Series 3: Railways

Map 1: *Length of Railway Lines, 1825-1845*

The map shows the development of the length of European railway lines in the first twenty year of their existence. The map clearly illustrates the pioneering position of Great Britain in this period, and it shows the spurt in rail construction in this country (Ireland counted and displayed separately!) during the second half of the 1830s. In just five years time the length of lines increased by 1846 km, an increase which translates into a growth rate of 339%. During the subsequent five years, absolute growth was still impressive (1,541 km of tracks added), but the rate was much smaller at 64%. Still, the map reflects the considerable private investments in the railway sector in Great Britain during the "railway mania". The map shows, too, that railway development on the Continent did not lag far behind. In 1830, France was the first of the continental countries to open railway lines, followed in 1835 by Belgium and the German states. It is noticeable that railway construction in Europe until 1835 was restricted to western and central Europe. But as early as 1840, the Habsburg Empire, Italy, and Russia - as well as the Netherlands, a latecomer in Western Europe - joined the row of nations in search of railway networks. By 1845 Britain had 3,931 km of tracks opened, followed by Germany (2,143), France (875), the Habsburg Empire (728), Belgium (577), and Italy (152). While in 1845 Britain alone had only little less lines in operation than all the other European countries put together (3931 vs. 4344 km), Belgium had achieved the highest level of rail density (19, measured in *m/km²*), followed by Great Britain (16), and Germany (4).

Map 2: *Length of Railway Lines, 1850-1870*

The map shows a big increase in the amount of railway lines operating in Europe during the period 1850-1870. If one compares these two benchmark years, the already established rail countries – Britain, France, Germany, Belgium, and Austria-Hungary all increased their networks considerably. The pace was even faster among a group of latecomers - or even newcomers – in railway building: Italy, Spain, Ireland, and especially Russia added lines to their nascent, but rapidly growing rail systems. At the European periphery, in the north and southeast, railway development between 1850 and 1870 commenced only slowly. In Scandinavia, railway construction begins in 1855, with Sweden taking a lead. Between 1865 and 1870 the same happened in the countries of South Eastern Europe and in the Ottoman Empire, although with a much more modest record in the length of lines opened. By 1870, then, Britain still was the leading 'rail country' of Europe, with some 21,500 km in operation, followed by Germany (18,800), France (15,500), and Russia (10,700). A second group was led by Italy (6,500), Austria-Hungary (6,100), and Spain (5,500). Rail density (given in *m/km²* and not displayed in the map!) was highest in Belgium (97), followed by Great Britain (86), Ireland and Germany (38), the Netherlands and Switzerland (34), Italy (22), and Spain (11). Not surprisingly, rail density was lowest in the large territorial countries of the north and east of Europe, as in Sweden (4), *European* Russia (2), and Finland (1).

Map 3: *Length of Railway Lines, 1875-1895*

The map pictures the second phase in major growth of the European railway network. Between 1875 and 1895, the rail network in northern and western Europe nearly doubled in size. It may be noted that growth of the rail network in Great Britain was slow in this period

as compared to France, Germany, and even Russia. The development of the rail networks in these last mentioned countries is impressive: With regard to the length of lines in operation, all three have by 1895 surpassed Britain. Considering density of the networks, though, Britain still scored higher (116 m/km²) if compared to Germany (93), and Russia (Empire except for Finland) (17). In southern Europe, Spain and Italy witnessed a substantial growth of their networks, just as did Sweden in the north. There were advances in the Balkan countries as well. In Bulgaria, for example, the length of lines in 1895 almost quadrupled if compared to 1870, and in Romania it rose from 900 in 1870 to 2,500 in 1895. This was made possible by the independence of these two countries gained from the Ottoman Empire in 1878, which, among other things, had encouraged foreign investments in railway building. The Ottoman Empire itself shows a more moderate growth, from 1,830 km in 1870 to 3,500 in 1895.

Map 4: *Length of Railway Lines, 1900-1913*

The map indicates that European railways still grew in the beginning of the twentieth century, but at a much slower rate if compared to the earlier periods. Only two countries still experienced a substantial growth of their networks: Germany, and – to an even larger extent – Russia. When we take the spread of the rail networks in different corners of Europe into account, we clearly get the picture that on the eve of the First World War Russia and Germany possessed the longest rail networks in Europe countries. Russia possessed a network of 70,156 km of track in 1913, Germany 63,378. When examining this, we have to take into account that the Russian network also consisted of tracks outside Europe, in Siberia, thus making the German figures – realised on a much slower area compared to Russia – more impressive. France had in 1913 the in size third rail network of Europe, Great Britain was fourth. Striking is the lagging behind of the rail development in South Eastern Europe, a region experiencing frequent political turmoil, war and changes of borders. The decline of the length of the Ottoman rail network can be linked to the loss of territory suffered after first Balkan War in 1913.

Map 5: *Length of Railway Lines, 1920-1935*

The map gives a picture of the European rail network during the interwar years. Although the overall picture of the European rail systems in this period is one of stabilisation after almost one hundred years of permanent expansion in the length of lines opened, the 'real picture' is a bit more complex. In countries like Great Britain, France, Poland, Austria, Czechoslovakia, Hungary, Romania, the Netherlands, and Belgium the number of lines opened indeed stabilised in this period. The continued growth o in the cases like Poland, Romania and France between 1920 and 1925 can be traced down to the changing borders as a result of the 1919/1920 peace settlements. In other countries like Italy, Spain, Bulgaria and Finland, an ongoing, but relative small growth in the expansion of lines can be distinguished. The newly founded Turkish Republic experienced a modest growth of its rail network during this period. The increase in rail lines in the newly formed Soviet Union was substantial, in absolute as well as in relative terms. As with the Russian figures before the First World War, one has to remember that they include the whole of (Asian) Siberia. If we look at the density figures for 1935, the factor 'size of the country' becomes readily apparent: Although the USSR has the greatest length in lines opened, this translates only into a density figure of 42 m/km², which is quite small if compared to Germany (170), or Great Britain (132).

Map 6: *Length of Railway Lines, 1950-1980*

The map shows the development of the European rail network between 1950 and 1980. The overall picture of this is one of a substantial decrease in the length of rail networks in Europe. The fastest decrease happened in the country which had pioneered railway building in the nineteenth century: Great Britain. Between 1950 and 1980 the British nationalised railways lost more than half of their network, sliding from 31,336 km in 1950 to 17,654 in 1980. The biggest cut down happened in the 1960s under the influence of the Beeching-Report, when one third of the entire network was cut. Also in France and West Germany the decrease of the rail network was quite substantial, just like – to lesser degree – in Sweden. By contrast, in another group of countries the size of the rail networks remained stable throughout this period, for example in Switzerland and Austria. This also holds for a set of countries in eastern Europe: Czechoslovakia, Poland, Romania, and Bulgaria. But not all communist countries in Europe maintained their rail networks in the same length. The networks of East Germany, Hungary, and Yugoslavia contracted in this period. It is apparent that countries at the western side of the Soviet Bloc had their rail networks slightly cut down, while their eastern partners did not. The special case in this period is the Soviet Union, where an impressive growth of rail lines occurred. Other gainers in this period, although much less impressive, were Turkey and Finland Again both these countries are situated at the most eastern flank of the European continent.

Map 7: *Length of Railway Lines, 1990*
Map 8: *Length of Railway Lines, 2000*

Map seven and eight should be examined together. The figures for 1990 and 2000 had to be presented on two different maps due to the boundary changes in the early 1990s as a result of the melting down of communism in 1989/1991. In most European countries the size in rail networks was smaller in 2000 than in 1990: France (31,939 against 34,322 km ten years before). In others like Sweden the network grew again. Russia in 2000 had more kilometres of rail than the Soviet Union in 1990, notwithstanding the fact that today Russia has a smaller land surface than the Soviet Union. The two maps also give an impression of the size of the rail networks in the new European countries which have emerged in the post-1989 period.