AGGREGATE AND PER CAPITA GDP IN EUROPE, 1870-2000: CONTINENTAL, REGIONAL AND NATIONAL DATA WITH CHANGING BOUNDARIES

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Abstract: We present estimates of aggregate and per capita GDP in constant prices for Europe over the period 1870-2000. Following Bairoch (1976), we present figures for the continent as a whole and for individual countries on the basis of changing boundaries. This is complementary to the Maddison (2003) dataset, where country data are presented on the basis of constant boundaries. Data on the basis of the boundaries of the time are more convenient for comparative historical analysis, and can be combined more easily with data from contemporary sources, such as official statistical collections. Regional totals are also provided.

I. INTRODUCTION

This paper presents estimates of aggregate and per capita GDP in constant prices for Europe over the period 1870-2000. We follow Bairoch (1976) in presenting figures for the continent as a whole and for individual countries on the basis of changing boundaries. We see this as complementary to the approach of Maddison (2003), who presents country data on the basis of the current boundaries for the whole period. For comparative historical analysis, it is often necessary to have data on the basis of the boundaries of the time, particularly if the national income statistics are to be combined with other data from contemporary sources, such as official statistical collections. Although major boundary changes were relatively rare amongst the most developed parts of Europe, where national income statistics first became available, they have been very common amongst the poorer parts of the continent. To write an economic history of Europe with full coverage of the continent, then, it is essential to work with changing national boundaries (Broadberry and O'Rourke, 2009).

Although we have followed the approach of Bairoch (1976) in distinguishing a number of periods with different national boundaries, we have made use of the large number of historical national accounting studies which have been conducted over the last three decades, so that our Europe-wide totals are more in line with those of Maddison (2003). In addition, we present three regional totals for the northwest, the southern and the central & eastern parts of the continent. This choice of regionalisation reflects a combination of factors including language, religion and political culture, as well as geography.

The next section sets out the sources and methods, with further details presented in a data appendix with links to a website from which the data can be downloaded. Sections III to VI discuss the main results for the periods 1870-1913, 1913-1950, 1950-1990 and 1990-2000, respectively. Section VII provides some cross-checks on the basic approach of time-series projection from a 1990 benchmark, by presenting benchmark data for earlier years, in line with the approach of Broadberry (1998; 2003).

II. SOURCES AND METHODS

1. Definition of Europe and its regions

We begin by defining Europe and its regions, a potentially contentious issue. We have opted for a wide definition of Europe, including Russia and Turkey. The inclusion of Russia west of the Urals is uncontroversial, but because of the way that the data were collected, we have to include the whole of Russia. For the Soviet era, again data constraints make it necessary to include a number of non-European states that were part of the USSR. Where possible, we will present additional data for European Russia. The other controversial issue concerns the treatment of Turkey. Although Constantinople was the capital of the Byzantine Empire, Turkey has more frequently been grouped with Asian countries in collections of economic statistics in modern times. Because of its position in the pre-Ottoman world and since Turkey is currently under consideration for membership of the European Union, we have included it in Europe.

We have divided Europe into three regions, defined largely on a geographical basis, but taking account also of differences of language, religion, and political

culture. Thus northwestern Europe is a group of states, many of which border the North Sea, have a protestant religious heritage, speak a Teutonic language and have maintained a democratic political system throughout the period since 1870. Southern Europe consists largely of states which border the Mediterranean Sea, speak a Greco-Latin language, have a catholic religious heritage and were ruled by an authoritarian regime for a significant part of the period. Central and eastern Europe consists of the other states, many of which speak a Slavic language, have an orthodox or catholic religious heritage and lived under an undemocratic regime for a significant part of the period. We will also consider alternative country groupings that have been proposed by other authors for particular periods, where this helps to shed light on the processes of European growth and development.

2. Periodisation

Most of the important boundary changes occurred around World War I, World War II and the fall of the Berlin Wall, and this provides us with a natural periodisation of 1870-1913, 1913-1950, 1950-1990 and 1990-2000. In each of these sub-periods, boundaries tended to be quite stable and have been held constant in this study. Estimates of population and GDP on the basis of both old and new boundaries in overlap years are needed to provide a link between the sub-periods.

3. Time series projections and benchmark checks

Following Maddison (2003), the basic methodology involves assembling time series of real GDP and population for each country, and projecting them backwards and forwards from a 1990 benchmark. Combining the time series of GDP and population allows the derivation of a time series for per capita GDP for each country. The 1990

benchmark allows us to pin down the comparative level of GDP and per capita income by converting all national currency units to 1990 international dollars, using purchasing power parities (PPPs) from Maddison (1995; 2001).

Since the 1990 benchmark is quite close to the present, the Maddison methodology involves projecting time series over very long periods. This potentially raises many index number problems, particularly given the substantial boundary changes involved, so it is helpful to provide some additional corroboration. This involves using additional benchmark estimates for earlier years to check for consistency with the comparative GDP per capita levels suggested by the time series projections. Although Prados de la Escosura (2000) and Ward and Devereux (2003) claim that these index number problems are serious enough to call into question the whole validity of the time series projection methodology, Broadberry (1998; 2003; 2006) finds broad consistency between time series projections and direct benchmarks in a small number of detailed case studies. In this paper, we use data on nominal per capita in incomes and PPPs for a wider sample of countries to estimate new direct benchmarks for 1905 and 1927, and use them to provide a check on the time series projections from 1990. We conclude that although index number problems exist, with careful treatment of the data it is still possible to bring time series projections and direct benchmarks together to tell a consistent story.

4. Basic data sources

Real GDP series are assembled using historical national accounting studies for each country for the pre-1950 period, combined with OECD sources and official publications from 1950 to the present. Detailed sources are listed in Appendix 1.

Population data are taken largely from Mitchell (2003), supplemented by national sources. Again, full details are given in Appendix 1.

The major boundary changes across World War I are dealt with by obtaining estimates for 1913 on both a prewar and an interwar basis. In some cases, such as the United Kingdom across World War I, detailed estimates are available for GDP as well as population on both bases. In other cases, such as Germany across both World Wars, considerable effort was made to link prewar and postwar territories on the basis of known productivity developments. For the majority of cases, GDPs were adjusted in proportion to population changes, with the population in overlap years taken from Svennilson (1954). For the boundary changes after the fall of the Berlin Wall, estimates for the overlap year of 1990 are available in Maddison (2003). Again, details of the sources used to calculate the impact of boundary changes are given in Appendix 1.

III. GDP, POPULATION AND PER CAPITA GDP, 1870-1913

The basic data for GDP, population and per capita GDP for each country over the period 1870-1913 are provided in Tables 1 to 3, while Table 4 presents the data on a comparative regional basis. Europe´s GDP grew at a little over 2 per cent per annum between 1870 and 1913, with a roughly equal split between extensive population growth and intensive per capita income growth (Table 4A). Since per capita income growth was 1.79 per cent per annum in the United Sates, European living standards fell increasingly behind those in North America. Whereas Europe´s GDP per capita was more than two-thirds of the US level in 1870, this had fallen to just over half by 1913 (Table 3).

Between the major European regions, the variation in growth rates was larger for GDP than for GDP per capita (Table 4A). Central and eastern Europe had substantially above average GDP growth, but this largely reflected faster population growth, with per capita GDP growth very close to the average. Similarly, the substantially slower than average growth of GDP in southern Europe largely reflected slower population growth. As a result, central and eastern Europe´s shares of the continent´s GDP and population increased, while the shares of southern Europe decreased (Table 4B). Inter-regional differences in living standards remained quite stable, with per capita GDP substantially above the continental average in Northwest Europe, slightly below the average in Southern Europe and further below the average in central and eastern Europe (Table 4C).

The period 1870-1913 has traditionally been seen as one of economic integration and convergence, with a number of countries on the periphery catching-up on the core through industrialisation (Bairoch, 1976; Craig and Fisher, 1997; O´Rourke and Williamson, 1997). This is explored in Table 4D, where growth performance is analysed for a number of country groupings suggested by Bairoch (1976). The later industrialisers (Austria-Hungary, Germany and the Netherlands) experienced substantially faster growth of GDP and per capita income than the early industrialisers (Belgium, France, Switzerland and the United Kingdom), while the Nordic countries (Denmark, Finland, Norway and Sweden) exhibited the fastest growth of all the groupings. Nevertheless, the tendency to β-convergence (a negative relationship between the starting level of per capita income and its subsequent growth) within the more industrialised parts of Europe, was offset by the effects of

slower growth in other poor parts of Europe, with the Mediterranean economies (Greece, Italy, Portugal, Spain and Serbia) exhibiting below average per capita income growth. Note that although Russia, Romania and Bulgaria experienced above average growth of GDP, this was consistent with the slowest growth of per capita income because of the rapid population growth. Note also that removing Russia and Turkey raises the growth rate of per capita income for Europe from 1.08 to 1.28 per cent per annum.

Hence Europe as a whole did not exhibit unconditional convergence during this period. Taking the change over time in the unweighted cross-sectional standard deviation of the log of per capita income (σ) as a measure of unconditional σ-convergence, we see that far from exhibiting convergence between 1870 and 1913, Europe displayed a tendency towards divergence (Table 3). Over this period, σ increased from 0.432 in 1870 to 0.471 in 1913. Any tendency towards β-convergence in the industrialised parts of western Europe was more than offset by further falling behind in the poorer parts of southern, central and eastern Europe. The United Kingdom remained the European per capita income leader, but was overtaken by the United States in the early 1900s. Because of the lower US rate of labour force participation, this is consistent with the United States forging ahead in terms of labour productivity during the 1890s (Broadberry and Irwin, 2006).

IV. GDP, POPULATION AND PER CAPITA GDP, 1913-1950

The basic data for GDP, population and per capita GDP for each country over the period 1913-1950 are provided in Tables 5 to 7, while Table 8 presents the data on a comparative regional basis. The annual growth rate of Europe´s GDP slowed down

from 2.13 per cent between 1870 and 1913 to 1.37 per cent between 1913 and 1950, although the slow down was less pronounced in per capita income growth, from 1.08 per cent before 1913 to 0.82 per cent during 1913-1950 (Tables 8A and 4A). Since per capita income growth was 1.59 per cent per annum in the United States over the whole period 1913-1950, European living standards fell to little more than one-third of the US level by 1950. Nevertheless, comparative Europe/US living standards fluctuated considerably during this period, reflecting the differential impact of the Great Depression and the two world wars on the two sides of the Atlantic (Table 7). Whereas in 1913, European per capita income was roughly half the US level, this had fallen to little more than 40 per cent by 1929, following the greater negative impact of World War I on Europe and the greater positive impact of the boom of the 1920s on the United States. By 1937, however, European per capita income was back to half the US level, as a result of the greater impact of the Great Depression of the 1930s in North America. The forging ahead of US living standards to nearly three times the European level by 1950 again reflects the greater impact of World War II on Europe.

Between the major European regions, the variation in growth rates of both GDP and GDP per capita was much smaller than before World War I (Tables 8A and 4A). A reduction in the population growth rate accounted for most of the slow down in GDP growth, apart from in southern Europe, where the decline in GDP per capita growth was more important. Regional shares of population remained quite stable, although northwest Europe slightly increased its share of GDP at the expense of southern Europe (Table 8B). Inter-regional differences in living standards also remained quite stable, with per capita GDP substantially above the continental

average in northwest Europe, slightly below the average in southern Europe and further below the average in central and eastern Europe (Table 8C).

1913-1950 is usually seen as a period of economic disintegration and divergence. Over this period, the standard deviation of the log of per capita GDP (σ) increased from 0.443 in 1913 to 0.549 in 1950 (Table 7). Although growth rates were quite similar in the three major regions, there was greater variation across country groupings defined in political terms (Table 8D). The fastest growth of per capita income occurred in the war-free countries (Sweden and Switzerland).[1] Growth was almost as rapid in the Soviet Union, following the socialist revolution of 1917 and the industrialisation drive pursued under Stalin. However distasteful the totalitarian methods used to bring about such growth, the economic achievements of the Soviet Union during this period cannot be ignored (Allen, 2003). Furthermore, they stand in strong contrast to the poor growth performance of the other totalitarian regimes of this period, the fascist countries of Italy, Portugal, Spain and Germany. Largely as a result of the dynamic Soviet performance, the growth rate of Europe less the USSR and Turkey was slower than the growth rate of Europe more widely defined. The United Kingdom remained the European per capita income leader until the end of the 1930s, but was overtaken by Switzerland during World War II (Table 7).

V. GDP, POPULATION AND PER CAPITA GDP, 1950-1990

The basic data for GDP, population and per capita GDP for each country over the period 1950-1990 are provided in Tables 9 to 11, while Table 12 presents the data on a comparative regional basis. The annual growth rate of Europe´s GDP increased

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[1] Although Spain was also neutral during both world wars, it faced a period of severe disruption during its Civil War.

from 1.37 per cent between 1913 and 1950 to 3.61 per cent between 1950 and 1990, with most of the increase due to faster per capita income growth rather than faster population growth (Tables 12A and 8A). Since per capita income growth was 2.22 per cent per annum in the United States over the whole period 1950-1990, European living standards recovered to 45.7 per cent of the US level by 1990 (Table 11). In fact, the period 1950-73 saw the most rapid sustained per capita income growth in Europe´s history, at 3.72 per cent per annum, bringing Europe´s per capita income back above 50% of the US level by 1973. This rapid postwar growth can partly be explained as reconstruction and recovery, and would be expected within a convergence framework. Per capita income growth between 1973 and 1990 slowed down to 1.38 per cent per annum.

Between the major European regions, the variation in growth rates of both GDP and GDP per capita increased compared with the period 1913-1950 (Tables 12A and 8A). GDP growth was substantially slower than average in northwest Europe, but this was largely explained by slower population growth. Per capita income growth was substantially above average in southern Europe, reflecting a process of catching-up. As a result, southern Europe increased its share of population slightly and its share of GDP a lot, while northwest Europe saw a corresponding fall in its shares of population and GDP. Central and eastern Europe saw a small increase in its share of population and a small decrease in its share of GDP (Table 12B). Inter-regional differences in living standards changed correspondingly, with northwest Europe seeing a decline in its lead, and southern Europe moving from below average to above average (Table 12C). Central and eastern Europe fell further behind as living

standards declined from 83.8 per cent of the European average in 1950 to 78.1 per cent in 1990.

The period 1950-1990 has often been characterised as one of economic integration and convergence. Between 1950 and 1973, the standard deviation of the log of per capita GDP (σ) did indeed decrease from 0.579 to 0.521 (Table 11). However, after 1973, we see a return of unconditional σ-divergence, with σ increasing to 0.611 by 1990. Although there was continued catching-up in much of southern Europe, this was more than offset by the slow growth of the relatively backward economies of central and eastern Europe. Again, it is helpful to consider some alternative country groupings in Table 12D. The fastest growth of per capita GDP was in the six founding members of the European Economic Community (the EEC6, comprising France, Germany, Italy and Benelux), measured across the whole period 1950-1990, despite the fact that the Treaty of Rome was signed only in 1957. Per capita income growth was still above average for the EEC9, which includes Denmark, Ireland and the United Kingdom, again for the whole period 1950-1990 despite the fact that these countries joined the EEC only in 1973. The eastern bloc countries, with centrally planned economies, grew relatively slowly, particularly after 1973. Largely as a result of the sluggish Soviet performance, the growth rate of Europe less the USSR and Turkey was significantly faster than the growth rate of Europe more widely defined. Switzerland remained the European per capita income leader throughout this period (Table 11).

VI. GDP, POPULATION AND PER CAPITA GDP, 1990-2000

The basic data for GDP, population and per capita income for each country over the period 1990-2000 are shown in Tables 13 to 15, while Table 16 presents the data on a comparative regional basis. Europe's annual growth rate of GDP declined from 3.61 per cent between 1950 and 1990 to just 1.10 per cent between 1990 and 2000 (Tables 16A and 12A). Part of the decline was explained by slower population growth, but the annual growth rate of GDP per capita also declined from 2.72 per cent during 1950-1990 to 0.96 per cent during 1990-2000. This continued the deceleration of growth which had already occurred from 3.72 per cent during 1950-1973 to 1.38 per cent during 1973-1990.

The inter-regional variation in growth rates reached an all-time high during this period as a result of the collapse of GDP in much of central and eastern Europe after the fall of the Berlin Wall and the transition away from central planning towards a more market-oriented economy (Table 16A). In the institutional chaos following the collapse of socialist regimes, output fell sharply and population also declined as people emigrated to the west. Output began to recover in most countries from the mid-1990s, but in many cases per capita GDP remained below the 1990 level in 2000 (Table 15). There was a high degree of political fragmentation with the break-up of the Soviet Union, Yugoslavia and Czechoslovakia, leading to an increase in the number of countries in central and eastern Europe from 12 before 1990 to 25 by 2000.

As a result of these trends, central and eastern Europe's share of Europe's GDP fell precipitously, while northwestern Europe and southern Europe saw their shares increase(Table 16B). Central and eastern Europe also saw a decline in living standards in absolute terms as well as relative to the rest of Europe, while

northwestern Europe and southern Europe improved their relative positions substantially (Table 16C).

It is instructive to consider a number of alternative country groupings based on political factors. The EEC continued to prosper as it expanded, adding Greece in 1981 and Portugal and Spain in 1986 Its name was changed to the European Community (EC) in the Maastricht Treaty of 1992, where the EC also became one pillar of a wider European Union (EU). The EC12 experienced rapid growth of GDP per capita at 1.91 per cent per annum. The EU15 includes Austria, Finland and Sweden, which joined in 1995. The addition of these small countries makes little difference to the growth rate measured across the whole period 1990-2000. Former Eastern Bloc economies (excluding Russia) were much more successful as a group than former Yugoslavia and the former USSR (Table 16D). Although population declined through emigration, former Eastern Bloc economies experienced per capita GDP growth that was not much slower than in southern Europe. Per capita incomes and population both declined precipitously in the former Yugoslavia, which broke up amidst the chaos of civil war and ethnic cleansing. Although the former USSR experienced a slower population decline than the former Yugoslavia, the collapse of living standards was dramatically worse, at more than 4 per cent a year for the decade. As a result, the growth rate of GDP per capita was substantially higher in Europe less Russia and Turkey than in Europe defined more widely.

The dramatic collapse of economic activity in central and eastern Europe combined with respectable growth in northwestern and southern Europe to produce a substantial divergence of living standards during the 1990s, with σ rising from 0.567

in 1990 to 0.777 in 2000 (Table 15). Given the large weight of eastern and central Europe in the continent as a whole, and combined with an acceleration in US growth during the second half of the 1990s, Europe's GDP per capita declined from 47.2 per cent of the US level in 1990 to 42.5 per cent by 2000 (Table 15).

VII. BENCHMARK CROSS-CHECKS ON TIME SERIES PROJECTIONS

Prados de la Escosura (2000) and Ward and Devereux (2003) are highly critical of time series projections over long periods, claiming that there are bound to be serious index number problems. Accordingly, we follow here the approach of Broadberry (1998; 2003; 2006), who uses additional benchmarks as a cross check on time series projections of comparative productivity and income levels. Tables 17 and 18 provide data on nominal income per capita and PPPs for a number of countries in 1905 and 1927. Per capita incomes can thus be converted to a common currency and used to provide benchmark cross-checks on the time series projections of per capita income. The PPPs are taken from a study by Williamson (1995), and are based on the prices of a basket of consumption goods. This is not ideal because national income includes other items of expenditure bedsides consumption, although this has clearly been the most important component. Note also that since the UK national accounts contain estimates of gross domestic product at factor costs and market prices (GDP_{FC} and GDP_{MP}, respectively) and also net national product at factor cost (NNP_{FC}), we are able to take account of the different concepts of national income available for the different countries. Inevitably, then, there are margins of error, shown in panel B of Tables 17 and 18. In Table 17, the errors are all within 10 per cent, which is reassuring, given the claims of inevitable large disagreements between time series projections and direct benchmarks made by Ward and Devereux (2003). For 1927,

however, there are three cases where the disagreements lie in the 10-15 per cent range (Denmark, France and Spain). It should be borne in mind here that, in contrast to the pre-1914 period, the interwar years were characterised by high levels of volatility in both prices and real economic activity, which makes for difficulty in establishing both the level of nominal income and the PPP for any particular year.

VIII. CONCLUSION

This paper presents a new set of estimates of aggregate and per capita GDP in constant prices for Europe over the period 1870-2000. Following Bairoch (1976), we present figures for the continent as a whole and for individual countries on the basis of changing boundaries. It should be stressed that this new data set is complementary to that of Maddison (2003), where country data are presented on the basis of constant boundaries. It is simply the case that data on the basis of the boundaries of the time are more convenient for comparative historical analysis, and can be more easily combined with data from contemporary sources, such as official statistical collections. The data have been produced as part of a project to provide a new economic history of Europe of a pan-European and quantitative basis (Broadberry and O'Rourke, 2008). Some emphasis is therefore placed on providing totals for Europe as a whole and within the major regions.

TABLE 1: GDP in Europe, 1870-1913 ($m in 1990 international prices)

	1870	1890	1913
Belgium	13,771	20,932	32,403
Denmark	3,453	5,293	10,665
Finland	2,258	3,593	6,980
Netherlands	8,765	12,701	21,988
Norway	2,370	3,428	6,013
Sweden	5,186	7,154	15,768
United Kingdom	104,011	151,998	229,604
Northwestern Europe	**139,814**	**205,099**	**323,421**
France	64,390	84,907	129,039
Greece	1,479	2,428	3,970
Italy	47,539	60,725	96,384
Portugal	4,499	5,884	7,503
Spain	19,254	29,022	41,556
Turkey	9,729		18,295
Southern Europe	**146,890**		**296,747**
Austria-Hungary	53,721	74,637	122,385
Bulgaria	1,958	4,410	6,526
Germany	81,836	136,243	280,005
Romania	4,880	7,380	12,453
Russia	95,432	114,518	265,089
Serbia	779	1,855	3,203
Switzerland	5,581	9,839	16,483
Central & eastern Europe	**244,187**	**348,882**	**706,144**
TOTAL EUROPE	**530,891**		**1,326,312**
USA	98,303	214,714	517,383

TABLE 2: Population in Europe, 1870-1913 (millions)

	1870	1890	1913
Belgium	5.06	6.08	7.60
Denmark	1.79	2.18	2.83
Finland	1.75	2.39	3.05
Netherlands	3.63	4.56	6.21
Norway	1.73	2.00	2.45
Sweden	4.16	4.77	5.62
United Kingdom	31.26	37.49	45.65
Northwestern Europe	**49.38**	**59.47**	**73.41**
France	36.87	38.38	39.77
Greece	1.50	2.21	2.73
Italy	25.86	30.25	35.42
Portugal	4.40	5.05	5.97
Spain	16.20	17.76	20.20
Turkey	10.22		13.00
Southern Europe	**95.05**		**117.09**
Austria-Hungary	33.92	38.84	47.51
Bulgaria	2.42	3.23	4.50
Germany	40.81	49.24	66.98
Romania	4.27	5.29	7.29
Russia	84.50	117.80	170.90
Serbia	1.30	2.20	3.03
Switzerland	2.66	2.95	3.86
Central & eastern Europe	**169.88**	**219.55**	**304.07**
TOTAL EUROPE	**314.30**		**494.57**
USA	40.06	63.30	97.61

TABLE 3: Per capita GDP in Europe, 1870-1913 ($ in 1990 international prices)

	1870	1890	1913
Belgium	2,722	3,443	4,263
Denmark	1,929	2,428	3,768
Finland	1,290	1,503	2,288
Netherlands	2,417	2,786	3,539
Norway	1,370	1,714	2,454
Sweden	1,247	1,500	2,806
United Kingdom	3,328	4,055	5,030
Northwestern Europe	**2,831**	**3,449**	**4,406**
France	1,746	2,212	3,245
Greece	986	1,009	1,455
Italy	1,838	2,007	2,721
Portugal	1,023	1,165	1,257
Spain	1,189	1,634	2,057
Turkey	952		1,407
Southern Europe	**1,545**		**2,534**
Austria-Hungary	1,584	1,922	2,576
Bulgaria	809	1,087	1,450
Germany	2,006	2,767	4,181
Romania	1,143	1,395	1,705
Russia	1,097	944	1,551
Serbia	599	843	1,060
Switzerland	2,098	3,183	4,270
Central & eastern Europe	**1,437**	**1,589**	**2,322**
TOTAL EUROPE	**1,686**		**2,677**
USA	2,454	3,392	5,301
Europe/USA (%)	68.7		50.5
σ (N=20)	0.432		0.471

TABLE 4: Comparative performance by region, 1870-1913

A. Growth rates by region (% per year)

	GDP	Population	GDP per capita
Northwestern Europe	1.95	0.92	1.03
Southern Europe	1.64	0.49	1.15
Central & eastern Europe	2.47	1.35	1.12
Total Europe	2.13	1.05	1.08

B. Regional shares (% of total)

	1870		1913	
	GDP	Population	GDP	Population
Northwestern Europe	26.3	15.7	24.4	14.8
Southern Europe	27.7	30.2	22.4	23.7
Central & eastern Europe	46.0	54.1	53.2	61.5

C. Relative per capita income by region (% of European average)

	1870	1913
Northwestern Europe	167.9	164.6
Southern Europe	91.6	94.7
Central & eastern Europe	85.2	86.7

D. Growth rates for alternative country groupings (% per year)

	GDP	Population	GDP per capita
Highly industrialised Europe	2.09	0.79	1.30
Early industrialisers	1.80	0.57	1.23
Later industrialisers	2.51	1.01	1.50
Nordic countries	2.53	0.91	1.62
Mediterranean countries	1.70	0.73	0.97
Russia, Romania, Bulgaria	2.38	1.62	0.76
Europe less Russia, Turkey	2.08	0.80	1.28

Notes: Highly industrialised Europe: Belgium, France, Germany, Sweden, Switzerland, UK; Early industrialisers: Belgium, France, Switzerland, UK; Later industrialisers: Austria-Hungary, Germany, Netherlands; Nordic countries: Denmark, Finland, Norway, Sweden; Mediterranean countries: Greece, Italy, Portugal, Spain, Serbia.

TABLE 5: GDP in Europe, 1913-1950 ($m in 1990 international prices)

	1913	1929	1937	1950
Belgium	32,403	40,665	41,475	47,275
Denmark	11,305	16,941	21,003	27,346
Finland	6,980	9,953	13,313	17,493
Ireland	8,275	8,300	8,708	10,231
Netherlands	21,988	39,008	41,162	53,432
Norway	6,013	9,536	12,206	17,527
Sweden	15,768	23,814	28,669	45,836
United Kingdom	220,651	247,283	295,500	347,850
Northwestern Europe	**323,383**	**395,500**	**426,036**	**566,990**
France	135,495	182,106	176,415	206,766
Greece	7,888	13,426	17,639	13,237
Italy	100,249	131,423	150,084	173,213
Portugal	7,503	10,800	12,993	17,541
Spain	41,556	62,916	45,055	61,313
Turkey	18,295	20,216	30,553	38,841
Southern Europe	**310,986**	**420,887**	**432,739**	**510,911**
Austria	24,168	25,412	21,975	26,484
Bulgaria	6,526	6,383	9,274	10,879
Czechoslovakia	27,969	42,571	41,890	43,824
Germany	252,030	278,626	328,024	324,487
Hungary	16,848	21,767	23,722	23,722
Poland	51,850	65,842	65,842	67,793
Romania	26,846	19,334	23,547	24,322
Switzerland	16,483	25,466	25,796	42,545
USSR	217,004	222,646	371,727	476,540
Yugoslavia	13,141	18,529	19,317	24,180
Central & eastern Europe	**652,865**	**726,576**	**931,114**	**1,064,776**
TOTAL EUROPE	**1,287,234**	**1,542,963**	**1,825,889**	**2,142,677**
USA	517,383	843,334	832,469	1,455,916

TABLE 6: Population in Europe, 1913-1950 (millions)

	1913	1929	1937	1950
Belgium	7.60	8.03	8.35	8.64
Denmark	3.00	3.52	3.75	4.27
Finland	3.05	3.45	3.66	4.01
Ireland	3.02	2.94	2.95	2.97
Netherlands	6.21	7.78	8.60	10.11
Norway	2.45	2.79	2.92	3.26
Sweden	5.62	6.11	6.28	7.01
United Kingdom	42.63	45.67	47.29	50.57
Northwestern Europe	**73.58**	**80.29**	**83.80**	**90.84**
France	41.76	41.23	41.93	41.83
Greece	5.43	6.29	7.03	7.36
Italy	36.84	40.55	43.27	48.48
Portugal	5.97	6.71	7.41	8.40
Spain	20.20	23.10	25.05	27.87
Turkey	13.00	14.71	16.73	20.80
Southern Europe	**123.20**	**132.59**	**141.42**	**154.74**
Austria	6.64	6.66	6.75	6.93
Bulgaria	4.50	5.66	6.20	6.90
Czechoslovakia	13.24	14.59	15.25	12.78
Germany	60.28	64.74	67.83	79.62
Hungary	6.90	8.58	9.10	9.56
Poland	26.71	31.08	34.36	27.70
Romania	15.75	17.54	19.53	20.69
Switzerland	3.86	4.02	4.18	4.69
USSR	139.90	156.10	164.00	168.59
Yugoslavia	12.40	13.58	15.17	15.64
Central & eastern Europe	**290.18**	**322.55**	**342.37**	**353.10**
TOTAL EUROPE	**486.96**	**535.43**	**567.59**	**598.68**
USA	97.61	122.25	129.46	152.27

TABLE 7: Per capita GDP in Europe, 1913-1950 ($ in 1990 international prices)

	1913	1929	1937	1950
Belgium	4,263	5,064	4,967	5,472
Denmark	3,768	4,813	5,601	6,404
Finland	2,288	2,885	3,638	4,362
Ireland	2,740	2,823	2,952	3,445
Netherlands	3,539	5,014	4,786	5,285
Norway	2,454	3,418	4,180	5,376
Sweden	2,806	3,898	4,565	6,539
United Kingdom	5,176	5,414	6,249	6,879
Northwestern Europe	**4,395**	**4,926**	**5,514**	**6,242**
France	3,245	4,417	4,207	4,943
Greece	1,454	2,135	2,509	1,798
Italy	2,721	3,241	3,469	3,573
Portugal	1,257	1,609	1,753	2,088
Spain	2,057	2,724	1,799	2,200
Turkey	1,407	1,375	1,827	1,867
Southern Europe	**2,524**	**3,174**	**3,060**	**3,302**
Austria	3,640	3,816	3,256	3,822
Bulgaria	1,450	1,128	1,496	1,577
Czechoslovakia	2,112	2,918	2,747	3,429
Germany	4,181	4,304	4,836	4,075
Hungary	2,442	2,537	2,607	2,481
Poland	1,941	2,118	1,916	2,447
Romania	1,705	1,102	1,206	1,176
Switzerland	4,270	6,335	6,171	9,071
USSR	1,551	1,426	2,267	2,827
Yugoslavia	1,060	1,364	1,273	1,546
Central & eastern Europe	**2,250**	**2,253**	**2,720**	**3,016**
TOTAL EUROPE	**2,643**	**2,882**	**3,217**	**3,579**
USA	5,301	6,899	6,430	9,561
Europe/USA (%)	49.9	41.8	50.0	37.4
σ (N=24)	0.443	0.527	0.502	0.549

TABLE 8: Comparative performance by region, 1913-1950

A. Growth rates by region (% per year)

	GDP	Population	GDP per capita
Northwestern Europe	1.52	0.57	0.95
Southern Europe	1.34	0.61	0.73
Central & eastern Europe	1.32	0.53	0.79
Total Europe	1.37	0.55	0.82

B. Regional shares (% of total)

	1913		1950	
	GDP	Population	GDP	Population
Northwestern Europe	25.1	15.1	26.5	15.2
Southern Europe	24.2	25.3	23.8	25.8
Central & eastern Europe	50.7	59.6	49.7	59.0

C. Relative per capita income by region (% of European average)

	1913	1950
Northwestern Europe	166.3	174.4
Southern Europe	95.5	92.3
Central & eastern Europe	85.1	84.3

D. Growth rates for alternative groupings (% per year)

	GDP	Population	GDP per capita
War-free countries	2.72	0.57	2.15
USSR	2.13	0.51	1.62
Fascist countries	0.98	0.78	0.20
Europe less USSR, Turkey	1.18	0.55	0.63

Notes: War-free countries: Sweden, Switzerland, Fascist countries: Italy, Portugal, Spain, Germany.

TABLE 9: GDP in Europe, 1950-1990 ($m in 1990 international prices)

	1950	1973	1990
Belgium	47,275	120,753	171,442
Denmark	27,346	70,235	94,863
Finland	17,493	51,099	84,103
Ireland	10,231	21,103	41,459
Netherlands	53,432	179,374	258,094
Norway	17,527	44,912	78,333
Sweden	45,836	110,840	151,451
United Kingdom	347,850	675,941	944,610
Northwestern Europe	**566,990**	**1,274,257**	**1,824,355**
France	206,766	679,379	1,026,491
Greece	13,615	69,314	101,452
Italy	167,103	628,261	925,654
Portugal	17,541	64,788	107,427
Spain	61,313	266,772	474,366
Turkey	38,841	135,858	305,395
Southern Europe	**505,179**	**1,844,372**	**2,940,785**
Albania	1,229	5,218	8,125
Austria	26,484	86,178	130,476
Bulgaria	11,431	45,652	49,779
Czechoslovakia	42,487	101,919	132,560
Germany, West	221,174	804,541	1,172,541
Germany, East	57,506	145,332	91,897
Hungary	23,176	58,364	66,990
Poland	60,745	177,953	194,920
Romania	19,173	72,011	80,277
Switzerland	42,545	117,251	146,900
USSR	508,942	1,523,513	1,987,995
Yugoslavia	25,277	88,813	129,953
Central & eastern Europe	**1,040,169**	**3,226,745**	**4,192,413**
TOTAL EUROPE	**2,112,338**	**6,345,373**	**8,957,563**
USA	1,455,916	3,536,622	5,803,200

TABLE 10: Population in Europe, 1950-1990 (millions)

	1950	1973	1990
Belgium	8.64	9.74	9.97
Denmark	4.27	5.02	5.14
Finland	4.01	4.67	4.99
Ireland	2.97	3.07	3.50
Netherlands	10.11	13.44	14.95
Norway	3.26	3.96	4.24
Sweden	7.01	8.14	8.56
United Kingdom	50.57	56.22	57.24
Northwestern Europe	**90.84**	**104.26**	**108.59**
France	41.83	52.12	56.73
Greece	7.57	8.93	10.16
Italy	46.77	54.75	57.66
Portugal	8.40	8.63	9.89
Spain	27.87	34.86	39.02
Turkey	20.80	38.40	56.50
Southern Europe	**153.24**	**197.69**	**229.96**
Albania	1.23	2.30	3.25
Austria	6.93	7.59	7.71
Bulgaria	7.25	8.62	8.99
Czechoslovakia	12.39	14.56	15.66
Germany, West	49.99	61.98	63.25
Germany, East	18.39	16.98	16.11
Hungary	9.34	10.43	10.38
Poland	24.82	33.36	38.12
Romania	16.31	20.83	23.20
Switzerland	4.69	6.43	6.71
USSR	180.05	249.70	288.60
Yugoslavia	16.35	20.96	23.76
Central & eastern Europe	**347.74**	**453.74**	**505.74**
TOTAL EUROPE	**591.82**	**755.69**	**844.29**
USA	152.27	211.91	249.91

TABLE 11: Per capita GDP in Europe, 1950-1990 ($ in 1990 international prices)

	1950	1973	1990
Belgium	5,472	12,398	17,196
Denmark	6,404	13,991	18,456
Finland	4,362	10,942	16,854
Ireland	3,445	6,874	11,845
Netherlands	5,285	13,346	17,264
Norway	5,376	11,341	18,475
Sweden	6,539	13,617	17,693
United Kingdom	6,879	12,022	16,503
Northwestern Europe	**6,242**	**12,222**	**16,800**
France	4,943	13,035	18,094
Greece	1,798	7,762	9,985
Italy	3,573	11,475	16,054
Portugal	2,088	7,507	10,862
Spain	2,200	7,653	12,157
Turkey	1,867	3,538	5,405
Southern Europe	**3,297**	**9,330**	**12,788**
Albania	1,001	2,273	2,499
Austria	3,822	11,354	16,923
Bulgaria	1,577	5,296	5,537
Czechoslovakia	3,429	7,000	8,464
Germany, West	4,424	12,981	18,537
Germany, East	3,127	8,559	5,704
Hungary	2,481	5,596	6,454
Poland	2,447	5,334	5,113
Romania	1,176	3,457	3,460
Switzerland	9,071	18,235	21,893
USSR	2,827	6,101	6,888
Yugoslavia	1,546	4,237	5,470
Central & eastern Europe	**2,991**	**7,111**	**8,290**
TOTAL EUROPE	**3,569**	**8,397**	**10,610**
USA	9,561	16,689	23,221
Europe/USA (%)	37.3	50.3	45.7
σ (N=26)	0.579	0.521	0.611

TABLE 12: Comparative performance by region, 1950-1990

A. Growth rates by region (% per year)

	GDP	Population	GDP per capita
Northwestern Europe	2.92	0.45	2.47
Southern Europe	4.40	1.01	3.39
Central & eastern Europe	3.48	0.93	2.55
Total Europe	3.61	0.89	2.72

B. Regional shares (% of total)

	1950		1990	
	GDP	Population	GDP	Population
Northwestern Europe	26.8	15.3	20.4	12.9
Southern Europe	23.9	25.9	32.8	27.2
Central & eastern Europe	49.3	58.8	46.8	59.9

C. Relative per capita income by region (% of European average)

	1950	1990
Northwestern Europe	174.9	158.3
Southern Europe	92.4	120.5
Central & eastern Europe	83.8	78.1

D. Growth rates for alternative groupings (% per year)

	GDP	Population	GDP per capita
EEC6	4.08	0.63	3.45
EEC9	3.64	0.55	3.09
Eastern bloc countries	3.20	1.00	2.20
Europe less Russia, Turkey	3.67	0.75	2.92

TABLE 13: GDP in Europe, 1990-2000 ($m in 1990 international prices)

	1990	2000
Belgium	171,442	211,631
Denmark	94,863	117,100
Finland	84,103	100,952
Ireland	41,459	82,504
Netherlands	258,094	343,756
Norway	78,333	112,907
Sweden	151,451	183,644
United Kingdom	944,610	1,205,155
Northwestern Europe	**1,824,355**	**2,357,649**
France	1,026,491	1,252,605
Greece	101,452	127,880
Italy	925,654	1,083,619
Portugal	107,427	142,814
Spain	474,366	625,117
Turkey	305,395	434,055
Southern Europe	**2,940,785**	**3,666,090**
Albania	8,125	9,523
Armenia	20,483	13,889
Austria	130,476	167,860
Azerbaijan	33,397	19,666
Belarus	73,389	64,943
Bosnia	16,530	22,487
Bulgaria	49,779	41,828
Croatia	33,139	28,400
Czech Republic	91,706	93,913
Estonia	16,980	16,158
Georgia	41,325	15,495
Germany	1,264,438	1,556,787
Hungary	66,990	72,345
Latvia	26,413	18,281
Lithuania	32,010	23,192
Macedonia	7,394	6,730
Moldova	27,112	9,425
Poland	194,920	278,675
Romania	80,277	67,480
Russia	1,151,040	774,253
Serbia/Montenegro	51,266	25,103
Slovakia	40,854	44,817
Slovenia	21,624	25,889
Switzerland	146,900	163,035
Ukraine	311,112	134,542
Central & eastern Europe	**3,937,679**	**3,694,716**
TOTAL EUROPE	**8,702,819**	**9,718,455**
USA	5,803,200	8,019,378

TABLE 14: Population in Europe, 1990-2000 (millions)

	1990	2000
Belgium	9.97	10.25
Denmark	5.14	5.34
Finland	4.67	5.19
Ireland	3.50	3.79
Netherlands	14.95	15.93
Norway	4.24	4.49
Sweden	8.56	8.87
United Kingdom	57.24	59.11
Northwestern Europe	**108.59**	**112.74**
France	56.73	58.97
Greece	10.16	10.92
Italy	57.66	57.19
Portugal	9.89	10.23
Spain	39.02	40.26
Turkey	56.50	67.42
Southern Europe	**229.96**	**244.99**
Albania	3.25	3.47
Armenia	3.38	3.04
Austria	7.71	8.11
Azerbaijan	7.20	7.75
Belarus	10.22	10.37
Bosnia	4.42	4.04
Bulgaria	8.99	8.17
Croatia	4.78	4.44
Czech Republic	10.36	10.27
Estonia	1.57	1.37
Georgia	5.43	4.78
Germany	79.37	82.16
Hungary	10.38	10.20
Latvia	2.66	2.37
Lithuania	3.70	3.50
Macedonia	2.03	2.03
Moldova	4.40	4.43
Poland	38.12	38.65
Romania	23.20	22.44
Russia	148.16	144.82
Serbia/Montenegro	10.53	8.14
Slovakia	5.30	5.40
Slovenia	2.00	1.99
Switzerland	6.71	7.18
Ukraine	51.94	48.92
Central & eastern Europe	**455.81**	**448.04**
TOTAL EUROPE	**794.36**	**805.77**
USA	249.91	282.34

TABLE 15: Per capita GDP in Europe, 1990-2000 ($ in 1990 international prices)

	1990	2000
Belgium	17,196	20,644
Denmark	18,456	21,930
Finland	16,362	19,504
Ireland	11,845	21,769
Netherlands	17,264	21,585
Norway	18,475	25,141
Sweden	17,693	20,699
United Kingdom	16,503	20,466
Northwestern Europe	**16,800**	**20,912**
France	18,094	21,241
Greece	9,985	11,713
Italy	16,054	18,948
Portugal	10,862	13,962
Spain	12,157	15,525
Turkey	5,405	6,438
Southern Europe	**12,788**	**14,964**
Albania	2,499	2,741
Armenia	6,066	4,565
Austria	16,923	20,698
Azerbaijan	4,639	2,538
Belarus	7,184	6,265
Bosnia	3,737	5,572
Bulgaria	5,537	5,120
Croatia	6,936	6,401
Czech Republic	8,850	9,142
Estonia	10,821	11,798
Georgia	7,616	3,244
Germany	15,932	18,948
Hungary	6,454	7,092
Latvia	9,981	7,704
Lithuania	8,656	6,627
Macedonia	3,646	3,321
Moldova	6,165	2,127
Poland	5,113	7,211
Romania	3,460	3,008
Russia	7,769	5,346
Serbia/Montenegro	4,869	3,083
Slovakia	7,712	8,298
Slovenia	10,822	13,008
Switzerland	21,893	22,693
Ukraine	5,989	2,750
Central & eastern Europe	**8,639**	**8,246**
TOTAL EUROPE	**10,956**	**12,061**
USA	23,221	28,403
Europe/USA (%)	47.2	42.5
σ (N=39)	0.567	0.777

TABLE 16: Comparative performance by region, 1990-2000

A. Growth rates by region (% per year)

	GDP	Population	GDP per capita
Northwestern Europe	2.56	0.37	2.19
Southern Europe	2.20	0.63	1.57
Central & eastern Europe	-0.64	-0.17	-0.47
Total Europe	1.10	0.14	0.96

B. Regional shares (% of total)

	1990		2000	
	GDP	Population	GDP	Population
Northwestern Europe	21.0	13.7	24.3	14.0
Southern Europe	33.8	28.9	37.7	30.4
Central & eastern Europe	45.2	57.4	38.0	55.6

C. Relative per capita income by region (% of European average)

	1990	2000
Northwestern Europe	153.3	173.4
Southern Europe	116.7	124.1
Central & eastern Europe	78.9	68.4

D. Growth rates for alternative groupings (% per year)

	GDP	Population	GDP per capita
EC12	2.21	0.30	1.91
EU15	2.21	0.32	1.89
Former Eastern Bloc	1.33	-0.13	1.46
Former Yugoslavia	-2.86	-1.16	-1.70
Former USSR	-4.57	-0.32	-4.25
Europe less Russia, Turkey	1.61	0.07	1.54

TABLE 17: Benchmark cross-checks on time series projections, 1905

A. Direct benchmarks in current prices

	Currency units	Income concept	Per capita income (currency units)	PPP (currency units per £)	Per capita income at PPP (£)
Denmark	DKr	GDP$_{FC}$	606.23	18.71	32.40
Sweden	SKr	GDP$_{MP}$	468.94	19.27	24.34
France	FFr	GDP$_{FC}$	700.97	25.78	27.19
Italy	Lr	GDP$_{FC}$	509.73	25.88	19.70
Germany	M	NNP$_{FC}$	644.64	21.05	30.62
UK	£	GDP$_{FC}$	45.04	1.00	45.04
UK	£	GDP$_{MP}$	48.58	1.00	48.58
UK	£	NNP$_{FC}$	39.88	1.00	39.88

B. Per capita income from direct benchmarks and time series projections (UK=100)

	Direct benchmarks	Time series projections
Denmark	71.9	70.4
Sweden	50.1	50.0
France	60.4	58.9
Italy	43.7	51.1
Germany	76.8	77.8
UK	100.0	100.0

Sources for Panel A: National income: Denmark: Hansen (1974: Table 3); Sweden: Krantz and Schön (2007: Table III); France: Lévy-Leboyer (1985: Table A-I); Italy: Rey (1991: Table 5.01); Germany: Hoffmann (1965: Table 248); UK: Feinstein (1972: Tables 1-4). Population: same sources as listed in Appendix 1. PPPs: Williamson (1995: 184).

Sources for Panel B: Direct benchmarks derived from final column of Panel A. Time series projections derived from the dataset underlying Table 3.

TABLE 18: Benchmark cross-checks on time series projections, 1927

A. Direct benchmarks in current prices

	Currency units	Income concept	Per capita income (currency units)	PPP (currency units per £)	Per capita income at PPP (£)
Denmark	DKr	GDP$_{FC}$	1,532.56	16.86	90.90
Netherlands	Dfl.	GDP$_{FC}$	795.78	8.99	88.52
Sweden	SKr	GDP$_{MP}$	1,560.20	20.45	76.29
France	FFr	GDP$_{FC}$	7,471.69	89.1	83.86
Italy	Lr	GDP$_{FC}$	3,871.89	73.21	52.89
Portugal	Esc	GDP$_{FC}$	1,9994.66	74.97	26.61
Spain	Pta	GDP$_{MP}$	1,479.63	25.58	57.84
Germany	M	NNP$_{FC}$	1,256.89	18.08	69.52
UK	£	GDP$_{FC}$	91.08		91.08
UK	£	GDP$_{MP}$	101.63		101.63
UK	£	NNP$_{FC}$	87.75		87.75

B. Per capita income from direct benchmarks and time series projections (UK=100)

	Direct benchmarks	Time series projections
Denmark	99.8	87.2
Netherlands	97.2	91.2
Sweden	75.1	68.0
France	82.5	73.3
Italy	58.1	56.2
Portugal	29.2	31.0
Spain	56.9	48.6
Germany	79.2	84.6
UK	100.0	100.0

Sources for Panel A: National income: Denmark: Hansen (1974: Table 3); Netherlands: Centraal Bureau voor de Statistiek (2001: Table 9); Sweden: Krantz and Schön (2007: Table III); France: Toutain (1997: Table 17b); Italy: Rossi et al. (1993: Table 1.B); Portugal: Batista et al. (1997: Table IV.A.1); Spain: Prados de la Escosura (2003: Table A.2.7); Germany: Hoffmann (1965: Table 248); UK: Feinstein (1972: Tables 1-4). Population: same sources as listed in Appendix 1. PPPs: Williamson (1995: 184).

Sources for Panel B: Direct benchmarks derived from final column of Panel A. Time series projections derived from the dataset underlying Table 3.

APPENDIX 1: DATA SOURCES
1. Real GDP, 1870-1913
Austria-Hungary: Schulze (2000: Tables A1, A2).
Belgium: Maddison (2007).
Bulgaria: Maddison (2007).
Denmark: Hansen (1974: 221-232).
Finland: Hjerppe (1996: Table 6).
France: Maddison (2007).
Germany: Hoffmann (1965: Table 103).
Greece: Maddison (2007)
Italy: Fenoaltea (2005: Table 3).
Netherlands: Smits, Horlings and van Zanden (2000).
Norway: Grytten (2004).
Portugal: Lains (2006: Table A1).
Romania: Maddison (2007).
Russia: Maddison (2007).
Serbia: series for Yugoslavia from Maddison (2007).
Spain: Prados de la Escosura (2003: Tables A11.1.1, A.11.9).
Sweden: Krantz and Schön (2007).
Switzerland: Maddison (2007).
Turkey: Maddison (2007).
UK: Feinstein (1972: Table 6).
USA: Maddison (2007).

2. Population, 1870-1913
Data from Mitchell (2003: Table A5), except as follows:
Germany: Hoffmann (1965: Table 1).
Netherlands: Smits, Horlings and van Zanden (2000).
UK: Feinstein (1972: Table 55).
USA: Maddison (2007).

3. Real GDP, 1913-1950
Austria: Österreichisches Institut für Wirtschaftsforschung (1965: 38).
Belgium: Maddison (2007).
Bulgaria: 1913-1924: Maddison (2007); 1924-1939: Tchakaloff (1946: 117), 1939-1950: Alton (1970: 46).
Czechoslovakia: 1913-1937: Pryor et al. (1971: 36); 1937-1950: Lazarcik (1969: 8-11).
Denmark: Hansen (1974: 221-232).
Finland: Hjerppe (1996: Table 6).
France: Maddison (2007).
Germany: Hoffmann (1965: Table 103).
Greece: Maddison (2007)
Hungary: 1913-1939: Eckstein (1955); 1939-1950: Alton (1970: 46).
Ireland: 1913-1926: Maddison (2007), 1926-1938: Kennedy (1971: 3); 1938-1950: Maddison (2007).
Italy: Maddison (1991: 238).
Netherlands: Maddison (2007).
Norway: Statistics Norway (1965: 244-251).
Poland: 1929-1938: Laski (1956: 86-90); 1937-1950: Alton (1970: 46).

Portugal: Lains (2006: Table A1).
Romania: 1913-1926: Maddison (2007); 1926-1938: Kaser and Radice (1985: 592), 1938-1950: Maddison (2007).
Spain: Prados de la Escosura (2003: Tables A11.1.1, A.11.9).
Sweden: Krantz and Schön (2007).
Switzerland: Maddison (2007).
Turkey: Maddison (2007).
UK: Feinstein (1972: Table 6).
USSR: Maddison (2007).
Yugoslavia: Vinski (1961: Table 13).
USA: Maddison (2007).

4. Population, 1913-1950
Data from Mitchell (2003: Table A5), except as follows:
Germany: Hoffmann (1965: Table 1).
Turkey: Maddison (2007).
UK: Feinstein (1972: Table 55).
USSR: Davies, Harrison and Wheatcroft (1994: 269).
USA: Maddison (2007).

5. Boundary changes across World Wars I and II
The population estimates for 1913 and 1950 on the basis of interwar territories were calculated using proportions computed from Svennilson (1954: 236-237).

6. Real GDP, 1950-1990
Austria: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Belgium: 1950-1952: Maddison (2007); 1952-1990: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Bulgaria: 1950-1960: Alton (1970: 46); 1960-1968: Bass (1975: 2), 1968-1975: Alton et al. (1985: 3); 1975-1990: Alton et al. (1992: 15).
Czechoslovakia: 1950-1965: Lazarcik (1969: 8-11); 1965-1975: Alton et al. (1985: 7); 1975-1990: Alton et al. (1992: 16).
Denmark: 1950-1960: Hansen (1974: 221-232); 1960-1990: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Finland: Hjerppe (1996: Table 6).
France: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Germany, West: 1950-1959: Hoffmann (1965: Table 103); 1960-1990: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Germany, East: 1950-1965: Alton (1970: 46); 1965-1975: Alton et al. (1985: 15); 1975-1990: Alton et al. (1992: 17).
Greece: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Hungary: 1950-1965: Alton (1970: 46); 1965-1975: Alton et al. (1985: 15); 1975-1990: Alton et al. (1992: 17).
Ireland: Maddison (2007).
Italy: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Netherlands: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Norway: 1950-1960: Statistics Norway (1965: 244-251); 1960-1990: OECD (various years), *National Accounts, Vol. II, Detailed Tables*.
Poland: 1950-1965: Alton (1970: 46); 1965-1975: Alton et al. (1985: 19); 1975-1990: Alton et al. (1992: 18).

Portugal: 1950-1958: Lains (2006: Table A1); 1958-1990: OECD (various years), *National Accounts, Vol. II, Detailed Tables.*
Romania: 1950-1965: Alton (1970: 46); 1965-1975: Alton et al. (1985: 23); 1975-1990: Alton et al. (1992: 19).
Spain: Prados de la Escosura (2003: Tables A11.1.1, A.11.9).
Sweden: OECD (various years), *National Accounts, Vol. II, Detailed Tables.*
Switzerland: Maddison (2007).
Turkey: OECD (various years), *National Accounts, Vol. II, Detailed Tables.*
UK: OECD (various years), *National Accounts, Vol. II, Detailed Tables.*
USSR: Kurzweg (1990: Table A1); Maddison (2007).
Yugoslavia: 1950-1975: Maddison (2007); 1975-1990: Alton et al. (1992: 20).
USA: Maddison (2007).

7. Population, 1950-1990
Data from Mitchell (2003: Table A5), except as follows:
Germany, West: 1988-1990: Statistisches Bundesamt Deutschland (1995: 46).
Germany, East: 1988-1990: Statistisches Bundesamt Deutschland (1995: 46).
Turkey: Maddison (2007).
UK: 1950-1965: Feinstein (1972: Table 55); UK Central Statistical Office (various years).
USA: Maddison (2007).

8. Boundary changes after the fall of the Berlin Wall
Maddison (2003).

9. Real GDP, 1990-2000
Data from OECD (various years), *National Accounts, Vol. II, Detailed Tables*, except as follows:
Czech Republic, Hungary, Ireland, Poland, Slovakia, USA and all non-OECD countries: Maddison (2007).

10. Population, 1990-2000
Data from Mitchell (2003: Table A5), except as follows:
Post-communist countries: Wiener Institut für Internationale Wirtschaftsvergleiche (2005: Table 2).
Turkey: Maddison (2007).
UK: UK Central Statistical Office (various years).
USA: Maddison (2007).

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