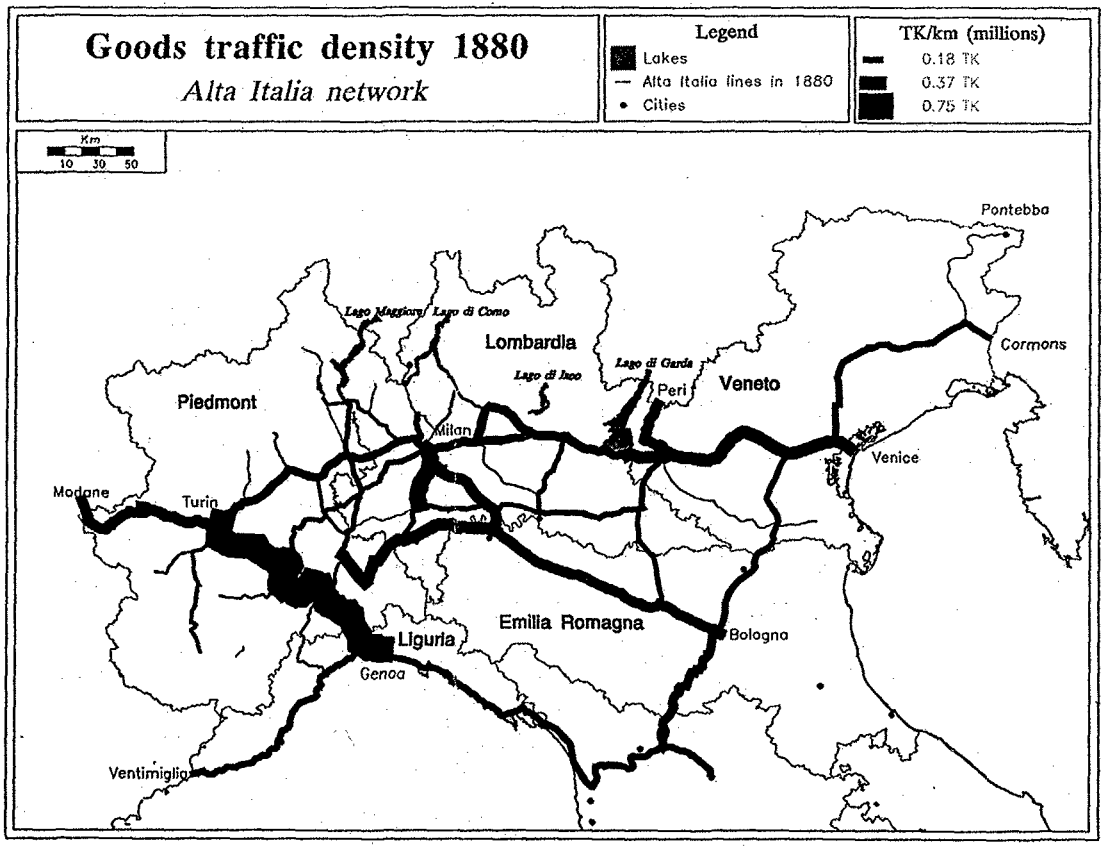
Historical Railway Traffic Maps

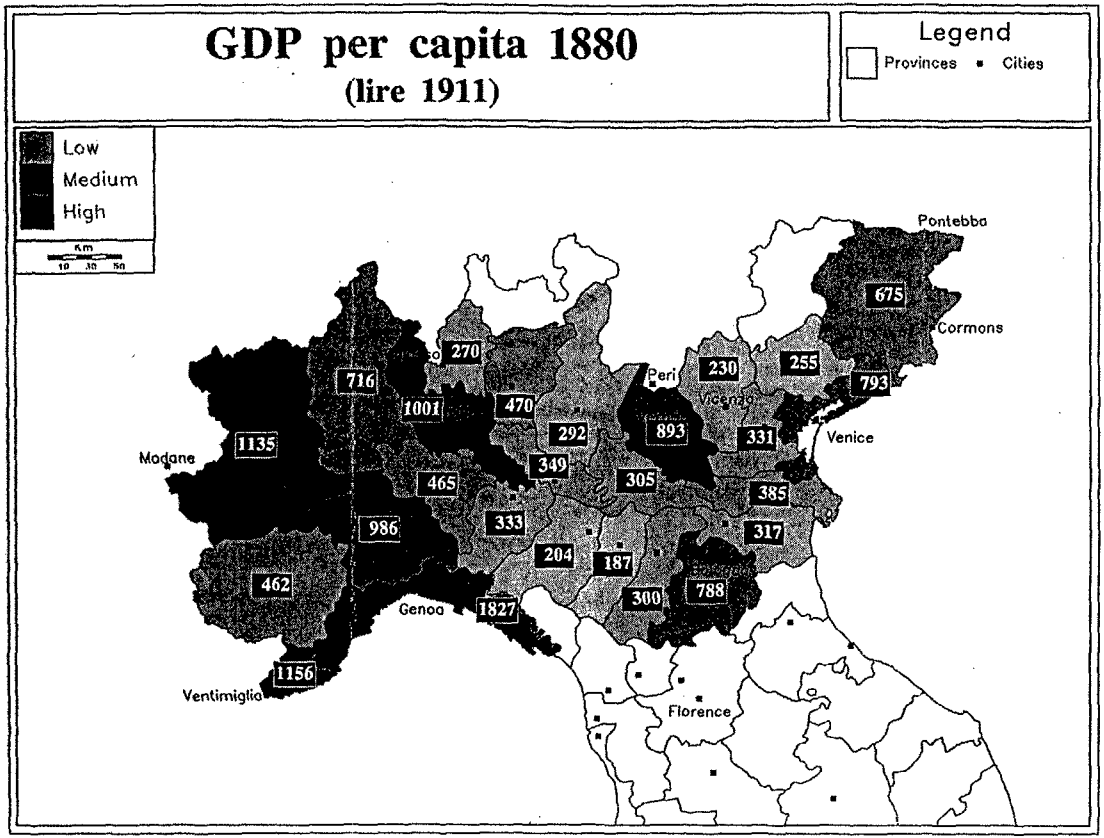
The research project "European Transport and Communication Networks" started by Prof. Albert Carreras[1] in 1991, stimulated some historians at the *European University Institute* to analyze data with a GIS for micros (Atlas-GIS). Evidently, historians are interested in changes over time and have a preference for thematic and dynamic maps. Although this GIS was not really suited for dynamic mapping, adequate approximations could be obtained by projecting maps for different moments in slide shows.

In the famous historical debate on the 'social savings' of railways in the 1960's, the study of the actual amount of railway traffic carried by railways in the nineteenth century was analyzed through an extremely simplified model. Probably, the quantity of traffic data to be processed deterred most historians. Nowadays, modern spreadsheets and GIS make analysis and presentation of these data with their spatial components much easier. In my Ph.D. thesis, I analyzed railway traffic data to obtain an estimate of provincial economic growth in Northern Italy for the period 1860-1880. I found the detailedness of these traffic data considerable. The advantage of a GIS is that from this detailed information comprehensible presentations can be created. Through similar studies, economic information can be obtained for periods and countries for which no national statistics are available.

My experience with GIS for historical applications is that one is limited to the measuring units used in the statistics of the period. The map on traffic density, for instance, had to be constructed from the beginning, since the existing GIS map on the opening dates of railway lines used a completely different division of the line sections. Even for very similar projects, therefore, maps can not easily be exchanged.

To illustrate the results of my research, I have enclosed some examples which show goods traffic density on the network in 1880 in tonkilometres per kilometre of track and the final estimate of GDP per capita in 1880. In my thesis I also made maps of goods traffic in and out of the network, station revenue and traffic per province per goods category.


Goods traffic density 1880
Alta Italia network
Legend
Lakes
Alta Italia lines in 1880
Cities
TK/km (millions)
0.18 TK
0.37 TK
0.75 TK
Km
10 30 50
Pontebba
Lago Maggiore
Lago di Como
Lombardia
Lago di Garda
Lago di Iseo
Peri
Veneto
Cormons
Piedmont
Milan
Venice
Modane
Turin
Emilia Romagna
Liguria
Bologna
Genoa
Ventimiglia


GDP per capita 1880
(lire 1911)
Legend
Provinces
Cities
Low
Medium
High
Km
10 30 50
Pontebba
675
Cormons
793
Venice
230
255
Peri
Vicenza
893
331
270
716
1001
470
292
1135
Modane
349
465
305
385
333
986
317
204
187
462
Genoa
1827
300
788
1156
Ventimiglia
Florence