# *The Modernization of Infrastructure*

## 1. War damage in the cities

The first consequence of urbanization[1] was heightened housing demand, a phenomenon far from new. The need for housing in Italy had a long history. The urbanization of the peasant masses dated far back and accelerated in the course of the twentieth century. In 1901 just 9.5 per cent of the population lived in cities of 100,000 or more inhabitants, but this percentage rose to 16.8 per cent in 1931, 20.5 per cent in 1951[2] and 33.4 per cent in 1961.[3] Naturally, urbanization was not a specifically Italian phenomemon; in Italy the pattern did not diverge greatly from that found in the other Western countries. In 1961, for example, the urban population made up 53.3 per cent of the entire British population, the comparable figure for the United States being 36.2 per cent.[4] In that year Italy had 34 cities with more than 100,000 inhabitants,whose population had grown by 837,190 in just over a decade, in addition to the 13,406,717 persons who resided there already.[5]

At the war's end, cities were in a dramatic state. The prewar housing shortage had been severely aggravated by wartime devastation. Istat's data reported the destruction of 1,706,041 dwellings during the war; another 942,703 were seriously damaged, while 3,275,316 suffered light damage, and 1,953,419 hotel rooms were destroyed.[6] Many of the medium-sized and large cities that had been the destination of urban in-migration suffered damage not only to the housing stock but also to their infrastructures services. After the war they had not only to repair damaged buildings, rebuild those destroyed and construct others, but also restore urban services (streets, sewer systems, aqueducts, public offices, schools, hospitals, churches, etc.) and construct new ones to accompany houses for the new urban residents.

## 2. Housing construction subsidies

Faced with this grim situation, despite severe budget problem the central government decided that intervention simply could not be delayed. A law for the construction of low-cost workers' housing had long been on the books, with this legislation being codified and coordinated as long ago as 1922.[7] State grants

[1] See Chapter IV, Section 6.
[2] F. Ferrarotti, "Urbanism in Italy", *Review*, XVIII, 4 (July 1964), pp. 226 *et seq.*
[3] F. Archibugi, "The growth of cities in Italy", *Review*, XIX, 1 (January 1965), p. 43.
[4] *Ibid.*
[5] G. Tagliacarne, "Employment and migration between the 1961 census and today", *Review*, XVIII, 4 (July 1964), pp. 251-53.
[6] Cited in A. Altarelli, "Building subsidies in Italy", *Review*, IV, 6 (November 1950), p. 466.
[7] Law 2318 of 30 December 1922.

covering 2 or 3 percentage points on loans taken out by local governments, low-cost housing authorities and construction co-operatives were confirmed. After the Second World War governments turned again to these subsidies, which had practically ceased during the war, to subsidize residential construction, authorizing the postal Deposits and Loans Fund and some credit institutions to provide low-interest loans. New buildings were exempted from payment of the real estate tax for 25 years.[8]

Before the new rules went into effect, governments moved to assist the homeless, especially as Law 1543 of 26 October 1940 for reimbursement of war damage proved a failure because of the steady devaluation of the lira. The government remedy was Law 366 of 17 November 1944, introducing rules to provide housing for the homeless and authorizing the Ministry of Public Works to repair war-damaged buildings at its own expense. Decree No. 4 of 18 January 1945 established which social categories were entitled to occupy the buildings so reconstructed. Other measures followed in 1945 and 1947.[9]

The turning point came with Decree No. 399 of 8 May 1947, laying down the first measures for the construction of civilian housing. The decree renewed prewar legislation in favour of provinces, municipalities, workers' housing authorities, the national institute for civil servants' housing (INCIS) and other public agencies, authorizing them to build houses for sale or rent. The central government would defray half the cost and would also offer contributions toward the interest on loans taken out to complete construction work. At the same time the Ministry of Public Works was authorized to make grants to individuals and construction companies in order to encourage house building. The 25-year exemption of new buildings from the real estate tax was reconfirmed.

These subsidies were the forerunners of both the Tupini Act and the Aldisio Act (named after their sponsors, both ministers of public works). The Tupini Act[10] appropriated 175 billion lire for annual interest-rate subsidies for 35 years, as well as the tax exemption. It set 31 December 1955 as the deadline for the completion of construction.[11] The Aldisio Act[12] instituted an annual "Fund to increase the number of dwellings" of 10 billion lire, later to be increased to 15 billion, the aim being to speed the construction of housing with special loans. The law was intended to favour small savers, providing them with at least 25

[8] Altarelli, "Building subsidies", p. 467.

[9] *Ibid.*, p. 468.

[10] Law 408 of 2 July 1949. An earlier measure (Law 407 of 25 June 1949) introduced new subsidies for the reconstruction of war-destroyed housing. Government contributions could cover as much as 80 per cent of the total cost, up to one million lire for the reconstruction of housing in towns of up to 10,000 inhabitants and in cities that had been 75 per cent destroyed. The subsidy was also extended to construction in cities with over 10,000 inhabitants, provided that the structure was a single building and that it served as the residence of the owner and his family. *Ibid.*, p. 470.

[11] *Ibid.*, p. 469.

[12] Law 715 of 10 August 1950.

per cent of the cost of non-luxury dwellings in localities where the need was clear and particularly urgent, with priority going to small cities.[13]

Another programme was the seven-year plan for workers' housing, known as the INA-Case plan, instituted by Decree No. 43 of 28 February 1949. This programme sought to stimulate employment in the construction industry by subsidizing house-building, funded by contributions from employers, workers and the state. Realized immediately, the plan involved 2,390 of the 7,764 municipalities existing at the end of 1949. In its first year it resulted in the construction of 51,000 dwellings for workers.[14] In short, this intensive government action, with large-scale appropriations for housing construction, produced 64,449 new working-class residential units between 1945 and 1949, plus the repair of another 2,823,600 damaged or destroyed units.[15] And as these were multi-year plans, construction of low-cost and other housing continued thereafter, although the continuing influx of new residents meant that the housing crisis would not be truly resolved.

Notwithstanding these government programmes, the need for housing remained strong. In 1954 the shortage amounted to some 13 million rooms, certainly an insoluble problem in the short run. The government's Vanoni plan, providing for an average annual investment quota of 6.5 per cent, sought to promote the construction of 10.2 million rooms between 1955 and 1959. This five-year target was actually overfulfilled, with the construction of 11,507,786 rooms, and the average annual quota of private housing investment came to 9.25 per cent rather than the planned 6.5 of total investment. From 1955 to 1958 average overall housing investment was considerably higher than the 31 per cent quota planned, giving rise to serious concern over the concentration of more than 16 trillion lire in the housing industry. It was feared that the diversion of such an imposing sum from productive investment was decreasing the overall pace of economic growth.[16]

## 3. Building boom and bust

Notwithstanding these worries, once the brief downturn of 1960-61 was over, housing investment grew even more buoyantly than before. In some years it came to as much as 34 or 35 per cent of total investment in the economy. In other words, more than a third of the country's investible savings was being allocated to the purchase of dwellings, a preference which showed no signs of slackening, as residential construction accounted for 33.5 per cent of total investment in 1966 and 31.7 per cent in 1967.[17] Even so, building failed to keep

[13] Altarelli, 'Building subsidies', pp. 470-71.
[14] *Ibid.*, p. 471.
[15] *Ibid.*, p. 472.
[16] F. Siracusano, "Situation and prospects of the Italian building industry", *Review*, XXII, 6 (November 1968), pp. 434-36. Siracusano was president of the National House Builders' Association.
[17] *Ibid.*, p. 437.

pace with planning. The number of new dwelling units built dipped in the second half of 1963 before recovering in 1964, but then declined again. Output dropped from 450,006 new dwellings built in 1964 to 267,849 in 1967, when a total of 480,780 had been planned.[18]

The fact is that the demand for new housing was slackening. Experts attributed this first of all to government-imposed limitations on construction; secondly to the fact that, with rising construction costs and consequently rising rents, a rent control law was passed that both cut into the returns to capital invested in this sector and also reduced the mobility of households, who feared losing the benefit of the rent freeze; and thirdly, to the decrease in the buying power of potential purchasers, as a consequence of rising housing prices. The result was a rising supply of unsold housing.

The crisis bottomed out in 1967, when only 64 per cent of the housing units planned were actually completed.[19] The market was weighed down by the problems afflicting the Italian economy in general from 1963 to 1965,[20] namely an economic and social crisis and a decline in employment.[21]

Any number of ways out of the building crisis of the mid-sixties were suggested. Builders decisively rejected the idea of credit subsidies to prospective buyers. The problem could not, in their view, be reduced to a price gap, i.e. a differential between production costs and what buyers could afford to pay. The high cost of housing was the result of the enormous increase in the prices of eligible real estate. Reviving the housing market thus required preliminary provision of urban infrastructures in the areas selected for construction and then putting houses on the market at reasonable prices and in quantities sufficient to meet demand. Construction standards were needed, while building sites and methods had to be rationalized and industrialized to make construction as economical as possible.[22]

## 4. The lack of zoning laws

The high cost of properties suitable for construction was bound up with the lack of urban development planning and zoning legislation. Neither now, during the downturn, nor previously, during the building fever, had landowners and builders refrained from abuses. For the most part they had taken no account whatever of natural landscapes, the country's artchitectural and artistic heritage, the need for parks and centres for youth and the elderly. In the age of the automobile explosion, new residential areas continued to be built with cramped, narrow streets, with buildings so close to one another, especially in the working-

[18] *Ibid.*, p. 439.
[19] *Ibid.*, pp. 438-41.
[20] See Chapter VI, Section 1.
[21] Siracusano, "Situation and prospects", p. 442.
[22] *Ibid.*, pp. 442-43.

class districts, as to block out sunlight and fresh air, with steadily worsening pollution from traffic forced into inadequate thoroughfares.

In the face of this urban planning disaster, which was in full swing in the later sixties, many experts called for a severe, efficacious zoning law, which was simply lacking. In this sphere, the country still relied on Law 1150 of 17 August 1942. Although, as Giorgio Ruffolo noted, this legislation incorporated concepts "that were certainly advanced for their day",[23] such as the principle of the city zoning plan implemented through a series of detailed plans drawn up by the local authorities, it failed to recognize that most municipalities lacked the funds needed to comply. In the end, the 1942 law was pure utopia, and landowners and builders openly took advantage. Attempts to end building abuses never produced any practical result. Law 765 of 6 August 1967, designed as stop-gap legislation, sought to curb abuses with temporary measures. It required municipalities to draft zoning plans within one year. The outcome was nothing short of disastrous, however, because during that year buildings sprang up everywhere, with or without the requisite licences. Worse still, a Constitutional Court ruling (No. 55, dated 9 May 1968 and published on 29 May) declared unconstitutional the 1942 requirement that urbanization plans reserve some areas for permanent, rent-free public use.[24] An urban planning bill submitted to Parliament in 1969 by the minister of public works met no happier a fate. Not only did it fail to pass; it was perhaps the prime reason for its sponsor's ouster. Meanwhile, the conviction that, sooner or later, an urban planning law would regulate the sector and curb the freedom with which housing was being constructed spurred landowners and builders to still greater efforts. New buildings, licensed or unlicensed, now spread everywhere unchecked.

## 5. A housing glut

The 1971 census registered the apparent resolution of the housing problem that had afflicted Italy for so much of its national history. The country had 17.4 million dwellings with 63.2 million rooms: 0.96 inhabitants per room, compared with 1.33 in 1951 and 1.14 in 1961.[25] Now, statistically, every Italian had slightly over one room of his own. Naturally, this average concealed marked disparities. While the index stood at 1 in most of the southern regions, it was 1.25 in Campania, Basilicata and Calabria. Inequalities were more pronounced still in urban areas, and the crowding indices were between 1.60 and 1.70 in central and southern Sicily, northern Sardinia, central Calabria and Basilicata, and as high as 2.0 near Salerno.[26]

[23] G. Ruffolo, "Building wake: Urban rent and administrative quasi-rent", *Review*, XXVIII, 2 (March 1974), pp. 139-40.
[24] *Ibid.*, p. 141.
[25] In 1881 the proportion was 1.7 persons per room, G. Tagliacarne, "The state of housing in Italy", *Review*, XXVIII, 6 (November 1974), p. 524.
[26] Ruffolo, "Building wake", pp. 124-25.

## 6. Residential imbalance

Even with these caveats the housing density index was misleading. The fact is that only 88 per cent of dwellings were occupied, while the vacant were 12 per cent, and this share was increasing (it had been 5.7 per cent in 1951 and 8 per cent in 1961).[27] In short, countless families were looking for housing while millions of dwellings were vacant. This state of affairs was the product, for one thing, of mass emigration from the South to the North, and also to fairly common second-home ownership.[28] Uninhabited houses were found throughout the country, but the highest percentages were in vacation regions or where emigration was especially heavy: Valle d'Aosta (30.3 per cent), Liguria (21.4), Molise (17.7), Abruzzo (16.6), Basilicata (15.4), Sicily (15.3), Trentino-Alto Adige (14.3), and Calabria (14.2).[29]

Second homes also signalled open interest in the ownership of real estate but, irrespective of second homes, home ownership was quite widespread. In 1971 more than half of all Italian homes were owner-occupied, up from 40 per cent in 1951 and 45.8 per cent in 1961. The highest rates of home ownership were found in the South: 74 per cent in Molise, 70 per cent in Basilicata, 67 per cent in Sardinia, and 60 per cent in Sicily. Typically, in these agricultural areas, these were peasant or farm houses.[30]

A study by Renzo Ricci[31] was cited to demonstrate that Italy had a 5 per cent housing surplus,[32] but matters were complicated by the fact that not all the housing was inhabitable. In 1965, 5.5 per cent of the stock was seriously run-down and 24.4 per cent was in poor condition.[33] Uninhabitable dwellings were most common in Sicily, owing to the large number of shacks built in the wake of the Belice Valley earthquake, but they were not rare in Latium (especially shantytowns around Rome) or Calabria.[34]

Aside from these deplorable exceptions, what emerged from the 1971 census was above all the general improvement in housing-related urban services. Now 85 per cent of all houses had potable water, a share rising to 97 per cent in Liguria and 95 per cent in Trentino-Alto Adige, though dropping to 72 per cent in Basilicata and 73.5 per cent in Apulia. Flush toilets were present in 82.2 per cent of all homes (93 per cent in Lazio, 70 per cent in Sardinia). Nearly all homes in the North and the South had electricity. Bathrooms, by contrast, were found in

[27] Tagliacarne, "The state of housing", p. 527.
[28] *Ibid.*, pp. 526-27.
[29] *Ibid.*, p. 527.
[30] *Ibid.*,pp. 527-28.
[31] R. Ricci, "Stock di abitazioni, nuove costruzioni e fabbisogno futuro al 1982", in L. De Rosa, ed., *Costruire ed abitare*, Rome, Credito Fondiario, 1973, p. 87.
[32] Ruffolo, "Building wake", p. 123.
[33] *Ibid.*, p. 126.
[34] Tagliacarne, "The state of housing", pp. 531-34.

only 63 per cent of dwellings, with a high point of 81.6 per cent in Latium and a low of 32.1 per cent in Basilicata.[35]

## 7. The Fanfani plan

In his article for the *Review* Giorgio Ruffolo[36] attributed the extraordinary boom in housing construction to "urban rent", a "tax silently levied on the community by a group of private citizens". Ruffolo's thesis was that ground rent had been responsible for the country's new wealth of over 2 billion cubic metres of construction, mostly located in cramped quarters on the outskirts of the big cities, where population density was ten times as high as in most European and American cities. Ground rent, in this view, destroyed the urban social fabric and degraded the natural environment but did not satisfy the need for housing, at least not for the lower-income groups of workers.[37]

Government sought to provide housing for lower-income citizens through GESCAL, a public agency instituted by Law 60 of 14 February 1963 for a period of ten years. The programme was generally known as the "Fanfani Plan" after the political leader who proposed it, Amintore Fanfani. Funded by employer, worker and state contributions, GESCAL operated under the minister of labour and the minister of public works. Its projects were designed for the areas set aside under Law 167 for municipalities under the low-income housing agency (Istituto autonomo per le case popolari, IACP). But the cities proved incapable of supplying areas with the requisite infrastructure, limiting the effectiveness of GESCAL. Only for two brief periods, 1951-54 and 1959-61, were the cities successful, working through INA-casa, in assuring significant intervention in the sector. During the first period GESCAL accounted for some 15 per cent of national housing construction, during the second for 10 per cent. The rest of the time the share was quite modest - of the order of 1 per cent, as in 1964-65.

As we have seen,[38] another form of government intervention consisted of budget allocations for 35 years of contributions towards the interest on home-mortgage loans. These appropriations were shared by a number of different agencies and thus proved totally inadequate to the need.[39] State funding was never higher than 25.7 per cent of total residential construction investment (this peak coming in 1951). The percentage stayed at around 15 per cent during the fifties and dropped to 7 per cent in the sixties (and just 4 per cent from 1961 to 1965). Meanwhile, this type of state intervention amounted to 27 per cent in Denmark and West Germany, 32 per cent in France, 40 per cent in Britain, 42 per cent in the Netherlands, 45 per cent in Austria and 58 per cent in Switzerland.[40]

[35] *Ibid.*, pp. 529-30.
[36] Ruffolo, "Building wake", p. 123.
[37] *Ibid.*, p. 124.
[38] Section 1, above.
[39] Ruffolo, "Building wake", pp. 143-46.
[40] *Ibid.*, p. 146, footnote.

Unquestionably, a large part of the population continued to feel the need for better housing. Ricci's study evaluated the requirement at 13,406,000 rooms from 1973 to 1981, or five times the number constructed between 1961 and 1972. The residential construction industry thus had the prospect of a very broad field of operations, and Tagliacarne argued that development would be spurred by inflation, because, in times of monetary uncertainty, real estate is ordinarily an attractive investment.[41] But these forecasts would prove erroneous.

The number of dwellings built from 1972 to 1977 was less than between 1962 and 1967, or 198,000 a year compared with 361,000, and the decline became more pronounced as the seventies proceeded. In 1972 some 259,000 dwellings were built, a figure not duplicated for the rest of the decade. Indeed, except for 1975, with a total of 220,000, the figure remained under 200,000 a year; in 1977, just 148,000,[42] and forecasts through the medium term allowed no room for hopes of a recovery.[43]

## 8. The residential-building slump

The crisis of the seventies affected the residential building industry in most EEC member countries, but differently with respect to Italy. Whereas in the other countries the slump began in 1973, in Italy it was perceptible a decade earlier.[44] The downturn coincided with the advent of centre-left coalition governments and the nationalization of the electrical power industry, but the causes were multifarious. First of all, there was the tightening of controls on rents for postwar housing. Until 1963 the return on new housing investment was strictly market-determined, but from then on it was fixed by law. As a result, the propensity to invest in real estate gradually diminished, and housebuilding for private clients progressively slowed to a virtual standstill. Other negative factors were the continuous increase in construction costs, which rose faster than those in manufacturing industry, slower productivity gains, and the substantial rise in the cost of borrowing, owing to inflation that soared to around 15 per cent in 1978, making mortgages more expensive. Another impediment was the continual modification of zoning procedures, which in some cities paralysed the planning machinery and the issue of building permits.[45]

With output in 1977 at less than half the estimated ordinary new housing requirement of 300,000 dwellings a year,[46] and with a rent freeze that paralyzed maintenance and renovation and blocked new investment in the sector, the

[41] Tagliacarne, "The state of housing", pp. 531-34.
[42] G. Dandri, "The evolution of the Italian housing situation from 1951 to 1978", *Review*, XXXII, 2-3 (March-May 1978), p. 137.
[43] *Ibid.*, p. 140.
[44] *Ibid.*, p. 138.
[45] *Ibid.*, pp. 139-40.
[46] *Ibid.*, p. 152.

residential construction slump towards the end of the seventies resulted in a deterioration of housing conditions, especially in the big cities.

## 9. The destruction of roads during the war

Apart from housing and large-scale work abroad, which was worth $300 million in 1967, or over half the total business of the Italian construction industry, the industry also played a key role, historically, in public works.[47] Road construction, improvement, enlargement and maintenance was handled by the National Road Agency, ANAS. Instituted by Law 1094 of 17 May 1928 and reconstituted by Law 547 of 17 April 1948, ANAS had responsibility for administering national highways and motorways and seeing to ordinary and extraordinary maintenace, improvement, road signs, new highway and motorway construction both directly and through contracting, and enforcement of laws and highway regulations on its roads.[48]

ANAS was funded by state contributions, by a percentage of the annual automobile tax, by contributions proportional to the improvements in roads, by advertising revenues and revenues for licences and concessions on state highways, etc. Total revenue varied from year to year. In the immediate postwar years it amounted to around 9 billion lire,[49] but expenditure rose rapidly, owing to inflation, to 65 billion in 1949.[50]

Road repair did not wait for the end of the war. As the fighting travelled up the peninsula and the front moved from the Gustav Line to the Gothic Line, and, in some cases, even as the battle raged, municipal and provincial roads of military interest were repaired, often in the form of detours, curves, steel or wooden bridges. Systematic action by ANAS, however, could not begin until peace had been restored; and now it was not limited to military roads alone. A medium-term plan called first for the re-establishment of communications, as the retreating Germans had systematically destroyed all interconnections (bridges, culverts, etc.). The account released at the war's end showed the enormous extent of the damage: 23,182 kilometres of roads, 4,734 bridges, 8,434 culverts.[51] The reconstruction effort was massive. By the end of 1948, 18,514 kilometres of roadway had been repaired, including repaving and reinforcement and protection; 3,337 culverts had been repaired, as well as 2,711 bridges, 1,518 with a span of under 10 metres, 1,193 with longer spans. The

[47] Siracusano, "Situation and prospects", p. 435.
[48] M. Del Viscovo, "ANAS, National autonomous road corporation", *Review*, XII, 3 (May 1958), pp. 275-77.
[49] *Ibid.*, p. 282.
[50] E. Grà, "Italy's road network", *Review*, IV, 2 (March 1950), p. 120. Grà was Director General of ANAS.
[51] M. Folinea, "Italy's road network", *Review*, IV, 1 (January 1950), p. 27. Folinea was chairman of the roadways division of the Supreme Council for Public Works.

technical complications of these larger bridges required the intervention of highly-specialized enterprises, as in the case of two bridges over the Arno (San Nicolò in Florence and Mezzo in Pisa), a bridge over the Tiber at Poggiomirteto and one over the Po (at Curicchi, on the Adria-Corbole highway). Problems of some gravity were also posed by many other bridges, in any case, such as five over the Arno (at San Giovanni Valdarno, Terranova Bracciolini, Signa, Fucecchio and Santa Croce), over the Pescara at Pescara, the Tiber at Orte, the Magra at Caprigliola. Even so, the reconstrucion of destroyed and damaged bridges was not yet complete and, as 1948 came to a close, bridges were going up across the Tiber at Tor Boacciana and Grillo, the Adige at Cavarzere, the Vara at Piana Battola, and so on.[52]

## 10. New roads

At the same time, partly with the idea of providing work for the many jobless, new roads were planned and work on them begun. Some projects represented the completion of trunk routes begun before the war and interrupted.[53] New roads were also planned and realized in some of the worst-bombed cities, such as Milan and Naples, both to improve the existing road network and to permit the creation of new residential neighbourhoods.[54] Roads were built to avoid through traffic in small towns and villages; many railway crossings were eliminated; such crossings on state highway modernization of infrastructure being reduced to 680 by the end of 1949, at a cost of 13 billion lire.[55] Road reconstruction and new construction, however, did not yet complete the highway network that the country needed. Steadily intensifying pressure for the completion of a highway network was being created by the economic and social forces behind the agricultural and industrial transformation of the country. Government was widely accused of inactivity and continuing neglect of development of the country's routes of communication, which were generally considered to be in bad condition, haphazard and generally inadequate to the process of economic growth under way.[56]

This criticism lay behind the Romita Act (named after the minister of public works who sponsored it), Law 463 of 21 May 1955, instituting a ten-year plan for the development of communication structures. The law appropriated 100 billion lire for motorway construction and 60 billion for the repair and upgrading of the southern Italian highway network. That same year the five-year Vanoni Plan to reduce the country's pervasive unemployment allocated 350 billion lire of its total investment of 1,150 billion to improve the state-

[52] *Ibid.*, pp. 28-29.
[53] Grà, "Italy's road network", pp. 121-22.
[54] Polinea, "Italy's road network", p. 29.
[55] Grà, "Italy's road network", p. 120.
[56] Del Viscovo, "ANAS", p. 280.

highway network and 70 billion to upgrade provincial roads into state highways.[57]

## 11. Motorways

Before the war Italy's motorway "network" was a poor thing indeed. It consisted of stretches of 84 kilometres from Milan to Lakes Como, Varese and Maggiore, built in 1924 and 1925; 50 kilometres from Milan to Bergamo (1927); 23 kilometres, Naples-Pompeii (1929); 48 kilometres, Bergamo-Brescia (1931); 27 kilometres, Turin-Milan (1932); 81 kilometres, Florence-seacoast (1933); 25 kilometres, Padua-Mestre (1933), and 50 kilometres, Genoa-Serravalle (1935).[58] These were just isolated tracts of motorway, separated from one another, and totalling not even 500 kilometres. Virtually the whole system was in the Centre or North.

Italy was far behind Germany and other countries. Work to close the gap got under way in 1952 with the establishment of an agency for the development of motorways in Italy, SISI, with the participation of AGIP, FIAT, Pirelli and Italcementi. Thanks to this iniatiative, the project for the "Superhighway of the Sun", from Milan to Naples, was developed. Not until 1956, however, following the May 1955 law, which authorized 4,000 kilometres of superhighway construction over a period of years, was the project, submitted to the government by SISI, passed on to the motorway concession and construction company, which was the contractor for the work.[59]

Linking North to South, the planned Milan-Naples motorway was designed to complement the work of the Southern Italy Development Fund. It was to be finished in 1963, shortening the road distance between Milan and Rome from 617 to 560 kilometres, 540 kilometres consisting of true superhighway; and from the centre of Milan to the centre of Naples from 850 to 767 kilometres, 738 kilometres being super highway. The Rome-Naples link would also shorten from 233 to 207 kilometres, including 198 kilometres of motorway,[60] while the route from Milan to Naples would link up Bologna, Florence, Rome, Capua and other localities.[61]

When this project was begun, other stretches of motorway were already under construction: Genoa-Chiasso, Genoa-Savona-Ceva, and Bologna-Rimini-Ancona.[62] Of course, none was as long or complex as the Milan-Naples superhighway, which required the removal of 40 million cubic metres of soil

[57] *Ibid.*, p. 281.
[58] V. Apicella, "The evolution of the Italian motorway system", *Review*, XXXII, 5-6 (September-November 1978) p. 331.
[59] F. Aimone, "The Super Highway of the Sun", *Review*, XI, 4 (July 1957), p. 318.
[60] *Ibid.*, p. 319.
[61] *Ibid.*, pp. 321 *et seq.*
[62] *Ibid.*, p. 319

and the placement of another 38 million cubic metres, the construction of 304 major bridges and 3,800 viaducts (the longest of which, across the Po, spanned more than a kilometre), the digging of 81 tunnels (one of 630 metres, at Passo di Cisterna in the Appennines, and another of 600 metres, at Rogheto, near Monte S. Savino between Florence and Rome, as well as seven others longer than 400 metres).

Paving the highway's 15 million square metres and building the retaining walls etc. required 1.5 million cubic metres of cement, 700,000 cubic metres of pre-compacted materials, 100,000 tons of steel. These jobs, plus the other necessary tasks, took a total of 26 million man-days,[63] not to mention the mass of machinery and equipment employed. Clearly, this was no simple or low-budget project. Having joined IRI, Società Autostrade, the motorway company, while proceeding with the construction of the Milan-Naples motorway, began other projects as well. Law 729 of 24 July 1961 authorised the company to construct a number of other sections of motorway: Como-Chiasso, Genoa-Sestri Levante, Bologna-Padua, Bologna-Canosa, Naples-Bari, and Rome Civitavecchia, and to modernize and manage the prewar motorways (previously run by ANAS) along with the Florence-seacoast link, put under its management in 1959.

Next, Law 385 of 28 March 1968 appointed the company to forge a series of international motorway linkups, through the Mont Blanc, Saint Bernard and Simplon tunnels, with Switzerland and France and, via the Udine-Tarvisio stretch, with Austria. It was also called on to extend the Adriatic superhighway to Taranto and Sibari and to build the stretch from Caserta to Salerno, completing the link between Rome and Reggio Calabria.[64]

Bit by bit, a true motorway network was emerging, quite separate from the pre-existing highway network. By the mid-seventies, when the "Superhighway of the Sun" had been fully operational for years, this road-communication system consisted of the two major longitudinal superhighways along the Adriatic and the Tyrrhenian coasts, with a point of contact at Bologna, the projected terminus of the motorway for the Veneto region, Trieste and Tarvisio. Two traverses, from Rome to the Adriatic and from Naples to Canosa, in Apulia, would link the coastal motorways. Another motorway would run from Modena to the Brenner Pass, while the main cities of Piedmont would also be interlinked by superhighway. A total of 5,800 kilometres were built, under construction or planned for 1975; half (2,900 kilometres) was constructed and managed by IRI and the other half was under the direct or indirect responsibility of ANAS, including the toll-free roads (Salerno-Reggio Calabria, Catania-Palermo, Palermo-Mazzara del Vallo).[65] The motorway fever ebbed in the seventies. Law 287/1971 renewed the government commitment to guarantee all of the Società Autostrade's bond issues,

[63] *Ibid.* pp. 323-324.
[64] Apicella, "The evolution", pp. 333-34.
[65] G. Pellegrini, "Toll motorways", *Review*, XXIII, 2 (March 1969), pp. 95 *et seq.*

resulting in a proliferation of new projects requiring government concessions. These new projects would soon have come to represent half the value of the entire network constructed to that date. As a remedy, a 1975 law suspended the implementation of all motorway projects.[66]

By now Italy had some 6,000 kilometres of motorway, forming a complex road transport system that awaited the completion of another axis, which for the time being stretched from the Saint Bernard and the Mont Blanc to Ventimiglia on the French border and to Livorno in Tuscany and was to be extended to intersect with the Rome-Civitavecchia motorway.[67] The project was never completed, however; it was blocked in the mid-seventies by the broad crisis stemming from the rise in oil prices, which sharply diminished the forecast growth in motor-vehicle traffic. The crisis was driven by other factors as well, such as soaring inflation, which greatly increased construction costs (for labour and materials) and brought financial costs to an unprecedented height, together with the abolition of preferential tax treatment for motorway construction, an increase in VAT on motorway tolls to 12 and then 14 per cent, which made any further toll increases impossible.[68] On the eve of the eighties, in any case, the original enthusiasm for the design and expansion of the motorway system was on the wane.

## 12. The cement industry

From the end of the war, cement production increased without pause. The prewar level of 5 million tons per annum was surpassed in 1950, and output continued to grow to 12 million tons in 1957 and 23 million in 1964.[69] Following the slump in residential building,[70] cement production then dropped to under 21 million tons in 1965, but with the launch of the five-year development plan for 1966-70, which allocated 25 per cent of overall investment to public low-income housing,[71] output grew once more. From 1966 to 1969 it increased from under 21 million per annum to over 31 million tons.[72] Not surprisingly, the increase was greatest in mainland Italy, where industrialization and urbanization prompted the most intensive housing demand. In fact, cement actually had to be imported.[73] Whereas in previous years cement exports had outweighed imports, in 1968 and 1969 the industry ran a trade deficit both for cement and for clinker. From 1964 to 1968 Italy constructed 5.3 million new rooms, as against

[66] Apicella, "The evolution", pp. 337-38.
[67] *Ibid.*, pp. 331 *et seq.*
[68] *Ibid.*, pp. 340-45.
[69] F. Federici, "Situation and prospects of the Italian cement industry", *Review*, XXIV, 3 (March-May 1970), pp. 103-04, 110.
[70] See Section 3, above.
[71] Siracusano, "Situation and prospects", pp. 443-44.
[72] Federici, "Situation and prospects", p. 110.
[73] *Ibid.*, p. 111.

urban in-migration of only 5 million persons.[74] Housing and non-housing construction as well as public works (roads, motorways, land reclamation, aqueducts, etc.) continued to fuel massive, and growing, demand for cement; the impossibility of meeting domestic demand led some producers to build new plants, bringing the industry's capacity to 47 million tons a year in 1972, 28.5 per cent higher than it had been in 1969.[75]

By the turn of the seventies the Italian cement industry had earned the reputation of being the most advanced in Europe, with state-of-the-art machinery. At the same time, however, between 1969 and 1972, there emerged perceptible signs that further development might be jeopardized and that continued full utilization of capacity might be impossible. For one thing, the Interministerial Committee on Prices set a price for cement that producers considered inadequate with respect to the cost increases for raw materials, machinery and energy. Secondly the termination of the subsidies under the interim urban-planning legislation restricted the possibilities of housing construction. Third was uncertainty over the content of the impending urban-planning legislation.[76] All these uncertainties were exacerbated in 1973, the year of the oil crisis, and continued to worsen through the seventies and eighties.

## 13. Construction materials

Another segment of the construction industry that registered enormous development was brick and tile production. At first, growth was stimulated by domestic demand, i.e. the expansion of residential construction,[77] exports accounting for just 0.5 per cent of total sales. This powerful domestic demand spurred an 80 per cent expansion of plants between 1950 and 1958, with factories scattered all over Italy. In 1957 there were 1,181, of which 782 were located in the North, 243 in the Centre, 112 in the South and 44 in Sicily or Sardinia. In consequence the work force grew steadily to 53,000 by 1957. This growth itself sparked interest in export markets, with initial exports to Austria, Belgium, France, Libya and Switzerland.[78]

Like the rest of the economy, the brick industry suffered recession between 1963 and 1965, with output plunging from 22.5 million tons to just 15 million. Production recovered haltingly after 1966 and finally, in 1969, surpassed the 1963 level, at 24 million tons. In the meantime many firms, unable to withstand the drop in output due to the building slump and strikes, had gone out of business. The subsequent recovery failed to increase the number of firms, which

[74] Ruffolo, "Building wake", p. 127.
[75] Federici, "Situation and prospects", pp. 105-07.
[76] *Ibid.*, pp. 108-09.
[77] Cantelli, "The Italian brick industry", *Review*, XXIV, 2-3 (March-May 1970), p. 113.
[78] M. Cantelli, "Technical and economic aspects of the brick industry", *Review*, XII, 6 (November 1958), pp. 597, 600-02.

had shrunk from 1,384 to 1,184.[79] Some companies had been taken over by others. Moreover, to expand production, and not just to neutralize the effects of rising labour costs, which increased by 110 per cent between 1966 and 1969, and the introduction of the 40-hour, 5-day week, most of the surviving firms had to make substantial investment to renovate the production process, mechanizing and cutting staff.[80] Further manpower reductions, combined with sizable new investment, were realized over the next few years. The industry's collective bargaining contract for 1970-72 provided for wage increases of 33.4 per cent per year, in addition to a special cost-of-living allowance.[81]

One segment of the overall construction industry that was a successful exporter during these years was the marble-quarrying and marble-working industry. Especially after the formation of the European Economic Community, joined as noted[82] by Britain, Ireland and Denmark in 1973, EEC countries stepped up imports of marble, reaching particularly high volumes in 1972 and 1973. There were also significant exports to Austria, Spain and Switzerland, and outside Europe to Japan, Lebanon, Libya, the United States, Oceania, etc.[83] This industry, too, however, suffered the repercussions of the oil crisis of the seventies and the ensuing double-digit inflation.

## 14. The railways at the end of the war and their reconstruction

The Italian railway system was very hard hit by the war. Some 7,000 kilometres of track were damaged or destroyed, along with 100 bridges, 70 tunnels, 2,500 steam-powered, over 1,000 electric and 750 diesel locomotives, 10,000 passenger, baggage and mail cars, 90,000 freight cars, and more. At the end of the war, 35 per cent of fixed assets and 65 per cent of rolling stock, or over 40 per cent of the railway system total assets were unusable.[84] Reconstruction got under way at once, but at the end of 1952 by comparison with the prewar situation, Italy was still short of 27,000 freight cars, 2,258 passenger and luggage coaches, 137 diesel locomotives, a good part of the overhead electric cable system, 787 bridges and viaducts, 60 tunnels, 85 stations, 10 engine depots, 19 repair shops, and 828 houses for level-crossing guards. Nevertheless, postwar reconstruction could be considered complete, in that not all of the 1939 system was worth rebuilding.[85] The effort was enormous, requiring more than 100 million man-days, and it produced a good number of technical improvements.

[79] M. Cantelli, "The Italian brick industry", pp. 113-16, 119.
[80] *Ibid.*, p. 119.
[81] *Ibid.*, pp. 117-18.
[82] See Chapter 3, Section 5.
[83] A. Carmi, "Situation and prospects of the Italian marble industry", *Review*, XXVIII, 5 (September 1974), pp. 433-47.
[84] G. Della Porta, "Italy's railway problem", *Review*, VII, 6 (November 1953), p. 519.
[85] *Ibid.*

## 15. Road-rail competition

Between 1938 and 1952 railroad passenger traffic increased by 88 per cent, while road traffic gained 650 per cent. Freight shipments by rail increased 4.3 per cent; by road, 300 per cent. The number of intercity buses rose from 6,750 in 1938 to 10,950 in 1952, while freight vehicles increased in number from 81,000 to 261,000.[86] In other words, the postwar years witnessed an intensification of competition between road and rail, which had already given rise to debate and concern before the war. Now, with reconstruction complete, the future of the railroads was in serious doubt.[87] The state railways ran a deficit of 60 billion lire in 1952, and it was explained that the problem was not so much a fall in traffic owing to competition from road transport as the political and social obligations imposed upon the system by the government.[88]

The following years saw no improvement, the deficit persisting. Nor could it be otherwise, as the system's nominal revenues were 48 times higher than in 1938-39 while expenses had increased 64-fold.[89] However, the other railway systems of Europe, whether nationalized or not, were all in more or less the same condition. In Italy the railroads faced ever stiffer competition from other means of transport, which were multiplying. At the end of 1953 Italy had 352,206 trucks on the roads, compared with 264,332 at the end of 1949. In the two years 1953-54 the number increased 18 per cent. Most of these vehicles (78 per cent) were small or medium-sized trucks, owned by the companies whose goods they carried. Only the remaining minority were larger vehicles which transported freight for third parties. The bulk of the increase in daily traffic came in the roads around the major cities. Circulation of light and heavy trucks was estimated to have quadrupled between 1948 and 1954.[90]

## 16. The Vanoni Plan for railway development

As road traffic soared, the government moved to enhance the role of the railroad system. The Vanoni Plan appropriated 120 billion lire over four years to improve national trunk lines, working on the permanent way and bridges, according priority to electrification and eliminating the many bottlenecks that hampered the system. Another 60 billion lire was appropriated for the construction of new lines. Considering that this was a four-year budget, many observers saw the plan as quite modest. In any case, in addition to expanding the port facilities at Villa San Giovanni (near Reggio Calabria) and expanding the ferry fleet linking the peninsula with Sicily, the plans called for doubling the

[86] *Ibid.*, p. 521.
[87] *Ibid.*, pp. 521-23.
[88] *Ibid.*, p. 527.
[89] G. Della Porta, "Transport situation and problems", *Review*, IX, 5 (September 1955), p. 461.
[90] *Ibid* pp. 463-64.

track between Battipaglia and Villa San Giovanni and between Genoa and La Spezia, electrifying the Adriatic line as far down as Bologna so as to bring it into an express-train network to central Europe, and electrifying the Turin-Milan-Venice stretch.[91]

The new investment did not neglect rationalization of the entire network and of fixed assets and rolling stock. The fact is that the overall extent of the system was virtually unchanged since before the war: 16,981 kilometres in 1938-39 and 16,980 in 1955. The most important change was seen in locomotives: steam engines dropped in number from 4,283 to 3,370, while electric locomotives increased their numbers from 2,147 to 3,085. The number of freight cars decreased while passenger cars increased by a thousand. However, development was still plagued by budget problems, which were aggravated by an increase in staff from 136,080 in 1938-39 to 155,876 in 1955-56.[92] Compared with the prewar years the number of passengers had doubled. In 1955-56 the system carried some 390 million passengers but, instead of increasing, the number then actually dropped to 365 million in 1959.[93] Freight traffic suffered even worse. Between 1938-39 and 1955-56, despite the enormous industrial development of the country, freight carried by rail increased by barely 10 per cent, while livestock transport actually diminished.[94]

The competition from road transport continued. Cars and trucks in circulation increased year after year. New passenger car registrations numbered 253,000 in 1959 but soared to 381,000 in 1960; at the same time the number of truck registrations rose from 29,000 to 41,000. Needless to say, the increase in the number of cars and trucks on the roads continued in the years that followed, so that the competition of road transport intensified, especially for freight haulage, as the number of heavy trucks increased.[95] The state railways' already heavy deficit worsened.[96]

The growing deficit prompted discussion and suggested remedies. Apart from the road transport boom, one factor identified was the system's "deadwood" – railroad lines with very few passengers – many of which were now discontinued. Another was the obsolescence of much of the system's fixed assets and rolling stock. The director general of the state railways, Ruben Fienga, acknowledged that lines and equipment, as well as locomotives, carriages and wagons, were very often of "venerable" age.[97] The problem, in Fienga's view, was that between 1952 and 1962, instead of a sweeping plan for investment coordinated with other transportation systems to make the railroads profitable,

[91] *Ibid.*, pp. 466-67.
[92] G. Trotta, "The Italian state railways", *Review*, XII, 1 (January 1958), p. 62.
[93] M. Del Viscovo, "Land transport in Italy", *Review*, XV, 3 (May 1961), p. 235.
[94] Trotta, "The Italian state railways", p. 65.
[95] *Ibid.*, p. 67.
[96] *Ibid.*, p. 68.
[97] R. Fienga, "Situation and prospects of the Italian state railways", *Review*, XXIII, 3 (September 1969), p. 399.

the only action taken had been budget cuts, which further aggravated the situation. This recognition of missed opportunities produced, in the summer of 1962, a ten-year plan for the railroad system.

To make up for lost time with the reclassification of lines and adaptation of the network to emerging demand, the plan sought to strengthen the system to meet future demand, which was readily predictable in 1962. A total of 1.5 trillion lire was appropriated in two five-year tranches, 800 billion for the first stage and 700 for the second. But the first phase began in 1967, two years late, and the rise in costs since 1963 cut the real operational potential of the funds by some 25 per cent. The plan had to be scaled down accordingly.

By the end of 1968, in any case, the state railways had been significantly transformed. Between 1962 and 1968 the system eliminated 30,228 freight wagons, 1,073 passenger coaches, 1,115 steam locomotives and 907 other locomotives, replacing them with new units up to European standards. The first of the E444 series of locomotives were introduced, capable of doing 250 kilometres an hour, along with the requisite passenger cars. Steam engines were replaced with diesel-powered units. Freight wagons of various sizes and specialties were built and brought into service. New ferries to Sardinia and Sicily were constructed. Some lines and related equipment were modernized, track was doubled along the southern and northern Tyrrhenian coast, the Adriatic coast and elsewhere. In many cases, the programme involved new construction and the abandonment of previous track. The electrified portion of the system was unified, and made automatic and electronic equipment was increased. New instruments were added: automatic blocks, repeaters for signals in the train drivers' cabin, continuous speed control and automatic braking, telephone links with trains, and so on.[98] The National Transportation Institute, formed with capital from the railway system, took over small-freight haulage, while the state railways began to organize a container service, although the system did not escape serious repercussions from labour conflict – no fewer than 15 strikes occurred in 1964 alone – overall management of the system improved and some 50,000 railroad workers were engaged in daily operations.[99] Once seemingly on the verge of serious trouble, the Italian railroads now appeared to have come fully up to European standards.[100]

## 17. High speed, long distance

A new Rome-Florence line was planned to increase speed, in the belief that cutting travel time would attract more passengers. Not everyone agreed with this strategic choice.[101] Some observers pointed out that the state railways had

[98] *Ibid.*, pp. 401-402.
[99] *Ibid.*, pp. 399-402.
[100] *Ibid.*, p. 402.
[101] M. Del Viscovo, "Land transport in 1968", *Review*, XXIII, 2 (March 1969), p. 112.

achieved their greatest successes in passenger traffic and ferry service to Sicily and Sardinia. For the rest, half of all Italian passenger traffic was essentially commuter travel within 30 or 40 kilometres of the major cities, while the other half was regional. Long-distance transport demand, it was argued, was essentially marginal, though on the surface one might get a different impression.[102] The fact is that for longer distance trips, even as early as 1969, the railways appeared to be losing out to air travel.

The area in which rail transport scored some fair success was long-distance freight haulage, thanks to competitive prices. The best results were in international freight traffic, although a considerable part of this was due to exports of southern farm products, especially fruit, for which reduced prices were charged. Some observers argued that this success was due simply to the railways' monopoly of international connections, as the Community had so far shown little interest in the liberalization of road traffic. In short, railroads dominated the demand for long-distance freight haulage, including international traffic, and regional and metropolitan commuter traffic.[103] Accordingly, some experts suggested that the railway system concentrate its efforts on improving its commuter and regional service, in view of ongoing urbanization.[104]

## 18. Commuter and regional service

The state railways thus faced a fork in the road. Should they improve their metropolitan and regional and commuter service or try to increase the speed of long-distance travel? Should they acquire medium-sized freight waggons for urban use, to bring goods virtually to their final destination, or larger cars to cut costs in long-distance transport and curb the budget deficit? This dilemma stemmed from the fact that, until the war, the railways had enjoyed an absolute monopoly and had simply ignored the technical advances of other sectors.[105] Nor had they taken advantage of war damage to modernize. Railway investment, in any case, continued after 1958 despite the mounting budget deficits. The overall size of the rail network increased by more than 200 kilometres between 1966 and 1969, while the number of passengers virtually stagnated (rising from 323 to 327 million) and freight carried increased from 51 to 55 or 56 million tons.[106] These tiny increments meant that the railways system had reached a limit that would not be easy to overcome. In the meantime, thanks to booming motorway construction, long-distance automobile transportation proliferated, carrying some 15 million passengers in 1971.[107]

[102] *Ibid.*, pp. 190-10.
[103] *Ibid.*, pp. 110-11.
[104] *Ibid.*, pp. 111-12.
[105] Fienga, "Situation and prospects", p. 397.
[106] M. Del Viscovo, "National transport economic account", *Review*, XXVI, 3 (May 1972), pp. 199 *et seq.*
[107] *Ibid.*, p. 219.

Long-distance freight shipment by truck was also expanding, road transport now representing a prime source of government revenue. Proceeds from the excise tax on fuels, the fees for vehicle ownership and circulation permits and other levies on automobile transport, even net of the expenses of the central government, government agencies, and provincial and local governments in this sphere, enabled the state to subsidize other transport sectors.[108] Both rail and road investment helped promote other economic sectors: railroad investment stimulated the production of the required material, i.e. iron and steel and related industries; investment in road and motorway construction spurred automobile purchases.[109] And, year after year, air traffic was growing.[110]

## 19. Air travel

Air travel was essentially a postwar activity, of which Rome, by the nineteen fifties, was the hub. In 1955, 25 airlines had facilities there, compared with 6 in 1938. They would have numbered 31, as in 1950, but for mergers. Two Italian airlines had existed in 1938 and four in 1948, but by 1955 there were again two, i.e. Alitalia and LAI. Rome now offered direct flights to 87 cities around the world.[111] Passenger traffic rose from 18,000 in 1938 to 247,000 in 1950 and 470,000 in 1955. By now the old airport at Ciampino was outdated and inadequate, so in 1950 construction of a larger, modern airport was begun. By 1957 the intercontinental airport of Fiumicino was completed; and needed only to be endowed with the necessary services.[112] In 1957 Alitalia and LAI merged, forming a group that monopolized all domestic air travel.[113]

With its new Fiumicino airport, Rome was linked with Sicily and Sardinia, Piedmont, Lombardy, Venice, Apulia and Campania. The most heavily travelled routes were to Milan and the two islands, with the other cities quite far behind. The prospect was for a doubling of both passenger and cargo traffic within a few years, and service was steadily extended to new cities. In 1961 daily services operated to Turin, Milan, Venice, Trieste, Pisa, Naples, Bari, Brindisi, Reggio Calabria, Catania, Palermo, Trapani, Pantelleria, Cagliari and Alghero. There were 11 flights daily between Rome and Milan; Rome-Palermo had 5, Rome-Catania 4, Rome-Cagliari 3. These routes were served by modern aircraft such as the Convair 440, the Viscount and the DC-6. The old DC-3 was used only for airports too small to handle the newer aircraft.[114]

[108] *Ibid.*, pp.219-20.
[109] Del Viscovo, "Land transport in 1968", pp. 108-09.
[110] Del Viscovo, "National transport", p. 219.
[111] S. Tommasino, "The Rome-Fiumicino Intercontinental Airport", *Review*, XI, 2 (March 1957), p. 109.
[112] *Ibid.*, pp. 109-28.
[113] N. Carandini, "Situation and prospects of Italian air transport", *Review*, XV, 3 (May 1961), p. 205.
[114] *Ibid.*, pp. 206 *et seq.*

Five years later, in 1966, air traffic had increased beyond comparison with the early postwar period. Airlines carried 3.5 million passengers and 48 million tons of freight. By 1969 the volumes were 6 million passengers and 94 million tons of freight.[115] This increase concerned both domestic and international traffic. Its international success prompted Alitalia to concentrate exclusively on that sector, turning domestic flights over to two subsidiaries, ATI and SAM (Societ[à] Aerea Mediterranea). One of the first European airlines to fly the North Atlantic routes, Alitalia held a good market share in that sector. Meanwhile more airlines were founded in Italy, such as Itavia and Alisarda, which like ATI and SAM flew domestic routes, reflecting the good growth prospects of the industry. In 1971 over 9 million passengers took domestic flights, while Italian airports served another 10 million for international connections, including those provided by airlines other than Alitalia.[116]

## 20. Ports

The war dealt especially severe blows to Italy's seaports. Naples suffered enormous damage, including the explosion of a munitions ship. The difficult and complicated work of repair and reconstruction got under way immediately, but in 1946 only the ports of Brindisi, Catania and Syracuse had fully restored their 1938 facilities. The others, such as Livorno, Palermo, Ancona, and Naples, where damage was more extensive, still had far to go to complete reconstruction.[117] Even so, shipping had resumed in Genoa, Savona, La Spezia, Cagliari, Bari and Ancona, often surpassing its 1938 level.[118] Within a few years Naples too, the worst damaged, was totally rebuilt with state-of-the-art equipment.[119] Facilities and functioning were also improved elsewhere, even though the volume of passenger and freight traffic was not yet back to prewar levels. Of the goods shipped to Italian ports, oil was increasingly predominant. In 1953 the country took in some 15 million tons. The leading oil port was Naples, which handled more than 3 million tons, followed by Genoa (1.7 million), Bari (1.6 million), and Venice (1.6 million).[120]

Freight and passenger traffic increased further in the years that followed. As Vito Danti Flore wrote, between 1861 and 1938 the amount of freight handled annually by Italian ports increased tenfold; but in the 20 years from 1951 to 1970 it soared from 45 to 325 million tons, increasing by 7.5 times or at an average

[115] Del Viscovo, "National transport", p. 219.
[116] M. Gabriele, "Italian civil aviation. Prospects and problems", *Review*, XXVI, 6 (November 1972), pp. 459-60, 463, 470.
[117] L. Greco, "Reconstruction of Italian sea ports", *Review*, III, 2 (March 1949), p. 114.
[118] *Ibid.*, p. 115.
[119] G. Mosti, "Harbours and harbour activity in Italy at the present moment", *Review*, VIII, 5 (September 1954), pp. 433-34.
[120] *Ibid.*, p. 432.
[121] V.D. Fiore, "Guidelines for a new Italian port policy", *Review*, XXVI, 1 (January 1972), p. 35.

annual rate of 12 per cent.[121] This extraordinary growth affected passenger travel first of all. Despite the decline in emigration and seagoing tourist travel, the number of passengers passing through Italian ports soared to between 21 and 22 million in 1972. Cruise ships and vehicle ferries became common, as the construction of motorways favoured the expansion of car-based tourism.[122] Often enough, then, tourists came to Italy by sea, but bringing their cars with them.

In the cargo department, oil continued to increase in importance. It now accounted for two thirds of all freight shipping, while another 15 per cent consisted of foodstuffs and industrial raw materials (grain, iron ore, coal, etc.). The increase in shipments of these materials affected port structures. Oil was off-loaded by pipeline outside the harbours, in the roadsteads, on artificial islands, floating docks, overhead lines and the unloading was handled, with government concessions, directly by the firms themselves. Increased shipping involved all the ports, but the main beneficiaries were the minor ports, especially those of the South: Augusta, Taranto, Porto Torres, Cagliari, Milazzo, Gela, Gaeta and Brindisi.[123]

Italy's coastline is dotted with dozens and dozens of harbours. Not all, obviously, are international seaports. A formal classification, dating back to 1885, accorded this title only to Genoa, Livorno, Naples, Venice, Trieste and Savona. Others, such as Ancona, Bari, Brindisi, Palermo, Catania, Cagliari and Civitavecchia, although receiving international shipping, were considered national ports. The great majority were classed as local ports.

This classification continued to have relevance and, to affect government action, but these years nevertheless witnessed, as was noted, an "excessive proliferation of industrial facilities along the coast". Major investments were made, with spending on port facilities of 400 billion lire between 1953 and 1974. The problem was not primarily the expansion of ports or their acquisition of additional equipment. The nature of the emerging cargo traffic did not call for expansion as much as for specialization, hence the installation of appropriate structures and instruments, not only technical innovations, for the task.[124] Action had to be taken not only to bring the technology side of dock work up to date but also to give port authorities managerial and entrepreneurial capacities. The port authorities needed to become industrial centres *sui generis*,[125] not just to continue their traditional stance of hindering rather than favouring the work of the docks by increasing costs.[126] This meant that the ports could not remain self-contained entities but needed to be integrated into the rest of their hinterland, linked up by road, motorway, railroad, and airport facilities. In a word, the time was ripe for the "interport".

[121] *Ibid.*, pp. 35-36.
[122] *Ibid.*, pp. 36-37.
[123] *Ibid.*, pp. 46-47.
[124] *Ibid.*, p. 39.
[125] *Ibid.*, pp. 39-40.

With the development of container ships, intershipment facilities became an urgent necessity. This technological revolution affected not only shipment modes but also dock and marine facilities for the movement and transportation of the containers. The transformation began within two decades of the end of the war, and in 1970 there were 470 container ships with a capacity of 150,000 containers. In regular use on North Atlantic and trans-Pacific routes, container ships accounted for more than 20.2 million tons of shipments in the ports of Northern Europe in 1970. Container traffic was still modest in the Mediterranean, but by 1972 it was growing rapidly.[127] Italy lagged far behind the other Western countries in this sector, though such ports as Genoa, Livorno, Naples and Cagliari were better equipped than others to handle the new method of shipping. In 1970 all the Italian ports combined handled only 113,000 containers with about 975,000 tons of cargo. Two thirds of this was accounted for by Genoa; Cagliari handled 101,000 tons, Naples 81,000 and Livorno 12,500.[128]

Although just beginning, compared with the state of development in the United States and Northern Europe, container shipments had already affected more than just ships and port facilities. Since the containers had to reach inland destinations, the problem of road and rail transport for them arose. The state railways built container terminals. In 1971 five of these had been built, in Milan, Florence, Rome, Naples and Bari. Dozens more were under construction throughout the peninsula, as well as four in Sicily and Sardinia. Special container transport lines had been created.[129] Truck-container terminals were also built.[130] Container shipment and trans-shipment was clearly the way of the future.

[127] A. Jatosti, "Containers: A technological revolution in transport", *Review*, XXVI, 6 (November 1972), p. 472.

[128] Other ports with some container facilities were Porto Torres, Anzio, Venice, Palermo, Catania and Trieste *Ibid.*, p. 481.

[129] These included Reggio Calabria-Naples-Milan, Milan-Bari, Turin-Genoa-Rome-Naples, and Turin-Venice-Trieste. *Ibid*, p. 482.

[130] The largest were in Rivalta Scrivia, Pomezia, Novara, Asiago, Montale Agliana (Pistoia), Osmannoro (Florence), and Piacenza. *Ibid.*