

## A Long Run Perspective on Saving

by

**Angus Maddison**

(published in the Scandinavian Journal of Economics, June 1992)

Recent comparative surveys of saving behaviour (Dean et al, 1990, and Agherli et al, 1990) have focussed on a rather narrow time period which affects the validity of their general finding that savings rates in the 1980s have been at historic lows.

In this paper, I have tried to provide longer term evidence on gross savings rates in 11 countries (Australia 1870-1988, Canada 1870-1988, France 1820-1913 and 1950-88, Germany 1870-1913, 1925-39 and 1950-88, Korea 1911-38 and 1953-88, India 1870-1988, Japan 1885-1988, Netherlands 1921-39 and 1950-88, Taiwan 1903-38 and 1951-88, UK 1870-1988 and USA 1870-1988).

My coverage of the historical evidence is not exhaustive (more countries could be included, and for some of those included it may be possible to go further back).(1) Nevertheless the 11 countries in this paper represent about 48 per cent of world product in real terms and probably about half of world savings. They are also countries which are or have been important in the international flow of capital.

The historical evidence on savings is best summarised in graph 1. This presents the record for the 11 countries in comparable form. The decline in savings rates over the past decade is clear in 9 of the 11 countries. The only exceptions are Korea and Taiwan. However, in most countries the savings rates of the 1950s and 1960s were very high by historical experience. Even at their present reduced level, savings rates in most of the countries are usually well above their prewar levels. It is therefore just as feasible to conceive of recent savings patterns as a reversion towards longer term "norms" after an unusually prolonged postwar boom, as it is to consider them as an aberration from postwar normality.

It is also clear from inspection of graph 1 that US long run experience has not conformed to the norm for the other countries. In most of the other cases it is possible to discern an upward trend in the long term savings rate, whereas in the USA this is not the case. The atypicality of US experience is important because a good deal of the theorising about savings (or consumption) behaviour emanated from the USA and was clearly influenced by

the historical evidence (see Friedman, 1957, pp. 3 and 4 and Modigliani 1986 p.298 explaining how they came to reject Keynes' notion of that savings rise with income - because there was no upward trend in the savings estimates developed by Kuznets).

In assembling the material in the statistical appendix, I kept more or less in line with contemporary national accounting (SNA) conventions and did not make any further adjustments to figures for 1960 onwards for OECD countries other than those already made by OECD.(2) The OECD adjustments are probably most extensive for the USA. As a result OECD shows higher savings rates than in US national accounting (NIPA) practice because of more comprehensive coverage of government investment.

In the present version of this paper, I have restricted the analysis to gross savings, as estimates of depreciation vary a good deal between countries not only for the reason mentioned in Horioka (1990), i.e. intercountry variations in use of historical versus replacement cost valuation, but also because of differences in assumptions about the length of life of assets, differences in depreciation formulae and other variations in the way countries measure capital stock. As I have recently made estimates of capital stock using standardised assumptions for some of these countries, I hope soon to be able to present standardised estimates of depreciation and net capital formation. The absence of such net estimates is clearly a shortcoming of the present paper, because movements in net saving are more volatile than those for gross savings, as explained in Goldsmith's (1961) algebra. (See Graph 4 for a preliminary version of my comparative results for gross and net investment for 6 OECD countries).

### Domestic Investment

Graph 2 shows the behaviour of domestic investment. It is interesting to compare the contours of these diagrams with those in graph 1 on total savings. In general the two sets of contours are not too different, except for the UK where pre-1913 investment was significantly lower than savings, so its long run domestic investment trend is more clearly upwards than its domestic savings. For Canada, the contour for long term investment is significantly different from that for long term savings, and there are also important differences for Taiwan where domestic investment rates have dropped considerably in recent years but savings have continued to be very high.

### Investment Abroad

Graph 3 presents the record for investment abroad.(3) Surprisingly Taiwan has had proportionately the biggest investment abroad, both in recent years and in the colonial period (when its experience was very different from that of the other Japanese colony, Korea). Over the long haul, Australia has been the most consistent foreign borrower, though not on as large a scale as pre-1913 Canada. Of the European countries, the UK appears as the biggest pre-1913 foreign investor (though its lending proportion may have been below that of the Netherlands in that period). In the postwar period the Netherlands and Germany have been lenders on a larger scale than the UK, whose investment abroad has been modest by historical standards. France too has been relatively modest in its postwar lending abroad. The USA has been the most consistent in lending abroad in the twentieth century and its recent borrowing abroad is clearly an unusual break with precedent.

### Absolute Importance of Savers

Table 2 and all the graphs are in proportionate terms, showing total savings and uses of savings in relation to GDP in the country concerned. However, the importance of individual countries in the international market for savings depends not only on their savings rate but also on the absolute size of the country, its propensity to invest abroad, and the extent to which its exchange rate deviates from purchasing power parity. This is illustrated in Table B which shows the situation in 1988.

Thus it can be seen that Japan had the biggest savings in 1988 - \$974 billion compared with \$700 billion in the USA, in spite of the fact that the real GDP of Japan was only 40 per cent of that of the USA. Japan's savings were high relative to the USA because it had one of the highest savings rates (34.2 per cent of GDP) whereas the USA had the lowest in our group (at 14.6 per cent of GDP). Japan also had the biggest deviation between its exchange rate and the purchasing power of its currency. In real terms, converting GDP at national prices with purchasing power parities supplied by Eurostat, its GDP was only 40 per cent of that in the USA, but in money terms, with conversion at the exchange rate, it was 59 per cent of that in the USA. The comparison between India and Japan is even more strongly affected by use of PPP rather than an exchange rate converter. In money terms Japanese GDP was 10 times that of India but in real terms it was only twice as high.

As Japanese investment abroad was 3.2 per cent of GDP in 1988 whereas US investment was negative - at - 2.8 percent - the contrast in the position of the two countries was most striking in this respect: the USA being the biggest borrower (\$132 billion) and Japan being the biggest investor (\$92 billion).

Thus there are serious problems of aggregation if one wanted to estimate savings trends for our eleven countries combined.

### Factors Influencing Savings Rates

The main purpose of this paper is to provide provisional estimates of savings rates over the long run for a significant sample of countries, and I cannot hope to make much of a contribution to diagnosing reasons for variation in such a complex phenomenon without a good deal of further work.

However, it is worth looking at long term changes in some characteristics which savings theorists have considered to be important.

Most analysts of saving behaviour are concerned to identify the motivations of various categories of savers - individuals, corporations or governments and their interaction (e.g. the impact of obligatory social security systems or fiscal deficits on private thrift). This is a field in which I have no research experience. In the past I have been mainly concerned with uses of savings - domestic investment and its impact on growth. The statistical evidence with which I am most familiar and which I have used here reflects this and my judgements about what causes variation in rates of investment and savings over time and between countries are biased towards explanations geared to business cycle or secular growth experience and opportunity rather than intertemporal optimisation of individuals.

As current saving and investment flows are equal at the aggregate level, there are obvious benefits from confrontation of the source of savings and use of savings approaches. I have not offered such a confrontation here, but I present some evidence about total savings, looked at from my normal (but here slightly extended) field of vision.

Tables C and D show absolute levels and growth of per capita real income in comparable units for the eleven sample countries. There has been very substantial long run growth in real income per head in all of these countries except India. This growth was generally fastest in the 1950-73 period and has slowed down appreciably since then, except in India, Korea and Taiwan. There is a general positive relationship between the faster postwar growth in output per head and the acceleration in savings rates, and a similar positive relation in the post 1973 slowdown. The USA which had the smallest postwar acceleration in per capita growth was also the country with least change in its long run savings habits.

It also emerges from Table C that the contemporary rates of saving are, if anything, negatively related to per capita income levels, as the richest country, the USA, has the lowest saving level and the highest levels are in two relatively low income countries - Korea and Taiwan. Even a very low income country like India has a higher savings ratio than Canada, the UK, or USA. This suggests that the savings ratio is more responsive to investment opportunity than to income. When there are realistic opportunities for economic catch-up - produced by accelerated international diffusion of technology, increased absorptive capacity due to improvements in human capital, effective pro-growth policies, better international cooperation, or liberation from a colonial yoke - then the improvement in prospective returns will induce a rise in savings and investment in follower countries. The lead country - the USA - did not have this experience, hence, its savings behaved differently. As follower countries approach the leader more closely (the European and Japanese case), their opportunities for catch-up will fade, whereas the lower-income Asian countries (India, Korea and Taiwan) are not yet in this situation (though the causes of the recent fall in Taiwanese investment rates are worth closer scrutiny).

Although the catch-up thesis helps to explain the postwar savings pattern in follower countries, it does not help explain the situation in the lead country. As its lead has narrowed and the burden of innovation is now shared with countries which have narrowed the productivity gap, one might expect US savings incentives to improve rather than worsen. The unorthodox fiscal-monetary policy mix of the past few years may help explain why this did not happen and the Wolf(4) effect may possibly have some explanatory value.

Some of the savings literature stresses the possibility that the ageing of the population and the swelling cohorts of elderly citizens will reduce the incentive or capacity to save, or that the decline in the proportion of children will reduce the incentive to provide for posterity. It is clear from Table F that ageing has been important in the advanced capitalist countries and is starting in Asia, but the timing and pattern of change in savings ratios has not been very obviously affected by this.

Even more striking than the demographic changes of Table F are the changes in institutional arrangements that have led to the massive increase in the governmental role in the economy (see Table G). On average government spending on goods, services, and transfers accounted for 46 per cent of GDP in 1987 compared with 12 per cent in 1913. A significant proportion of these expenditures involve governmental takeover of provision for old age, or coverage of risks which were previously born by individuals. This has obviously had an impact on the way savings are formed but it is not so clear what the impact has been on overall rates of saving.

- (1) Kuznets (1961b) provides a comparative survey of long term investment and savings experience. He covers 12 countries (Argentina, Australia, Canada, Denmark, Germany, Italy, Japan, Norway, South Africa, Sweden, UK and USA). In Maddison (1964) pp.234-42, I presented long term investment ratios for some countries not included in my present paper (Denmark, Italy, Norway and Sweden) and discussed some of the problems of comparability and measurement in more detail.
- (2) Blades (1983) is a discussion of the impact of some relatively minor deviations from standardised SNA practice, e.g. treatment of expenditure on consumer durables as savings. Kendrick (1976) considers a much more comprehensive alternative which includes not only consumer durables, but treatment of the full cost of education (human capital formation), health and safety, R and D spending as well as the usual SNA components. Kendrick's broader concept raised 1929 US investment to 43.1 per cent of GNP as compared with 15.7 per cent in the NIPA
- (3) In the present version of this paper I simply adopted the SNA definition of investment abroad for the OECD countries for 1960 onwards, i.e. "surplus of the nation on current transactions" (consolidated by adding the "statistical discrepancy" which figures in the OECD accounts for all our countries except France and Germany). In these accounts a net transfer abroad is not treated as savings. Such transfers are of a miscellaneous nature but a significant part seems to consist of official grant aid. In the revised version of this paper I propose to treat all net transfers as part of "investment abroad". As the characteristic situation in all eight OECD countries included in my sample is one of net transfers to abroad, the effect of this change will be to raise investment abroad in these countries for 1960 onwards. It will also make the figures for 1960 onwards consistent with the definition of investment abroad which I used for earlier years.
- (4) Wolf (1912) suggested that technical progress will ultimately be retarded because we will have exploited the easier innovations, there will be less left to discover, and the unknown will be harder to penetrate. If this is the situation the lead country is entering, one would expect the profitability of investment and savings to falter as it would be starting to approach a stationary state. It is not at all clear that the USA is entering such a situation, but it is not a possibility which should be totally disregarded. See my discussion of this issue in Maddison (1984).

## References for Text

- B.B. Agherli, J.M. Boughton, P.J. Montiel, D. Villanueva and G. Woglom, The Role of National Saving in the World Economy, Occasional Paper No.67, IMF, Washington DC, 1990
- D. Blades, "Alternative Measures of Saving" OECD Economic Outlook, Occasional Studies, June 1983.
- A. Dean, M. Durand, J. Fallon and P. Hoeller, "Savings Trends and Behaviour in OECD Countries", OECD Economic Studies, No.14, Spring 1990.
- M. Friedman, A Theory of the Consumption Function, NBER, Princeton, 1957.
- R.W. Goldsmith, The National Wealth of the United States in the Postwar Period, NBER, Princeton, 1961.
- R.W. Goldsmith, Comparative National Balance Sheets: A Study of Twenty Countries 1688-1978, Chicago, 1985.
- C.Y. Horioka, "Why is Japan's Household Saving Rate So High? A Literature Survey", Journal of Japanese and International Economies, 4, 1990
- J.W. Kendrick, The Formation and Stocks of Total Capital, NBER, Columbia University Press, New York, 1976.
- S. Kuznets, Capital in the American Economy: Its Formation and Financing, NBER, Princeton, 1961(a).
- S. Kuznets, "Long Term Trends in Capital Formation Proportions", Economic Development and Cultural Change, July 1961(b).
- S. Kuznets, "Capital Formation in Modern Economic Growth", in his Population, Capital and Growth: Selected Essays, Heinemann, London, 1974.
- R.E. Lipsey and H.S. Tice, eds., The Measurement of Saving, Investment and Wealth, Chicago, 1984.
- A. Maddison, Economic Growth in the West, Allen and Unwin, London, 1964.
- A. Maddison, "Comparative Analysis of the Productivity Situation in the Advanced Capitalist Countries" in J.W. Kendrick, ed., International Comparisons of Productivity and Causes of the Slowdown, Ballinger, Cambridge, Mass., 1984.
- A. Maddison, Dynamic Forces in Capitalist Development, OUP, 1991.
- F. Modigliani, "Life Cycle, Individual Thrift, and the Wealth of Nations", American Economic Review, June 1986.

- F. Modigliani and R. Hemming, The Determinants of National Saving and Wealth, Macmillan, London, 1983.
- P.H. Sturm, "Determinants of Saving: Theory and Evidence", OECD Economic Studies, No.1, Autumn 1983.
- L. Summers and C. Carroll, "Why is US National Saving So Low?", Brookings Papers on Economic Activity, No.2, 1987.
- J. Wolf, Die Volkswirtschaft der Gegenwart und Zukunft, Deichert, Leipzig, 1912.

Table 1 A

Total Gross Savings as a Ratio of GDP at Current Market Prices

	1870-89	1890-1913	1914-38	1939-49	1950-73	1974-88	1950-9	1960-73
1974-1981								
89								
Australia	11.2a	12.5a	12.2	13.8	24.3	22.0	23.5	24.9
23.2								
20.9								
Canada	9.1b	12.2b	14.4b	19.3	22.5	21.4	21.4	23.3
France	12.8	14.7	n.a.	n.a.	23.4	22.1	18.8	26.6
Germany	n.a.	n.a.	12.8c	n.a.	26.7	22.4	25.9	27.2
India	n.a.	5.8d	7.4	6.7	12.8	20.3	10.8	14.3
Japan	12.4e	12.4e	16.7e	24.8e	32.8	32.8	28.1	36.1
Korea	n.a.	n.a.	4.3f	n.a.	8.1g	27.9	4.0h	10.1
Netherlands	n.a.	n.a.	15.2i	n.a.	26.6	22.1	25.8	27.2
Taiwan	n.a.	9.6j	25.5k	n.a.	19.9	33.2	14.7	23.2
UK	13.9	13.6	8.8	2.5	18.4	18.5	16.8	19.5
USA	n.a.	18.0	17.0	15.2	19.6	17.9	19.7	19.5

a) excludes inventories; b) 1870-1926 excludes inventories; c) 1925-38; d) 1900-13; e) 1885-1940 excludes inventories and first entry is for 1885-9; f) excludes part of inventories; g) 1953-73; h) 1953-9; i) 1921-38; j) 1903-13 and excludes part of inventories; k) excludes part of inventories.

Source: Appendix Table 2.

Table 1 B

Gross Fixed Domestic Investment as a Ratio of GDP at Current Market Prices

	1870-89	1890-1913	1914-38	1939-49	1950-73	1974-88	1950-9	1960-73
1974-1981								
1981-88								
80								
Australia	16.5	13.0	14.9	11.9	25.0	24.3	24.3	25.4
Canada	16.0	19.4	15.2	12.9	22.4	22.3	22.3	22.4
France	12.8	13.9	16.1a	n.a.	21.2	21.7	17.5	23.8
Germany	n.a.	n.a.	12.9b	n.a.	23.2	20.6	20.8	24.9
India	4.5c	5.6c	7.0	7.8	12.5	17.9	10.2	14.2
Japan	12.6d	14.4	16.2	18.6	28.3	30.4	22.3	32.6
Korea	n.a.	4.9e	7.0	n.a.	15.9f	28.9	9.8g	18.9
Netherlands	n.a.	n.a.	17.5h	n.a.	23.8	20.2	22.3	25.0
Taiwan	n.a.	8.7i	15.6	n.a.	17.0j	24.6	13.0k	19.5
UK	8.4	8.5	8.4	7.4	17.1	18.0	15.2	18.4
USA	12.9	15.6	14.2	13.1	18.3	18.2	18.4	18.2

a) 1922-38; b) 1925-38; c) in separating fixed investment from inventories it was assumed for 1870-99 that inventories averaged 0.6 per cent of GDP; d) 1885-9; e) 1911-13; f) 1953-73; g) 1953-9; h) 1921-38; i) 1903-13; j) 1951-73; k) 1951-9.

Source: Appendix Table 2.

Table A ii

Net Investment in Inventories as a Ratio of GDP at Current Market Prices

	1870-89 1913	1890- 38	1914- 49	1939- 73	1950- 88	1974- 9	1950- 73	1960- 80	1974- 88	1981-	
Australia		n.a.		1.7	0.8		1.2	1.2	0.5	1.2	1.1
Canada		n.a.		n.a.	0.3		1.0	1.3	0.5	1.5	1.1
France		0.0		0.2	n.a.		n.a.	1.9	0.5	1.9	1.9
Germany		n.a.		n.a.	n.a.		n.a.	1.9	0.4	2.5	1.6
India		0.6		0.6	0.4		0.2	1.9	3.4a	1.8	1.9
Japan		n.a.		n.a.	n.a.		7.7	3.8	0.6	5.2	2.7
Korea		n.a.		n.a.	n.a.		n.a.	1.9c	1.1	2.8d	1.4
Netherlands		n.a.		n.a.	-2.7e		n.a.	1.8	0.2	2.1	1.5
Taiwan		n.a.		n.a.	n.a.		n.a.	3.1f	2.1	2.7g	3.4
UK		0.9		0.6	-0.2		0.4	0.9	0.3	0.9	1.0
USA		3.2		1.9	0.9		0.9	0.9	0.6	1.0	0.9

a) 1974-87; b) 1981-7; c) 1953-73; d) 1953-9; e) 1921-38; f) 1951-73; g) 1951-9.

Source: Table 2.

Table A iv

Net Investment Abroad as a Ratio of GDP at Current Market Prices

	1870-89 1913	1890- 38	1914- 49	1939- 73	1950- 88	1974- 9	1950- 73	1960- 80	1974- 88	1981	
Australia		-5.4		-1.5	-3.5		0.7	-1.8	-2.8	-2.0	-1.6
Canada		-6.9		-7.1	-0.9		5.4	-1.2	-1.3	-2.5	-0.2
France		-0.1		0.6	n.a.		n.a.	0.3	-0.2	-0.6	0.9
Germany		1.7		1.5	-0.1a		n.a.	1.6	1.4	2.7	0.7
India		n.a.		0.2	-0.1		-0.7	-1.5	-1.0	-1.3	-1.8
Japan		-0.3		-2.1	0.5		-1.5	0.7	1.8	0.7	0.7
Korea		n.a.		n.a.	-2.7		n.a.	-9.7b	-2.2	-8.7c	-10.2
Netherlands		n.a.		n.a.	0.4d		n.a.	1.0	1.8	1.5	0.7
Taiwan		n.a.		0.9e	9.9		n.a.	-0.2f	6.4	-1.0g	0.3
UK		4.5		4.6	0.7		-5.3	0.4	0.2	0.7	0.2
USA		-0.7		0.5	2.0		1.3	0.4	-0.9	0.4	0.4

a) 1925-38; b) 1953-73; c) 1953-9; d) 1921-38; e) 1903-13; f) 1951-73; g) 1951-9.

Source: Table 2. Figures for OECD countries for 1960 onwards are subject to revision to treat net transfers abroad in the same way as investment. Negative sign means negative investment (borrowing).

Table B

Comparative Levels of Real GDP, Money GDP and Savings in 1988

	1988 GDP at US Relative Prices \$ Billion	1988 GDP Con- verted at Exchange Rate \$ Billion	1988 Exchange Rate as Percent of GDP	1988 Savings as Percent of GDP \$ Billion	1988 Savings as Percent of GDP \$ Billion	1988 Invest- ment Abroad as Percent Abroad \$ Billion	1988 Invest- ment Abroad as Percent Abroad \$ Billion
Australia	236.6	247.0	1.13	20.1	49.7	-6.7	-16.6
Canada		482.1		486.0		1.10	19.7
France		816.7		955.7		1.27	20.9
Germany		906.5		1,201.8		1.44	26.4
Netherlands	197.3	227.4		1.25		22.9	52.0
UK		815.5		833.8		1.11	15.8
USA		4,809.1		4,809.1		1.00	14.6
India		899.4		281.1		0.34	21.0
Japan		1,926.3		2,848.9		1.61	34.2
Korea		286.3		174.9		0.66	38.3
Taiwan		146.5		123.3		0.91	35.3

Source: First column represents GDP in national currencies converted by Eurostat ICP V PPPs at US relative prices, adjusted to 1988 basis; Indian, Korean and Taiwanese GDP converted by ICP IV PPPs updated to 1988. Second column from OECD sources. Column 3 is equal to column 2 divided by column 1. Savings rates derived from Appendix Table 2.

Table C

GDP Per Capita in 1985 Dollars at US Prices

	1870	1913	1950	1973	1987			
Australia	3,123	4,523	5,931	10,331	13,584			
Canada			1,347	3,560	6,113	11,866	17,576	
France			1,571	2,734	4,149	10,323	13,837	
Germany			1,300	2,606	3,339	10,110	13,989	
Netherlands			2,064	3,178	4,706	10,267	12,737	
UK			2,610	4,024	5,651	10,063	13,468	
USA			2,247	4,854	8,611	14,103	18,317	
India			470	536	482	689	1,065	
Japan			618	1,114	1,563	9,237	15,101	
Korea			n.a.	819	757	2,404	6,503	
Taiwan			n.a.	608	706	2,803	7,252	

Source: A. Maddison, Dynamic Forces in Capitalist Development, Oxford University Press, 1991.

Table D

Rate of Growth of GDP Per Capita  
(annual average compound growth rate)

	1870-1913	1913-50	1950-73	1973-89			
Australia	0.9	0.7	2.5	1.7			
Canada			2.3	1.5	2.9	2.5	
France			1.3	1.1	4.1	1.8	
Germany			1.6	0.7	4.9	2.0	
Netherlands			1.0	1.1	3.5	1.4	
UK			1.0	0.8	2.5	1.8	
USA			2.0	1.6	2.2	1.6	
Average			1.4	1.1	4.0	1.8	
India			0.3	-0.3	1.6	2.8	
Japan			1.4	0.9	8.0	3.1	
Korea			n.a.	-0.2	5.2	6.4	
Taiwan			n.a.	0.4	6.2	6.1	
Average			n.a.	0.2	5.3	4.6	

Source: Derived from Table C.

Table E

Growth of Output (GDP at Constant Prices)<sup>a</sup>  
annual average compound growth rates

	1870-1913	1913-50	1950-73	1973-89		
Australia	3.5	2.2	4.7	3.1		
Canada			4.1	3.1	5.1	3.6
France			1.5	1.1	5.0	2.3
Germany			2.8	1.3	5.9	2.1
Netherlands			2.3	2.4	4.7	2.0
UK			1.9	1.3	3.0	2.0
USA			3.9	2.8	3.6	2.7
Average			2.9	2.0	4.6	2.5
India			0.6	0.7	3.7	5.0
Japan			2.5	2.2	9.3	3.9
Korea			n.a.	1.7	7.5	8.0
Taiwan			n.a.	2.7	9.3	7.9
Average			1.6	1.9	7.5	6.2

a) adjusted to exclude the impact of boundary changes.

Source: OECD countries from A. Maddison, Dynamic Forces in Capitalist Development, Oxford, 1991. Others from A. maddison The World Economy in the Twentieth Century, OECD, Paris, 1989.

Table F

Changes in Demographic Structure 1870-1987

	1870	1910	1950	1973	1987	1870	1910	1950
1973								
1987								
	Percent of population 65 and Over					Percent of Population		
0 - 14								
Australia	1.8	4.0	8.1	8.5	10.7	42.3	35.2	26.6
28.2								22.6
Canada	3.7	4.7	7.7	8.3	10.9	41.6	33.1	29.7
France	7.4	8.4	11.4	13.2	13.5	27.1	25.8	22.7
Germany	4.6	4.9	(9.2)	13.9	15.1	34.0	33.9	(23.5)
Netherlands	5.5	6.1	7.7	10.5	12.4	33.6	34.5	29.3
UK	5.0	5.3	10.7	13.6	15.5	36.1	30.8	22.3
USA	3.0	4.3	8.1	10.2	12.2	39.2	32.1	26.8
India	3.2a	2.4	3.6	3.4	4.4	34.9a	38.5	37.5
Japan	5.3	5.3b	5.2	7.3	10.8	33.7	36.5b	35.3
Korea	n.a.	n.a.	3.9c	3.5d	4.8	n.a.	n.a.	43.2c
Taiwan	n.a.	2.4e	n.a.	3.2	5.3	n.a.	35.9e	39.0

a) 1881; b) 1920; c) 1944; d) 1975; e) 1905. German figures in brackets exclude Berlin.

Source: OECD countries from OECD, Labour Force Statistics, various issues, OECD Demographic Trends 1950-1990, Paris 1979, and B. Mueller, A Statistical Handbook of the North Atlantic Area, Twentieth Century Fund, New York, 1965. Asian countries from B.R. Mitchell, International Historical Statistics: Africa and Asia, Macmillan, London, 1982, World Bank, World Development Report 1990, and UN, The Aging of Populations and Its Economic and Social Implications, New York, 1956.

Table G

Total Government Expenditures as a Percentage of GDP  
at Current Prices, 1913-87

	1913	1929	1938	1950	1973
s 1987					
France	8.9	12.4	23.2	27.6	38.8
52.6b					
Germany	17.7	30.6	42.4	30.4	47
Japan	14.2	18.8	30.3	19.8	33
Netherlands	8.2	11.2	21.7	26.8	59
UK	13.3	23.8	28.8	34.2	45
USA	8.0	10.0	19.8	21.4	37
Average	11.7	17.8	27.7	26.7	46

a) 1910; b) 1986.

Source: A. Maddison, **Dynamic Forces in Capitalist Development**, Oxford University Press, 1991.