

Table 1.1. *Population, gross domestic product, territory, and empires of the Allied and Axis powers within contemporary frontiers, 1938*

	Popul- ation, million 1	Territory, sq. km		GDP, international dollars and 1990 prices	
		total, thou. 2	per thou. people 3	total, \$ bn 4	per head, \$ 5
<i>Allied powers</i>					
UK	47.5	245	5	284.2	5,983
France	42.0	551	13	185.6	4,424
UK dominions	30.0	19,185	639	114.6	3,817
Czecho-Slovakia	10.5	140	13	30.3	2,882
Poland	35.1	389	11	76.6	2,182
French colonies	70.9	12,099	171	48.5	684
UK colonies	453.8	14,994	33	284.5	627
Allied total	689.7	47,603	69	1,024.3	1,485
of which, great powers only (UK and France)	89.5	796	9	469.8	5,252
<i>Axis powers</i>					
Germany	68.6	470	7	351.4	5,126
Austria	6.8	84	12	24.2	3,583
Italy	43.4	310	7	140.8	3,244
Japan	71.9	382	5	169.4	2,356
Japanese colonies	59.8	1,602	27	62.9	1,052
Italian colonies	8.5	3,488	412	2.6	304
Axis total	258.9	6,336	24	751.3	2,902
of which, great powers only (Germany Austria, Italy, and Japan)	190.6	1,246	7	685.8	3,598
<i>China</i>					
(exc. Manchuria)	411.7	9,800	24	320.5	778
Allies/Axis	2.7	7.5	2.8	1.4	0.5
Great powers only	0.5	0.6	1.4	0.7	1.5
China/Japanese empire	3.1	4.9	1.6	1.4	0.4

Notes:

Countries and groups of countries are ranked under each subheading in descending order of their GDP per head. 'Colonies' include League of Nations mandates and other dependencies. Figures are given for territory within 1938 frontiers, except as noted below.

UK dominions: Australia, Canada, New Zealand, Union of South Africa. Canada includes Newfoundland and Labrador.

Czecho-Slovakia: including the Sudetenland (annexed by Germany in September 1938).

French colonies: mainly in the Near East, Africa, and Indo-China.

Notes to Table 1.1 (*cont.*)

UK colonies (including joint Anglo-French and Anglo-Egyptian colonies): many countries in the Near East, south and southeast Asia, Africa, the Caribbean, and Oceania.

Germany: the geographical entity of the Versailles treaty, excluding the Sudetenland and Austria.

Japanese colonies: Korea, Formosa (Taiwan), and Manchuria.

Italian colonies: mainly Libya and Abyssinia (Ethiopia).

Sources:

Population

All figures from Maddison (1995), appendix A, except that Czech-Slovakia, Poland, Germany, China (except Manchuria), Manchuria itself, and various colonial populations, all within contemporary frontiers, are taken from League of Nations (1940), 14–19.

GDP

Population multiplied by GDP per head (for Czecho-Slovakia, GDP per head of 1937).

GDP per head

All figures from Maddison (1995), appendix D, except as follows.

UK dominions: for South Africa, the white population (20 per cent of the total, from League of Nations (1940), 14–19) is assigned the same GDP per head as the average for Australia, New Zealand, and Canada, and the black and coloured population is credited with the African regional average.

French colonies are divided among Indo-China, Algeria, and other (mainly African) colonies. The GDP per head of French Indo-China is based on that of Vietnam (see above), and that of Algeria is derived in the same way. France's other colonies are credited with a GDP per head based on the African regional average.

UK colonies are divided among south Asia, Africa, and other. The GDP per head of south Asian colonies is a weighted average of that for 1938 of Burma, India, Pakistan, and Bangladesh within modern frontiers.

The GDP per head of African colonies is taken as that of Maddison's African regional average, and that of other (mainly southeast Asian colonies, but also of those in the Pacific, and Caribbean) is based on the Asian regional average.

Italian colonies: the weighted average of GDPs per head of Libya and Ethiopia, derived as above.

Japanese colonies: for Korea and Formosa, GDPs per head are those given by Maddison for South Korea and Taiwan; that of Manchuria is based on his China average.

Territory

League of Nations (1940), 14–19. All figures are within boundaries of 1938, except that Germany excludes Austria and the Sudetenland; the frontiers of Czecho-Slovakia are those of the beginning of the year.

Territory per thousand

Territory divided by population.

(now including Austria), Italy, Japan, and the much smaller colonial empires of Italy in Africa and Japan in east Asia; these amounted to 260 million people and a little more than 6 million square kilometres. Thus the Allies outweighed the Axis by 2.7:1 in population and 7.5:1 in territory. In the Far East, Japan was also at war with China, the population and territory of which exceeded those of Japan and its existing colonies by 3.1:1 and 4.9:1.

For each country or region the table lists GDP as well as population and territory. Population and territory can be measured without much ambigui-

Table 1.2. *National and colonial boundaries of 1942, showing populations and GDPs of 1938*

	Popul- ation, million 1	Territory, sq. km		GDP, international dollars and 1990 prices	
		total, thou. 2	per thou. people 3	total, \$ bn 4	per head, \$ 5
Allied powers					
Allied total, 1938	689.7	47,603	69	1,024.3	1,485
China, 1938					
(exc. Manchuria)	411.7	9,800	24	320.5	778
Net gain, 1938–42	93.8	20,401	—	724.5	—
Allied total, 1942	1,195.2	77,803	65	2,069.3	1,731
excluding China	783.5	68,003	87	1,748.8	2,232
of which, great powers only (UK, USA, and USSR)	345.0	29,277	85	1,443.5	4,184
<i>Gains, 1938–42</i>					
USA	130.5	7,856	60	800.3	6,134
USSR	167.0	21,176	127	359.0	2,150
US colonies	17.8	324	18	26.5	1,495
Near East and North Africa	38.6	6,430	167	52.1	1,351
<i>Losses, 1938–42</i>					
France	42.0	551	13	185.6	4,424
Czecho-Slovakia	10.5	140	13	30.3	2,882
Poland	35.1	389	11	76.6	2,182
Occupied USSR	62.4	978	16	134.2	2,150
US colonies	15.9	296	19	23.9	1,497
French colonies	70.9	12,099	171	48.5	684
UK colonies	23.2	933	40	14.4	621
Axis powers					
Axis total, 1938	258.9	6,336	24	751.3	2,902
Net gain, 1938–42	375.7	4,834	—	800.7	—
Axis total, 1942	634.6	11,169	18	1,552.0	2,446
of which, great powers only (Germany and Austria, Italy, and Japan)	190.6	1,246	7	685.8	3,598
<i>Gains, 1938–42</i>					
Denmark	3.8	43	11	20.9	5,544
Netherlands	8.7	33	4	44.5	5,122
Belgium	8.4	30	4	39.6	4,730
France	42.0	551	13	185.6	4,424
Norway	2.9	323	110	11.6	3,945

Table 1.3. *Wartime GDP of the great powers, 1939–1945, in international dollars and 1990 prices (billions)*

	1938	1939	1940	1941	1942	1943	1944	1945
<i>Allied powers</i>								
USA	800	869	943	1,094	1,235	1,399	1,499	1,474
UK	284	287	316	344	353	361	346	331
France	186	199	82	—	—	—	—	101
Italy	—	—	—	—	—	—	117	92
USSR	359	366	417	359	318	464	495	396
Allied total	1,629	1,721	1,757	1,798	1,906	2,223	2,458	2,394
<i>Axis powers</i>								
Germany	351	384	387	412	417	426	437	310
France	—	—	82	130	116	110	93	—
Austria	24	27	27	29	27	28	29	12
Italy	141	151	147	144	145	137	—	—
Japan	169	184	192	196	197	194	189	144
Axis total	686	747	835	911	903	895	748	466
Allies/Axis	2.4	2.3	2.1	2.0	2.1	2.5	3.3	5.1
USSR/Germany	1.0	1.0	1.1	0.9	0.8	1.1	1.1	1.3

Sources: For 1938, see table 1.1. Other years are interpolated on index numbers as follows: UK, table 2.1 (col. 4); USA, table 3.1 (col. 4); Germany, table 4.1 (col. 1); Italy, table 5.1 (col. 3); Japan, table 6.1 (col. 1); USSR, table 7.7, part (A). Figures for the USSR for 1939 are interpolated on population within 1938 frontiers on the assumption that GDP per head remained unchanged compared with 1938 (for evidence on this score see Harrison (1994), 269; Maddison (1995), 200). For France and Austria see Maddison (1995), appendix B.

tions as they existed in 1942. The prewar GDP of the combined Allied powers exceeded that of the Axis powers by 2.4:1. Subsequently the ratio moved somewhat against the Allies, falling to 2:1 in 1941, because the Axis economies expanded while the resources of France, knocked out of the Allied coalition in 1940, became available to Germany. In 1941 Soviet GDP was also beginning to fall under the impact of German attack. But 1941 was the Allied low point.

From 1942 onwards the ratio moved steadily in the Allied favour. First, the United States economy, already by far the largest among the great powers in GDP terms, embarked on a huge quantitative mobilization drive; by 1944, US GDP stood at nearly twice its 1938 level. Second, the Soviet economy, although hit hard by invasion in 1941 and harder still in 1942, was subsequently stabilized and then mobilized to a higher level of output. Third, Italy was knocked out of the Axis coalition in 1943. Fourth, the

Table 1.4. *The main neutral-country trading blocs of the wartime coalitions, showing population and GDP of 1938*

	Population million 1	GDP, international dollars and 1990 prices	
		total, \$ bn 2	per head, \$ 3
<i>Allied trading bloc</i>			
Ireland	2.9	9.2	5,126
Independent states of Central and South America	126.7	250.3	1,975
Allied total	129.7	259.4	2,001
<i>Axis trading bloc</i>			
Switzerland	4.2	26.4	6,302
Sweden	6.3	29.8	4,725
Spain	25.3	51.1	2,022
Portugal	7.6	12.9	1,707
Turkey	17.0	23.1	1,359
Portuguese colonies	9.5	7.0	735
Spanish colonies	1.0	0.7	714
Axis total	70.8	151.0	2,133
Allies/Axis	1.8	1.7	0.9

Notes:

Ireland, although neutral, could scarcely avoid a high degree of commercial integration into the British war economy. The only significant neutral trading partners of the wartime Allies were in Central and South America, but the colonial dependencies are already accounted for or otherwise dealt with in table 1.2, so only the independent states remain to be dealt with here: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Salvador, Uruguay, Venezuela.

Spanish colonies: mainly Spanish Guinea, Spanish Morocco, and Spanish Sahara.

Portuguese colonies: mainly Angola and Mozambique, but also territories elsewhere in Africa, India, and east Asia.

Sources: As tables 1.1 and 1.2. Populations are taken from League of Nations (1940) where not given by Maddison (1995). GDPs per head are from Maddison (1995), except that, where not available for the territories specified, the regional average is assumed, weighted where necessary (as in the case of Portuguese colonies) by population.

Table 1.5. *Armed forces of the great powers, 1939–1945 (thousands)*

	1939	1940	1941	1942	1943	1944	1945
<i>Allied powers</i>							
USA	—	—	1,620	3,970	9,020	11,410	11,430
UK	480	2,273	3,383	4,091	4,761	4,967	5,090
France	5,000	7,000	—	—	—	—	—
USSR	—	5,000	7,100	11,340	11,858	12,225	12,100
Allied total	5,480	14,273	12,103	19,401	25,639	28,602	28,620
<i>Axis powers</i>							
Germany	4,522	5,762	7,309	8,410	9,480	9,420	7,830
Italy	1,740	2,340	3,227	3,810	3,815	—	—
Japan	—	1,630	2,420	2,840	3,700	5,380	7,730
Axis total	6,262	9,732	12,956	15,060	16,995	14,800	15,560
<i>Allies/Axis:</i>							
eastern front	—	—	1.1	1.5	1.4	1.9	2.3
western and Pacific fronts	1.2	0.8	0.9	1.1	1.9	1.9	1.6

Notes:

The Allied and Axis totals sum the preceding rows in each column; however, the Axis total is based on the average of the alternative Japanese series. The ratios of Allied to Axis forces on each front are calculated as follows.

Western and Pacific fronts: for 1939 UK and France versus Germany. In 1940, the French and Italian forces are included, each with a 50 per cent weight since Italy joined the war in mid-year, at the same time as the French surrendered. In 1942–3, USA and UK versus one-tenth of the German armed forces, plus Italy, plus Japan (the average of the alternative series), but in 1943 the Italian forces are given a weight of two-thirds corresponding to the eight months of fighting before the Italian surrender. In 1944–5, USA and UK versus one-third of the German armed forces, plus Japan.

Eastern front: USSR versus Germany, assuming that Germany allocated 90 per cent to the eastern front in 1941–3, but only two-thirds in 1944–5.

Sources:

USA, table 3.11 (col. 3).

UK, table 2.13.

France: according to Kedward (1995), 401, there were 'just under 5 million' in the French army after mobilization in September 1939, with 'a further two million possible soldiers available in the Empire', which I assume to have been mobilized by 1940.

USSR, as table 7.8.

Germany: Förster, Messenger and Petter (1995), 468.

Italy: personal communication (Vera Zamagni).

Japan, table 6.9 (the rounded average of cols. 1, 2).

Table 1.6. *War production of the great powers, 1939 to August 1945 (units)*

	1939	1940	1941	1942	1943	1944	1945	Total
<i>USA</i>								
No. of months	—	—	1	12	12	12	8	45
<i>Thousands</i>								
Rifles, carbines	—	—	38	1,542	5,683	3,489	1,578	12,330
Machine pistols	—	—	42	651	686	348	207	1,933
Machine guns	—	—	20	662	830	799	303	2,614
Guns	—	—	3	188	221	103	34	549 ^a
Mortars	—	—	0.4	11.0	25.8	24.8	40.1	102.1
Tanks and SPG	—	—	0.9	27.0	38.5	20.5	12.6	99.5
Combat aircraft	—	—	1.4	24.9	54.1	74.1	37.5	192.0
<i>Units</i>								
Major naval vessels	—	—	544	1,854	2,654	2,247	1,513	8,812
<i>UK</i>								
No. of months	4	12	12	12	12	12	8	72
<i>Thousands</i>								
Rifles, carbines	18	81	79	595	910	547	227	2,457
Machine pistols	—	—	6	1,438	1,572	672	231	3,920
Machine guns	19	102	193	284	201	125	15	939
Guns	1	10	33	106	118	93	28	390
Mortars	1.3	7.6	21.7	29.2	17.1	19.0	5.0	100.9
Tanks and SPG	0.3	1.4	4.8	8.6	7.5	4.6	2.1	29.3
Combat aircraft	1.3	8.6	13.2	17.7	21.2	22.7	9.9	94.6
<i>Units</i>								
Major naval vessels ^a	57	148	236	239	224	188	64	1,156
<i>USSR</i>								
No. of months	—	—	6	12	12	12	8	50
<i>Thousands</i>								
Rifles, carbines	—	—	1,567	4,049	3,436	2,450	637	12,139
Machine pistols	—	—	90	1,506	2,024	1,971	583	6,174
Machine guns	—	—	106	356	459	439	156	1,516
Guns	—	—	30	127	130	122	72	482
Mortars	—	—	42.3	230.0	69.4	7.1	3.0	351.8
Tanks and SPG	—	—	4.8	24.4	24.1	29.0	20.5	102.8
Combat aircraft	—	—	8.2	21.7	29.9	33.2	19.1	112.1
<i>Units</i>								
Major naval vessels	—	33	62	19	13	23	11	161

Table 1.6. (cont.)

	1939	1940	1941	1942	1943	1944	1945	Total
<i>Germany</i>								
No. of months	4	12	12	12	12	12	4	68
<i>Thousands</i>								
Rifles, carbines	451	1,352	1,359	1,370	2,275	2,856	665	10,328
Machine pistols	40	119	325	232	234	229	78	1,257
Machine guns	20	59	96	117	263	509	111	1,176
Guns	2	6	22	41	74	148	27	320
Mortars	1.4	4.4	4.2	9.8	23.0	33.2	2.8	78.8
Tanks and SPG	0.7	2.2 ^b	3.8	6.2	10.7	18.3	4.4	46.3
Combat aircraft	2.3	6.6	8.4	11.6	19.3	34.1	7.2	89.5
<i>Units</i>								
Submarines	15	40	196	244	270	189	0	954
<i>Italy</i>								
No. of months	—	6	12	12	8	—	—	38
<i>Thousands</i>								
Rifles, carbines	—	—	—	—	—	—	—	—
Machine pistols	—	—	—	—	—	—	—	—
Machine guns	—	—	—	—	—	—	—	125
Guns	—	—	—	—	—	—	—	10
Mortars	—	—	—	—	—	—	—	17.0
Tanks and SPG	—	—	—	—	—	—	—	3.0
Combat aircraft	1.7	3.3	3.5	2.8	2.0	—	—	13.3
<i>Units</i>								
Major naval vessels	40	12	41	86	148	—	—	327
<i>Japan</i>								
No. of months	4	12	12	12	12	12	8	72
<i>Thousands</i>								
Rifles, carbines	83	449	729	440	634	885	349	3,570
Machine pistols	—	—	—	—	—	3	5	8
Machine guns	6	21	43	71	114	156	40	450
Guns	1	3	7	13	28	84	23	160
Mortars	0.5	1.6	1.1	1.5	1.7	1.1	0.3	7.8
Tanks and SPG	0.2	1.0	1.0	1.2	0.8	0.4	0.2	4.8
Combat aircraft	0.7	2.2	3.2	6.3	13.4	21.0	8.3	55.1
<i>Units</i>								
Major naval vessels	21	30	49	68	122	248	51	589

Notes:

^a Small calibre naval and aviation weapons accounted for roughly half this number.

^b Including armoured cars.

Sources:

Ground and air munitions (SPG are self-propelled guns), except Italy: IVMV, vol. XII (1982), 168, 181, 183, 200, 202.

Major naval vessels (excluding landing craft, torpedo boats, and other auxiliary craft), except Italy: Overy (1995), 1060.

Italy, all figures: personal communication (Vera Zamagni).

Table 1.7. *War production of the great powers, 1942-1944*

	Rifles, carbines (thou.)	Machine pistols (thou.)	Machine guns (thou.)	Guns (thou.)	Mortars (thou.)	Tanks (thou.)	Combat aircraft (thou.)	Major naval vessels
<i>The Allied powers</i>								
USA	10,714	1,685	2,291	512	61.6	86.0	153.1	6,755
UK	2,052	3,682	610	317	65.3	20.7	61.6	651
USSR	9,935	5,501	1,254	380	306.5	77.5	84.8	55
Allied total	22,701	10,868	4,154	1,208	433.4	184.2	299.5	7,461
<i>The Axis powers</i>								
Germany	6,501	695	889	262	66.0	35.2	65.0	703
Italy	—	—	83	7	11.3	2.0	8.9	218
Japan	1,959	3	341	126	4.3	2.4	40.7	438
Axis total	8,460	698	1,313	395	81.6	39.6	114.6	1,359
Allies/Axis	2.7	15.6	3.2	3.1	5.3	4.7	2.6	5.5
eastern front	2.3	11.9	2.1	2.2	7.0	3.3	2.0	—
western and Pacific fronts	3.1	22.9	4.0	3.8	3.4	6.6	3.0	—

Source: Calculated from table 1.6. Two-thirds of Italian production between mid-1940 and mid-1943 is assumed to have taken place within the period 1942-4. For ground and air munitions, two-thirds of German war production are assigned to the eastern front. No account is taken of the contribution of the western Allies to Soviet munitions supply, or of the Italian contribution to Axis forces in Russia.

Table 1.8. *The military burden, 1939–1944 (military outlays, per cent of national income)*

	1939	1940	1941	1942	1943	1944
<i>At current prices</i>						
<i>Allied powers</i>						
USA	1	2	11	31	42	42
UK	15	44	53	52	55	53
USSR	—	—	—	—	—	—
<i>Axis powers</i>						
Germany	23	40	52	64	70	—
Italy	8	12	23	22	21	—
Japan	22	22	27	33	43	76
<i>At constant prices</i>						
<i>Allied powers</i>						
USA	1	2	11	32	43	45
UK	—	—	—	—	—	—
USSR	—	17	28	61	61	53
<i>Axis powers</i>						
Germany	23	40	52	63	70	—
Italy	—	—	—	—	—	—
Japan	—	—	—	—	—	—

Sources:

USA (per cent of GNP at current and 1958 prices): table 3.1 (cols. 3, 6).

UK (per cent of net national expenditure at current prices): table 2.6 (col. 2).

USSR (per cent of GNP at 1937 factor cost): table 7.11.

Germany (per cent of GNP at current and 1939 prices): calculated from table 4.16. For war outlays at 1939 prices the same deflator is assumed as for government outlays generally; by 1943, war outlays accounted for 96 per cent of the latter.

Italy (per cent of GDP at current prices): table 5.14 (col. 22) shows real military outlays divided by real GDP, both converted from current values by the same GDP deflator.

Japan (per cent of GDP at current prices): table 6.11 (col. 5).

in World War I, and of China in World War II, remind us that size was not sufficient for economic survival under attack.

The success of the British economic mobilization testifies eloquently to the importance of development level by comparison with size and self-sufficiency. In terms of the scale factors shown in table 1.1, Britain was smaller than Japan in population and territory, smaller than Germany in GDP and territory, and the smallest of all the Allied powers by any measure. Being a highly open economy, exceptionally highly industrialized, the British economy also relied heavily on imported food and fuels. Despite

Table 1.11. *War losses attributable to physical destruction (per cent of assets)*

	Human assets 1	Physical assets	
		national wealth 2	industry fixed assets 3
<i>Allied powers</i>			
USA	1	0	—
UK	1	5	—
USSR	18–19	25	—
<i>Axis powers</i>			
Germany	9	—	17
Italy	1	—	10
Japan	6	25	34

Note:

Figures are war damage to fixed assets and war deaths amongst the working population; they take no account of wartime replacement of either fixed or human capital.

*Sources:**Human assets*

USA, Germany: total war deaths divided by prewar population from Uralanis (1971), 295.

UK: chapter 2 (p. 71).

USSR: table 7.13.

Italy: chapter 5 (p. 213).

Japan: excess deaths, 1941–5, compared with 1940 population, from table 6.8.

Physical assets

UK (physical destruction, per cent of 1938): table 2.20.

USSR: table 7.13.

Germany (war destruction in the postwar Anglo-American occupation zone, per cent of 1936): table 4.20.

Italy: chapter 5 (p. 211).

Japan (war damage, per cent of the sum of 1945 assets plus war damage): table 6.14 (col. 5).

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