

HS-2: WESTERN OFFSHOOTS: 1500-2001 (Australia, Canada, New Zealand, and the United States)

These four countries have experienced much more rapid growth since 1820 than Western Europe or the rest of the world. Between 1820 and 2001 their combined population increased 35-fold, compared with less than 3-fold in Western Europe. Their GDP increased 679-fold compared with 47-fold in Western Europe. Average per capita GDP (in terms of 1990 international dollars) rose from \$1 202 to \$26 943; Western Europe's from \$1 204 to \$19 256.

The disparity was due partly to huge differences in natural resource endowment. In 1820, land per head of population in France, Germany and the United Kingdom averaged 1.5 hectares compared to 240 hectares in the Western Offshoots. Their growth was facilitated by large-scale immigration, foreign investment and distance from foreign wars. They inherited institutional arrangements and traditions which gave them political stability, a fair degree of social mobility, relatively high levels of education, secure property rights, and a willingness to use market forces, which were more favourable to growth than was the case of the Iberian offshoots in Latin America.

Table 2-1. Population and GDP of Australia, 1700-1870

	Population (000)			GDP (million 1990 international \$)			Per capita GDP (international \$)		
	European	Aboriginal	Total	European	Aboriginal	Total	European	Aboriginal	Average
1700	0	450	450	0	180	180		400	400
1820	34	300	334	53	120	173	1 559	400	518
1830	70	260	330	176	104	280	2 514	400	848
1840	190	230	420	485	92	577	2 553	400	1 374
1850	405	200	605	1 115	80	1 195	2 951	400	1 975
1860	1 146	180	1 326	3 766	72	3 838	3 349	400	2 894
1870	1 620	155	1 775	5 748	62	5 810	3 548	400	3 273

Table 2-2. Population and GDP of the United States, 1700-1870

	Population (000)			GDP (million 1990 international \$)			Per capita GDP (international \$)		
	European and African	Indigenous	Total	European and African	Indigenous	Total	European and African	Indigenous	Average
1700	250	750	1 000	227	300	527	909	400	527
1820	9 656	325	9 981	12 418	130	12 548	1 286	400	1 257
1830	12 951	289	13 240	18 103	116	18 219	1 398	400	1 376
1840	17 187	257	17 444	27 591	103	27 694	1 605	400	1 588
1850	23 352	228	23 580	42 492	91	42 583	1 820	400	1 806
1860	31 636	203	31 839	69 265	81	69 346	2 189	400	2 178
1870	40 061	180	40 241	98 302	72	98 374	2 454	400	2 445

<http://dx.doi.org/10.1787/456125276116>

In the past, most measures of their performance have concentrated on the economies created by European settlement, and disregarded the fact that they displaced and destroyed indigenous economies whose output and populations contracted. I have attempted to provide a crude measure of this disruptive impact up to 1870, estimating what Noel Butlin called a “multicultural” estimate of GDP. For the indigenous economies the population figures are rough and the per capita GDP estimates are stylised. For the settler economies the estimates are at least as good as those for Western Europe.

Australia: Australia has a distinguished record of national income measurement. It was the first country with official estimates.. They were started in 1886 by Timothy Coghlan (1857–1926), government statistician for New South Wales who published estimates of the *Wealth and Progress of New South Wales* as well as a *Statistical Abstract for the Seven Colonies of Australasia* covering New Zealand and the six colonies which became the constituent states of Australia. Publication was discontinued in 1905 when he accepted a diplomatic post as agent general for New South Wales in London, and official national accounts did not reappear until 1946. Bryan Haig is the custodian of the Coghlan archive, and has written an as yet unpublished memoir on Coghlan’s work “The First Official National Accounting Estimates” (see also Heinz Arndt, “A Pioneer of National Income Estimates”, *Economic Journal*, December, 1949).

In 1938, Colin Clark (1905–89) and John Crawford (1910–84) published estimates of income and product for the 1920s and 30s, annual estimates of real income for 1914–39, and rough estimates of productivity for some years back to 1886 (see their *National Income of Australia*, Angus and Robertson, Sydney, 1938). Clark used this material in the first edition of *Conditions of Economic Progress*, 1940, pp. 84–5, improved on it in the 1951 edition, pp. 140–1, and modified his estimates showing faster growth of real product for 1914–38 in the 1957 edition, pp. 90–7 (see Table 2–4).

Noel Butlin (1921–91) published a continuous stream of studies on the quantitative economic history of Australia from 1946 onwards (see Graeme Snooks, “Life and Work of Noel George Butlin”, *Australian Economic History Review*, September 1991). He was an admirer of Kuznets and much of his work is in the Kuznetsian tradition with meticulous indication of sources and transparent explanation of methodology. His first major book (1962) provided annual estimates of GDP, GNP, net domestic and net national product from 1861 to 1938/9. It showed nominal and real value added by industry of origin at factor cost and market prices, together with very detailed estimates of capital formation and the balance of payments on current and capital account. It contained more than 200 pages describing his sources and estimating procedures, and 274 tables.

As Butlin’s work covered the whole span of Australian history, I relied heavily on his estimates in Maddison (1995 and 2001). 1820 to 1828 GDP movement was derived from N.G. Butlin, “Our 200 Years”, *Queensland Calendar*, 1988. 1828–60 annual GDP volume movement by eight industries of origin at 1848–50 prices from N.G. Butlin, “Contours of the Australian Economy 1788–1860”, *Australian Economic History Review*, Sept. 1986, pp. 96–147. Annual GDP movement 1861–1938/9, by 13 industries of origin in 1910/11 prices from N.G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing 1861–1938/39*, Cambridge, 1962, pp. 460–1; amended as indicated in N.G. Butlin, *Investment in Australian Economic Development 1861–1900*, Cambridge, 1964, p. 453, with revised deflator for 1911–1938/9 shown in M.W. Butlin, *A Preliminary Annual Database 1900/01 to 1973/74*, Discussion Paper 7701, Reserve Bank of Australia, May 1977, p.41. 1938/9–1950 real expenditure aggregates in 1966/7 prices from M.W. Butlin, p. 85. 1860–1 link derived by using the GDP deflator in W. Vamplew (ed.), *Australians: Historical Statistics*, Fairfax, Broadway, 1987, p. 219. 1950 onwards from OECD sources. Where necessary, GDP figures were adjusted to a calendar year basis. Population 1788–1949 from Butlin (1988), adjusted to a calendar year basis from 1870. Butlin’s estimate of the pre-contact population is much higher than is conventional (1.1 million instead of 300 000). His analysis of the destructive impact of white settlement makes it difficult to accept the conventional estimate, but his depopulation coefficient seems exaggerated. As a compromise, I assumed a pre-contact population of 450 000, 1820–70 from L.R. Smith, *The Aboriginal Population of Australia*, ANU, Canberra, 1980, p. 210.

Recently, Bryan Haig rejected Butlin's estimates *en bloc* (see his "New Estimates of Australian GDP: 1861–1948/49", *Australian Economic History Review*, March 2001, pp. 1–34). He argues that Butlin's approach (deflation of nominal estimates of value added by price indices) is "unworkable" because of the weakness of existing price indices, and the inherent difficulty of improving them; Butlin "relied on existing series of wholesale prices, wage rates and retail price indices", and "no useful research has been undertaken by academics on Australian price indices since Butlin produced his estimates". Butlin did not take his price indices from the shelf, but constructed ten special deflators for sectors of GDP, and eight for components of capital investment. Butlin's deflators are imperfect but improvable. Australian academics have not abandoned the field (see Ian McLean and S.J. Woodland "Consumer Prices in Australia, 1850–1914" *Working Paper 92–4*, Economics Dept, University of Adelaide, 1992), and Australia seems better endowed with historical price statistics than many other countries (see Shergold's chapter in Vamplew, 1987).

Haig's second fundamental objection is that Butlin's results are "unreasonable" as they show contours of development which conflict with traditional views and generated a new interpretation of Australian economic history. I see no harm in this. It is up to those who disagree with Butlin to prove him wrong.

Table 2-3. Alternative Measures of Australian Sector Growth and Structure, 1861-1938/9

	Confrontation of Butlin (1962) and Haig (2001) Estimates							
	Annual Growth %		1891 level:		Annual Growth %		1938/9 level:	
	1861-1911		million 1891 pounds		1911/12-1938/9		million 1938/9 pounds	
	Butlin	Haig	Butlin	Haig	Butlin	Haig	Butlin	Haig
Pastoral	4.81	4.30	29.5	28.7	1.39	0.96	74.5	63.2
Agriculture	3.39	3.81	10.5	15.3	1.13	2.38	41.7	41.2
Dairy	3.69	3.96	9.7	6.8	3.54	2.64	49.3	40.8
Mining	1.83	1.98	11.3	12.0	-2.21	-0.60	27.9	27.1
Manufacturing	6.13	3.72	21.3	29.5	2.01	2.43	157.0	198.0
Construction	3.01	2.37	28.4	15.1	0.34	2.27	56.2	65.0
Water Transport	4.56	n.a.	3.6	n.a.	-0.41	n.a.	7.9	n.a.
Public Undertakings	5.88	n.a.	6.8	n.a.	1.06	n.a.	45.5	n.a.
Public services	1.99	n.a.	8.5	n.a.	2.62	n.a.	40.7	n.a.
Finance	1.55	n.a.	6.7	n.a.	2.73	n.a.	21.1	n.a.
Distribution	4.33	n.a.	23.9	n.a.	2.40	n.a.	159.8	n.a.
Other services	3.16	n.a.	22.5	n.a.	0.89	n.a.	91.0	n.a.
Total Services	3.63	3.33	72.0	52.0	1.77	2.35	366.0	291.0
Imputed Rent	3.34	3.27	21.9	18.3	2.20	2.19	72.0	60.0
Unallocated	4.91	n.a.	1.8	0.0	2.93	n.a.	-4.1	0.0
GDP	3.67	3.34	202.8	177.8	1.58	2.09	840.5	797.0
GDP New South Wales	n.a.	4.00	n.a.	57.3				
GDP Victoria	n.a.	2.06	n.a.	53.3				

Source: Columns 1 and 5 from Butlin, pp. 160-1. Butlin shows fiscal years (beginning July 1st) from 1901/2 onwards, Haig from 1911/2 onwards. 1911 calendar year for Butlin derived by averaging his estimates for 1910/11 and 1911/12. Columns 2 and 6 from Haig, pp. 28-34. Columns 3 and 7 from Butlin, pp. 10-11. Columns 4 and 8 from Haig, pp. 28-34.

Table 2-4. **Alternative Estimates of Australian Real GDP, calendar years 1861-1900**
(million 1990 international Geary-Khamis dollars)

	<i>Haig</i>	<i>Butlin</i>		<i>Haig</i>	<i>Butlin</i>	<i>Clark</i>
1861	4 453	4 188	1901	17 764	16 201	
1862	4 625	4 133	1902	16 905	16 366	
1863	4 750	4 271	1903	18 436	17 661	
1864	4 867	4 739	1904	17 733	18 846	
1865	5 132	4 711	1905	19 038	19 066	
1866	5 539	5 014	1906	19 741	20 361	
1867	5 515	5 621	1907	19 936	21 187	
1868	5 929	5 896	1908	20 694	21 904	
1869	6 101	5 951	1909	21 608	23 695	
1870	5 898	6 392	1910	22 662	25 348	
1871	6 210	6 144	1911	22 967	25 541	
1872	6 484	6 805	1912	23 764	26 147	
1873	6 656	7 522	1913	24 861	27 552	
1874	7 187	7 770	1914	24 797	25 430	21 294
1875	7 398	8 624	1915	24 341	23 943	20 782
1876	7 593	8 596	1916	24 172	25 623	19 902
1877	7 796	8 954	1917	23 716	26 202	17 519
1878	7 976	9 809	1918	23 155	26 340	16 138
1879	8 249	9 946	1919	24 488	26 092	17 819
1880	8 421	10 470	1920	25 534	28 075	19 969
1881	8 929	11 241	1921	26 818	30 831	22 263
1882	9 702	10 608	1922	28 225	31 051	25 058
1883	10 694	12 178	1923	29 579	31 685	27 275
1884	11 132	12 233	1924	31 524	34 109	29 324
1885	11 296	13 032	1925	33 002	35 239	30 872
1886	11 702	13 197	1926	33 792	34 798	32 587
1887	12 265	14 603	1927	34 305	34 716	34 068
1888	12 546	14 685	1928	34 368	34 164	34 759
1889	13 702	15 953	1929	33 662	33 834	34 848
1890	13 772	15 402	1930	30 458	32 181	33 411
1891	13 890	16 586	1931	28 416	32 720	31 406
1892	13 640	14 547	1932	30 025	31 878	31 640
1893	13 663	13 748	1933	32 110	33 696	31 199
1894	13 819	14 217	1934	33 810	34 991	34 603
1895	14 015	13 418	1935	35 798	36 424	35 427
1896	14 288	14 437	1936	37 414	38 160	36 195
1897	15 147	13 638	1937	39 306	40 336	37 509
1898	15 749	15 760	1938	40 639	40 639	40 639
1899	16 592	15 760				
1900	17 186	16 697				

Source: Haig, pp. 28-30. He gives calendar year estimates for 1861-1911, fiscal years (beginning July 1st) for 1911/12 onwards. I adjusted the latter to a calendar year basis. For 1910/11, he presents no figures for the primary sector or GDP. To make the link between his two temporal segments, I used the 1910/11-1911/12 primary movement shown by Butlin. Clark (1957), pp. 90-1, real product adjusted to calendar year basis.

<http://dx.doi.org/10.1787/456125276116>

A more legitimate objection is that Butlin probably exaggerated the long boom from 1861 to 1891 by understating manufacturing employment and output at the beginning of the period. This is a point which Haig should have tackled more rigorously, showing his own employment estimates for Australian manufacturing and comparing them with those of Butlin (see Butlin and Dowie, "Estimates of Australian Work Force and Employment, 1861–1961", *Australian Economic History Review*, September, 1969). Instead he presents a comparison for the state of Victoria.

Haig's alternative to the Butlin approach is to use quantitative measures of output for seven sectors of GDP. This is a desirable crosscheck, but for 1861–1911 Haig does not have quantitative measures for 70 per cent of GDP, and uses employment (available in direct form only for NSW and Victoria) as a proxy. He amalgamates his sector estimates using 1891 output weights which Coghlan published in 1893. Although he makes a few comparisons between his results and those of Butlin they are limited and casual. A further problem is that Haig describes his estimating procedure parsimoniously in five pages whereas Butlin provided 200. Table 2–4 facilitates systematic confrontation of their sector growth rates and structure (Butlin's value added and Coghlan's gross output). Haig relies heavily on measures for New South Wales and Victoria to fill gaps in information for Australia as a whole, whereas Butlin covers a wider and perhaps more representative range of states. For 1861–1911, Haig's estimates imply per capita growth of 1.6 per cent a year in NSW, 0.42 in Victoria, and 0.57 per cent in Australia.

For 1911–12 to 1938–39, Haig's estimates are of better quality. He has quantity indicators for manufacturing from his "Manufacturing Output and Productivity, 1910 to 1948/9", *Australian Economic History Review*, September, 1975. For the rest of the economy he was able to adjust his employment indicators for productivity change. The weights from his "1938/9 National Income Estimates", *Australian Economic History Review*, 1967, p. 176, are also more satisfactory. I have now adopted Haig's estimates for 1911–38, but would like to see more detail of his evidence before adopting his estimates for 1861–1911.

All the above refers to the white settler economy. In the 1980s Butlin made a major innovation in proposing a "multicultural" estimate. In 1983 he published a masterpiece of demographic modelling (*Our Original Aggression*, Allen & Unwin, Sydney and London) analysing the impact of white settlement on the Aboriginal population and its economy, with detailed specification of the different vectors of mortality. This was similar in intent to studies by Borah and others on the impact of European conquest on the Americas, but Butlin was much more rigorous. His analysis of Aboriginal history was enlarged in *Economics and the Dreamtime: A Hypothetical History*, Cambridge University Press, 1993. A further posthumous work *Forming A Colonial Economy: Australia 1810–1850*, Cambridge University Press, appeared in 1994.

Canada: GDP and population of French–Canadian settlers in 1700 derived from Morris Altman, "Economic Growth in Canada, 1695–1739: Estimates and Analysis", *William and Mary Quarterly*, October 1988. 1820–50 per capita product of non–indigenous population assumed to grow at the same rate as in the United States. GDP for 1851, 1860 and 1870 from O.J. Firestone, "Canada's Changing Economy in the Second Half of the 19th Century", NBER, New York, 1957. 1870–1926 GDP from M.C. Urquhart and Associates, ed., *Gross National Product, Canada 1870–1926: The Derivation of the Estimates*, McGill Queen's University Press, Montreal, 1993, pp. 11–12 and 24–5. 1926–60 from Statistics Canada, *National Income and Expenditure Accounts*, vol. 1, *The Annual Estimates 1926–1974*, Ottawa, 1975, p. 323. 1960 onwards from OECD sources. 1820–1948 GDP raised by 1.32 per cent and population by 2.6 to include Newfoundland, acquired in 1949. Indigenous population before 1820 from same sources as for the United States. Population 1820–50 supplied by Marvin McInnis; 1850–1950 from M.C. Urquhart and K.A.H. Buckley, *Historical Statistics of Canada*, Cambridge, 1965, p. 14.

Table 2-5. Population and GDP of Canada and New Zealand, 1700-1870

	Population (000)			GDP (million 1990 international \$)			Per capita GDP (international \$)		
	European	Indigenous	Total	European	Indigenous	Total	European	Indigenous	Average
Canada									
1700	15	185	200	12	74	86	800	400	430
1820	741	75	816	708	30	738	955	400	904
1830	1 101	68	1 169	1 142	27	1 169	1 038	400	1 000
1840	1 636	61	1 697	1 948	24	1 972	1 191	400	1 162
1850	2 430	55	2 485	3 282	22	3 304	1 351	400	1 330
1860	3 319	50	3 369	4 867	20	4 887	1 466	400	1 451
1870	3 736	45	3 781	6 389	18	6 407	1 710	400	1 695
New Zealand									
1700	0	100	100	0	40	40		400	400
1820	0	100	100	0	40	40		400	400
1830	0	100	100	0	40	40		400	400
1840	0	70	70	0	28	28		400	400
1850	25	65	90	77	26	103	3 080	400	1 144
1860	76	56	132	270	22	292	3 553	400	2 212
1870	243	48	291	883	19	902	3 633	400	3 100

<http://dx.doi.org/10.1787/456125276116>

New Zealand: GNP, 1870–1939, in 1910/11 prices from K. Rankin, “New Zealand’s Gross National Product: 1859–1939, *Review of Income and Wealth*, March 1992, pp. 60–1. These are proxy estimates based on regression involving assumptions about velocity of circulation, nominal money supply, a variety of price indices (wholesale, export, import, farm and non-farm) and population. 1939–50 from C. Clark, *The Conditions of Economic Progress*, third edition, Macmillan, London, 1957, pp. 171–2 (which Clark derived by deflating official estimates in current prices). 1950 onwards from OECD sources. GDP estimates are for calendar years to 1939 and fiscal years starting April 1st thereafter. For 1820–70 I assumed per capita income of Maoris to have been 400 international 1990 dollars. Per capita GDP of white settlers was assumed to have grown 0.8 per cent a year from 1850 to 1870 (the rate shown by Rankin for 1859–70). Maori population 1820–1919 and non-Maoris 1820–60 from G.R. Hawke, *The Making of New Zealand*, Cambridge University Press, 1985, pp. 10–11 and 20; 1861–1919 non-Maoris from Rankin (1992), pp. 58–9. 1920–49 population from UN, *Demographic Yearbook*, 1960, pp. 148–50.

United States: GDP Estimates

1700–1820: Robert Gallman, “The Pace and Pattern of American Economic Growth”, in L. Davis and Associates (eds.), *American Economic Growth: An Economist’s History of the United States*, Harper and Row, New York, 1972, estimated per capita growth in net national product of 0.42 per cent a year between 1710 and 1840 (taking the mid-point of the range he suggested for 1710). His figures refer to the neo-European economy of the white and black population. Adjusting for the faster growth of their per capita income in 1820–40 (see below), Gallman’s estimate implies a per capita growth of about 0.29 per cent a year from 1700 to 1820 (from a level of \$909 to \$1 286). Assuming an unchanged per capita income of \$400 a year in the indigenous hunter-gatherer economy, the average level for the whole population would have risen from \$527 in 1700 to \$1 257 in 1820.

P.C. Mancall and Weiss, "Was Economic Growth Likely in British North America?", *Journal of Economic History*, March 1999, made a "multicultural" estimate which shows much slower growth for the eighteenth century. I consider their growth rate to be much too slow, given the huge change in the relative size of the neo-European and indigenous populations. They show no figures for total population or GDP, so it is not possible to replicate their multicultural measure. They make no reference to the Gallman estimate I used.

1820–2001

Modern GDP estimation relies heavily on the massive contribution of Simon Kuznets. He took over the NBER research in this field around 1930, and also prepared the first official estimates, *National Income 1929–32*, which were transmitted to the Finance Committee of the US Senate by the Dept. of Commerce in January 1934. This showed the flows of different categories of income broken down by industry together with corresponding employment estimates prepared by Robert Nathan. A cost of living index was provided as a tentative deflator, together with very fully documented appendices with sources. This approach was further elaborated in S. Kuznets, *National Income and Its Composition 1919–38*, NBER, New York, 1941, which contained estimates (at current and 1929 prices) of the industrial distribution of different categories of income (wage, property, and entrepreneurial).

Kuznets also derived estimates by category of expenditure for 1919 onwards by the "commodity flow" method, i.e. he used census and other information on production, and determined what part represented the final flow to consumers and capital formation. These flows from producers were given distributive mark-ups to reflect final sales values. Rougher estimates were made for services. This work was sponsored by the Committee on Credit and Banking which was interested in commodity flows as a counterpart to its interest in flows of financial resources. The details of this approach are described in S. Kuznets, *Commodity Flow and Capital Formation*, NBER, New York, 1938. The expenditure estimates were extended back to 1869 in S. Kuznets, L. Epstein and E. Jenks, *National Product Since 1869*, NBER, New York, 1946 (but these referred to overlapping decades and were not annual). This extension back to 1869 relied very heavily on W.H. Shaw, *Value of Commodity Output Since 1869*, NBER, New York, 1947, who used the same procedure for making commodity flow estimates of values as Kuznets (1938) did. Shaw also supplied price deflators. Estimates in the same form can also be found (in an analytical context) in S. Kuznets, *Income and Wealth of the United States: Trends and Structure*, Income and Wealth Series II, Bowes and Bowes, Cambridge, 1952. This study contains an annex on the estimates for 1800 to 1870 by Martin and King. Kuznets had a poor opinion of these, and although he did not produce alternative estimates, he gave a clear indication of the direction in which they were biased, and some clues for constructing estimates with limited information.

The final version of Kuznets' massive work appeared in his *Capital in the American Economy*, NBER, Princeton, 1961. Here he published annual estimates of GNP by type of expenditure in current and in 1929 dollars (pp. 555–8) back to 1889. As the underlying census information was inadequate before 1889, he showed only 5-year moving averages back to 1871 (pp. 559–64). He had three variants of GNP with different assumptions about which products were intermediate.

The US Department of Commerce did not adopt the Kuznets' definitions of the scope of GNP. He explained his disagreement with their procedures in S. Kuznets, "Discussion of the New Department of Commerce Income Series", *Review of Economics and Statistics*, August 1948. The official side was not convinced by his arguments, see M. Gilbert, G. Jaszi, E.F. Denison and C.F. Schwartz, "Objectives of National Income Measurement: A Reply to Professor Kuznets" in the same publication.

The Kuznets estimates were published in transparent form with the full scholarly apparatus characteristic of the NBER. It was therefore possible for John Kendrick (who in any case had access to the worksheets) to convert the Kuznets annual estimates of GNP (variant III) back to 1889 (with some minor adjustment) by type of expenditure to a Dept. of Commerce basis, see J.W. Kendrick, *Productivity Trends*

in the United States, NBER, Princeton, 1961, pp. 298–9. Like Kuznets, Kendrick used fixed 1929 weights for his volume estimates, but he also gave a chain weighted alternative, which for 1889–1929 shows a growth rate of 3.82 per cent a year compared with 3.68 for his fixed weight index for the private domestic economy (p. 327). For 1869–1889 Kendrick presented only decade averages, as it seemed probable that they exaggerated growth. Kendrick (1961) augmented the NBER sectoral production studies (by Barger, Fabricant and others) to show annual movements in output or value added on an annual basis back to 1869 in many cases. However, he did not construct an estimate of GDP by industry of origin. His aggregate (pp. 302–3) covers 9 production sectors in combination with total private GDP by type of expenditure. The bulk of private service activity was derived as a residual. Even then his estimates were presented only for 10 benchmark years. Thus we have the paradox that the United States is one of the few countries where the construction of historical accounts by industry of origin has been neglected, though the statistical basis for such estimates is better than elsewhere.

1820–40: For this period the evidence is still rather weak, and one must still rely on the kind of reasoning which Kuznets (1952) first applied, and which can be found in P.A. David, “The Growth of Real Product in the United States before 1840: New Evidence, Controlled Conjectures”, *Journal of Economic History*, June 1967, and more recently in T. Weiss, “US Labor Force Estimates and Economic Growth, 1800–1860”, in R.E. Gallman and J.J. Wallis, eds., *American Economic Growth and Standards of Living Before the Civil War*, University of Chicago Press, 1992, p. 27. I used a variant of the Kuznets–David inferential approach. I calculated agricultural productivity 1820–40, taking agricultural value added (output of crops and livestock products plus change in livestock inventories, minus intermediate products consumed) from M.W. Towne and W.D. Rasmussen, “Farm Gross Product and Gross Investment in the Nineteenth Century”, in Parker, ed. (1960), p. 25, and agricultural employment from Weiss (1992), p. 51. Agricultural productivity (thus measured) grew by .62 per cent a year from 1820–40. Like Kuznets and David, I assumed that productivity growth in the rest of the economy was faster (1 per cent a year). Although service productivity growth is likely to have been modest, the assumption of faster growth in non–agriculture seems warranted as K.L. Sokoloff found manufacturing productivity to have grown by 2.2 per cent a year, see his “Productivity Growth in Manufacturing During Early Industrialisation: Evidence from the American Northeast, 1820–1860”, in S.L. Engerman and R.E. Gallman, *Long Term Factors in American Economic Growth*, Chicago, 1986, p. 695.

1840–69: derived from Robert Gallman who revised and extended the Kuznets estimates backwards (variant I) using the same commodity flow approach and techniques of presentation. He first estimated value added (in 1879 prices) for agriculture, mining, manufacturing and construction for benchmark years, see R.E. Gallman, “Commodity Output, 1839–1899”, in W.N. Parker, *Trends in the American Economy in the Nineteenth Century*, NBER, Princeton, 1960, p. 43. He used these results, census, and other information to construct his estimates of GNP by type of expenditure (four–way breakdown of consumption and three–way breakdown of capital formation) in 1860 prices, see R.E. Gallman, “Gross National Product in the United States 1834–1909”, in D.S. Brady, ed., *Output, Employment and Productivity in the United States after 1800*, NBER, New York, 1966, p. 26. Unfortunately he provided figures only for five benchmark years, 1839, 1844, 1849, 1854, and 1859 and for overlapping decades from 1834–43 to 1899–1908, and did not publish the full detail of his procedures.

1869–90: from N.S. Balke and R.J. Gordon, “The Estimation of Prewar Gross National Product: Methodology and New Evidence”, *Journal of Political Economy*, February 1989, p. 84. They revamped the Gallman–Kendrick–Kuznets commodity flow estimates, using additional information on construction, transport and communications, to provide annual estimates of nominal GNP, real GNP and a GNP deflator. For 1869–90, their average annual estimate for real GNP growth was 4.16 per cent a year, which is lower than the unpublished Kendrick figure of 5.44 per cent, or the 5.55 per cent of Kuznets. As both Kuznets and Kendrick thought their 1869 level (as described above) was too low, the Balke–Gordon estimate seems acceptable.

1890–1929: GDP volume movement with 1929 weights from J.W. Kendrick (1961), pp. 298–9.

1929–50: GDP movement at 1987 prices as shown by the Bureau of Economic Analysis (BEA) in *National Income and Product Accounts of the United States*, vol. 1, US Dept. of Commerce, Washington, D.C., February 1993.

1950–2001: 1950–59 from “GDP and other Major NIPA Series, 1929–97”, *Survey of Current Business*, August 1998; 1959–90 GDP movement and 1990 level in 1990 prices from E.P. Seskin, “Improved Estimates of the National Income and Product Accounts for 1958–98: Results of the Comprehensive Revision”, *Survey of Current Business*, December 1999; 1990–8 from S.K.S. Lum, B.C. Moyer and R.E. Yuscavage, “Improved Estimates of Gross Product by Industry for 1947–98”, *Survey of Current Business*, June 2000, p. 46; 1998–2001 from E.P. Seskin and S.M. McCulla, “Annual Revision of the National Income and Product Accounts”, *Survey of Current Business*, August 2002, p. 11. Figures for years before 1960 are adjusted to include Alaska and Hawaii, which added 0.294 per cent to 1960 GDP (see *Survey of Current Business*, December 1980, p. 17).

Population: Indigenous population before 1820 from R. Thornton, *American Indian Holocaust and Survival: A Population History Since 1492*, University of Oklahoma, 1987 and D.H. Ubelaker, “Prehistoric New World Population Size: Historical Review and Current Appraisal of North American Estimates”, *American Journal of Physical Anthropology*, 1976, pp. 661–6, as indicated in Maddison (2001), pp. 232–3. White and black population, 1630–1949 from *Historical Statistics of the United States, Colonial Times to 1970*, US Department of Commerce, 1975, pp. 8 and 1168. The figures refer to the present territory of the United States. 1820–1949 increased by 0.39 per cent to include Alaska and Hawaii, incorporated in 1950. 1950–2001 from International Programs Center, US Bureau of the Census. In 1820, the territory of the United States was half of what it is today. The increase was due to the acquisition of Texas, California and other Western lands from Mexico between 1845 and 1853. The settlement of the border with Canada brought in the territory which is now Idaho, Oregon and Washington in 1846. These territories were sparsely settled and consisted very largely of the indigenous population which was not separately specified in US censuses before 1860. Before 1890 the censuses excluded those living in Indian territory or reservations. I added 325 000 for the indigenous population in 1820 and 180 000 for 1850, (see Maddison, 1995, p. 97).

Three Recent Modifications in US Official Measures of GDP

Annual Chain Indices for GDP: The official figures I use for 1950 onwards are based on a chain index as described in J.S. Landefeld and R.P. Parker, “BEA’s Chain Indexes, Time Series and Measures of Long Term Growth”, *Survey of Current Business*, May 1997. This is an index where the weights change every year. The annual GDP volume change is measured by a Fisher index which is the geometric mean of two indices, one of which (a Laspeyres index) uses the prices of year $t-1$ as weights, and the other (a Paasche index) uses prices of year t . Annual changes calculated this way are multiplied together to form a time series. This procedure is a sharp break with the tradition of the Department of Commerce which for six decades used a fixed weight for the whole period it covered (though the chosen year was changed quinquennially). Before making the switch, BEA experimented with alternative weighting systems. A.H. Young, “Alternative Measures of Changes in Real Output and Prices, Quarterly Estimates for 1959–92”, *Survey of Current Business*, March 1993 presented three alternative indices for 1959–92. The old fixed weight index showed a real GDP growth rate of 2.88 a year, the annual Fisher chain index 3.12 per cent and a Fisher index with weights changed every 5 years 3.16 a year. In Maddison (1995) I used the third measure because it was closer to the procedure used in other OECD countries at that time. BEA did not present these three options for earlier years as it announced. Instead it made a sudden switch to chain indexation back to 1929. The new measure shows a GDP growth of 3.5 per cent a year for 1929–50, the traditional measure 2.6 per cent. This is a much bigger difference between fixed and chain weights than Young found for 1959–92 or Kendrick for 1889–1929. Acceptance of the new measure for this period would involve a major reinterpretation of American economic history. It implies a GDP level in 1929 16 per cent lower than the old index and would lower the level for earlier years. If used as a

link, it would imply a US level of labour productivity in 1913 below that in the United Kingdom. The new BEA index also changes the picture of the war and immediate postwar recovery. It seems hazardous to use it for 1929–50 without further investigation of the reasons why the new method had such a big impact. One must also remember that no other country uses a chain index technique for such a long period in the past.

Hedonic Indices for the New Economy: A major reason why BEA switched to chain indexation was its adoption of “hedonic” price indices for computers and peripherals in 1985 and extended use of this type of measure back to 1959. By the year 2000, the components of GDP deflated by this technique represented 18 per cent of the total (see J.S. Landefeld and B.T. Grimm, “A Note on the Impact of Hedonics and Computers on Real GDP”, *Survey of Current Business*, December 2000). This technique imputes quality improvements by specifying computing power in terms of several characteristics, e.g. speed, memory etc. and estimating price change by regression. The manufacturers of computers were understandably helpful in supplying detail of these improved characteristics and the application of hedonic techniques to the measurement of computer prices was in fact pioneered by IBM. The hedonic measure implied that prices dropped 32 per cent a year from 1994 onwards. If this rate had prevailed for the 1990s, it would mean that a consumer who spent \$1 000 on a computer in 1990 and again in 2000, would be getting sixteen times as much for his money in the latter year. Hedonic weights (advocated since 1961 by Zvi Griliches) are perfectly respectable, but one can be a bit sceptical about the assumption that quality change was so large and monotonically positive. The hedonic techniques used by BEA imply a direct connection between computing power (speed, memory etc.) and computer output without considering the quality of the software that converts power to output. In addition, hedonic techniques assume competitive markets where prices accurately reflect consumer utility, but recent anti-trust cases suggest that this assumption may be unrealistic. One would like to see a more rigorous and detailed examination of alternatives and a smaller dose of euphoric reassurance that the results are robust. However, adoption of annual chain weights helped moderate the accelerative impact of hedonic indices on GDP growth.

Treatment of Computer Software as Investment: A third innovation which raised the level of GDP modestly and raised the growth rate, was the decision to treat computer software as investment rather than as an intermediate product. This practice was introduced in 1999 and applied retrospectively to 1959. The average service life for such investment is assumed (rather generously) to be 3–5 years (see BEA, “Recognition of Software as Investment in the US National Accounts”, *OECD Meeting of National Accounts Experts*, September 1999). The change was recommended in the 1993 revision of the *System of National Accounts* of EU, IMF, OECD and World Bank, and has been adopted by other OECD countries. Given the fact that hedonic indexation already makes generous allowance for quality change in computers which derive in large part from improved software, there is an element of double-counting in the new procedure. It is also a little odd to treat this rapidly depreciating advance in knowledge as investment, whilst ignoring the more durable impact of scientific academies. However, the hallowed status of computer technology seems to be firmly esconced in most statistical offices.

Table 2a. **Population of Western Offshoots, 1500-1899**
(000 at mid-year)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1500	450	100	250	2 000	2 800
1600	450	100	250	1 500	2 300
1700	450	100	200	1 000	1 750
1820	334	100	816	9 981	11 231
1830	330	100	1 169	13 240	14 839
1840	420	70	1 697	17 444	19 631
1850	605	90	2 485	23 580	26 760
1860	1 326	132	3 369	31 839	36 666
1870	1 775	291	3 781	40 241	46 088
1871	1 675	306	3 801	41 098	46 880
1872	1 722	320	3 870	42 136	48 048
1873	1 769	335	3 943	43 174	49 221
1874	1 822	367	4 012	44 212	50 413
1875	1 874	406	4 071	45 245	51 596
1876	1 929	434	4 128	46 287	52 778
1877	1 995	450	4 184	47 325	53 954
1878	2 062	467	4 244	48 362	55 135
1879	2 127	494	4 312	49 400	56 333
1880	2 197	520	4 384	50 458	57 559
1881	2 269	539	4 451	51 743	59 002
1882	2 348	555	4 503	53 027	60 433
1883	2 447	574	4 560	54 311	61 892
1884	2 556	598	4 617	55 595	63 366
1885	2 650	614	4 666	56 879	64 809
1886	2 741	626	4 711	58 164	66 242
1887	2 835	640	4 760	59 448	67 683
1888	2 932	649	4 813	60 732	69 126
1889	3 022	656	4 865	62 016	70 559
1890	3 107	665	4 918	63 302	71 992
1891	3 196	674	4 972	64 612	73 454
1892	3 274	686	5 022	65 922	74 904
1893	3 334	705	5 072	67 231	76 342
1894	3 395	722	5 121	68 541	77 779
1895	3 460	735	5 169	69 851	79 215
1896	3 523	748	5 218	71 161	80 650
1897	3 586	764	5 269	72 471	82 090
1898	3 642	779	5 325	73 781	83 527
1899	3 691	794	5 383	75 091	84 959

<http://dx.doi.org/10.1787/456125276116>

Table 2a. **Population of Western Offshoots, 1900-1955**
(000 at mid-year)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1900	3 741	807	5 457	76 391	86 396
1901	3 795	824	5 536	77 888	88 043
1902	3 850	844	5 650	79 469	89 813
1903	3 896	867	5 813	80 946	91 522
1904	3 946	893	5 994	82 485	93 318
1905	4 004	919	6 166	84 147	95 236
1906	4 062	946	6 282	85 770	97 060
1907	4 127	969	6 596	87 339	99 031
1908	4 197	996	6 813	89 055	101 061
1909	4 278	1 024	6 993	90 845	103 140
1910	4 375	1 045	7 188	92 767	105 375
1911	4 500	1 067	7 410	94 234	107 211
1912	4 661	1 092	7 602	95 703	109 058
1913	4 821	1 122	7 852	97 606	111 401
1914	4 933	1 143	8 093	99 505	113 674
1915	4 971	1 152	8 191	100 941	115 255
1916	4 955	1 155	8 214	102 364	116 688
1917	4 950	1 152	8 277	103 817	118 196
1918	5 032	1 156	8 374	104 958	119 520
1919	5 193	1 195	8 548	105 473	120 409
1920	5 358	1 241	8 798	106 881	122 278
1921	5 461	1 275	9 028	108 964	124 728
1922	5 574	1 304	9 159	110 484	126 521
1923	5 697	1 326	9 256	112 387	128 666
1924	5 819	1 350	9 394	114 558	131 121
1925	5 943	1 382	9 549	116 284	133 158
1926	6 064	1 412	9 713	117 857	135 046
1927	6 188	1 437	9 905	119 502	137 032
1928	6 304	1 454	10 107	120 971	138 836
1929	6 396	1 471	10 305	122 245	140 417
1930	6 469	1 493	10 488	123 668	142 118
1931	6 527	1 514	10 657	124 633	143 331
1932	6 579	1 527	10 794	125 436	144 336
1933	6 631	1 540	10 919	126 180	145 270
1934	6 682	1 552	11 030	126 978	146 242
1935	6 732	1 562	11 136	127 859	147 289
1936	6 783	1 573	11 243	128 681	148 280
1937	6 841	1 587	11 341	129 464	149 233
1938	6 904	1 604	11 452	130 476	150 436
1939	6 971	1 627	11 570	131 539	151 707
1940	7 042	1 636	11 688	132 637	153 003
1941	7 111	1 629	11 818	133 922	154 480
1942	7 173	1 639	11 969	135 386	156 167
1943	7 236	1 633	12 115	137 272	158 256
1944	7 309	1 654	12 268	138 937	160 168
1945	7 389	1 688	12 404	140 474	161 955
1946	7 474	1 759	12 634	141 940	163 807
1947	7 578	1 797	12 901	144 688	166 964
1948	7 715	1 833	13 180	147 203	169 931
1949	7 919	1 871	13 469	149 770	173 029
1950	8 267	1 908	14 011	152 271	176 458
1951	8 511	1 947	14 331	154 878	179 667
1952	8 691	1 995	14 786	157 553	183 025
1953	8 858	2 047	15 183	160 184	186 273
1954	9 064	2 093	15 636	163 026	189 819
1955	9 277	2 136	16 050	165 931	193 395

<http://dx.doi.org/10.1787/456125276116>

Table 2a. **Population of Western Offshoots, 1956-2003**
(000 at mid-year)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1956	9 501	2 178	16 445	168 903	197 027
1957	9 713	2 229	17 010	171 984	200 936
1958	9 915	2 282	17 462	174 882	204 541
1959	10 132	2 331	17 872	177 830	208 165
1960	10 361	2 372	18 267	180 671	211 671
1961	10 599	2 432	18 635	183 691	215 357
1962	10 795	2 489	18 986	186 538	218 807
1963	11 001	2 541	19 343	189 242	222 128
1964	11 218	2 592	19 711	191 889	225 410
1965	11 439	2 640	20 071	194 303	228 454
1966	11 655	2 688	20 448	196 560	231 351
1967	11 872	2 728	20 820	198 712	234 132
1968	12 102	2 759	21 143	200 706	236 710
1969	12 379	2 789	21 448	202 677	239 293
1970	12 660	2 828	21 750	205 052	242 290
1971	12 937	2 875	22 026	207 661	245 500
1972	13 177	2 929	22 285	209 896	248 287
1973	13 380	2 992	22 560	211 909	250 841
1974	13 599	3 058	22 875	213 854	253 386
1975	13 771	3 118	23 209	215 973	256 071
1976	13 916	3 154	23 518	218 035	258 622
1977	14 074	3 165	23 796	220 239	261 274
1978	14 249	3 166	24 036	222 585	264 036
1979	14 422	3 165	24 277	225 055	266 918
1980	14 616	3 170	24 593	227 726	270 106
1981	14 923	3 185	24 900	229 966	272 975
1982	15 184	3 211	25 202	232 188	275 785
1983	15 394	3 246	25 456	234 307	278 403
1984	15 579	3 279	25 702	236 348	280 908
1985	15 788	3 298	25 942	238 466	283 494
1986	16 018	3 308	26 204	240 651	286 181
1987	16 257	3 317	26 550	242 804	288 928
1988	16 520	3 331	26 895	245 021	291 768
1989	16 780	3 342	27 379	247 342	294 843
1990	17 022	3 360	27 791	250 132	298 304
1991	17 258	3 397	28 118	253 493	302 265
1992	17 482	3 438	28 524	256 894	306 337
1993	17 689	3 475	28 921	260 255	310 340
1994	17 893	3 517	29 262	263 436	314 108
1995	18 116	3 566	29 619	266 557	317 858
1996	18 348	3 621	29 983	269 667	321 620
1997	18 565	3 676	30 306	272 912	325 459
1998	18 769	3 726	30 629	276 115	329 239
1999	18 968	3 774	30 957	279 295	332 994
2000	19 165	3 820	31 278	282 339	336 601
2001	19 358	3 864	31 593	285 024	339 838
2002	19 547	3 908	31 902	287 676	343 033
2003	19 732	3 951	32 207	290 343	346 233

Table 2b. **GDP Levels in Western Offshoots, 1500-1899**
(million 1990 international Geary-Khamis dollars)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1500	180	40	100	800	1 120
1600	180	40	100	600	920
1700	180	40	86	527	833
1820	173	40	738	12 548	13 499
1830	280	40	1 169	18 219	19 708
1840	577	28	1 972	27 694	30 271
1850	1 195	103	3 304	42 583	47 185
1860	3 838	292	4 887	69 346	78 363
1870	5 810	902	6 407	98 374	111 493
1871	5 525	965	6 669	102 289	115 448
1872	6 119	1 127	6 599	106 360	120 205
1873	6 764	1 283	7 263	110 593	125 903
1874	6 987	1 411	7 437	114 994	130 829
1875	7 755	1 497	7 263	119 571	136 086
1876	7 730	1 572	6 774	124 330	140 406
1877	8 052	1 792	7 228	129 278	146 350
1878	8 820	1 994	6 948	134 423	152 186
1879	8 944	1 763	7 612	139 772	158 091
1880	9 415	1 948	7 961	145 335	164 659
1881	10 108	2 029	9 078	151 119	172 334
1882	9 539	2 023	9 497	157 133	178 193
1883	10 951	2 006	9 532	163 387	185 876
1884	11 000	2 214	10 300	169 889	193 403
1885	11 719	2 203	9 672	176 651	200 244
1886	11 867	2 255	9 776	183 681	207 579
1887	13 131	2 307	10 091	190 991	216 519
1888	13 205	2 307	10 824	198 592	224 928
1889	14 345	2 428	10 894	206 496	234 163
1890	13 850	2 497	11 697	214 714	242 758
1891	14 914	2 515	11 976	224 027	253 432
1892	13 081	2 607	11 906	245 757	273 352
1893	12 362	2 671	11 837	233 857	260 726
1894	12 784	2 584	12 395	227 131	254 894
1895	12 066	2 677	12 256	254 552	281 551
1896	12 982	2 983	11 941	249 379	277 285
1897	12 264	3 018	13 233	273 178	301 693
1898	14 172	3 104	13 757	278 869	309 903
1899	14 172	3 208	15 049	304 221	336 650

<http://dx.doi.org/10.1787/456125276116>

Table 2b. **GDP Levels in Western Offshoots, 1900-1955**
(million 1990 international Geary-Khamis dollars)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1900	15 014	3 469	15 887	312 499	346 869
1901	14 568	3 480	17 144	347 681	382 873
1902	14 717	3 746	18 820	351 303	388 586
1903	15 881	4 099	19 378	368 377	407 735
1904	16 947	4 081	19 658	363 720	404 406
1905	17 145	4 457	21 962	390 624	434 188
1906	18 309	4 879	24 162	435 636	482 987
1907	19 052	5 174	25 559	442 362	492 147
1908	19 697	4 816	24 336	406 146	454 995
1909	21 307	4 885	26 920	455 814	508 927
1910	22 793	5 556	29 225	460 471	518 044
1911	22 967	5 862	31 215	475 475	535 519
1912	23 764	5 689	33 275	497 722	560 450
1913	24 861	5 781	34 916	517 383	582 941
1914	24 797	5 931	32 577	477 545	540 849
1915	24 341	5 960	34 672	490 996	555 969
1916	24 172	5 914	38 163	558 774	627 023
1917	23 716	5 769	39 734	544 804	614 024
1918	23 155	5 677	37 186	593 956	659 973
1919	24 488	6 313	34 357	599 130	664 288
1920	25 534	7 001	33 973	593 438	659 946
1921	26 818	6 538	30 307	579 986	643 650
1922	28 225	6 313	34 741	612 064	681 343
1923	29 579	6 822	36 801	692 776	765 978
1924	31 524	6 943	37 360	713 989	789 816
1925	33 002	7 313	41 445	730 545	812 305
1926	33 792	6 926	43 680	778 144	862 542
1927	34 305	6 729	48 010	785 905	874 948
1928	34 368	7 475	52 269	794 700	888 812
1929	33 662	7 741	52 199	843 334	936 936
1930	30 458	7 405	50 454	768 314	856 631
1931	28 416	6 775	42 667	709 332	787 191
1932	30 025	6 608	39 630	615 686	691 948
1933	32 110	7 047	36 801	602 751	678 710
1934	33 810	7 400	40 712	649 316	731 237
1935	35 798	7 747	43 994	698 984	786 523
1936	37 414	9 186	46 368	798 322	891 290
1937	39 306	9 683	50 733	832 469	932 191
1938	40 639	10 365	52 060	799 357	902 421
1939	40 749	10 510	55 167	862 995	969 421
1940	43 422	10 308	62 744	929 737	1 046 211
1941	48 271	9 984	71 508	1 098 921	1 228 684
1942	53 837	11 082	84 182	1 318 809	1 467 911
1943	55 738	11 313	87 988	1 581 122	1 736 162
1944	53 809	11 360	91 305	1 713 572	1 870 047
1945	51 109	11 695	88 477	1 644 761	1 796 042
1946	49 291	12 597	87 569	1 305 357	1 454 814
1947	50 503	14 100	91 445	1 285 697	1 441 744
1948	53 754	12 701	93 121	1 334 331	1 493 907
1949	57 308	14 071	95 146	1 339 505	1 506 030
1950	61 274	16 136	102 164	1 455 916	1 635 490
1951	63 892	14 904	107 960	1 566 784	1 753 540
1952	64 470	15 552	115 816	1 625 245	1 821 083
1953	66 481	16 084	121 228	1 699 970	1 903 763
1954	70 614	18 298	120 390	1 688 804	1 898 106
1955	74 471	18 639	131 633	1 808 126	2 032 869

Table 2b. **GDP Levels in Western Offshoots, 1956-2001**
(million 1990 international Geary-Khamis dollars)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1956	77 034	19 605	142 282	1 843 455	2 082 376
1957	78 577	20 165	146 402	1 878 063	2 123 207
1958	82 351	20 957	149 021	1 859 088	2 111 417
1959	87 421	22 449	155 062	1 997 061	2 261 993
1960	91 085	22 449	159 880	2 046 727	2 320 141
1961	91 713	23 704	164 598	2 094 396	2 374 411
1962	97 444	24 215	176 130	2 220 732	2 518 521
1963	103 413	25 749	185 041	2 316 765	2 630 968
1964	110 488	27 004	197 098	2 450 915	2 785 505
1965	116 131	28 724	210 203	2 607 294	2 962 352
1966	119 363	30 536	223 832	2 778 086	3 151 817
1967	127 422	29 142	230 647	2 847 549	3 234 760
1968	134 913	29 095	242 703	2 983 081	3 389 792
1969	143 118	32 099	255 497	3 076 517	3 507 231
1970	152 220	31 644	262 098	3 081 900	3 527 862
1971	158 992	33 285	276 694	3 178 106	3 647 077
1972	163 453	34 711	291 314	3 346 554	3 836 032
1973	172 314	37 177	312 176	3 536 622	4 058 289
1974	176 586	39 390	324 928	3 526 724	4 067 628
1975	181 367	38 937	332 269	3 516 825	4 069 398
1976	188 678	39 887	350 467	3 701 163	4 280 195
1977	190 653	37 944	362 245	3 868 829	4 459 671
1978	196 184	38 097	376 894	4 089 548	4 700 723
1979	206 515	38 874	392 561	4 228 647	4 866 597
1980	210 642	39 141	397 814	4 230 558	4 878 155
1981	218 780	41 041	410 164	4 336 141	5 006 126
1982	218 512	41 809	397 671	4 254 870	4 912 862
1983	218 539	42 955	409 246	4 433 129	5 103 869
1984	233 618	45 072	432 711	4 755 958	5 467 359
1985	245 444	45 420	456 107	4 940 383	5 687 354
1986	250 539	46 372	468 055	5 110 480	5 875 446
1987	262 925	46 564	487 138	5 290 129	6 086 756
1988	274 737	46 435	510 815	5 512 845	6 344 832
1989	286 820	46 850	523 177	5 703 521	6 560 368
1990	291 180	46 729	524 475	5 803 200	6 665 584
1991	288 661	45 908	514 459	5 775 948	6 624 976
1992	296 225	46 304	519 148	5 952 089	6 813 766
1993	307 489	48 654	531 096	6 110 061	6 997 300
1994	322 819	51 554	556 209	6 356 710	7 287 292
1995	336 990	53 599	571 447	6 526 361	7 488 397
1996	350 470	55 368	580 590	6 759 427	7 745 855
1997	362 601	57 083	605 162	7 046 304	8 071 150
1998	382 147	56 761	630 306	7 349 878	8 419 092
1999	399 670	59 173	664 021	7 651 223	8 774 087
2000	412 813	61 156	694 308	7 941 969	9 110 246
2001	423 596	62 282	704 594	7 965 795	9 156 267

<http://dx.doi.org/10.1787/456125276116>

Table 2c. **Per Capita GDP in Western Offshoots, 1500-1899**
(1990 international Geary-Khamis dollars)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1500	400	400	400	400	400
1600	400	400	400	400	400
1700	400	400	430	527	476
1820	518	400	904	1 257	1 202
1830	848	400	1 000	1 376	1 328
1840	1 374	400	1 162	1 588	1 542
1850	1 975	1 144	1 330	1 806	1 763
1860	2 894	2 212	1 451	2 178	2 137
1870	3 273	3 100	1 695	2 445	2 419
1871	3 299	3 155	1 755	2 489	2 463
1872	3 553	3 523	1 705	2 524	2 502
1873	3 824	3 831	1 842	2 562	2 558
1874	3 835	3 843	1 854	2 601	2 595
1875	4 138	3 688	1 784	2 643	2 638
1876	4 007	3 623	1 641	2 686	2 660
1877	4 036	3 982	1 727	2 732	2 712
1878	4 277	4 271	1 637	2 780	2 760
1879	4 205	3 569	1 765	2 829	2 806
1880	4 285	3 747	1 816	2 880	2 861
1881	4 455	3 765	2 040	2 921	2 921
1882	4 063	3 646	2 109	2 963	2 949
1883	4 475	3 495	2 090	3 008	3 003
1884	4 304	3 703	2 231	3 056	3 052
1885	4 422	3 587	2 073	3 106	3 090
1886	4 329	3 602	2 075	3 158	3 134
1887	4 632	3 604	2 120	3 213	3 199
1888	4 504	3 554	2 249	3 270	3 254
1889	4 747	3 701	2 239	3 330	3 319
1890	4 458	3 755	2 378	3 392	3 372
1891	4 666	3 731	2 409	3 467	3 450
1892	3 995	3 801	2 371	3 728	3 649
1893	3 708	3 788	2 334	3 478	3 415
1894	3 766	3 579	2 420	3 314	3 277
1895	3 487	3 642	2 371	3 644	3 554
1896	3 685	3 988	2 288	3 504	3 438
1897	3 420	3 950	2 512	3 769	3 675
1898	3 891	3 985	2 583	3 780	3 710
1899	3 840	4 041	2 796	4 051	3 963

<http://dx.doi.org/10.1787/456125276116>

Table 2c. **Per Capita GDP in Western Offshoots, 1900-1955**
(1990 international Geary-Khamis dollars)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1900	4 013	4 298	2 911	4 091	4 015
1901	3 839	4 223	3 097	4 464	4 349
1902	3 823	4 438	3 331	4 421	4 327
1903	4 076	4 727	3 334	4 551	4 455
1904	4 295	4 570	3 280	4 410	4 334
1905	4 282	4 850	3 562	4 642	4 559
1906	4 507	5 158	3 846	5 079	4 976
1907	4 616	5 340	3 875	5 065	4 970
1908	4 693	4 835	3 572	4 561	4 502
1909	4 981	4 770	3 850	5 017	4 934
1910	5 210	5 316	4 066	4 964	4 916
1911	5 104	5 494	4 213	5 046	4 995
1912	5 098	5 209	4 377	5 201	5 139
1913	5 157	5 152	4 447	5 301	5 233
1914	5 027	5 189	4 025	4 799	4 758
1915	4 897	5 174	4 233	4 864	4 824
1916	4 878	5 120	4 646	5 459	5 373
1917	4 791	5 008	4 801	5 248	5 195
1918	4 602	4 911	4 441	5 659	5 522
1919	4 716	5 283	4 019	5 680	5 517
1920	4 766	5 641	3 861	5 552	5 397
1921	4 911	5 128	3 357	5 323	5 160
1922	5 064	4 841	3 793	5 540	5 385
1923	5 192	5 144	3 976	6 164	5 953
1924	5 417	5 143	3 977	6 233	6 024
1925	5 553	5 292	4 340	6 282	6 100
1926	5 573	4 905	4 497	6 602	6 387
1927	5 544	4 683	4 847	6 576	6 385
1928	5 452	5 141	5 172	6 569	6 402
1929	5 263	5 262	5 065	6 899	6 673
1930	4 708	4 960	4 811	6 213	6 028
1931	4 354	4 475	4 004	5 691	5 492
1932	4 564	4 327	3 671	4 908	4 794
1933	4 842	4 576	3 370	4 777	4 672
1934	5 060	4 768	3 691	5 114	5 000
1935	5 318	4 959	3 951	5 467	5 340
1936	5 516	5 840	4 124	6 204	6 011
1937	5 746	6 102	4 473	6 430	6 247
1938	5 886	6 462	4 546	6 126	5 999
1939	5 846	6 460	4 768	6 561	6 390
1940	6 166	6 300	5 368	7 010	6 838
1941	6 788	6 129	6 051	8 206	7 954
1942	7 505	6 762	7 033	9 741	9 400
1943	7 703	6 928	7 263	11 518	10 971
1944	7 362	6 868	7 443	12 333	11 676
1945	6 917	6 928	7 133	11 709	11 090
1946	6 595	7 161	6 931	9 197	8 881
1947	6 664	7 846	7 088	8 886	8 635
1948	6 967	6 929	7 065	9 065	8 791
1949	7 237	7 521	7 064	8 944	8 704
1950	7 412	8 456	7 291	9 561	9 268
1951	7 507	7 653	7 533	10 116	9 760
1952	7 418	7 796	7 833	10 316	9 950
1953	7 505	7 856	7 984	10 613	10 220
1954	7 791	8 743	7 699	10 359	10 000
1955	8 027	8 725	8 201	10 897	10 512

<http://dx.doi.org/10.1787/456125276116>

Table 2c. **Per Capita GDP in Western Offshoots, 1956-2001**
(1990 international Geary-Khamis dollars)

	<i>Australia</i>	<i>New Zealand</i>	<i>Canada</i>	<i>United States</i>	<i>4 Western Offshoots</i>
1956	8 108	9 000	8 652	10 914	10 569
1957	8 090	9 045	8 607	10 920	10 567
1958	8 305	9 185	8 534	10 631	10 323
1959	8 628	9 630	8 676	11 230	10 866
1960	8 791	9 465	8 753	11 328	10 961
1961	8 653	9 745	8 833	11 402	11 025
1962	9 027	9 731	9 277	11 905	11 510
1963	9 400	10 132	9 566	12 242	11 844
1964	9 849	10 418	9 999	12 773	12 357
1965	10 152	10 879	10 473	13 419	12 967
1966	10 241	11 362	10 946	14 134	13 624
1967	10 733	10 682	11 078	14 330	13 816
1968	11 148	10 545	11 479	14 863	14 320
1969	11 561	11 511	11 912	15 179	14 657
1970	12 024	11 189	12 050	15 030	14 560
1971	12 290	11 576	12 562	15 304	14 856
1972	12 404	11 850	13 072	15 944	15 450
1973	12 878	12 424	13 838	16 689	16 179
1974	12 985	12 879	14 205	16 491	16 053
1975	13 170	12 489	14 316	16 284	15 892
1976	13 559	12 648	14 902	16 975	16 550
1977	13 546	11 989	15 223	17 567	17 069
1978	13 769	12 034	15 680	18 373	17 803
1979	14 320	12 284	16 170	18 789	18 233
1980	14 412	12 347	16 176	18 577	18 060
1981	14 660	12 884	16 472	18 856	18 339
1982	14 391	13 022	15 779	18 325	17 814
1983	14 197	13 234	16 076	18 920	18 333
1984	14 995	13 746	16 836	20 123	19 463
1985	15 546	13 772	17 582	20 717	20 062
1986	15 641	14 017	17 862	21 236	20 531
1987	16 173	14 037	18 348	21 788	21 067
1988	16 630	13 939	18 993	22 499	21 746
1989	17 093	14 020	19 108	23 059	22 250
1990	17 106	13 909	18 872	23 201	22 345
1991	16 727	13 514	18 297	22 785	21 918
1992	16 945	13 470	18 201	23 169	22 243
1993	17 383	14 001	18 364	23 477	22 547
1994	18 042	14 657	19 008	24 130	23 200
1995	18 602	15 031	19 293	24 484	23 559
1996	19 101	15 290	19 364	25 066	24 084
1997	19 531	15 528	19 968	25 819	24 799
1998	20 361	15 233	20 579	26 619	25 571
1999	21 070	15 679	21 450	27 395	26 349
2000	21 540	16 010	22 198	28 129	27 065
2001	21 883	16 118	22 302	27 948	26 943

<http://dx.doi.org/10.1787/456125276116>

Select Bibliography

- ALDCROFT, D.H. AND A. SUTCLIFFE (eds.) (1999). *Europe in the International Economy: 1500 to 2000*, Elgar, Cheltenham.
- ALLEN, R.C. (2001), "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War", *Explorations in Economic History*, 38, pp. 411–447.
- BAIROCH, P. (1967), *Diagnostic de l'évolution économique du tiers-monde, 1900–1966*, Gauthiers–Villars, Paris.
- BAIROCH, P. (1976), "Europe's Gross National Product: 1800–1975", *Journal of European Economic History*, Fall, pp. 273–340.
- BAIROCH, P. (1977), "Estimations du revenu national dans les sociétés occidentales pré-industrielles et au dix-neuvième siècle: propositions d'approches indirectes", *Revue économique*, March, pp. 177–208.
- BAIROCH, P. (1997), *Victoires et Déboires*, 3 vols., Gallimard, Paris.
- BAIROCH, P. AND M. LEVY–LEBOYER (1981), *Disparities in Economic Development since the Industrial Revolution*, Macmillan, London.
- BAGNALL, R.S. AND B.W. FRIER (1994), *The Demography of Roman Egypt*, Cambridge University Press.
- BARDET, J.–P. AND J. DUPAQUIER (1997), *Histoire des populations de l'Europe*, Fayard, Paris, 2 vols.
- BECKERMAN, W. (1966), *International Comparisons of Real Incomes*, OECD Development Centre, Paris.
- BELOCH, J. (1886), *Die Bevölkerung der Griechisch–Römischen Welt*, Duncker and Humblot, Leipzig.
- BERGSON, A. (1953), *Soviet National Income and Product in 1937*, Columbia University Press, New York.
- BETHELL, L. (1985–6), *The Cambridge History of Latin America*, vols. III and IV, Cambridge University Press.
- BOISGUILBERT, P. DE (1696), *La France ruinée sous la règne de Louis XIV par qui et comment*, Marteau, Cologne (author not shown, publisher fictitious, clandestinely printed in Rouen).
- BOISGUILBERT, P. DE (1697), *Le détail de la France* (author and publisher not shown).
- BOISGUILBERT, P. DE (1966), see INED.
- BOOMGAARD, P. (1993), "Economic Growth in Indonesia, 500–1990", in SZIRMAI, VAN ARK AND PILAT.
- BOOMGAARD, P., see Creutzberg.
- BORAH, W. AND S.F. COOK (1963), *The Aboriginal Population of Central Mexico on the Eve of the Spanish Conquest*, University of California, Berkeley.
- BORDO, M.D. AND R. CORTÉS–CONDE (2001), *Transferring Wealth and Power from the Old to the New World*, Cambridge University Press.
- BOSERUP, E. (1965), *The Conditions of Agricultural Growth*, Allen and Unwin, London.
- BOWLEY, A.L. (1900), *Wages in the United Kingdom in the Nineteenth Century*, Cambridge University Press.
- BOWLEY, A.L. (1942), *Studies in the National Income*, Cambridge University Press.
- BOWMAN A.K. AND E. ROGAN (eds.) (1999), *Agriculture in Egypt from Pharaonic to Modern Times*, Oxford University Press.

- BRAUDEL, F. (1985), *Civilization and Capitalism: 15th–18th Century*, vol. 3, Fontana, London.
- BRESNAHAN, T.F. AND R.J. GORDON (1997), *The Economics of New Goods*, NBER and University of Chicago Press.
- BREWER, J. (1989), *The Sinews of Power: War, Money and the English State, 1688–1783*, Unwin Hyman, London.
- BREWER, J. AND R. PORTER (eds.) (1993), *Consumption and the World of Goods*, Routledge, London.
- BROADBERRY, S.N. (1997a), "Forging Ahead, Falling Behind and Catching-up: A Sectoral Analysis of Anglo-American Productivity Differences, 1870–1990", *Research In Economic History*, 17, pp. 1–37.
- BROADBERRY, S.N. (1997b), "Anglo-German Productivity Differences 1870–1990: A Sectoral Analysis", *European Review of Economic History*, 1, pp. 247–267.
- BROADBERRY, S.N. (1998), "How did the United States and Germany Overtake Britain? A Sectoral Analysis of Comparative Productivity Levels, 1870–1990", *Journal of Economic History*, June, pp. 375–407.
- BUTLIN, N.G. (1983), *Our Original Aggression*, Allen and Unwin, Sydney.
- CHALMERS, G. (1802), *An Estimate of the Comparative Strength of Great Britain*, Stockdale, Piccadilly, London.
- CHAO, K. (1986), *Man and Land in Chinese History: An Economic Analysis*, Stanford University Press, Stanford.
- CHRISTENSEN, J.P., R. HJERPPE, O. KRANTZ AND C.-A. NILSSON (1995), "Nordic Historical National Accounts since the 1880s", *Scandinavian Economic History Review*, XLIII, no. 1.
- CIPOLLA, C.M. (1976), *Before the Industrial Revolution: European Society and Economy, 1000–1700*, Norton, New York.
- CLARK, C. (1937), *National Income and Outlay*, Macmillan, London.
- CLARK, C. (1940), *The Conditions of Economic Progress*, Macmillan, London.
- CLARK, C. (1951), *The Conditions of Economic Progress*, second edition, Macmillan, London.
- CLARK, C. (1957), *The Conditions of Economic Progress*, third edition, Macmillan, London.
- COLE, A.H. AND R. CRANDALL (1964), "The International Scientific Committee on Price History", *Journal of Economic History*, September, pp. 381–388.
- COLGRAVE, B. AND R.A.B. MYNORS (eds.) (1969), *Bede's Ecclesiastical History of the English People*, Clarendon Press, Oxford.
- COLLINS, J.B. (1995), *The State in Early Modern France*, Cambridge University Press.
- COLQUHOUN, P. (1815), *A Treatise on the Wealth, Power, and Resources of the British Empire in Every Quarter of the World*, Mawman, London.
- CRAFTS, N.F.R. (1983), "Gross National Product in Europe 1870–1910: Some New Estimates", *Explorations in Economic History* (20), pp. 387–401.
- CRAFTS, N.F.R. AND C.K. HARLEY (1992), "Output Growth and the British Industrial Revolution: A Restatement of the Crafts–Harley View", *Economic History Review*, November, pp. 703–730.
- CREUTZBERG, P. AND P. BOOMGAARD (eds.) (1975–1996), *Changing Economy in Indonesia: A Selection of Statistical Resource Material from the Early 19th century up to 1940*, 16 volumes, Royal Tropical Institute, Amsterdam.
- CROSBY, A.W. (1972), *The Columbian Exchange: Biological and Cultural Consequences of 1492*, Greenwood Press, Westport.
- CROUZET, F. AND A. CLESSE (eds.) (2003), *Leading the World Economically*, Dutch University Press, The Netherlands.
- DAVENANT, C. (1694), *An Essay on Ways and Means of Supplying the War*, (see Whitworth, 1771).
- DAVENANT, C. (1699), *An Essay upon the Probable Methods of Making a People Gainers in the Balance of Trade*, (see Whitworth, 1771)
- DEANE, P. (1955), "The Implications of Early National Income Estimates for the Measurement of Long-Term Economic Growth in the United Kingdom", *Economic Development and Cultural Change*, pp. 3–38.

- DEANE, P. (1955–6), “Contemporary Estimates of National Income in the First Half of the Nineteenth Century”, *Economic History Review*, VIII, 3, pp. 339–354.
- DEANE, P. (1956–7), “Contemporary Estimates of National Income in the Second Half of the Nineteenth Century”, *Economic History Review*, IX, 3, pp. 451–61.
- DEANE, P. (1957), “The Industrial Revolution and Economic Growth: The Evidence of Early British National Income Estimates”, *Economic Development and Cultural Change*, pp. 159–74.
- DEANE, P. (1968), “New Estimates of Gross National Product for the United Kingdom, 1830–1914”, *Review of Income and Wealth*, June, pp. 95–112.
- DEANE, P. AND W.A. COLE (1964), *British Economic Growth, 1688–1959*, Cambridge University Press.
- DENISON, E.F. (1947), “Report on Tripartite Discussions of National Income Measurement”, in *Studies in Income and Wealth*, Vol.10, NBER, New York.
- DENISON, E.F. (1967), *Why Growth Rates Differ*, Brookings, Washington, D.C.
- ECE (ECONOMIC COMMISSION FOR EUROPE) AND UN (1994), *International Comparison of Gross Domestic Product in Europe 1990*, New York and Geneva.
- ELTIS, D. (1995), “The Total Product of Barbados, 1664–1701”, *Journal of Economic History*, June.
- ELTIS, D. (1997), “The Slave Economies of the Caribbean: Structure, Performance, Evolution and Significance”, in KNIGHT, pp. 105–137.
- ELVIN, M. (1973), *The Pattern of the Chinese Past*, Methuen, London.
- ENG, P. VAN DER (1993), *Agricultural Growth in Indonesia Since 1880*, University of Groningen.
- ENGERMAN, S.L. AND R.E. GALLMAN (1996–2000), *The Cambridge History of the United States*, 3 vols., Cambridge University Press.
- ENGERMAN, S.L. AND B.W. HIGMAN (1997), “The demographic structure of the Caribbean slave societies in the eighteenth and nineteenth centuries” in Knight, pp. 45–104.
- ESCAP (ECONOMIC COMMISSION FOR ASIA AND THE PACIFIC) (1999), *ESCAP Comparisons of Real Gross Domestic Product and Purchasing Power Parities, 1993*, Bangkok.
- ESCWA (ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA) AND WORLD BANK (1997), *Purchasing Power Parities: Volume and Price Level Comparisons for the Middle East, 1993*, Beirut.
- EUROSTAT (1996), *Comparisons of Price Levels and Economic Aggregates 1993: The Results of 22 African Countries*, Luxembourg.
- FEINSTEIN, C.H. (1972), *National Income, Expenditure and Output of the United Kingdom, 1855–1965*, Cambridge University Press.
- FEINSTEIN, C.H. (1988), “The Rise and Fall of the Williamson Curve”, *Journal of Economic History*, September, pp. 699–729.
- FEINSTEIN, C.H. (1998), “Pessimism Perpetuated: Real Wages and the Standard of Living in Britain during and after the Industrial Revolution”, *Journal of Economic History*, September, pp. 625–58.
- FOGEL, J.A. (1964), *Railroads and American Economic Growth*, Johns Hopkins University Press, Baltimore.
- FRANK, A.G. (1998), *Reorient: Global Economy in the Asian Age*, University of California Press, Berkeley.
- GALBRAITH, J.K. et al. (1945), *The Effects of Strategic Bombing on the German War Economy*, US Strategic Bombing Survey, Washington, D.C.
- GILBERT, M. AND I.B. KRAVIS (1954), *An International Comparison of National Products and Purchasing Power of Currencies*, OEEC, Paris.
- GILBERT, M. AND ASSOCIATES (1958), *Comparative National Products and Price Levels*, OEEC, Paris.
- GLASS, D.V. (1965), “Two Papers on Gregory King”, in Glass and Eversley (1965), pp. 159–221.

- GLASS, D.V. AND D.E.C. EVERSLEY (eds.) (1965), *Population in History: Essays in Historical Demography*, Arnold, London.
- GOITEIN, S.D.F. (1967–93), *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza*, 6 vols., University of California Press, Berkeley and Los Angeles.
- GOLDSMITH, R.W. (1984), “An Estimate of the Size and Structure of the National Product of the Roman Empire”, *Review of Income and Wealth*, September.
- GOODY, J. (1971), *Technology, Tradition and the State in Africa*, Oxford University Press.
- GRAUNT, J. (1662), *Natural and Political Observations Made Upon the Bills of Mortality*, reprinted in Laslett.
- HABIB, I. (1978–9), “The Technology and Economy of Moghul India”, *Indian Economic and Social History Review*, vol. XVII, No. 1, pp. 1–34.
- HABIB, I. (1995), *Essays in Indian History*, Tulika, New Delhi.
- HAIG, B. (2001), *The First Official National Accounting Estimates*, Canberra (processed).
- HANLEY, S. (1997), *Everyday Things in Premodern Japan*, University of California, Berkeley.
- HANLEY, S.B. AND K. YAMAMURA (1977), *Economic and Demographic Change in Preindustrial Japan, 1600–1868*, Princeton University Press.
- HARALDSON, W.C. AND E.F. DENISON, (1945), “The Gross National Product of Germany 1936–44”, Special Paper I (mimeographed), in GALBRAITH *et al.*
- HAYAMI, A. (1986), “Population Trends in Tokugawa Japan 1600–1970”, International Statistical Institute Conference.
- HESTON, A. AND R. SUMMERS (1993), “What Can be Learned from Successive ICP Benchmark Estimates?” in SZIRMAI, VAN ARK AND PILAT (*op. cit.*).
- HESTON, A., R. SUMMERS AND B. ATEN (2002), PWT Version 6.1 (CICUP), <http://pwt.econ.upenn.edu>.
- HJERPPE, R. (1996), *Finland's Historical National Accounts 1860–1994*, University of Jyväskylä, Jyväskylä.
- HO, P.T. (1959), *Studies on the Population of China, 1368–1953*, Columbia University Press, New York.
- HOFMAN, A.A. (2000), *The Economic Development of Latin America in the Twentieth Century*, Elgar, Cheltenham.
- HOPKINS, K. (1980), “Taxes and Trade in the Roman Empire (200 BC–400 AD)”, *Journal of Roman Studies*, vol. LXX, pp. 101–25.
- IBN KHALDUN (1958), *The Muqadimah: An Introduction to History*, 3 vols., translated by Franz Rosenthal, Routledge and Kegan Paul, London.
- INED (1966), *Pierre de Boisguilbert ou la naissance de l'économie politique*, vol. I, Biographie, correspondance, bibliographies, vol. II, œuvres manuscrites et imprimées, Paris.
- JARRETT, H.S. AND J.–N. SARKAR (1949), *Ain–I–Akbari of Abul Fazl–I–Allami*, Royal Asiatic Society of Bengal, Calcutta.
- JONES, E.L. (1981), *The European Miracle*, Cambridge University Press.
- JONES, E.L. (1988), *Growth Recurring: Economic Change in World History*, Clarendon Press, Oxford.
- KALDOR, N. (1946), “The German War Economy”, *Review of Economic Studies*, vol. XIII, 1.
- KING, G. (1696), *Natural and Political Observations and Conclusions upon the State and Condition of England*, reproduced in G.E. Barnett (1936), *Two Tracts by Gregory King*, Johns Hopkins Press, Baltimore.
- KING, G. (1697), *Natural and Political Observations and Conclusions upon the State and Condition of England*, manuscript copy of above, interleaved with detailed comments by Robert Harley and King's replies, Manuscript (MS 1458) in National Library of Australia.
- KING, G. (1695–70), *Manuscript Notebook*, reproduced in Laslett (1973).
- KNIGHT, F.W. (ed.) (1997), *General History of the Caribbean*, vol III, UNESCO, London.

- KRAVIS, I.B., A. HESTON AND R. SUMMERS (1978), "Real GDP Per Capita For More Than One Hundred Countries", *Economic Journal*, June.
- KRAVIS, I.B., A. HESTON AND R. SUMMERS (1982), *World Product and Income, International Comparisons of Real Gross Product*, Johns Hopkins, Baltimore.
- KUZNETS, S. (1948), "Discussion of the New Department of Commerce Income Series", *Review of Economics and Statistics*, August, with reply by Gilbert, Jaszi, Denison and Schwartz, and comment by Kalecki.
- KUZNETS, S. (1973), *Population, Capital and Growth: Selected Essays*, Norton, New York.
- LAL, D. (1988), *The Hindu Equilibrium*, Oxford University Press.
- LAL, D. (1998), *Unintended Consequences*, MIT Press, Cambridge, Mass.
- LANDES, D.S. (1969), *The Unbound Prometheus*, Cambridge University Press.
- LANDES, D.S. (1998), *The Wealth and Poverty of Nations*, Little, Brown and Company, London.
- LARSEN, H. K. (2001), *Convergence? Industrialisation of Denmark, Finland and Sweden 1870–1940*, Finnish Society of Science and Letters, Helsinki.
- LASLETT, P. (ed.) (1973), *The Earliest Classics: John Graunt and Gregory King*, Gregg International, London.
- LEE, B. AND A. MADDISON (1997), "A Comparison of Output, Purchasing Power and Productivity in Indian and Chinese Manufacturing in the mid-1980s", *COPPAA Paper, No. 5*, Brisbane.
- LE ROY LADURIE, E. (1978), "Les comptes fantastiques de Gregory King", in *Le territoire de l'historien*, vol. 1, Gallimard, Paris.
- LI, B. (1998), *Agricultural Development in Jiangnan, 1620–1850*, Macmillan, London.
- LIN, J.Y. (1995), "The Needham Puzzle: Why the Industrial Revolution did not Originate in China", *Economic Development and Cultural Change*, January.
- LINDERT, P.H. AND J.G. WILLIAMSON (1983), "English Workers Living Standards during the Industrial Revolution: A New Look", *Economic History Review*, February, pp. 1–25.
- MA, D. (2003), "Modern Economic Growth in the Lower Yangzi: A Quantitative and Historical Perspective", <http://aghistory.ucdavis.edu/ma.pdf>.
- MADDISON, A. (1962), "Growth and Fluctuation in the World Economy, 1870–1960", *Banca Nazionale del Lavoro Quarterly Review*, June.
- MADDISON, A. (1969), *Economic Growth in Japan and the USSR*, Allen and Unwin, London.
- MADDISON, A. (1970), *Economic Progress and Policy in Developing Countries*, Allen and Unwin, London.
- MADDISON, A. (1971), *Class Structure and Economic Growth: India and Pakistan Since the Moghuls*, Allen and Unwin, London.
- MADDISON, A. (1982), *Phases of Capitalist Development*, Oxford University Press.
- MADDISON, A. (1983), "A Comparison of Levels of GDP Per Capita in Developed and Developing Countries, 1700–1980", *Journal of Economic History*, March, pp. 27–41.
- MADDISON, A. (1987a), "Growth and Slowdown in Advanced Capitalist Economies: Techniques of Quantitative Assessment", *Journal of Economic Literature*, June, pp. 649–698.
- MADDISON, A. (1987b), "Recent Revisions to British and Dutch Growth, 1700–1870 and their Implications for Comparative Levels of Performance", in MADDISON AND VAN DER MEULEN (1987).
- MADDISON, A. (1989a), *The World Economy in the Twentieth Century*, Development Centre Studies, OECD, Paris.
- MADDISON, A. (1989b), "Dutch Income in and from Indonesia 1700–1938", *Modern Asian Studies*, pp. 645–70.
- MADDISON, A. (1990), "Measuring European Growth: the Core and the Periphery", in E. AERTS AND N. VALERIO, *Growth and Stagnation in the Mediterranean World*, Tenth International Economic History Conference, Leuven.

- MADDISON, A. (1991), *Dynamic Forces in Capitalist Development*, Oxford University Press.
- MADDISON, A. (1991b), "A Revised Estimate of Italian Economic Growth, 1861–1989", *Banca Nazionale del Lavoro Quarterly Review*, June, pp. 225–41.
- MADDISON, A. (1991c), *A Long Run Perspective on Saving*, Research Memorandum 443, Institute of Economic Research, University of Groningen (shorter version in *Scandinavian Journal of Economics*, June 1992, pp. 181–96).
- MADDISON, A. (1995), *Monitoring the World Economy 1820–1992*, Development Centre Studies, OECD, Paris.
- MADDISON, A. (1995b) *Explaining the Economic Performance of Nations: Essays in Time and Space*, Elgar, Aldershot.
- MADDISON, A. (1995c), "The Historical Roots of Modern Mexico: 1500–1940", in Maddison (1995b).
- MADDISON, A. (1998), *Chinese Economic Performance in the Long Run*, Development Centre Studies, OECD, Paris.
- MADDISON, A. (1998b), "Measuring the Performance of A Communist Command Economy: An Assessment of the CIA Estimates for the USSR", *Review of Income and Wealth*, September.
- MADDISON, A. (1999), Review of Hanley (1997), *Journal of Japanese and International Economies*.
- MADDISON, A. (2001), *The World Economy: A Millennial Perspective*, Development Centre Studies, OECD, Paris.
- MADDISON, A. (2002), "The Nature of US Economic Leadership: A Historical and Comparative View", in O'BRIEN AND CLESSE.
- MADDISON, A. (2003), "Growth Accounts, Technological Change, and the Role of Energy in Western Growth" in *Economia e Energia Secc. XIII–XVIII*, Istituto Internazionale di Storia Economica "E. Datini", Prato.
- MADDISON, A. (2003), website: <http://eco.rug.nl/~Maddison/>
- MADDISON, A. (2004), *The West and the Rest in the World Economy*, forthcoming.
- MADDISON, A. AND ASSOCIATES (1992), *The Political Economy of Economic Growth: Brazil and Mexico*, Oxford University Press, New York.
- MADDISON, A. AND B. VAN ARK (1988), *Comparisons of Real Output in Manufacturing*, Policy, Planning and Research Working Papers WPS 5, World Bank, Washington, D.C.
- MADDISON, A. AND B. VAN ARK (1989), "International Comparisons of Purchasing Power, Real Output and Labour Productivity: A Case Study of Brazilian, Mexican and US Manufacturing, 1975", *Review of Income and Wealth*, March.
- MADDISON, A. AND B. VAN ARK (2000), "The International Comparison of Real Product and Productivity" in MADDISON, PRASADA RAO AND SHEPHERD.
- MADDISON, A. AND H. VAN DER MEULEN (eds.) (1987), *Economic Growth in Northwestern Europe: The Last 400 Years*, Research Memorandum 214, Institute of Economic Research, University of Groningen.
- MADDISON, A. AND H. VAN DER WEE (eds.) (1994), *Economic Growth and Structural Change: Comparative Approaches over the Long Run*, Proceedings of the Eleventh International Economic History Congress, Milan, September.
- MADDISON, A., D.S. PRASADA RAO AND W. SHEPHERD (eds.) (2000), *The Asian Economies in the Twentieth Century*, Elgar, Aldershot.
- MADDISON, A. AND G. PRINCE (eds.) (1989), *Economic Growth in Indonesia, 1820–1940*, Foris, Dordrecht.
- MANARUNGSAN, S. (1989), *Economic Development of Thailand, 1850–1950*, University of Groningen.
- McEVEDY, C. (1995), *Penguin Atlas of African History*, London.
- McEVEDY, C. AND R. JONES (1978), *Atlas of World Population History*, Penguin, Middlesex.
- McNEILL, W.H. (1963), *The Rise of the West*, University of Chicago Press.
- McNEILL, W.H. (1977), *Plagues and Peoples*, Anchor Books, Doubleday, New York.

- MCNEILL, W.H. (1990), "The Rise of the West after Twenty-Five Years", *Journal of World History*, vol. 1, no. 1.
- MEADE, J. R. AND R. STONE (1941), "The Construction of Tables on National Income, Expenditure, Savings and Investment", *Economic Journal*, Jun-Sep, pp. 216–33.
- MITCHELL, B.R. (1975), *European Historical Statistics 1750–1970*, Macmillan, London.
- MITCHELL, B.R. (1982), *International Historical Statistics: Africa and Asia*, Macmillan, London.
- MITCHELL, B.R. (1983), *International Historical Statistics: the Americas and Australasia*, Macmillan, London.
- MOOSVI, S. (1987), *The Economy of the Moghul Empire c.1595: A Statistical Study*, Oxford University Press, Delhi.
- MULDER, N. (2002), *Economic Performance in the Americas*, Elgar, Cheltenham.
- MULHALL, M.G. (1880), *The Progress of the World*, Stanford, London.
- MULHALL, M.G. (1881), *Balance Sheet of the World for 10 Years 1870–1880*, Stanford, London.
- MULHALL, M.G. (1884), *The Dictionary of Statistics*, Routledge, London, 4th edition 1899.
- MULHALL, M.G. (1896), *Industries and Wealth of Nations*, Longmans, London.
- NEEDHAM, J. (1954–97), *Science and Civilisation in China*, Cambridge University Press.
- NEEDHAM, J. (1970), *Clerks and Craftsmen in China and the West*, Cambridge University Press.
- NORDHAUS, W.D. (1997), "Do Real-Wage Measures Capture Reality? The Evidence of Lighting Suggests Not", in BRESNAHAN AND GORDON.
- NORTH, D.C. (1990), *Institutions, Institutional Change and Economic Performance*, Cambridge University Press.
- NORTH, D.C. AND R.P. THOMAS (1973), *The Rise of the Western World*, Cambridge University Press.
- O'BRIEN P.K. AND A. CLESSE (eds.) (2002), *Two Hegemonies: Britain 1846–1914 and the United States 1941–2001*, Ashgate, Aldershot.
- OECD (1993), *Purchasing Power Parities and Real Expenditures 1990: GK Results*, Vol. II, Paris.
- OECD (2002), *Purchasing Power Parities and Real Expenditures, 1999 Benchmark Year*, Paris.
- OECD (2003), *Measuring Productivity Levels—A Reader*, Paris.
- OHKAWA, K., M. SHINOHARA AND M. UMEMURA (eds.) (1966–1988), *Estimates of Long-Term Economic Statistics of Japan since 1868*, 14 volumes, Toyo Keizai Shinposha, Tokyo.
- ÖZMUCUR, S. AND S. PAMUK (2002), "Real Wages and Standards of Living in the Ottoman Empire, 1489–1914", *Journal of Economic History*, June, pp. 293–321.
- PAIGE, D. AND G. BOMBACH (1959), *A Comparison of National Output and Productivity of the United Kingdom and the United States*, OEEC, Paris.
- PARTHASARATHI, P. (1998), "Rethinking Wages and Competitiveness in the Eighteenth Century: Britain and South India", *Past and Present*, 158, pp. 79–109.
- PERKINS, D.W. (1969), *Agricultural Development in China, 1368–1968*, Aldine, Chicago.
- PETTY, W. (1997), *The Collected Works of Sir William Petty*, 8 volumes, Routledge/Thoemes Press, London (includes Hull's (1899) collection of Petty's economic writings; E.G. Fitzmaurice's (1895) biography of Petty; Lansdowne's (1927 and 1928) collection of Petty papers and the Southwell–Petty correspondence; Larcom's (1851) edition of Petty's Irish Land Survey, and critical appraisals by T.W. Hutchinson and others).
- PHELPS BROWN, H. AND S.V. HOPKINS (1981), *A Perspective on Wages and Prices*, Methuen, London.
- PILAT, D. (1994), *The Economics of Rapid Growth: The Experience of Japan and Korea*, Elgar, Aldershot.
- POMERANZ, K. (2000), *The Great Divergence: China, Europe and the Making of the Modern World Economy*, Princeton University Press, New Jersey.

- PRADOS DE LA ESCOSURA, L. (2000), "International Comparisons of Real Product, 1820–1990: An alternative Dataset", in *Explorations in Economic History*, 37 (1), pp1–41.
- RAYCHAUDHURI, T. AND I. HABIB (1982), *The Cambridge Economic History of India, c.1200–1750*, vol. I, Cambridge University Press.
- RICHARDS, E.G. (1998), *Mapping Time*, Oxford University Press.
- REN, R. (1997), *China's Economic Performance in an International Perspective*, Development Centre Studies, OECD, Paris.
- RICCIOLI, G.B. (1672), *Geographiae et Hydrographiae Reformatae, Libri Duodecim*, Venice.
- ROSENBLAT, A. (1945), *La Poblacion Indigena de America Desde 1492 Hasta la Actualidad*, ICE, Buenos Aires.
- ROSTAS, L. (1948), *Comparative Productivity in British and American Industry*, Cambridge University Press, Cambridge.
- ROSTOW, W.W. (1960), *The Stages of Economic Growth*, Cambridge University Press.
- SHEPHERD, V. AND H. M. BECKLES (eds.) (2000), *Caribbean Slavery in the Atlantic World*, Wiener, Princeton.
- SIVASUBRAMONIAN, S. (2000), *The National Income of India in the Twentieth Century*, Oxford University Press, New Delhi.
- SIVASUBRAMONIAN, S. (2003), *The Sources of Economic Growth in India 1950–2000*, Oxford University Press, New Delhi.
- SMITS, J.P., E. HORLINGS AND J.L. VAN ZANDEN (2000), *Dutch GNP and Its Components, 1800–1913*, Groningen Growth and Development Centre, Monograph Series, No. 5.
- SNOOKS, G.D. (1993), *Economics Without Time*, Macmillan, London.
- SNOOKS, G.D. (1996), *The Dynamic Society: Exploring the Sources of Global Change*, Routledge, London.
- SNOOKS, G.D. (1997), *The Ephemeral Civilisation*, Routledge, London.
- STONE, R. (1956), *Quantity and Price Indexes in National Accounts*, OEEC, Paris.
- STONE, R. (1961), *Input–Output and National Accounts*, OEEC, Paris.
- STONE, R. (1971), *Demographic Accounting and Model Building*, OECD, Paris.
- STONE, R. (1997a), "The Accounts of Society"(1984 Nobel Memorial Lecture), *American Economic Review*, December, pp. 17–29.
- STONE, R. (1997b), *Some British Empiricists in the Social Sciences 1650–1900*, Cambridge University Press, Cambridge.
- STUDENSKI, P. (1958), *The Income of Nations: Theory, Measurement and Analysis: Past and Present*, New York University Press, Washington Square.
- SUMMERS, R., I.B. KRAVIS AND A. HESTON (1980), "International Comparison of Real Product and its Composition: 1950–77", *Review of Income and Wealth*, March, pp. 19–66.
- SUMMERS R. AND A. HESTON (1988), "A New Set of International Comparisons of Real Product and Prices: Estimates for 130 Countries, 1950–1985", *Review of Income and Wealth*, March, pp. 1–26.
- SZIRMAI, A., B. VAN ARK AND D. PILAT (eds.) (1993), *Explaining Economic Growth: Essays in Honour of Angus Maddison*, North Holland, Amsterdam.
- THOROLD ROGERS, J.E. (1866–1902), *A History of Agriculture and Prices in England*, 7 vols. Clarendon Press, Oxford.
- THOROLD ROGERS, J.E (1884), *Six Centuries of Work and Wages*, Swan Sonnenschein, London.
- TODA, YASUSHI (1990), "Catching–up and Convergence: the Standard of Living and the Consumption Pattern of the Russians and the Japanese in 1913 and 1975–1976", paper presented at session C28, 10th World Congress of the International Economic History Association, Leuven, mimeographed.

- UN (1987), *World Comparisons of Purchasing Power and Real Product for 1980*, New York.
- UN (1993), *System of National Accounts 1993*, Paris (jointly with EU, IMF, OECD and World Bank), earlier versions in 1953 and 1968.
- UN (1994), *World Comparisons of Real Gross Domestic Product and Purchasing Power, 1985*, New York.
- UN (2001) *World Population Prospects: The 2000 Revision*, vol 1, *Comprehensive Tables*, Population Division, Dept. of Economic and Social Affairs, New York. Annual estimates on CD ROM Disk 2: Extensive Set.
- VAUBAN, S. (1707), *La dîme royale* (1992 edition, with introduction by E. Le Roy Ladurie, Imprimerie nationale, Paris).
- VRIES, J. DE (1984), *European Urbanization 1500–1800*, Methuen, London.
- VRIES, J. DE (1993), “Between Purchasing Power and the World of Goods: Understanding the Household Economy in Early Modern Europe”, in BREWER AND PORTER (1993).
- VRIES, J. DE (1994), “The Industrial Revolution and the Industrious Revolution”, *Journal of Economic History*, June, pp. 249–270.
- VRIES, J. DE AND A. VAN DER WOUDE (1997), *The First Modern Economy; Success, Failure and Perseverance of the Dutch Economy, 1500–1815*, Cambridge University Press, Cambridge.
- WARD, M. (1985), *Purchasing Power Parities and Real Expenditures in the OECD*, OECD, Paris.
- WESTERGAARD, H. (1932), *Contributions to the History of Statistics*, King, London (Kelley reprint, 1969).
- WHITWORTH, C. (ed.) (1771), *The Political and Commercial Works of Charles Davenant*, 5 vols., London.
- WHITE, E.N. (2001), “France and the Failure to Modernise Macroeconomic Institutions”, in BORDO AND CORTÉS-CONDE.
- WILLIAMS, E. (1944), *Capitalism and Slavery*, Russell and Russell, New York.
- WILLIAMS, E. (1970), *From Columbus to Castro: The History of the Caribbean 1492–1969*, Deutsch, London.
- WILLIAMSON, J.G. (1985), *Did British Capitalism Breed Inequality?* Allen and Unwin, London.
- WILLIAMSON, J.G. (1995), “The Evolution of Global Labor Markets since 1930: Background Evidence and Hypotheses”, *Explorations in Economic History*, 32, pp. 141–196.
- WRIGLEY, E.A. (1988), *Continuity, Chance and Change*, Cambridge.
- WRIGLEY, E.A. AND R.S. SCHOFIELD (1981), *The Population History of England 1541–1871*, Arnold, London.
- WRIGLEY, E.A., R.S. DAVIES, J.E. OEPPEN AND R.S. SCHOFIELD (1997), *English Population History from Family Reconstitution 1580–1837*, Cambridge University Press, Cambridge.
- YOUNG, A. (1794), *Travels During the Years 1787–9 with a View to Ascertaining the Cultivation, Wealth, Resources and National Prosperity of the Kingdom of France*, Richardson, London, (2nd edition).
- VAN ZANDEN, J.L. (1999), “Wages and the Standard of Living in Europe, 1500–1800”, *European Review of Economic History*, August, pp. 175–198.
- VAN ZANDEN, J.L. AND E. HORLINGS (1999), “The Rise of the European Economy 1500–1800”, in ALDCROFT AND SUTCLIFFE.
- VAN ZANDEN, J.L. (2002), “Taking the Measure of the Early Modern Economy: Historical National Accounts for Holland in 1510/14”, *European Review of Economic History*, 6, pp. 131–163.
- VAN ZANDEN, J.L. (2003), “Rich and Poor before the Industrial Revolution: A Comparison between Java and the Netherlands at the beginning of the 19th Century”, *Explorations in Economic History*, 40, pp. 1–23.
- VAN ZANDEN, J.L. (forthcoming), “Economic Growth in Java, 1815–1939: Reconstruction of the Historical National Accounts of a Colonial Economy” (<http://iisg.nl/research/jvz-reconstruction.pdf>).

Table of Contents

Foreword.....	385
Acknowledgements	386
List of Tables in Prologue and Source Notes	388
List of Basic Tables	389
Preface	392
Prologue: The Pioneers of Macrommeasurement	393
HS-1: 29 West European Countries	403
<i>Source notes and estimates 1500, 1600, 1700, 1820-2001 annually</i>	
HS-2: Western Offshoots (Australia, New Zealand, Canada and the United States)	449
<i>Source notes and estimates, 1500, 1600, 1700, 1820-70 at decade intervals, 1870-2001 annually</i>	
<i>Estimates for 1500-1870 show indigenous and white settler economies separately</i>	
HS-3: A. East Europe and the Former USSR	469
<i>Source notes and estimates for 8 countries (within 1989 frontiers)</i>	
<i>1820, 1850, 1870, 1890, 1900, 1913 and annually wherever possible since 1920</i>	
B. 7 Successor States of Former Czechoslovakia and Yugoslavia	481
C. 15 Successor States of Former USSR	485
HS-4: Latin America	491
<i>Source notes and estimates for 47 countries for 1820, 1850, 1870 and annually since 1900</i>	
<i>wherever possible</i>	
HS-5: Asia	529
<i>Source notes and estimates for 16 East Asian countries for 1820, 1850 and annually since 1870</i>	
<i>wherever possible</i>	
<i>Estimates for 26 East Asian and 15 West Asian countries annually 1950-2001</i>	
HS-6: Africa	569
<i>Source notes and annual estimates 1950-2001 for 57 countries,</i>	
<i>estimates for sample countries and Africa as a whole, 1, 1000, 1500, 1600, 1700, 1820, 1870, 1913</i>	
HS-7: The World Economy, 1950-2001	605
<i>Source notes and estimates for world and major regions 1950-2001 annually</i>	
HS-8: The World Economy, 1-2001 AD	621
<i>Source notes and estimates for world and major regions, 11 benchmark years, 1-2001 AD</i>	
Select Bibliography	645

List of Tables in Prologue and Source Notes

Table 1	Gross Domestic Expenditure in England and Wales in 1688	395
Table 2	Structure of British Gross Domestic Expenditure, 1688 and 1996	396
Table 3	Mulhall's 1896 Guidelines for Estimates of Value Added by Sector of Economic Activity	401
Table 1–1	Population and GDP in Modern and Habsburg Austria, 1830–1913	404
Table 1–2	The Impact of Frontier Changes on German GDP, 1870–1991	406
Table 1–3	Economic Growth in Ireland (Irish Republic) and the United Kingdom, 1820–2001	410
Table 1–4	Population and GDP: 13 Small West European Countries, 1950–2001	411
Table 2–1	Population and GDP of Australia, 1700–1870	449
Table 2–2	Population and GDP of the United States, 1700–1870	449
Table 2–3	Alternative Measures of Australian Sector Growth and Structure, 1861–1938/9	451
Table 2–4	Alternative Estimates of Australian Real GDP, calendar years 1861–1938	452
Table 2–5	Population and GDP of Canada and New Zealand, 1700–1870	454
Table 3–1	Good and Ma Proxy Measures of Per Capita GDP	472
Table 3–2	Maddison Estimates of Per Capita GDP and Proxies derived from Good and Ma	472
Table 3–3	Eastern Europe and Russia: Population and GDP, 1500–1820	473
Table 4–1	The Economies of the Americas: Five regions, 1500–2001	492
Table 4–2	Ethnic Composition of the Americas in 1820	493
Table 4–3	Net Non-Slave Migration to the Americas, 1500–1998	493
Table 4–4	Arrivals of African Slaves in the Americas, 1500–1870	492
Table 4–5	GDP and Population in 24 Small Caribbean Countries, 1950–2001	497
Table 5–1	Population of Undivided India, Bangladesh and Pakistan, 1820–1946	530
Table 5–2	Population of Korea, North and South, 1820–1950	531
Table 5–3	16 East Asian Countries: GDP Conjectures and Estimates, 1820–1913	532
Table 5–4	Population and GDP in 20 Small East Asian Countries, 1950–2001	533
Table 5–5	26 East Asian Countries: Conjectures and Estimates for GDP, 1820–1913	533
Table 5–6	West Asian Population, GDP and Per Capita GDP, 1820–1913	534
Table 5–7	Turkish Population, GDP and Per Capita GDP, 1820–1950	535
Table 5–8	Total Asian Population, GDP and Per Capita GDP, 1820–1913	536
Table 6–1	African Population, 1–2001 AD190	570
Table 6–2	Tentative Conjectures of African GDP and Per Capita GDP, 1–1820 AD	571
Table 6–3	World Gold Output by Major Region, 1493–1925	574
Table 6–4	Akan (Ghanaian) Gold Production, 1400–1900	574
Table 6–5	Slave Exports from Black Africa, 650–1900, by Destination	574
Table 6–6	Egyptian Population, GDP and Per Capita GDP, 1820–2001	577
Table 6–7	Algerian Population, GDP and Per Capita GDP, 1820–2001	578
Table 6–8	Ghanaian Population, GDP and Per Capita GDP, 1820–2001	578
Table 6–9	Length of Railway Line in Service, 1870–1913	579
Table 6–10	African GDP and Population Movement, 1820–2001	580
Table 6–11	Alternative Estimates of 1990 African GDP Levels by ICP and PWT	581
Table 7–1	Coverage of World GDP Sample and Proportionate Role of Proxy Measures, 1820–2001	606
Table 7–2	Nature of PPP Converters Used to Estimate GDP Levels in the Benchmark Year 1990	610
Table 7–3	Annual Change of World GDP, IMF and Maddison Measures, 1970–2001	611
Table 8–1	Amendments to GDP Estimates in Maddison (2001) for 1820–1950	624
Table 8–2	Comparison of Maddison Per Capita GDP Levels and Prados' Proxies, 1820–1900	627
Table 8–3	The Chinese/West European Dichotomy, 1–2001 AD	639

List of Basic Tables

HS-1

Table 1a	Population of 12 West European Countries, 1500–1868 (2 pages)	412
Table 1a	Population of 12 West European Countries, 1869–1918 (2 pages)	414
Table 1a	Population of 12 West European Countries, 1919–1969 (2 pages)	416
Table 1a	Population of 12 West European Countries, 1970–2003 (2 pages)	418
Table 1a	Population of 4 West European Countries and Total WEC, 1500–1868	420
Table 1a	Population of 4 West European Countries and Total WEC, 1869–1918	421
Table 1a	Population of 4 West European Countries and Total WEC, 1919–1969	422
Table 1a	Population of 4 West European Countries and Total WEC, 1970–2003	423
Table 1b	GDP Levels in 12 West European Countries, 1500–1868 (2 pages)	424
Table 1b	GDP Levels in 12 West European Countries, 1869–1918 (2 pages)	426
Table 1b	GDP Levels in 12 West European Countries, 1919–1969 (2 pages)	428
Table 1b	GDP Levels in 12 West European Countries, 1970–2001 (2 pages)	430
Table 1b	GDP Levels in 4 West European Countries and Total WEC, 1500–1868	432
Table 1b	GDP Levels in 4 West European Countries and Total WEC, 1869–1918	433
Table 1b	GDP Levels in 4 West European Countries and Total WEC, 1919–1969	434
Table 1b	GDP Levels in 4 West European Countries and Total WEC, 1970–2001	435
Table 1c	Per Capita GDP in 12 West European Countries, 1500–1868 (2 pages)	436
Table 1c	Per Capita GDP in 12 West European Countries, 1869–1918 (2 pages)	438
Table 1c	Per Capita GDP in 12 West European Countries, 1919–1969 (2 pages)	440
Table 1c	Per Capita GDP in 12 West European Countries, 1970–2001 (2 pages)	442
Table 1c	Per Capita GDP in 4 West European Countries and Average WEC, 1500–1868	444
Table 1c	Per Capita GDP in 4 West European Countries and Average WEC, 1869–1918	445
Table 1c	Per Capita GDP in 4 West European Countries and Average WEC, 1919–1969	446
Table 1c	Per Capita GDP in 4 West European Countries and Average WEC, 1970–2001	447

HS-2

Table 2a	Population of Western Offshoots, 1500–1899	459
Table 2a	Population of Western Offshoots, 1900–1955	460
Table 2a	Population of Western Offshoots, 1956–2003	461
Table 2b	GDP Levels in Western Offshoots, 1500–1899	462
Table 2b	GDP Levels in Western Offshoots, 1900–1955	463
Table 2b	GDP Levels in Western Offshoots, 1956–2001	464
Table 2c	Per Capita GDP in Western Offshoots, 1500–1899	465
Table 2c	Per Capita GDP in Western Offshoots, 1900–1955	466
Table 2c	Per Capita GDP in Western Offshoots, 1956–2001	467

HS-3A

Table 3a	Population of Former Eastern Europe and USSR, 1820–1949	474
Table 3a	Population of Former Eastern Europe and USSR, 1950–2003	475
Table 3b	GDP Levels in Former Eastern Europe and USSR, 1820–1949	476
Table 3b	GDP Levels in Former Eastern Europe and USSR, 1950–2002	477

Table 3c	Per Capita GDP in Former Eastern Europe and USSR, 1820–1949	478
Table 3c	Per Capita GDP in Former Eastern Europe and USSR, 1950–2002	479

HS-3B

Table 3a	Population of Successor Republics of Yugoslavia and Czechoslovakia, 1950–2003	482
Table 3b	GDP Levels in Successor Republics of Yugoslavia and Czechoslovakia, 1990–2001	483
Table 3c	Per Capita GDP in Successor Republics of Yugoslavia and Czechoslovakia, 1990–2001	483

HS-3C

Table 3a	Population of Successor Republics of USSR, 1950–2003 (2 pages)	486
Table 3b	GDP Levels in Successor Republics of USSR, 1973–2002 (2 pages)	488
Table 3c	Per Capita GDP in Successor Republics of USSR, 1973–2002 (2 pages)	488

HS-4

Table 4a	Population of 8 Latin American Countries, 1820–1913	499
Table 4a	Population of 8 Latin American Countries, 1914–1949	500
Table 4a	Population of 8 Latin American Countries, 1950–2003	501
Table 4a	Population of 15 Latin American Countries, 1820–1949 (2 pages)	502
Table 4a	Population of 15 Latin American Countries, 1950–2003 (2 pages)	504
Table 4a	Population of 47 Latin American Countries, 1820–1949	506
Table 4a	Population of 47 Latin American Countries, 1950–2003	507
Table 4b	GDP Levels in 8 Latin American Countries, 1820–1913	510
Table 4b	GDP Levels in 8 Latin American Countries, 1914–1949	511
Table 4b	GDP Levels in 8 Latin American Countries, 1950–2001	512
Table 4b	GDP Levels in 15 Latin American Countries, 1820–1949 (2 pages)	513
Table 4b	GDP Levels in 15 Latin American Countries, 1950–2001 (2 pages)	515
Table 4b	GDP Levels in 47 Latin American Countries, 1820–1949	517
Table 4b	GDP Levels in 47 Latin American Countries, 1950–2001	518
Table 4c	Per Capita GDP in 8 Latin American Countries, 1820–1913	520
Table 4c	Per Capita GDP in 8 Latin American Countries, 1914–1949	521
Table 4c	Per Capita GDP in 8 Latin American Countries, 1950–2001	522
Table 4c	Per Capita GDP in 15 Latin American Countries, 1820–1949 (2 pages)	523
Table 4c	Per Capita GDP in 15 Latin American Countries, 1950–2001 (2 pages)	525
Table 4c	Per Capita GDP in 47 Latin American Countries, 1820–1949	527
Table 4c	Per Capita GDP in 47 Latin American Countries, 1950–2001	528

HS-5

Table 5a	Population of 16 East Asian Countries, 1820–1913 (2 pages)	538
Table 5a	Population of 16 East Asian Countries, 1914–1949 (2 pages)	540
Table 5a	Population of 16 East Asian Countries, 1950–2003 (2 pages)	542
Table 5a	Population of 15 West Asian Countries, 1950–2003 (2 pages)	544
Table 5a	Population of 26 East Asian Countries, 1950–2003	546
Table 5a	Population of 57 Asian Countries, 1820–2001	547

Table 5b	GDP Levels in 16 East Asian Countries, 1820–1913 (2 pages)	548
Table 5b	GDP Levels in 16 East Asian Countries, 1914–1949 (2 pages)	550
Table 5b	GDP Levels in 16 East Asian Countries, 1950–2001 (2 pages)	552
Table 5b	GDP Levels in 15 West Asian Countries, 1950–2002 (2 pages)	554
Table 5b	GDP Levels in 26 East Asian Countries, 1950–2001	556
Table 5b	GDP Levels in 57 Asian Countries, 1820–2001	557
Table 5c	Per Capita GDP in 16 East Asian Countries, 1820–1913 (2 pages)	558
Table 5c	Per Capita GDP in 16 East Asian Countries, 1914–1949 (2 pages)	560
Table 5c	Per Capita GDP in 16 East Asian Countries, 1950–2001 (2 pages)	562
Table 5c	Per Capita GDP in 15 West Asian Countries, 1950–2002 (2 pages)	564
Table 5c	GDP Per Capita in 26 East Asian Countries, 1820–2001	566
Table 5c	Per Capita GDP in 57 Asian Countries, 1820–2001	567

HS-6

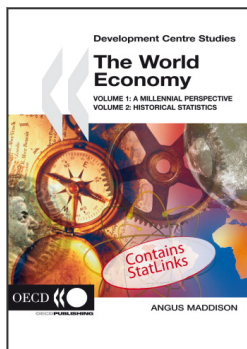
Table 6a	Population of 57 African Countries, 1950–2003 (7 pages)	582
Table 6b	GDP Levels in 57 African Countries, 1950–2001 (7 pages)	590
Table 6c	Per Capita GDP in 57 African Countries, 1950–2001 (7 pages)	598

HS-7

Table 7a	World Population by Region, 1900 and 1950–2001	612
Table 7b	World GDP by Region, 1900 and 1950–2001	613
Table 7c	World Per Capita GDP by Region, 1900 and 1950–2001	614
Table 7a	Year-to-Year Percentage Change in World Population, by Region, 1950–2001	615
Table 7b	Year-to-Year Percentage Change in World GDP Volume, by Region, 1950–2001	616
Table 7b	Year-to-Year Percentage Change in World Per Capita GDP, by Region, 1950–2001	617
Table 7a*	Alternative UNPD World Population Estimates by Region, 1950–2000	618
Table 7a**	World Population: Confrontation of UNPD and USBC–Maddison Estimates	619

HS-8

Table 8a	World Population, 20 Countries and Regional Totals, 1–2001 AD	636
Table 8a	Rate of Growth of World Population, 20 Countries and Regional Totals, 1–2001 AD	637
Table 8a	Share of World Population, 20 Countries and Regional Totals, 1–2001 AD	638
Table 8b	World GDP, 20 Countries and Regional Totals, 1–2001 AD	639
Table 8b	Rate of Growth of World GDP, 20 Countries and Regional Totals, 1–2001 AD	640
Table 8b	Share of World GDP, 20 Countries and Regional Totals, 1–2001 AD	641
Table 8c	World Per Capita GDP, 20 Countries and Regional Averages, 1–2001 AD	642
Table 8b	Rate of Growth of World Per Capita GDP, 20 Countries and Regional Totals, 1–2001 AD	643



From:

The World Economy

Volume 1: A Millennial Perspective and Volume 2: Historical Statistics

Access the complete publication at:

<https://doi.org/10.1787/9789264022621-en>

Please cite this chapter as:

Maddison, Angus (2006), "Western Offshoots Australia, New Zealand, Canada and the United States", in *The World Economy: Volume 1: A Millennial Perspective and Volume 2: Historical Statistics*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264022621-15-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.