1913, 1920-1938 and 1950. 14 branches, VAVOP. For 1820-70 I used his indicators for agriculture and services. For 1870-1960 I used his GDP estimates.		
GERMANY			
R.H. Tilly, 1978	2 branches (ag. 1831-1849 and ind. 1831-1846/7) for Prussia for 3 benchmark years, VO. I made a crude service sector proxy, adjusted to cover all Germany using demographic ratios, and linked to Hoffmann in 1850		
W.G. Hoffmann, 1965	1850-1913, 1924-1938, 9 branches (with detail for 147 industries), VO. Weighting system not clear.	1850-1913, 1924-1938 1950, 5 categories VAVOP	1850-1913, 1925-1938, 9 categories, VA
ITALY			
R. Ercolani & O. Vitali (Fua Group), 1975	1861-1952, 11 branches, VAVOP	1861-1952, 18 categories, VAVOP	1861-1971, 2 categories of wages and salaries, VA
Maddison, 1991	Rewighted version of the above supplemented with production estimates of Fenoaltea		
JAPAN			
K. Ohkawa and M. Shinohara, 1979	1885-1940, 5 sectors, VAVOP. I used this source for 1885-1940 and their expenditure estimate for 1940-50	1885-1940, 1930-44 and 1946-70, 6 categories, VAVOP	1906-40, 1953-70, 4 categories, VA

Main Authors	Value Added Approach	Expenditure Approach	Income Approach
NETHERLANDS			
J.L. van Zanden, 1987	Four benchmarks (1820, 1850, 1880 and 1910). 8 sectors, VO		Four benchmarks (1820, 1850, 1880 and 1910) wage and three types of property income, VA
C. van Bochove & T.A. Huitker, CBS, 1987	1921-39, 21 sectors. VA (not yet published)	1921-1939, 1946-1986. 7 categories, VAVOP. I used this for 1921-60, and deflated income for 1900-21	1900-1921. 1 category, deflated by cost of living index, 1921-39, 1946-86, 9 categories, VA
NORWAY			
Central Bureau of Statistics, 1970	1930-1939, 1946-1950. 11 branches, VAVOP	1865-1939, 1936-1950. 7 categories, VAVOP. I filled the 1939-1946 gap from another CBS source and adjusted from the Norwegian to the OECD concept of GDP	1930-1939, 1940-1950. 149 items, VA
SWEDEN			
O. Krantz and C.A. Nilsson, 1975	1861-1970, 7 sector breakdown, VAVOP	1861-1970, 7 category breakdown	
O. Krantz and Associates, 1986-91. 7 background vols. 2 (on agriculture and foreign trade) pending	1800-1980, industry of origin, VAVOP		
SWITZERLAND			
C. Clark, 1957			1890, 1895, 1899, 1913, 1924-1951. VAVOP. 1 category crudely deflated
UK			
P. Deane, 1968		1830-1914, 5 categories, VAVOP. I used her 1830-1855 figures	
C.H. Feinstein, 1972	1855-1913, 1920-1960, 4 sectors, VAVOP. Plus VO for 15 branches	1870-1960 7 categories, VAVOP	1855-1960, 5 categories, VA

Main Authors	Value Added Approach	Expenditure Approach	Income Approach
USA			
R.E. Gallman, 1966		1839, 1844, 1849, 1854, 1859 benchmarks and overlapping decade averages from 1859-43 to 1899-1908. Gallman replicates Kuznets technique and methods of presentation. Uses a large amount of information on commodity output and rougher estimates for services to build up volume estimates of final flows to consumers (4 way breakdown) and to capital formation (3-way breakdown). Full detail of estimates not published. I derived my 1840-69 estimates from Gallman.	
N.S. Balke and R.J. Gordon, 1989		1869-90. For this period Kuznets (1961) published only 5 year moving averages as he considered the annual information to be too weak. Balke and Gordon revamped the existing commodity flow estimates to incorporate extra information on construction, transport and communications. They provided annual estimates of nominal GDP, real GDP in 1982 prices and a GDP deflator. I used their estimates for 1869-90.	
J.W. Kendrick, 1961	Private Domestic Product: volume indices for 10 benchmark years from 1869 to 1953 with a 10 sector breakdown. His service estimate is a residual and his total is derived from the expenditure GDP. For most of the individual sectors he provides annual figures.	Decade averages of GDP for 1869-78 and 1879-88 and annual estimates for 1889-1953. Kendrick used Kuznets' (1961) commodity flow estimates with adjustments to put them on the basis used by the US Dept. of Commerce. VAVOP	
Dept. of Commerce		1929-onwards annual estimates, 14 categories. They supply 3 weighting variants: 1987 weights, annual chain-weighting and quinquennially changing benchmarks. I used the latter.	VA

VA means that the source cited shows current values. VO means that the source provides volume indices or constant price estimates. P means that the appropriate deflators are given or are implicitly available in the source cited. I have not included New Zealand in the Table as Rankin (1992) used proxy indicators.

Table B-2. Confrontation of Toutain and Levy-Leboyer Estimates of Value and Volume of French GDP, 1820-1913

	Value Added in Million Francs at Current Prices				Volume Indices by Sector (1913 = 100.0)			
	Agriculture	Industry	Services	GDP	Agriculture	Industry	Services	GDP
	Toutain				Toutain			
1820	3 637	3 252	2 076	8 965	46.9	9.7	29.6	22.0
1870	9 442	8 411	6 016	23 959	81.1	35.0	50.5	52.1
1913	13 024	19 212	17 335	49 571	100.0	100.0	100.0	100.0
	Levy-Leboyer				Levy-Leboyer			
1820	4 117	3 391	1 503	9 011	41.4	18.0	(17.5)	(25.1)
1870	7 958	6 374	4 980	19 312	71.5	42.4	(42.7)	(51.4)
1913	11 907	16 143	10 792	38 842	100.0	100.0	(100.0)	(100.0)

Sources: Toutain (1987) and Levy-Leboyer (1985). The figures in brackets are not explicit in Levy-Leboyer but are easily derived from the information he gives. I arrived at the Levy-Leboyer GDP volume index by using 1913 weights. The figures in this table are not adjusted to eliminate the effect of territorial changes.

Table B-3. Confrontation of Toutain and Levy-Leboyer Sectoral and Aggregate Deflators (1913 = 100)

	Agriculture	Industry	Services	GDP	Agriculture	Industry	Services	GDP
		Toutain				Levy-Leboyer		
1820	59.6	174.5	40.5	82.2	83.5	116.7	79.6	92.4
1870	89.4	125.1	68.7	92.7	93.5	93.1	108.1	96.6
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: As for Table B-2.

Table B-4. Alternative Indices of French Industrial Output, 1820-1913 (1913 = 100)

	Markovitch (1965)	Levy-Leboyer (1968)	Crouzet (1970)	Levy-Leboyer (1978 and 1985)	Toutain (1987)
1820	15.7	10.2	20.7	18.0	9.7
1870	47.8	32.8	40.0	42.4	35.0
1913	100.0	100.0	100.0	100.0	100.0
	Annual Average Compound Growth Rates				
1820-70	2.3	2.3	1.3	1.7	2.6
1870-1913	1.7	2.8	2.2	2.0	2.5
1820-1913	2.0	2.6	1.7	1.9	2.5

Source: Col. 1 from J.J. Markovitch "L'industrie française de 1789 à 1964 — Sources et méthodes", *Cahiers de l'ISEA*, AF4, July 1965, Table 1, pp. 216-7. Markovitch gives figures for decades or quinquennia, and I had to interpolate to get figures for the years shown here. Second, fourth and fifth columns from works already cited, third column from F. Crouzet, "Essai de construction d'un indice annuel de la production industrielle française au XIX siècle", *Annales ESC*, January-February 1970. All series, except Crouzet, include construction.

Table B-5. Alternative Estimates of French GDP per Capita 1820-1913

	1820	1870	1913
The compromise estimate	1 218	1 858	3 452
Toutain (1987)	983	1 858	3 452
Levy-Leboyer (1985)	1 123	1 836	3 452

Table B-6. Area Breakdown of German GDP, Population and Per Capita GDP 1936, and 1990

	1936		
	National Income million RM	Population (000)	Per Capita Income in RM
Federal Republic Territory ^a	41 757	42 208	989
DDR Territory	16 159	15 614	1 035
East of Oder-Neisse	6 968	9 514	732
Total (1936 territory)	64 884	67 336	964
of which:			
Saar	629	821	766
West Berlin	4 175	2 685	1 555
	1990 (second half year)		
	GDP billion DM	Population (000)	Per Capita GDP in DM
Federal Republic ^a	1 216.9	63 527	19 864
Former DDR	97.7	16 111	6 064
Total	1 359.6	79 638	17 007

a) including Saar and West Berlin.

Source: 1936 from *Handbuch* (1949); second half of 1990 from Statistisches Bundesamt, *Erste Ergebnisse der Sozialproduktberechnung 1992*, Fachserie 18, Reihe 1, Wiesbaden, January 1993, pp. 39 and 41.

Table B-7. Previous Estimates of the Performance of the East German Economy

	Population (000s)	Index of GNP at Constant Prices (1950 = 100)	Inferential Level of GDP per capita in 1990 Geary Khamis \$		Population (000s)	Index of GDP at Constant Prices	Inferential Level of GDP per capita in 1990 Geary Khamis \$
1936	15 614	129.9	4 783	1970	17 058	231.9	7 816
				1971	17 061	237.1	7 990
1946	18 488	n.a.	n.a.	1972	17 043	245.1	8 268
1947	19 102	n.a.	n.a.	1973	16 980	252.8	8 559 ^b
1948	19 044	n.a.	n.a.	1974	16 925	264.9	8 998
1949	18 793	n.a.	n.a.	1975	16 850	274.7	9 373
1950	18 388	100.0	3 127	1976	16 786	280.2	9 597
1951	18 335	n.a.	n.a.	1977	16 765	288.8	9 904
1952	18 334	n.a.	n.a.	1978	16 756	293.7	10 077
1953	18 271	n.a.	n.a.	1979	16 745	301.9	10 365
1954	18 057	n.a.	n.a.	1980	16 737	308.3	10 590
1955	17 928	136.4	4 374	1981	16 736	314.6	10 806
1956	17 735	n.a.	n.a.	1982	16 732	313.5	10 772
1957	17 478	n.a.	n.a.	1983	16 700	319.5	10 999
1958	17 262	n.a.	n.a.	1984	16 671	328.6	11 332
1959	17 148	n.a.	n.a.	1985	16 644	338.8	11 703
1960	17 114	173.9	5 842	1986	16 625	343.7	11 886
1961	17 002	175.2	5 924	1987	16 642	349.5	12 074
1962	16 874	180.0	6 133	1988	16 667	353.3	12 187
1963	16 930	185.8	6 309	1989	16 399	357.4	12 530 ^b
1964	16 972	190.9	6 467				
1965	17 020	198.6	6 708	1990 ^a	16 111		5 704
1966	17 058	204.7	6 899	1991	15 910		6 042
1967	17 082	211.3	7 111	1992	15 730		6 589
1968	17 084	220.9	7 434	1993	15 648		7 003
1969	17 076	226.1	7 612				

a) second half of 1990;

b) in 1973 and 1989. Czech levels of per capita GDP were \$7 036 and \$8 729 respectively. In my view, East German levels in this period were probably nearer to these Czech levels than to the levels previously thought to prevail in the DDR.

Source: GDP index derived as follows: 1936-50 movement from E.M. Snell and M. Harper, "Postwar Economic Growth in East Germany: A Comparison with West Germany", in *Economic Developments in Countries of Eastern Europe*, Joint Economic Committee, US Congress, Washington, D.C., 1970, p. 561; 1950-65 from T.P. Alton, "Economic Structure and Growth in Eastern Europe", in the same (1970) volume, p. 46; 1965-75 from Alton, *op. cit.* (1985), pp. 109-10; 1975-89 from T.P. Alton, ed., "Economic Growth in Eastern Europe 1975-1989", *Occasional Paper* 110, Research Project on National Income in East Central Europe, New York, 1990, p. 26. Population estimates derived for 1936-93 from the same Joint Economic Committee volumes, and from publications of the Federal Statistical Office, Wiesbaden. GDP per capita is benchmarked on the 1936 estimate in Table B-6 and its movement is derived from the first two columns of this table. The 1990-93 real GDP movement in the "neue Länder" (ex DDR) from Statistisches Bundesamt, *Volkswirtschaftliche Gesamtrechnungen*, Fachserie 18, Reihe 3, various issues. The official 1990 estimate in DM for East Germany was converted into dollars with the same PPP as was used for the Federal Republic.

Table B-8. Characteristics of the 15 Constituent Republics of the USSR in 1991

	Population (000s)	GDP (million 1990 international dollars)	GDP per capita in 1990 international dollars
Armenia	3 400	16 363	4 813
Azerbaijan	7 250	30 026	4 142
Belarus	10 300	65 619	6 371
Estonia	1 600	13 832	8 645
Georgia	5 500	29 520	5 367
Kazakhstan	16 850	98 513	5 846
Kyrgyzstan	4 500	13 158	2 924
Latvia	2 700	21 423	7 934
Lithuania	3 750	27 327	7 287
Moldova	4 400	20 242	4 600
Russia	148 800	990 360	6 656
Tajikistan	5 400	13 158	2 437
Turkmenistan	3 750	11 471	3 059
Ukraine	52 000	257 079	4 944
Uzbekistan	21 000	78 777	3 751
USSR	291 200	1 686 868	5 793

Source: Derived from B.M. Bolotin, "The Former Soviet Union as Reflected in National Accounts Statistics", in S. Hirsch, ed., *Memo 3: In Search of Answers in the Post Soviet Era*, Bureau of National Affairs, Washington, D.C., 1992. Col. 1 above is from Bolotin, pp. 182-3, col. 2 is adapted from Bolotin who presents his estimates in 1990 dollars, without giving the source for his PPPs. His total for the 15 republics is \$ 1,541,700 million. My estimate is 9.4 per cent higher and is derived as explained in Appendix C. However, I have used Bolotin's proportionate allocation of total GDP (pp. 184-5). Col. 3 is derived from cols. 1 and 2.

Table B-9. Alternative Estimates (in billion 1933 yuan) of Chinese GDP in the mid 1880s and in 1933

	mid-1880s		1933	
Chang (1962)	12 254	Ou (1947)	20 044	
Feuerwerker (1969)	14 710	Ou (1948)	21 770	
		Liu (1946)	24 190	(excluding Manchuria, Jehol, Sinkiang, Mongolia and Tibet)
		Liu (1946)	26 660	(with Manchuria, Jehol, Sinkiang, Mongolia and Tibet)
		Liu and Yeh (1965)	29 880	(including Manchuria and Outer Mongolia)
		Yeh (1979)	29 460	(coverage not specified)

Source: Chang (1962), Feuerwerker (1969) and Ou (1947 and 1948) as above; Ta-chung Liu, *China's National Income 1931-36*, Brookings, Washington, D.C., 1946, p. 10; Ta-chung Liu and Kung-chia Yeh, *The Economy of the Chinese Mainland: National Income and Economic Development 1933-1959*, Princeton University Press, 1965, p. 66; Kung-chia Yeh, "China's National Income, 1931-36" in Chi-ming Hou and Tzong-shian Yu, eds., *Modern Chinese Economic History*, Academia Sinica, Taipei, 1979, p. 98. Feuerwerker (1977) in his *Economic Trends in the Republic of China*, Michigan Papers in Chinese Studies, No. 31, 1977.