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Definition and measurement of the factors that cause urban expansion and their influence on each other

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PRELIMINARY NOTE

This report has been drawn up at the request of the Council of Europe by Prof. Dr. Aldo Cuzzer and Paolo Avarello Dr. Arch. It is the final part of a two volume study on the definition, measurement and inter-relationship of urban growth factors - a study conceived by the Steering Committee for Regional Planning and the Architectural Heritage (CDAT) as a suitable follow-up to the third session of the European Conference of Ministers responsible for Regional Planning (Bari, October 1976), where one of the themes explored by the Ministers concerned urban growth.

This second part concentrates on the application of the theories of the first volume to a number of case studies in Italy.

The author is responsible for the opinions expressed in the text; they do not necessarily reflect the views of the Council of Europe.

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Summary

SECTION I

Elements for a policy of controlling urban expansion

In Europe the growth of modern cities has always been viewed with suspicion, if not aversion, even when it has been the result of economic expansion.

Speaking in general terms, we can say that urban-planning, which since the beginning of the century, has primarily been a technical subject, has focused its attention more and more on the needs of the population in an urban environment rather than on the physical position of the city; The neo-humanist concept of the "human-size" city of the "Charte d'Athène" (1934) soon replaced the traditional nineteenth-century concept of the machine city.

In reality the common element in these problems is the attempt to bring the city back to an essentially static dimension. In practice then even the growing city would have to adapt to a pre-determined gravitional-hierarchic model. Therefore, in dealing with the problem of urban growth, we must bear in mind that the ultimate goal of a policy will always be the creation of an urban environment that favours the development of human activity for the major part of the citizens. However, urban growth is also one of the essential features of modern civilisation, and the problems associated with it cannot be completely reduced to or solved within the framework of a discipline.

In countries with a mixed economy, the chances of public agencies being able to control urban growth depend largely on the possibilities private entrepreneurs have of making money in construction, on the growth or transformation patterns of the city, and on the legal and economic power of the public organisations to intervene in matters of real estate.

In practice, policies attempting to control urban expansion have always caused conflict between the public and private sectors. Private capital's interest in the growth of the city and the transformation of the land does not depend merely on the profits to be made in building. It also depends on many other factors that might be summed up as the advantage of investing in land and building over other forms of investment. In theory, this advantage may exist even when the profits are relatively modest if other types of investment are not available or if the alternative exists only under special conditions that are not generally accessible to the investors.

Obviously the basic condition that determines private capital's interest is the existence of a market. Since the product of the building industry lasts longer than other goods, the market must be an expanding one. The growth of the total population, the tendency to move to the city, and the proliferation of higher housing standards have assured this condition.

Other factors may also have contributed to intensifying this original condition in different ways in different local situations at different times. For example, great importance is given to the solvency of the demand in respect to the average increase in real terms, to the tendency to save, to the availability of personal credit, to the cost of living, to widespread inflation, to the individual taste of the buyer etc.

For a more thorough examination of the relationship between public and private investment, it is useful to separate the components of the private building industry, and to assume that there are three categories of operators, each of which has a special role, a specific interest and precise business behaviour. They consider themselves purely landowners, purely builders, or purely investors. Of course these three categories really do exist separately, but often they are partially or totally incorporated into the figure of a single operator, who buys the land and provides for the construction and commercial exploitation of the building product. In Italy, for example, this has been the most common case, and it will therefore be difficult to single out the prevailing business behaviour because it is a combination of three components.

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Control of areas that can be developed has always been considered a fundamental element of urban-planning policy. In general the most effective way of assuring control of land is public ownership of large suburban areas. In many European countries this was accomplished by a policy of widespread acquisition carried out long in advance of the time the land was actually to be used for building.

On the other hand, public acquisition of land at the moment it is needed for the expansion of the city obviously creates greater problems. Therefore, special attention should be given to the means that make it possible and the ends for which it is to be used.

If land prices are low enough, that is, close to their agricultural value (which is considered the lowest one), special provisions will usually not be needed. On the other hand, if suburban land prices reflect anticipated increases in value, there will be a need for vast capital or legislation that permits expropriation against the payment of a total indemnity that is less than the market value of the areas that are to be developed. This causes a double market: on the one hand, transactions between private individuals will create a market value; on the other, the forced sale of part of the land at lower prices to public institutions will cause lower prices. It is clear that the greater difference there is between market value and expropriation indemnity, the greater will be the legal and political opposition to expropriation (obviously this problem is being viewed there within the framework of a democratic regime that in principle respects property rights).

By acquiring land, the public institution can intentionally try to control the overall land market by competing with private landowners and by having more choice (of time and place) compared to real-estate operators. It can also use its power to directly influence the final housing market. Generally speaking, we can say that the sooner and more widespread the action of public institutions is, the greater the probability that the growth of the city will follow a chosen model.

Other elements of a land policy are high taxation of building ground or strict regulations that prohibit or limit construction. If used in isolation these provisions are less effective, because they do not affect the market. In fact, they can always be reabsorbed when the demand is much higher than the supply. That is why the general tendency is to treat taxation on building ground the same as any other taxes and at most, give them the collateral function of supporting a more general ground policy.

On the other hand, a policy of only regulations and restraints, which would require a costly bureaucratic administrative apparatus to be successful, must not hinder the satisfaction of the immediate demand (otherwise it would encourage speculation). It should also not allow the projection of the future demand to influence the level of land prices. In other words, this kind of policy can be successful only when there is perfect equilibrium between supply and demand, which is most unlikely to occur in an expanding economy. In fact, it is not enough to prevent construction not included in the established programmes; it is also necessary to guarantee that these programmes are carried out. Therefore, land policy is the foundation of any plan to control urban expansion.

However, a land policy alone does not completely solve the problem of controlling urban expansion. Though it is true that land price influences the choice of building (and in the last analysis housing prices), it is also true that the demand for housing causes changes in land prices. And this demand is influenced by the willingness of families to spend the money necessary. Therefore, a city is a complex physical-economic system whose internal regulation will be determined by the sum total of individual choices, which are not always rational in respect to a (theoretical) model of the market. Moreover, control of urban expansion will never be completely effective if it is not part of a more general policy controlling urban dynamics as a whole.

In theory the economic practices of building firms are comparable to those of other production companies. However, since there are special characteristics in the real-estate sector this is true only for very large companies.

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The traditional company, which is small and has a low level of technology, operates from time to time on single commissions without (because it is impossible) any overall company planning. Thus automatically these companies are placed in a marginal position that can only be maintained when there is a steady and strong increase in the demand and prices are rising. However, this type of company has the advantage of requiring a minimum of fixed capital (and, therefore, initial investment), which greatly reduces the risk of bankruptcy.

Obviously all policies for controlling urban expansion must take into consideration the structure of the building industry and its position in the national economy. Thus it is natural that there be an attempt to select companies which will guarantee acceptable standards of quality while keeping the production costs at reasonable levels.

Of course, it is also possible to have an urban-control policy that completely eliminates the intervention of private capital in the land market, in the building operations and in real-estate investments. In addition to being contradictory, this kind of policy (as compared to the general political-economic system in countries with a capitalist or mixed economy) would force the public institutions to assume total responsibility for the entire cost of urban growth. In effect, the absolute limit of any control policy (even in socialist countries) lies in the ability of the public institutions to keep up with the costs of expansion.

Therefore the direct or indirect intervention of public institutions should be primarily corrective of the typical economic system of the country. This intervention should be related to the objectives sought, among which is also the control of urban expansion. Therefore, as far as possible, the intervention should be compatible with the general economic system and also take into consideration the availability of public funds.

Since there is still no general reference model that shows all the possible interrelationships in urban affairs, it is possible that every intervention - even if it is effective for the specific problem it intends to solve - will cause reactions that are, by definition, uncontrolled in other sectors. Therefore the lines of public action must be corrected and changed continually on the basis of periodic local and national verifications. Thus, the continuity of this process must be institutionally guaranteed through the co-operation of the central government and the local authorities.

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SECTION II

The problems of urban land rent in Italy

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1. The importance of the problem

In almost all countries with a market or mixed economy, the market price of available land for building is higher than its normal value, which supposedly should correspond to the current value of future agricultural yield plus the cost of urbanisation. The difference between the market price and the normal value of land is usually referred to as rent. This rent varies considerably because it is based on the importance of the urban centre, the location of the land, population and economic factors, and economic trends in the building market. All other things being equal, rent values vary greatly from country to country.

Rent is an important factor in the control of urban expansion. Since it is a component of the final price for land that is already or will be available for building, it has a direct influence on:

i. the possibility of public administrations to buy land for housing or services or to accumulate a land reserve so that it can control prices;

ii. the attitudes of landowners to the eventual use of the land and, therefore, their acceptance of the location of buildings and the general lines of development established by urban-planning programmes.

iii. the evaluation of investments other than building investments, thus influencing economic activity in the free areas within the urban zone or adjacent to it.

Another factor that should be considered is the uninterrupted expansion of the major cities in the last thirty years. This has created an expectation of rent which goes far beyond the middle-term forecasts for the area and affects much more territory than that which will actually be used for urban structures.

Increasing awareness of the importance of these phenomena in determining urban development has led to more interest in theoretical studies. There has also been a burgeoning of legislative measures to control the indiscriminate increase in urban land prices. These measures range from tax laws to expropriation.

However, the considerable differences in urban development in western countries has made it extremely difficult to develop a single general theory on urban rent. Therefore, the interpretations of the various schools of thought should take into account the prevalent type of development as well as the socio-economic and political situations in the different countries. Moreover, most scholars accept this approach because they "realise that the problem is becoming increasingly complex and they want to avoid arbitrary generalisations. They prefer instead to direct their studies to the effect of particular urban projects on the price of building areas" (1).

2. Theoretical approach

As opposed to the Anglo-Saxon school - which can be traced directly to the agricultural rent theory formulated by Ricardo, Malthus and Von Thunen on the one hand and to Marshall's marginalistic analysis on the other - Italian thought on matters of urban land rent tends to accept the criticism of Maffeo Pantaleoni, who says it is impossible to use Ricardo's model based on the declining productivity of the land because it is impossible to define the product of urban ground (2). According to Pantaleoni the rent problem should be considered within the framework of monopoly theory. He emphasises the uniqueness of urban land not only in terms of its location but also in terms of its various potential uses: "... the employees of the various ministries look for homes near the ministries; students do not like to be far from the university; depending on their type of business, merchants are scattered among their clientele, but sometimes the opposite occurs also. Therefore the topical distribution of inhabitants according to their individual motives creates hundreds of small centres of plus value land that are subject to a great many vicissitudes that may destroy some of these centres and create others ..." (3).

Pantaleoni's criticism is clear and surprisingly modern in its indication of the weak points of a mechanical transposition of rent theory from the framework of agriculture to that of a built-up city. He was the first to question the model of one monocentric, monofunctional city that is the basis of a great many theories of urban ground rent, since he was well aware of the complexity of the functions of a modern city. He was also the first to clearly pose the problem of defining the product of urban ground. Pantaleoni's ideas were taken up and expanded by other economists such as Einaudi and Grilli (4), who for many years set the trend in Italy in formulating the value of building land.

Despite these flashes of brilliance, this line of reasoning has not always led to the complete understanding and solution of urban problems. In fact, the overly hasty linking of ground plus value to monopoly theories has shifted the entire complicated problem of urban expansion back into a codified economic framework. This has lessened the need for continual confrontation with the reality of urban settlements along the lines, albeit in a very different context, of the American Land Economists. At the same time this attitude has been conducive to the manoeuvring of regulatory and fiscal laws which have often proved to be inadequate.

In Italy, interest in the problem of urban ground rent increased in the early 1960s when the beginning of "centro-sinistra" politics aroused hopes for greater integration of economic programming and regional planning and for a radical reform of urban legislation. In this new phase there was an obvious attempt to recognise the contribution of the Anglo-Saxon school regarding differential rent in interested and intermediate urban areas. For developing areas, on the other hand, the monopolistic concept of absolute rent was proposed although the interpretation was different from Pantaleoni's original concept.

In this connection, Siro Lombardini published a very important article in 1963 (5). Using a simplified model of a city, in which all the main activities occur in the centre and in which the development is by the addition of rings, Lombardini interprets the differences in ground values in the various rings. He does this according to Ricardo's rent theory without, however, posing the fundamental problem of defining the product of urban ground. The main part of the article, however, is devoted to formulating the price of land in the external ring "... where there are both agricultural activities and various kinds of recent urban settlements ... in which the necessary work of urbanisation is being carried out." (6) By definition this land should not produce rent. Yet "... the cost of land in the external ring rises above its normal value (price), that is, the value of the land for agricultural use, because the supply of this land tends to be less than the demand ... The offer is restricted because of (a) speculation and (b) the infrastructure policy" (7).

The clear distinction between differential rent and absolute rent (and the interpretation of the latter as being affected by the limited supply in respect to demand) is confirmed by Franco Fiorelli and Sandro Petriccione. "Ground rent, and in particular urban ground rent, is an example of what happens when supply is less than the demand ... This refers to absolute rent" (8). Among other contributions of the Italian school, mention should be made of Bruno Roscani's essay, which once again views the problem of rent within the more general framework of building development (9); Miro Allione's lucid article, which attempts to overcome the dualism of the formation of ground values by drawing attention to the fundamental problem of defining the product of urban ground (10); and Italo Magnani's book, which analyses complex problems like urban sprawl and leap frog development (11). Despite the great interest in these works the prevailing trend is still toward a clear distinction between two kinds of rent. This distinction maintains that the differential rent cannot be eliminated because it depends on objective differences in position of the various ground sites. The marginal or absolute rent, on the other hand, could be eliminated because it is created by market distortions that might be corrected.

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This view has greatly influenced urban planning and legislation in Italy in the last twenty years. In fact:

i. from 1960 until the present, the bills presented and the laws passed on urban affairs apply mostly to the zones of expansion and attempt to eliminate absolute rent or, to take all, or at least some, of it away from the landowners and return it to the community;

ii. and also, in virtue of a rather extensive interpretation of the 1942 urban law (12) which despite numerous changes and additions is still the basis of Italian urban legislation-regulatory plans deal primarily with the new zones and only offer a few general guidelines for the inner city and, in fact, continue to distinguish between piani regolatori edilizi and piani di ampliamento (dealt with in the laws of 22 June, 1865 No. 2359) (13);

iii. except for the case of the historical centres, where cultural and social factors tend to place less importance on strictly economic evaluations, Italy, from the technical as well as the legislative institutional point of view, seems to be inadequately prepared to deal with the complex problems of urban renewal, which tends more and more to be considered the basic problem of European urban policy for the next ten or twenty years.

3. The theoretical models and urban planning models

The school of American Land Economists and the more recent works of Alonso and Wingo (14) have been criticised for trying to formulate a general theory of urban ground rent based on typical United States settlements that are very different from the prevailing models in other countries. The Italian school might be taken to task for erring in the opposite direction: it has placed the emphasis on theoretical analysis without paying sufficient attention to the special characteristics of existing cities and their new zones.

One of the special characteristics of many Italian cities is a much higher residential density than that in other European cities, especially those of Northern Europe. For example, the density (calculated on the entire urban area) is ten times higher in Rome than it is in Stockholm. It is also significant that the Greater London Plan of 1944 considered a residential density of 150-200 inhabitants per hectare excessive, while in Rome there are numerous cases where the land density is 1, 500 or even 2, 000 inhabitants per hectare. Thus in this case too, the ratio is 1 to 10.

As the following table shows, after the war there was a tendency toward higher density settlements. The table refers to the city of Rome. It is based on the areas of the successive zones of expansion and the population increase during three periods between 1900 and 1957 (15).

TABLE I

Residential density of urban developments in Rome from 1900 to 1957.

Period	Population increase (thousands)	Urban area increase (hectares)	Density of urban developments (inhabitants/hectare)
1900-1930	400	1, 150	348
1930-1950	700	2, 160	324
1950-1957	400	820	488

Sources: ISTAT (for population increases)
URBANISTICA Nos. 27 and 28 (for calculation of the surface areas)

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In evaluating these figures, one should bear in mind that they are averages and refer to very different urban situations. Therefore, it is easy to understand how the extraordinary figures that were previously cited in the more densely populated areas were reached.

The substantial increase in density that occurred in the 1950s during the building boom refers primarily to the external areas of Italian cities. This is the opposite of the typical situation in the majority of European and North American cities. In fact, in the latter the trend has been to decreasing residential and building density as one moves from the city toward the outskirts and suburbs. This phenomenon was formulated by Colin Clark in an exponential equation (16). In Italian cities the areas with the highest resident and building density are often in the outskirts (17).

Despite differences in mathematical formulation, Clark's model of residential density corresponds quite well to René Mayer's diagram for the value of urban ground (18). Mayer claims that ground value varies according to the Laplace-Gauss normal distribution curve, with the maximum corresponding to the centre and asymptotically tending to a constant value at the extremes. This latter value corresponds to the agricultural price of the land which has been increased by a quota of the cost of urbanisation and a quota of rent.

In contrast to what happens for residential density distribution, Mayer's diagram can also be applied to Italian cities although there are significant differences in land prices at the extremes. The correspondence of this diagram was empirically proven in a study of metropolitan areas of Milan (19).

The marked anomaly of the Italian situation raises many questions that have not always been taken into consideration by the theoreticians. In fact, when the trends in building density and price are fairly similar, one can hypothesise that there is a cause and effect relationship between density and rent. This hypothesis (which also seems to be common sense) is implicit in many interpretations of rent, and it became explicit in Alfred Marshall's analysis: "We may next pass to the case of urban ground rent ... Suppose a person is planning a hotel or a factory and is considering how much land to take for the purpose. If the land is cheap he will take much of it; if the land is dear he will take less and build high" (20).

However, the hypothesis of a cause-effect relationship between ground value and density does not hold up if the curves of the variations of these two factors have different or, as is the case in Italy, opposite directions. The effects of this situation are very important for urban planning and theoretical formulations.

A particularly interesting analysis of this situation has been done by J J Granelle, who reversed the classic view by considering the land market complementary and subordinate to the building market (21). He says that it is not "... the high price of land that raises the price of housing... The exact opposite is true, so that any unsteadiness of the housing market is transmitted to the land market" (22). Granelle says the flaws in the housing market are caused by the strong demand; the insufficient information the users of housing have about the market; the fact that different locations are not interchangeable (thus he recapitulates the ideas expressed eighty years before by Pantaleoni); and the speculation of the landowners. But perhaps Granelle's major contribution is to have considered land a stock-in-trade of the expanding residential-building industry.

On a theoretical level, this view permits a useful redefinition of the concept of scarcity of the land factor, because it justifies the presence of rent in marginal zones without necessarily turning to the hypothesis of market instability or speculation. The key to this redefinition is offered by Joan Robinson's theory of imperfect competition (23). Robinson says, "If the expanding industry only employs a negligible proportion of the factor, the reduction in the amount available for the rest will not have an appreciable effect upon the price of the factor, and its supply to the expanding industry will be perfectly elastic. But if this industry absorbs a considerable proportion of the

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factor, then its value to the others is raised as this industry expands, and the transfer earnings of units of it are increased (24). Since the building industry absorbs very large quantities of the land factor, the value of land (in proximity to an expanding urban centre) increases for any other use, especially for agricultural use, for which, perhaps, there was an overly hasty attempt to bring the price back to the normal value of the land.

The implications of this way of posing the problem are important in the analysis of the Italian situation in terms of the separation between the curves of population density and land values and in terms of the high price of land in marginal urban areas. In fact, these two phenomena are more easily understood if they are viewed in relationship to what happened in the building industry in Italy after 1950 and to the fundamental role that rent plays in the unprecedented expansion of the building industry.

4. Relationship between ground rent and building development

Within the context of an expanding market economy, the building industry as such (without considering the plus values resulting from the purchase and sale of the areas) is generally not a privileged sector of investment for private capital. In fact, we must remember that:

i. the product is by nature untransportable and cannot be transferred from one market to another to satisfy shifts in demand and variations in price;

ii. the housing demand is not very elastic as far as price is concerned, and this makes it impossible to stimulate market expansion after the investment of additional capital;

iii. the amortisation time for invested capital is generally long or very long (from 20 to 40 years);

iv. interest rates are, on the average, lower than those in more dynamic productive sectors.

However, private capital is sometimes attracted by the building sector during periods of stagnation or recession, when there is a surplus of liquid assets in respect to the possibility of investment in more dynamic sectors. The propensity to invest in building is accentuated even more when stagnation and inflation are concurrent (stagflation) because, in addition to the desire not to leave capital idle, there is a need to protect it against currency devaluation.

This combination of factors tends to generate cycles in the construction industry. Frequently these cycles were in opposition to the general economic cycle. This was the case in the United States during the last thirty years (25).

On the other hand, in many European countries, especially during the years of post-war recovery, there were long periods of growth in the building sector. At the same time that there was great expansion in other productive sectors and in the general economy. Since mere industrial profit could not have been sufficient to attract private capital, this must have been due to:

i. a greater use of public funds for the construction of housing or, to a lesser degree, in incentives to building and facilitation of the building industry;

ii. a tolerant attitude towards the formation and appropriation by private entrepreneurs of substantial ground rents so that the total profit of the operation was higher than the minimum profit of other industrial sectors.

Although these two possibilities cannot be considered as strictly alternative policies (there is no country in Europe where there is no public intervention in building and variations in land values occur in all types of building operation), the prevalence of one tendency or the other has characterised urban development in the various European countries.

In Italy, there was exceptional development of the residential building sector in absolute terms as well as in relationship to the increase in gross fixed investments and in relationship to the growth in population. Between 1951 and 1968, the years of the so-called "economic miracle", total investments in housing went from 512 to 2,388 billion a year, in lire at the 1963 constant value. In real terms this was an average annual increase of 9.5%. In the same period, the average annual rate of gross fixed investments was 7.6% in real terms and the gross national income in real terms was 0.8%. Thus the construction sector was the most dynamic one. The percentage of gross fixed investments in housing went from 22.7% in 1951 to 30.3% in 1968 while the share of the national income absorbed by residential construction almost doubled, going from 3.3% to 6.0% (26). There were 5,369,000 new dwellings built with a total of 21,614,000 rooms; the increase in population was 6 million. Thus 3.3 rooms were built for each new inhabitant.

The surprising expansion of the sector was almost entirely due to the contribution of private capital. Public investments in housing during this period barely reached 2,850 billion lire at the 1963 constant value as compared to 25,000 billion lire of private capital. Thus it constituted slightly more than 10% of the total investments.

TABLE II

Investments in residential buildings in Italy between 1951 and 1968 (in billions of 1963 lire)

Year	Private Sector	Public Sector	Total Investment	% Public investment of total
1951	382	130	512	25.4
1952	468	165	633	26.1
1953	595	160	755	21.2
1954	758	145	903	16.1
1955	961	130	1091	11.9
1956	1099	110	1209	9.1
1957	1224	140	1364	10.3
1958	1208	200	1408	14.2
1959	1195	320	1515	21.1
1960	1273	257	1530	16.8
1961	1481	190	1671	11.4
1962	1799	130	1929	6.7
1963	2072	90	2162	4.2
1964	2202	90	2292	3.9
1965	2014	135	2149	6.3
1966	1977	145	2122	6.8
1967	2092	150	2242	6.7
1968	2338	170	2508	6.8
Total				
1951-68	25138	2857	27995	10.2

Source: ISTAT data (26).

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Although the preceding table shows the low level of public intervention - Italy holds last place among the countries of Western Europe - it also shows the extreme variability of these investments. In particular, the flow of public money increases when there is a decrease in private investments and it decreases rapidly as soon as the private sector shows signs of recovery. This clearly depicts the true role of public building in Italy. Its objectives have not been a housing construction programme of its own but it has limited itself to acting as an anti-recession support for the private sector, which has always had primary responsibility for the development of the construction industry.

Under these circumstances, considering the observations made at the beginning of this section, it seems useless to support the thesis which maintains that rent is a disturbing element in building activity. On the contrary, one can say that land rent is an indispensable factor in the particular type of building development that has taken place since the 1950s. One can, and should, question whether this type of development was the most suitable one to use in facing the nation's urban and building problems; but it would be misleading to claim that the eliminations of land rent or its re-appropriation by the collectivity could solve these problems if all the other factors remain unchanged.

5. Land rent and residential density

From Pantaleoni to Alonso, almost all the writers on the subject have supported the hypothesis that the cost of construction can be considered constant for a unit of volume constructed, for a specific category of work, and for a given period of time, independent of where the land is situated. On the basis of this hypothesis - which more or less corresponds to reality - land price becomes a determinant factor in the final cost of housing, and the latter must be commensurate with the spending power of the market.

In Italy, it is widely believed that private builders operated primarily in the sector of luxury housing. Several foreign writers have also been of this opinion. "There has been a marked tendency for an increase of investment in larger-sized or luxury constructions for higher income groups while low-cost housing has been sadly neglected" (27). There is no doubt that higher-income housing offers the builders a chance for greater earnings. Nevertheless, if one examines the amount of building done by private companies during the period of considerable residential construction, this opinion must be radically changed. Between 1951 and 1968, private companies invested more than 25,000 billion lire at the 1963 constant value and they built more than 19 and a half million rooms. Even if we consider that 2 or 3% are unused rooms, there were still 19 million rooms actually put on the market. Therefore, unless one accepts the absurd hypothesis that 40% of the Italian population belongs to the higher-income groups and that all these people were without housing in 1951, one must admit that the private building industry was geared primarily to the middle and lower-middle income groups.

Under these conditions, urban ground rent is subject to two opposing pressures: on the one hand, it should be high enough to attract private investment to the construction sector; on the other, it should not affect the final cost of housing too much in order not to exceed the spending power of the largest share of the market. These two contrasting needs can be reconciled by appropriately varying the residential density. More specifically, the density will be high or very high for lower-middle-class housing so that the cost of the land can be distributed over a large number of apartments. The density can be kept lower in luxury buildings because the cost of the land can be a higher percentage of the construction cost. Table III shows how the cost of the land in relation to the total building cost varied in the periods from 1961-62 and 1966-67 according to geographical area, size of community, and type of construction.

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TABLE III

Average percentage of cost of land over total cost

	1st period	2nd period
Geographical area		
north-west	20.4	22.6
north-east	14.1	17.2
centre	15.2	18.8
south and islands	22.1	22.7
Size of community		
up to 100,000 inhabitants	14.6	16.6
from 100,000 to 500,000	18.6	21.6
more than 500,000	21.0	24.8
Type of construction		
economy	15.9	13.7
medium	18.0	20.4
superior	24.1	27.6
Average	18.1	20.3

Source: CRESME survey - 1968.

Almost all the figures increased from the first to the second period, presumably because of the continual increase in the cost of land for building. Only one figure decreased: that for economy constructions. This is significant because it confirms Granelle's point of view discussed in Section 3 of this chapter. In fact, between 1961-62 and 1966-67, the production costs more than doubled (28), while the general price increase to the consumer, and therefore also for payment, was held down to about 30% (29). In order to keep the final price of housing within the range of a larger part of the market it was necessary to decrease the cost of land in relation to the total building cost. Most likely it was possible to do this only by increasing the residential density.

Appendix 1 of this report gives further data on the cost of housing, the market price of the land, and residential density. Nevertheless, it is useful to mention here the possible variations in unit price of building land in relation to residential density and type of housing. To do this we should use the highest and lowest figures in Table III; consider the cost of building 65,000 lire per cubic metre for economy constructions and 80,000 lire per cubic metre for luxury ones; and consider the constructed volume 80 cubic metres for building in the first case and 100 cubic metres in the second. Tables IV and V show the results of these analyses.

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TABLE IV

Unit price of land in relationship to residential density (in current lire values)

Density (inhab./ha.)	Land Price (lire/m^2)
Case I - Economy construction	
100	7000
300	21400
500	35000
1000	71200
1500	106900
2000	142500
Case II - Luxury construction	
100	22000
300	66000
500	110000
1000	221000
1500	331000
2000	442000

The relationship between residential density and unit price of land varies in the two cases by a factor of about 3. With a given price for the land, the density must be three times higher for economy housing than for luxury apartments; with a given residential density, the price of the land could be three times higher for luxury apartments than for economy ones. This explains the anomaly mentioned in Section 3 of this chapter in reference to the residential density in Italian cities. We can assume that luxury, or at least higher-level, housing is located in areas closer to the centre or in other places that have special attractions. In this case there can be a high profit in ground rent without forcing the density figures to very high levels. In the case of less-favoured and more distant urban areas, where, presumably, lower- and lower-middle-income housing will be built, higher density becomes a necessity if the enterprise is to be profitable.

However, an indiscriminate increase in density inevitably leads to a decrease in space available for social services, schools, green space, and sports facilities. Analytical treatment of this problem will be found in Appendix 2 of this report, but in this case also it is worthwhile to begin here to examine some of the data concerning availability of free space per inhabitant in comparison to residential density.

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TABLE V

Square metres of free space per inhabitant compared to residential density and building height (economy construction)

No. of floors	Residential density (inhab/ha.)					
	100	300	500	1000	1500	2000
2	87.5	20.8	7.5	-	-	-
3	91.7	25.0	11.7	1.7	-	-
5	95.0	28.3	15.0	5.0	1.7	-
9	97.2	30.5	17.2	7.2	3.9	2.2

As the table indicates, an increase in residential density has been an indispensable factor in the particular type of building development that has taken place in Italy. However, despite the good intentions of some local administrations, this kind of development has drastically reduced those neighbourhood services which, according to Le Corbusier's definition are considered "prolongements du logis".

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Notes

1. R Prodi, Rassegna delle Teorie della Rendita Urbana e della Formazione del Prezzo delle aree fabbricabili, Istituto Lombardo di Studi Economici e Sociali, 1964, page 10.

2. M Pantaleoni, Teoria della Traslazione dei Tributi, Roma, 1882.

3. M Pantaleoni, op cit page 222.

4. Cf L Einaudi, Studi sugli Effetti delle Imposte, Torino 1902; cf also C C Grilli, La Rendita Edilizia nelle Moderne Metropoli, Roma 1910.

5. S Lombardini, "La Normalizzazione dei Mercati delle Aree e degli Alloggi attraverso la Nuova Legge Urbanistica", in Urbanistica No. 38, March 1963.

6. S Lombardini, op cit page 7.

7. S Lombardini, op cit page 8.

8. F Fiorelli e S Petriccione, "Modificazioni di Uso e Rendita dei Suoli", in Nord e Sud No. 65, 1965, reprinted in F Fiorelli, Spazio e Luogo, Bari 1978, page 51 and sgg.

9. B Roscani, "La Rendita Edilizia in Italia", in Critica Marxista No. 6 1969, reprinted in Lo Spreco Edilizio, edited by F Indovina, Padova 1972.

10. M Allione, "Metamorfosi della Rendita", in Il Manifesto, March-April 1970.

11. I Magnani, La Teoria Pura dell'Equilibrio della Città e gli Effetti delle Imposte, Milano 1971.

12. Cf first part, Section III of the former report (contract No. 99/77).

13. In spite of its rather modest title: "Sulla Espropriazione per Pubblica Utilità", this law was the first nationwide planning law of the Kingdom of Italy.

14. Cf W Alonso, Location and Land Use - Toward a General Theory of Land Rent, Cambridge, Mass. 1964; cf also L Wingo, "Transportation and Urban Land", in Resources for the Future, New York 1961.

15. The 1950-57 period was the period of the highest boom for residential building in Italy. The average yearly increase of investments reached the figure of 21.2%.

16. Cf C Clark, "Urban Population Densities", in Journal of the Royal Statistical Society, 1961.

17. Cf Il Traffico a Roma, published by the Municipality of Rome, 1968.

18. R Mayer, Prix du Sol et Prix du Temps, Essai de Théorie sur la Formation des Prix Fonciers, Ministère de la Construction, Paris 1965.

19. Cf Istituto Lombardo per gli Studi Economici e Sociali, Indagine sul Valore delle Aree Fabbricabili in Milano e nel suo Territorio Metropolitano dal 1956 al 1963, Milano 1964.

20. A Marshall, Principles of Economics, 2nd edition, London 1891, Book VI, Ch. IX, page 671.

21. J J Granelle, Essai sur la Formation des Prix du Sol dans l'Espace Urbain, Paris 1967.

22. J J Granelle, op cit page 53.

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23. J Robinson, The Economics of Imperfect Competition, London 1933.

24. J Robinson, op cit 12th edition, London 1961, Ch. 8, page 110.

25. The above information on the situation of the building industry in the United States is the result of an interview with Mr Clifford Graves, Assistant for the Budget to the United States President Gerald Ford, March 1976.

26. Cf P Monterstatelli, "Il Finanziamento dell'Edilizia per abitazioni in Italia", in Rassegna Economica, No. 5, 1967; cf also Relazione sulla Situazione Economica Generale del Paese, 1967 and 1968.

27. G Podbielski, Italy - Development and Crisis in the Post-War Economy, Oxford, 1974, page 156.

28. Cf "Indice dei Costi dell'Edilizia", in Documentazione Economica, 1972.

29. Cf Annuari ISTAT (various years).

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SECTION III

The housing market in Italy

Housing needs, supply and demand

At the end of the second world war, there was a serious lack of housing in Italy. At that time there was an estimated lack of 14 million rooms, and that figure was only in small part due to war damage (1.5 million rooms destroyed, 1.5 million damaged) (1). Before the war, total housing needs were estimated at about 700,000 rooms/year for a period of twenty years; but the productive capacity in the sector was not even 200,000 rooms/year and would not go beyond this figure until 1948.

In later years, the housing deficit was estimated with non-uniform criteria and the results were often questionable. The following figures are indicative of the main estimates (minimum and maximum) of dwellings per year, rounded off to the closest million (2).

1951	from 1.6 to more than 3.9
1957	2.9
1960	1.4
1961	from 2.0 (UNO estimate) to 4.7
1963-4	1.7-1.8
1969-70	from 3.0 to 4.5
1975	3.5

Although the estimates tend to exaggerate the housing deficiency (if for no other reason because they do not consider at all the re-use of old or crumbling dwellings), they do indicate a market situation in which the demand is constantly greater than the supply. This is so even though 26.5 million rooms were built between 1951 and 1971 while the total population increase was slightly more than 6.6 million. Thus four rooms were built for every new inhabitant and the goal that was set at the beginning of the 1960s of one inhabitant per room was reached by 1971 (at present the figure is about 0.86 inhabitants per room).

However, the total figure does not offer an adequate picture of the situation because there are great disparities. According to the census of 1971, 4.8% of inhabited dwellings were overcrowded, with more than 2 inhabitants/room (12.3% in 1961), while 68.2% (53.0 in 1961) were under-utilised (less than 1 or 1 inhabitant/room). The average figures for overcrowding are: 3.11 inhabitants/room for the first category (3.04 in 1961); and 0.69 for the second (0.70 in 1961). The intermediate category (27.0% of the dwellings in 1971) have an average index of 1.5 inhabitants/room (TECHNOCASA elaboration of ISTAT data).

A CNR (Centro Nazionale delle Richerche) survey of developing urban areas showed over-crowded conditions higher than 1 in 40% of the cases examined; and more recent studies, (CRESME, 1977) limited to rented dwellings, showed figures of more than 1 in 25% of the cases. Notwith-standing the difference in the estimates (due in part to the criteria adopted to define a habitable room), 25 to 40% of rented dwellings are under-utilised according to the standard of 1 inhabitant/room.

However, the increase in population does not explain the persistent demand. The explanation of this is to be found in the transformation of social and economic structures in the country and in the changing distribution of population.

The first element to consider is the evolution of the employment structure (Table I) between 1951 and 1971. This massive transformation caused substantial internal migration. At first it was directed toward medium-sized cities, primarily the chief cities of the provinces (between 1951 and 1961 these cities absorbed more than 90% of the population increase). Later it was more decisively toward the major industrial centres, which more and more took on the shape of metropolitan areas (Table II).

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According to the present definitions in 1951 there were 22 metropolitan areas. Thirteen of them were in the north and contained more than 31% of the total population, although they occupied only 4.4% of the national territory. Thus the average density was 1082 inhabitants/km^2. In 1961 there were 27 metropolitan areas (17 in the north) occupying 5.8% of the national territory and containing 39% of the total population, creating an average density of 1140 inhabitants/km^2. In 1971 the number increased to 33 (21 in the north), occupying 8.3% of the territory and containing 49% of the population (average density 1062 inhabitants/km^2). In 1971, 31% of the Italian population was concentrated in the 21 metropolitan areas in northern Italy.

This might lead one to believe that the surplus of residential buildings (almost 10 million rooms from the 1971 census) is largely due to the abandonment of dwellings in the areas of emigration (particularly in the south), but the available data does not completely verify this hypothesis. However, regional data does show several trends. For example, while the percentage of unoccupied dwellings increased steadily from 5.7 in 1951 to 8.3 in 1961 and 12.2 in 1971, the regional percentages did not vary greatly (4). On the other hand, average indices of occupancy (calculated on the basis of inhabited dwellings) remained higher in the southern regions, five of which, in 1971, were still below the standard of one inhabitant per room. Furthermore, less building was done in these regions in absolute terms as well as in relation to the number of inhabitants.

Another factor that is rarely taken into consideration in judging the need for housing is the request for dwellings for other than residential purposes (for example, offices for small companies, salesmen, doctors, lawyers and other professionals etc). There is still no reliable estimate of this request because only recently and only in a few large cities is the change of use subject to authorisation. It is legitimate, however, to assume that this request is concentrated in the areas of greater development, particularly in the central districts of the city (or metropolitan areas), requiring among other things, that people move about more, thus increasing urban traffic.

This phenomenon is emphasised by the relative rarity of buildings constructed (or remodelled) specifically for office use. This is especially so in the central districts of Italian cities, because many of these areas are very old and are regulated by strict building codes. The estimate of this phenomenon, based on several large cities, is about 20% (24% according to Credito Fondario, "Del mercato edilizio", Rome, 1971) of the dwellings occupied, with an increase of about 0.2% a year. There is no mention, however, if, and to what extent, mixed use has been taken into account.

Consequently, the concentration of population cannot be estimated in quantitative terms only because it creates profound changes in the social structure. From 1951 to 1971, for example, the average number of people in the family group in Italy dropped from 4.0 to 3.35 (3.63 in 1961). But this phenomenon which creates a great increase in the demand for housing (5), is clearly stronger in the cities (particularly large cities) than in the country (or in small towns) and in the north more than the south. The 1971 census showed a total of 564,000 cohabitations, though some of these may be voluntary (for example, family nuclei of only one person, old people etc).

Moreover, it seems obvious that migration toward the cities (or metropolitan areas) is largely due to the search for steady employment, which, in turn, improves the economic conditions of the family. This puts the recent immigrant, who presumably is without great financial resources, in the position - at least in the beginning - of accepting whatever housing he can find, even if it is clearly sub-standard, because he cannot afford to pay for a suitable dwelling.

This type of demand, which is purely quantitative and has no impact on the housing market, means that there is still enforced cohabitation, overcrowding, and housing that is unfit or has inadequate sanitary facilities which contributes further to the degradation of the dwelling. In other countries this is the typical process that creates slums. In Italy, except for rare exceptions, it is common to the outskirts and in part, at least until recently, in the centres of old settlements.

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At the time of the 1971 census there were still 79,000 unsuitable dwellings, that is, places not meant for dwellings but used as such (basements, garages, attics etc). This number is much lower than the 1951 figure of 252,000. It is not easy to give an estimate of dwellings with inadequate facilities because the data collected referred to certain specific elements (toilet, water, electricity etc) and not to an overall judgement of health conditions, which should include such factors as proximity to the networks of urban services, and the condition of the building (humidity, wall covering, insulation etc). But there has been a great reduction in the percentage of dwellings lacking essential sanitary facilities. This has been due to the renovation of about 300,000 dwellings a year between 1961 and 1971 according to estimates made by the Banca d'Italia (6).

As for the age of the dwellings, in 1971 31.1% were less than 10 years old and the total of those built after the war was 54.9%. Those more than 50 years old were 21.5% and for 9.8% there was no information on the construction. In the period 1972-75 the difference between the number of houses demolished and constructed was 840,000, which was a 4.8% increase over 1971. However, the two figures cannot be compared because the annual surveys consider only those constructions which have regular permits and have been reported by the communal authorities to ISTAT. For example, there was a difference of more than 2,150,000 between the number of buildings reported annually from 1961 to 1971 and the census data.

As soon as the urban immigrant has a steady job and his financial position improves, he tends to improve the housing conditions of his family. This creates a demand that is added to the demand of the new immigrants. But this demand becomes a real one only if he can afford to buy. And this depends on the relationship between the family income and the price of the dwelling. When the market is flexible enough this type of demand is satisfied by "filtering". That is, the passing of relatively durable goods from one income category to a lower one as the goods age or when the market offers similar goods of a slightly higher standard. This is basically what happens when the offer is greater than the demand (7), but this condition in itself is not enough.

There must also be a real possibility (and desire) to change the goods. In the case of housing, for example, this must be possible in terms of increased income and variations of the number of people in the family, as well as in the desire for larger and better housing. The desire is determined not only by the dwelling itself but also by its location. In other words, the demand must be rather elastic. Yet it is an accepted fact that the demand for essential goods is rather rigid because the consumption of them varies only slightly, depending on income, and is difficult to reduce. In the housing sector the demand is generally considered to be semi-elastic because real estate is durable and most dwellings are bought to satisfy a basic need. This probably explains why the demand tends to become less flexible when the income is lower (8).

The elasticity of the demand in the middle-income bracket may be influenced by many economic, social and psychological factors. The economic factors are almost always the main ones (at least that is what people say) (4), but often they are inseparable from the others. In Italy, for example, the housing market in all social classes has always been characterised by a strong tendency to buy, and this cannot be attributed entirely to rational economic behaviour. A great many families have chosen to use their spending power to buy a less than optimum dwelling rather than rent a more suitable one.

The economic components of this choice can be found in the desire to protect savings from inflation, but the fear of higher inflation rates and reduced buying power (also for rental) has increased the demand and often caused an excessive rise in initial prices and hastened the decision to buy. This means that the buyer must depend largely on credit at rates that are higher than that of the expected inflation. Thus the small home investor has always paid a total price that is higher than either its utilitarian value or the actual value of the income it might yield (real or hypothetical) (10). However, this financial loss is partially recompensed because urban expansion transforms marginal land to more central land. This increases the income from location and thus the share of this income included in the price of the dwelling. As a matter of fact, unevenness of urban growth and the uncertainty of what effect it will have on a specific area means that only a part of future increases in value can be included in the original price.

In theory, an important consideration among those that determine the choice of residence is the level of public and private services the area has (or will have in a reasonably short time). However, some sample surveys made in expanding urban areas showed that in Italy this kind of consideration was less influential than those having to do with the dwelling itself. This was true for the upper-middle class as well (11). This psychological factor is important in explaining the disorder and deficiencies in the development of the outskirts of Italian cities. It seems obvious that this situation could not have arisen or lasted if public services had always been considered an integral part of the residence, that is, if the demand had not pertained to the dwelling only but to the residence as part of a complex of integrated private and public functions(12).

Another factor that has contributed to the increase in demand and to its increasing inflexibility in Italy (accentuated by the propensity to buy homes) has been the rent freeze. The measure was taken for the first time during the first world war and then again, after an interruption of a few years, in 1934. With various extensions and changes it has been renewed more or less from year to year since then. In addition to the effects of the rent freeze (a short-term anti-inflation measure which cannot be protracted too long) there were distortions due to the uncertainty of its duration, extension, and areas of application.

It should be pointed out that the successive rent freezes in Italy have followed no overall strategy. Therefore, all together they have not taken the form of a real policy of rent control. In particular, a general distinction should be made between two types of rent freeze which more or less correspond to two periods. In the first type (from the end of the war until the mid sixties) the freeze was limited to dwellings rented at a certain date (existing dwellings) and the tenants living in them (not new tenants). In the second type (and second period) the freeze was extended to new buildings, but negotiations for the initial rent were not controlled (13).

The immediate effect of the first type of freeze was to reduce mobility and to create situations of overcrowding and under utilisation very similar to those for owned dwellings (see Table V). Moreover, rent controlled dwellings tended to become run-down because of improper use and because the owners took no interest in maintaining them except when there was a change of tenant. The decrease in commercial value of the dwelling (due to the permanency of the tenant and the run-down conditions) on the one hand, and the tenant's fear, on the other, of worsening conditions and/or the end of the rent freeze, tend to favour the passage of ownership from landlord to tenant (14).

In a more general way, rent control contributes greatly to the rise in rent of free leases, because it removes a considerable part of the offer from the market. This not only increases the inclination to buy, it also creates inequality among tenants with the same income. Those who are hardest hit are primarily recent immigrants, young couples etc. With the extension of rent control to recent buildings (second type and period) the landlord tends to compensate the longer stay of the tenant with a higher initial rent. In time, however, the tenant will gradually pay a lower rent in real terms because of inflation.

And finally, from the point of view of building production, there will be less interest in anticipating future requests for higher housing standards (in respect to the dwelling itself and the zone in which it is located) because the higher cost cannot be recompensed with progressive rent increases. The lower quality of the dwellings (and the urban environment) has a theoretical bottom limit in building and urban regulations, but this limit does not exist for illegal building, which in Italy still constitutes a large share of the production (15).

Another theoretical effect of widespread rent control is the reduction of land values (assuming that the building costs are constant or increasing); that is, the containment of land income, which cannot be remunerated by rent, decreases the value in real terms. However, this did not occur in Italy, at least not on a wide scale and certainly less on building land than for that already built upon. The explanation can be found partly in the hope for an end to rent control or at least its non-application to more recent buildings (on the outskirts), but mostly in the fact that the main object of real-estate investment was not a profit on capital but rather the assurance of a potential profit (increasing in time), to be made some time in the future through a new sale (16).

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The tendency of the entrepreneur to produce upper-middle-income housing is due to the fact that all of private building is intended for the demand of ownership dwellings (therefore for the classes able to purchase) either through direct sale, for personal use, or through the intervention of the investor, who covers the period between the time of construction and formation of another solvent demand (17). However, since the boundaries between the various categories of housing are not fixed, the higher cost needed to qualify the production for a higher category is often negligible and the differences between housing of various categories are generally more apparent than real. The legal classification does not influence the sale price; and, for tax purposes, a lower category than the real one is declared.

Credit facilitations (for the construction and purchase of housing) and tax facilitations which have characterised the building policy of the Italian Government in the last thirty years, have naturally encouraged the general tendency to purchase and the preference for newly-constructed housing (usually on the outskirts) that increases in value more rapidly. This preference is clearly understandable for the pure investor. For the buyer who is going to use the dwelling himself, the preference is on the basis of relatively lower prices (which means the purchase can be made sooner) and an investment factor that is always kept in mind.

Total investment in residential construction has been very high in Italy in respect to the total economic activity of the country; in fact, it is the highest percentage in Europe. Nevertheless, only a minimum part of this investment was made by the government or other public organisations. Table VI indicates, year by year, by percentage, sources of financing for residential construction (18). The prevalence of private capital is clear, especially the part from direct financing, entrepreneurs' capital, and family savings. For the twenty years examined, the credit mechanism for real-estate operations generally has two phases. The first phase (purchase of the land and initial work) is financed by the entrepreneur himself through advances from future buyers and through the ordinary credit channels for short-term loans at current rates. The second phase is often financed by special building credit over a long term and at special rates (partially paid by the government) through loans that can be transferred to the final purchaser (19).

Long-term building credit has grown in importance because more institutions (at present 21) have been authorised to offer it, because it has been extended to almost all operations, because the administrative procedures have been simplified, and because it has been extended from 50% to almost the total expense (often the mere ownership of a building site is sufficient to obtain a loan).

Another interesting factor is the method used by the special credit institutes in Italy to provide themselves with funds. Until 1975, capital was accumulated through special fixed-income bonds ("cartelle") issued by the institutes and put on the stock exchange to satisfy the entrepreneurs' requests (20). In other words, the credit institutes have acted as intermediaries between contractors and investors. They have limited their activity to evaluating the amount of income to be made on the individual operation without influencing general planning or acting as a unifying element, despite their increasing importance.

For a long time investors favoured these "cartelle" because of the special facilitations they offered: they have many tax benefits and cannot be attached, but they can be accepted as security by public organisations; in other words, they are easily negotiable. In 1973, 53% of the "cartelle" in circulation were held by families; the remaining by banks and other institutes which, since 1966, have been authorised to include "cartelle" in their obligatory reserves. Table VII shows the taxes and average rate of exchange of the "cartelle" as compared to those of government securities and stock market shares.

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Building policy

Table VI shows that public construction is generally less important than private construction (and tends to become less and less important) and that it is cyclical. There are periodical modest increases that correspond (with two- or three-year delays) to the decrease in private investment, that is, to times when production falls as a result of market saturation. These times (which have less and less to do with general economic trends) are more evident in Table VIII, where the production is shown in buildings, dwellings, and rooms. The discrepancies between Table VIII and Table VI (investment in constant lire) are due in part to the lapse of time between the investment and the finished dwelling, but also to the increase (since 1960) in the average number of rooms per dwelling. In addition, the construction costs must be considered. They remained more or less the same or decreased slightly (in real terms) from 1951 to 1961, but later increased rapidly at a rate higher than that of the general cost of living.

The increase in production (and land) costs is obviously reflected in the real (solvent) market which private production supplies, and it increases the need (potential demand) for the lower-income groups, which are the natural receivers of public residential buildings. However, it would be a mistake to consider the public housing policy only in terms of the number of dwellings built or financed directly by public agencies (21). In reality there has been much more public participation. Mention has already been made of tax and credit provisions to stimulate the supply and demand for housing, especially ownership housing.

From the fiscal point of view, we need only mention that 97-98% of the new buildings (of private production) have substantial tax exemptions for 25 years. Indirectly this has also applied to the land, since it is not distinct for fiscal purposes, and the various other components that contribute to the value of real estate (22). There have been many attempts to levy a specific tax on building land, or more precisely on the plus value of the land, but they have not been very successful (23). In 1963, a progressive tax was levied on the increased monetary value between the time of sale and that of purchase. Though this tax was extended to all real estate in 1972, it is obviously likely not to affect the decisions of the builder but only the final cost of the land (and the dwelling).

Credit facilitations, on the other hand, were first limited to low-income housing (1938) and then gradually extended to almost all housing except those declared to be luxury (2-3% of the total production). Essentially the facilitation consists of some of the interest charges being paid by the government. Since 1965 the facilitation has been extended to building companies and part of the loan is guaranteed by the government. This policy of facilitations, which was begun in 1949, has been continued uninterruptedly by means of various provisions (theoretically tied to the economic conditions at the moment) and extensions, whose official motivation has always been an attempt to expand the offer of dwellings even if it is through supporting the demand (24). In theory a strong increase in the offer should satisfy the demand and thus solve the problem by redistributing what is available.

However, this has not happened. The reasons have already been explored; they can be summed up in the limited mobility of families, which is aggravated by the rent freeze and the tendency to purchase. Moreover, purchasing was encouraged by government incentives because home ownership has a stabilising social effect and because, by means of the credit, this made it possible to recycle the capital of builders and a large part of their profits more often. These are also the reasons for the systematic sale of even the small amount of public residential real-estate (most of which is also destined for sale) at prices that are often less than cost and sometimes negligible (25).

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As a whole, the effects of Italian building policy have been widespread and have encouraged market mechanisms. The apparent increase in the real demand has been obtained, for the most part, moment by moment by anticipating the future market demand for dwellings to buy, either for personal use or for investment. In any case, this type of demand increases during a phase of economic expansion, even if it means the contraction of other family spending in respect to housing expenses. Over a long period of time the market has been saturated, but without satisfying the back need, which is still a potential demand. In other words, with the slowdown of general economic growth we have found ourselves in a housing crisis and a crisis (of over-production) in the building industry.

The causes of the present situation are to be found in the role of the building sector in the national economy. Tables IX and X offer a picture in terms of employment and investment. There are various hypotheses to explain this choice; they can be summed up in the following three (26), which are not mutually exclusive.

The first group of hypotheses examines the problem from the point of view of employment and considers the building sector (because of the large number of people it employs and because it employs them all over the country) a filter between internal immigration of unskilled manpower and its later use in industry. Of course this function is fulfilled only during a period of industrial expansion (see Table IX, bearing in mind that the residential sector represents on the average about 50% of the construction workers), so the increases were greater up to the middle of the 1960s. During that period (1951-65) there was a gradual qualification of labour and a concentration of part of it in medium-sized companies (Table XI), but the average salary remained lower than that in large industry. Later on the salaries of the various sectors tended to equalise. This happened because there was a large increase in labour costs in the building sector. However, in industry the gross product per worker increased by 180% from 1951 to 1971; in the building sector during the same period it increased only 83%. (In 1951 the gross product was the same for both.)

Maintaining a traditional production system was not enough to ensure the employment of excess labour, but the percentage of employees in construction was still very high. From 1961 to 1971, moreover, the employment trends in the different sized companies changed direction (Table XI). This was due in part to the increase in restoration of individual dwellings in the second half of the 1960s and in part to the tendency to sub-contract certain jobs to "independent" work squads. By using these squads companies could avoid making hospitalisation and pension payments that are obligatory for steady employees and thereby lower total costs.

The second group of hypotheses picks up where the first group left off and deals with the effect of building operations on other production sectors: sometimes the building sector acts as a stimulus and sometimes it even substitutes for the others. However, although it is true that there are many interrelationships between the building sector and the others, in general these interrelationships are significant primarily for credit, transportation, the lumber industry, and various suppliers of materials (metals and others) (28). Therefore the anti-recessional effect of an increase in building is due essentially to the circulation of family savings and the increase in employment.

The third group considers the problem from the point of view of capital. Its hypothesis is that in our country, which is backward in production, the real-estate and building sectors made it possible to accumulate capital that was later used in other sectors of production. This hypothesis would seem to be disproved because the percentage of investment in building (for residential construction see Table IX) tends to increase with time; thus it creates a conflict with other types of investment. In reality, the mechanism of land values (which is then passed on to construction) makes real-estate investment (independent of the profit from real estate) so advantageous that industry and finance have begun to invest in this sector directly and by buying shares in real-estate companies (29). This is important for the small- and medium-sized companies as well as the large ones because, on the average, the constructions are only about 30% of the fixed assets and so are guarantees for credit as well as a means for re-evaluating the capital itself (30).

URBAN POLICY

The aforementioned factors have undoubtedly influenced Italian building policy in the last thirty years, but they have also affected land policy (or perhaps it would be better to say the lack of a land policy). The adoption of specific programmes would have required more government involvement in the financing. But, since any programme requires that certain choices be made (about time, place and companies), many of the conditions typical of the building industry in Italy would have disappeared. In other words, more or less explicitly, it was maintained that a land policy would have impeded the economic and political manoeuverability of the real-estate and building system.

According to national urban legislation, which dates back to fundamental principles set down in 1942 (31), the central government (Ministry of Public Works) is responsible for plans that co-ordinate local initiatives (32) on a territorial basis and, in theory at least, are not limited by communal subdivisions. Therefore, the government should promote local initiatives and force individual communities to draw up their own plans. It should also make sure that the local plans comply with the co-ordinated plan as well as with national laws and regulations. In reality, though, the central bodies have always ignored their fundamental duty and limited themselves to mere administrative-bureaucratic controls (often extremely slow at that) without (intentionally or not) influencing the choices made in the individual urban-control plans.

In practice, therefore, the initiative for urban and territorial planning (since plans cover the entire territory of a community) has been left up to the communities which, under the best of circumstances, have limited information to work from because there is no national or even extra-communal framework. In the mid-sixties, an attempt at economic programming in connection with "Progetto 80" (33), which in itself was unsuccessful, only supplied general guidelines and these were never fully adhered to.

Even on the local level the lack of co-ordination and adequate legislation and the fear that a plan might have an adverse effect on local building have made administrations hesitant to approve communal plans or make them too binding. Moreover, the Italian urban law is general in nature and mostly administrative (34) so that its limits are obvious as soon as there is an attempt to apply it to very different territorial and demographic situations. For example, immediately after the war the bureaucratic system provided by the law was considered too complicated and time-consuming, so that reconstruction was begun on the basis of partial plans. Moreover, these plans were tied to the mechanism of state subsidies. Therefore, Italians interested in urban development have constantly (but perhaps not decidedly enough) fought for master plans and a change in the law that provides for them.

Although the few master plans officially approved up to the end of the 1960s seemed to be similar to those that were drawn up in other countries, they had very different features, some of which have still not changed. For example, the planning bodies (the communities) do not have programmes for public works, acquiring terrain, or raising capital. Most public works (extra-urban roads, highways, railroads, ports and airports, universities and secondary schools, hospitals etc) are built by the central government or the provinces according to their programmes, which often conflict with community needs. Through special organs, the central and provincial governments were also involved in residential construction and industrial settlements, especially in southern Italy.

It is therefore clear that these master plans are rather abstract documents in a market economy dominated by private enterprise. This abstract quality was further emphasised by the fact that each plan was adopted for an indefinite period of time and therefore had to be so vast that it could not be completely carried out even in 20 or 30 years. In other words, every community that drew up a plan tried to regulate the quality of building. However, the regulations differed from zone to zone, and no thought was given to what would happen after construction or in connection with the other economic forces at play (35). Although it is obvious that purely regulatory planning can only aim at modest control, Italian master plans often had unrealistically ambitious objectives. It was expected that they exert some sort of magical power that was well beyond that of the bodies that would have to administer them.

For many years all the negative features of urban expansion in Italy were attributed to the lack of a plan (in the individual cities) or, if there was one, to disregard of it. These situations were considered either accidental or criminal (there were many proven cases of corruption or collusion between public officials and private interests) rather than due to the economic method chosen or the type of plan adopted.

Although the revision of territorial plans has aroused great political and cultural interest, it is still proceeding slowly because it is tied to changes in the socio-economic structure of the country as well as to problems of urban planning. Law No. 167 of 1962 was an attempt to co-ordinate urban planning with public intervention in low-income housing. It left the communities the job of choosing the building sites necessary and making them available. Since there was a lack of building sites and plans, there was a slow-down in public building (36) and an accumulation of unused funds. There were other defects in Law 167 (which we shall not delve into here); some of them were remedied in Law 865 of 1971. In any case, Law 167 helped create the practical need for a plan that would involve many communities.

Towards the end of the sixties, urban legislation was broadened by provisions that tried to make zoning uniform by defining "homogeneous zoning", to establish minimum standards for green space and public services, to introduce the concept of the private builder's contribution to the cost of urbanisation (previously paid for in full by the communities), to subordinate building permits to an actual plan (even a plan drawn up by private companies but under the control of the community), and to limit the building in communities without master plans. Even before these provisions were put into effect, the more conservative political and social forces (which are often allied with the so-called "building block" in Italy) set up strong opposition. They managed to have the law formulated in a way that was not binding and there was a waiting period before it went into effect. Furthermore, several articles of the urban law of 1942 were declared unconstitutional.

During the same period, however, public indignation was aroused by the lack of services and facilities in the cities (despite the high costs and community debts, particularly in the large cities). On a political level, this culminated in trade-union struggles in the late sixties. For the first time in Italy the central issue was not salary increases but the problems of housing and urban environment. Law No. 865 of 1971 (37), was a partial answer to the first problem, but it was not until 1977-78 that something was done about planning in general.

It is not our intention here to examine recent legislation in detail. In any case it would be difficult to evaluate. Law No. 10, of 1977, does not change the system of planning, but it does obligate private builders to make special contributions to the cost of urbanisation. Connected to this mechanism there is a time factor that is not in the plan but in special three- or five-year programmes that the builders cannot easily ignore. In other words, general plans (and executive plans) are becoming more and more indispensable in the administrative aspect of building expansion. Another interesting feature of Law 10 is that private builders are given the choice of executing the works instead of paying contributions (38) or of being exempt from a part of the contributions if they agree to sell or rent the dwellings at prices established by the community.

During this same period, Law No. 392, of 1978, which cautiously rescinded the rent freeze, was passed; and Law No. 457, of 1978, was intended to relaunch building. Law 392 provided fixed measures to determine rent based on the assessed value of the dwelling. This in turn varies according to certain parameters like the age and state of the building and its location in respect of the centre of the city, which is determined by special community zoning legislation. These measures affect about 50% of existing dwellings, but the percentage is very much higher in cities, especially large cities.

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Law No. 457, of 1978, on the other hand, is in form very much like previous legislation of its kind. However, for the first time, although with some uncertainty, it attempts to aggregate the demand and, to a certain extent, the offer (39). In addition, there are special provisions for urbanistic measures to re-organise and rehabilitate existing dwellings; and the communities are required to take a more active part than their traditional administrative-bureaucratic one in drawing them up.

Decisive elements in the substantial revision of legislation and in territorial policy are the greater number of communities that have adopted master plans and the communities' increased authority (quantitative and qualitative). However, the communities still do not have real economic and contractual power or sufficient administrative independence. The passage of jurisdiction in urbanistic matters from the central government to the regions in 1972 has not improved the situation; on the contrary, it has often aggravated it. In other words, the communities are subject to an extraordinary number of purely administrative and bureaucratic controls (which take a very long time) that once again can be attributed to the lack of a general economic-territorial framework.

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Notes

1. Cf S Alberti in "Atti della Commissione Economica della Costituente", Rome, 1947, quoted in M Preite, Edilizia in Italia, Florence, 1979.

2. Cf "Edilizia popolare", No. 120, 1974 (cf "Besoins et demande de logements: méthodes actuelles d'évaluation et problèmes d'estimation", UNO, Geneva, 1973).

3. In Italy this term is used for areas with at least 110,000 inhabitants, of whom at least 35,000 are engaged in non-agricultural activity, spread out over an area with a density of not less than 100 inhabitants/km^2. Cf TECNECO-Ministero per la Ricerca Scientifica, "Prima relazione sulla situazione ambientale del Paese", Urbino, 1973.

4. On a scale of areas with the lowest percentages of unoccupied dwellings, for the two years examined the regions were: Sardinia, Lombardy, Campania and Veneto. The highest percentages were (in order): Basilicata, Piedmont, Abruzzo, Molise, Ligura and Val d'Aosta. There were noticeable variations in Umbria and Apulia, where the percentage of unused dwellings was lowered, and in Latium, Friuli, Calabra and Sicily, where the percentage increased. For an explanation of non-utilisation, see Table III. Cf AA.VV. (TECNOCASA), "La situazione della casa in Italia", Milan, 1976.

5. In the period from 1961 to 1971 there was a 7% increase in the population but a 16% increase in families.

6. Cf "Bolletino della Banca d'Italia", No. 1, 1967; No. 1, 1970, Nos. 3-4, 1973; and Nos. 3-4, 1974.

7. This condition might exist in Italy in a few years for middle-income housing production. That is why there are periodic government interventions to support the demand.

8. Another hypothesis considers the demand of the higher-income brackets also inflexible because it is assumed that this demand is, for the most part, satisfied.

9. Cf C N R, "Il mercato edilizio delle abitazione nelle aree di sviluppo urbano in Italia: situazione attuale e previsioni", Vol. II, "Il fabbisogno e la domanda", Milano, 1973.

10. It is no secret that "partial" real-estate sales are more profitable for the seller than "entire" ones because in the latter case the two parties are probably on the same economic and business level.

11. Op cit C N R Today (1979), a similar survey would probably produce different results. Since 1968-69, the public and even the trade unions, have increased their demands for public services (particularly for schools and parks).

12. Table IV shows the national average percentages in the census years between owned dwellings and rented ones. However, these percentages are usually higher in large cities. For example, the percentages of rented dwellings in 1971 were:
Rome (49%); Milan (72%); Naples (67%); Turin (73%); Palermo (52%);
Source: AA.VV. (TECNOCASA), op cit.

13. Cf Magnani-Muraro, Edilizia e sviluppo urbano, Bologna, 1978. The situation of the second period, which ended with Law 392 of 1978 that regulated rentals, was not caused so much by legislation as it was by the behaviour of the real-estate operators in view of the elimination, reduction, confirmation or extension of rent control.

14. After the continuation and extension of rent control (1963), more than 300,000 dwellings went from the landlord to the tenant. Cf Mortara, "Vent'anni di edilizia pubblica in Italia", in Economia Pubblica No. 2-3, 1975. Payment of low rentals was in itself one of the factors that made it possible to save enough money to purchase.

15. Cf the text, about 2,150,000 non-declared dwellings in the decade 1961-71.

16. Several authors (cf Magnani-Muraro, op cit) attribute the prevalence of medium-high-income housing on the market to the hopeful prediction of a limitation of rent control to low-income housing. However, in the long run this does not seem likely to happen, even though a provision to this effect has at times been discussed by the government.

17. Of course it may happen that the pure investor never sells the dwelling he has bought for investment because he never needs the capital. But this is not important in terms of the choice. What does count is the possibility of an easy sale in case of need.

18. Cf AA.VV Banca d'Italia, "Il finanziamento degli investimenti in abitazioni tramite gli istituti dei credito speciale", Rome, 1975.

19. M Preite, op cit.

20. The borrower not only pays the real interest but also the difference between the face value of the share (to be paid at the date of expiration) and the price (generally lower) at which it was placed on the stock market. The latter depends on the interest paid from other shares or bank deposits, since the stock market is basically homogeneous.

21. Public intervention in residential construction was through special organisms, some of which existed before the war. The financing is done by direct government contributions and by contributions made periodically by employers and employees. The mechanism was set up immediately after the war with the INA-CASA plan, which has been the most important part of public investment in residential construction.

22. Cf Magnani-Muraro, op cit. In the period between 1955 and 1970, the uncollected taxes were estimated to be about 15,000 billion lire.

23. For the first time in 1904-7 with a tax on building land (from 1% to 3% of the value in excess of the agricultural value), abrogated in 1923 and replaced by specific "improvement contributions" (for public works done) and general ones (for value increase due to urban expansion or expectations). Taxation on ground plus value was one of the main controversies in urbanistic policy in Italy from the end of the war until the early sixties.

24. The law of 1965, in particular, permits credit facilitations also for dwellings already on the market; the intent is to recover the immobilised capital of the companies. This forces the government to accept higher maximum standards in order to give facilitations.

25. For example, the IACP housing of Messina (5,600 dwellings), valued at 30 billion lire, was liquidated for 1.6 billion. Cf AA.VV "Gli italiani senza casa", Milan, 1970. At present about 3% of the total dwellings are public property.

26. Cf M Preite, op cit.

27. In the building sector the percentage of specialised and qualified workers went from 34.7% in 1951 to 55.0% in 1971 (39.3% in 1961).

28. Cf F Indovina, "La produzione di case per abitazione in Italia nel processo economico", in AA.VV Lo spreco edilizio, Padua, 1972.

29. The phenomenon is no longer limited to Italy. Cf S Della Seta, "La ripresa della rendita urbana nei paesi del Mec", in Critica marxista, No. 3-4, 1974.

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30. From a study done by Mediocredito and cited by R Stefanelli, "Problemi del settore edilizio: struttura finanziaria e politica del credito", in AA.VV Casa, citta e struttura sociale, Rome, 1975.

31. For the general features of Italian urbanistic legislation see the first part of this study, published as n°. 23 in this series.

32. Since 1972 responsibility for urbanistic matters has been in the hands of the regional departments.

33. Cf Ministry of the Budget and Economic Planning, "Progetto '80", Florence 1971.

34. The 1942 law was drawn up during an absolutist regime and was difficult to apply in a democratic regime. The law survived until the end of the 1960s only because it was rarely applied. At that time the process of revision began.

35. Cf A Cuzzer, Questioni di urbanistica, Rome, 1974.

36. Of course there are other reasons as well and not all of them have to do with the lack of legislation. However, the lack of plans and the difficulties in applying them when they do exist are by no means secondary factors.

37. This law extends the mechanism for acquiring land for public construction to industrial zones.

38. In reality this possibility existed since 1967, but it meant higher costs for the builder because, as an alternative, the communities bore the entire cost.

39. Law 457 of 1978 also extended the requirements of public construction to construction with credit facilitations. These requirements had to be met in order to obtain credit.

SECTION IV

Three case-studies in Italy

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Modena, Terni and Pescara are three medium-sized towns in the north, centre and south of Italy. The differences we may find in their recent growth, however, do not completely depend on geography. Moreover, it is interesting to emphasise not the differences of structure between these towns, but the different way in which they have dealt with the necessities of the demographic growth.

A full analysis would require, of course, a quantity of data and systematic uniform inquiries in each of the towns. Our comparison is based more generally on the analysis of the demographic growth, compared to the increase of all residential buildings. In addition consideration has been given to data on annual dwellings' production, in an attempt to find out the importance of the building sector on economy, at local level, comparing, at the same time, the local data to the national averages.

The results are reported in the graphics enclosed. In this chapter, only a commentary and some indications on the general situation will be exposed.

a. Conditions of the growth

The above-mentioned towns are main towns in a district, ie administrative centres with a wide sphere of influence on outlying municipalities.

Modena (Regione Emilia-Romagna) is a town of ancient formation, which remains an historical centre of remarkable importance. In comparison with most Italian towns (and also of the region Emilia-Romagna), it represents a balanced and relatively steady economical structure. Also the percentage of employees is very high, notwithstanding the low percentage of labourers.

During the years 1951-71 (censual years) the agricultural sector has greatly diminished, as regards the number of labourers, while the laboured land is still the same (on the plain). At the same time, productivity has increased both per labourer and per acre. Agriculture therefore still represents a remarkable economical resource.

The industrial sector, which greatly developed in the years 1951-61, is characterised by many medium and medium-small size labour intensive enterprises. They are rather elastic with regard to the market cycles. The third sector (trade, professional people, civil servants and so on) has mainly developed in the years 1961-71, essentially as a consequence of the growth of some factories and firms.

As to its geographical position, Modena stands in the centre of a large communications network. This is characterised by the principal connection Milano-Bologna (railway and motorway) and by a rich network of connections with the nearby towns and villages. For this reason, Modena, as most of the towns of the Padana Plain, has many and frequent relations with both the most important towns of the country and with the less important of the district.

Terni (Regione Umbria), though being of ancient formation, was heavily damaged during the second world war. The economy of Terni and its hinterland has been centralised by the iron-working industry since the first years of the national unity. When Italy entered the CECA, some very important chemical industries were installed (Montedison, ENI). These industries condition all the productive activities even the less important ones.

In the years 1951-71 the number of industrial workers (and, of course, labourers) diminished while there was a big increase in the other activities, mostly in the years 1961-71.

The geographical position of Terni (historically determined by the presence of abundant waters) has always made its relationship with the important lines of national communication and with the towns of the neighbourhood difficult. The region Umbria, mostly mountainous and hilly, is a poor region. In its interior, the valley of Terni is an anomalous area.

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Pescara (Regione Abruzzo) is a town of modern formation which was almost destroyed by the last war. Notwithstanding its latitude, it can undoubtedly be considered a typically southern town, characterised by a "purely quantitative growth".

It is situated between the Adriatic main connections and the difficult connection east-west (Pescara-Rome), which has lately been completed by means of a new motorway. This position and a little harbour make Pescara a commercial centre of remarkable importance, at least from a regional point of view. Pescara is in fact the main regional centre and, together with the nearby Chieti, forms one of the most recent "metropolitan areas" of South Italy.

The economy of Pescara is dominated by the tertiary sector and in particular by the commercial one. The agriculture which still remains is very poor and may be considered marginal. In the industrial sector, which the public administrations try from time to time to increase, though with poor results, the building sector is the most important (small enterprises).

b. The demographic growth

In 1951 Modena had still more than 100,000 inhabitants and from then, its growth has been relatively constant. The rate of natural increase is very poor (especially in the years 1961-71) and is like those of the towns over 50,000 inhabitants in north-west Italy. Immigration comes mainly from the country and from the villages of the district. In the years 1961-71, the relative increase has been smaller than in the years 1951-61. The data of these last years seem to prove once more this trend.

The demographic increase of Terni during the above-mentioned years (1951-71) is practically constant and very poor, as it regards mostly medium-large Italian towns. This is due to immigration from various places, but mostly from the region Umbria and from north Latium.

In the years 1951-71 Pescara has had an extraordinary demographic increase, superior to most Italian towns, comparable only with that of Rome and of some "metropolitan areas" (Naples, Milano). It is also necessary to bear in mind that such process of quick growth began much before the second world war. Therefore, the development of this town did not come from a pre-existing and definite nucleus, but practically from nothing.

The area of emigration towards Pescara has been progressively larger together with the growing importance of the town and now it concerns the adjacent regions.

c. Urban planning

Before the war, Modena already had a master plan (1925). A new master plan, according to the Urban Planning Law of 1942, was approved in 1953 (one of the first in Italy), but it only came into force in 1958. This plan foresaw surrounding the existing town with high densities of population (from 250 to 620 inh./ha), gathered mainly along the roads of regional and national connection. The plan foresaw also a total population of about 530,000 inhabitants.

In 1965 a new plan was approved (it came into force in 1969) amining above all to better the standards of public facilities and parks, which were inadequate in the former plan. The new plan foresaw about 225,000 inhabitants, with a medium density of 145 inh./ha. The most characteristic feature of this plan is the careful analysis of the relationship between the principal centre (Modena) and the less important centres of its gravitation area. By means of this plan, it is intended to reach a demographic equilibrium between the main centre and the less important villages.

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This hypothesis is particularly interesting, owing to the characteristics of the hinterland of Modena. It is part of a proposal for a regional development plan, which by mutual consent has been accepted by all the municipalities of the region in the second half of the 1960s. In 1975 the master plan was partially modified to permit greater co-ordination with the less important municipalities and to emphasise the urban renewal policy.

The development of Terni had already had a first complete regulation in 1937. Despite its limits and negative characteristics, typical of that period, the plan may be considered one of the best ever drawn up in Italy before the war. After destructions of the war, a "reconstruction plan" was approved in 1949, drawn up according to the former general plan, without proposing the reconstruction of all buildings "as they were and where they were " before the war (as almost always happens with "reconstruction plans", at least in Italy).

In 1960 the general master plan was approved (Law No. 1150/1942) according to which private enterprises were forbidden to build without the previous approbation of detailed plans. In this way, the national urban planning law was strictly interpreted, which is unusual among the Italian municipalities. This master plan thus became a scheme only of broad lines in which the single zones are detailed. A master plan is submitted to general periodical revisions. The constance with which the local administration has followed this line of action makes Terni a rare case in Italy of "continuous planning". Moreover this brings intense interrelations between public and private interests.

The town of Pescara which rose from the union of two pre-existing centres (1927) never had before the war any urban regulation, in spite of its extraordinary demographic and building growth. The "reconstruction plan" drawn up immediately after the war (1947), without any former reference, proved at once inadequate to the planners themselves. A few years later (1953) it was modified by granting greater building densities, without planning an adequate urban structure.

From 1956 to 1975, four master plans were drawn up. However, none of them was ever legally approved (some were approved only partially), while the building growth of the town went on even more rapidly. Only last year the municipality succeeded in approving a master plan, which has not yet come into force.

d. Building development

The enclosed graphics clearly show the effects on building production of the factors and fundamental elements which have already been considered.

Housing production as regards dwellings and rooms has been superior to the demographic increase in the three above-mentioned towns. Besides, in all the three towns, a difference between the building of dwellings and that of rooms is more and more remarkable. These two phenomena, common to the three towns, are easily explained by the necessity of supplying dwellings to homeless people (or to those with inadequate dwellings) and at the same time aiming to improve the quality of housing.

However, the difference in the three increases (graph 1) seems emphasised by the growth of the demographic increase rate. The relative constancy of the demographic development of Modena and Terni is particularly interesting in comparison to the much faster growth of Pescara in the years 1961-71. Besides, the graphic of Terni clearly shows that in the years 1961-71 there was a trend to improve the housing standard, with a slight dimunition of the production of dwellings.

Graph 1a compares the growth of the three towns, presenting the number of dwellings and inhabitants.

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Graph 2 shows the annual production of dwellings for the three towns, compared to the national average (number per 100). It is to be noted that there are great similarities between local and national trends and cycles (with the exception of the years 1966-68). The curve which is most like the national production is the one relative to the town of Pescara. This is probably due to the lack of building regulations at local level and to the great importance that the building sector (which is almost completely residential) has in the economy of Pescara. Moreover, both at Terni and at Modena, public housing has always been more important, thus helping to diminish the effects of the production cycles. It is necessary to bear in mind that the national average is calculated by including all the Italian municipalities.

The next graph 2a shows the relation between the number of rooms annually built with the number of inhabitants resulting from the three censuses (1951, 1961, 1971). All this explains the discontinuity of the curves in the years of the censuses. This discontinuity is more evident the greater the relative demographic increase. From this graph, it is clear that the building production has been on average superior to the national average for Modena and even more for Pescara, while Terni was under from 1962 to 1964 and from 1966 to 1975 (with the exception of 1974).

The graph shows to a greater extent the cyclic proceeding of the Pescara production, more affected by the state of the market.

Graph 2b shows the relationship between the number of residential places (including bathrooms, kitchens, halls, corridors and so on) and the number of actual rooms (bedrooms, living rooms and so on). This relationship, almost constant at national level (considering the average of the district main towns), is generally growing for Modena; it is very unstable for Pescara (however inferior to the national average between 1965 and 1974) and on average is lower for Terni, where it is very high in the period 1956-64, yet remaining below the national average.

Graph 2c represents (still based on the annual production) the number of rooms and the total residential spaces for each dwelling. For both these relationships, the national average (district main towns) shows a trend to an increase up to 1974. The curves concerning Pescara are remarkably unstable, while for Modena and Terni two periods are clearly visible. The number of total residential space, for Terni, remains almost constantly below the national average.

Graph 3 shows for Pescara and Modena (sufficient data lacking for Terni) the relationship of housing with the total building activity.

e. Final results

In spite of the small amount of data at our disposal concerning few cases, it is possible to outline the differences among the towns examined.

The growth of Pescara is the one which has led to the greatest waste, both in the areas and in the building work. Moreover, this town is the one which lacks most public facilities, parks and public housing.

The condition of Terni is better, with the exception of the availability of public parks, while Modena boasts of more.

Lastly Modena stands in an intermedia position. In both towns, the present housing crisis and the consequences of the building crisis (which is a national crisis) are less visible and less dramatic than in the most part of Italian towns.

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TABLES AND GRAPHS

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Table 1. Working population. Percentage in jobs in primary, secondary and tertiary sectors

Years	Primary	Secondary	Tertiary
1951	42.2	32.1	25.7
1961	29.1	40.6	30.3
1971	17.2	44.4	38.4
	100.0	100.0	100.0

Source: ISTAT.

Table 2. (A) Number of municipalities by the size of population. Percentage of their population over country's total.

(B) Shift of population growth towards the district main towns (% of the total).

		1951	1961	1971
to 10,000 inh.	No.	7015	7221	7181
	%	45.0	40.0	35.1
10,000 to 100,000 inh.	No.	764	782	828
	%	34.5	35.2	35.6
100,000 to 250,000 inh.	No.	14	19	33
	%	4.2	5.4	8.4
over 250,000 inh.	No.	12	13	14
	%	16.3	19.4	20.9
(B)			90.57	64.98

Source: ISTAT.

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Table 3. Unoccupied dwellings (% of total dwellings) and reason for vacancy (%)

	1961	1971
Dwellings for sale or renting	4.17	3.80
Dwelling to be restored or repaired	0.29	0.77
Holiday houses	2.89	6.44
Other causes	0.96	1.19
Total unoccupied dwellings	8.32	12.20

Source: ISTAT.

Table 4. Owner occupied, rented or otherwise used dwellings

	1951	1961	1971
Ownership (%)	40.0	45.8	50.8
Rent	48.7	46.6	44.2
Other	11.3	7.6	5.0
Total	100.0	100.0	100.0

Source: ISTAT.

Table 5. Ratio between inhabitants and rooms in rented dwellings

	Frozen rent	Free market rent
Under 1 inh./Room	44.7	34.2
from 1 to 1.99	42.3	53.0
over 2	13.0	12.8
Total rented dwellings	100.0	100.0

Source: ISTAT 1966.

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Table 6. Investments in housing by the type of financing. Total in billions lire 1972.

Years (%)	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Public	24.7	22.6	20.3	15.1	11.3	8.6	9.1	13.6	20.3	16.1	10.2	5.2	2.6	2.6	3.8	3.8	5.9	6.4	3.7	2.9	2.5	2.2	2.1
Private	61.6	59.9	59.5	66.8	68.6	74.6	75.3	71.0	63.0	56.1	54.4	52.4	62.4	77.8	72.0	63.6	59.6	54.6	64.0	64.9	65.1	64.8	52.0
Shares and bonds	0.2	0.2	0.2	0.2	0.4	0.2	0.3	0.5	0.5	1.3	1.1	3.3	2.7	1.8	2.0	1.4	0.9	1.0	1.0	2.0	1.3	1.0	1.2
LOANS	13.3	17.2	20.0	17.9	19.7	16.6	15.3	14.9	16.2	26.4	34.2	39.0	32.3	17.8	22.1	31.4	33.5	37.9	31.3	30.2	31.0	32.0	44.6
short time	7.4	9.5	9.9	7.2	10.7	8.3	7.1	5.8	7.2	13.1	15.6	18.9	15.3	5.7	8.9	12.5	13.3	15.3	12.0	11.1	8.2	12.0	15.2
long time	5.1	6.1	8.2	9.3	7.8	6.9	6.9	7.7	7.9	12.2	18.1	19.7	16.8	12.0	12.8	18.5	19.7	24.0	19.0	18.7	22.4	19.8	29.4
Insur. Cos.	0.8	1.6	1.9	1.4	1.2	1.4	1.3	1.4	1.1	1.1	0.5	0.4	0.2	0.1	0.4	0.4	0.5	0.6	0.3	0.3	0.3	0.2	-
TOTAL Inv.	735	885	1027	1237	1482	1607	1836	1805	1952	1981	2170	2567	2912	3231	2917	2850	3053	3476	4230	4308	3916	3874	4617

Data from Bank of Italy.

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Table 7. Rates of exchange (A) and rates of interest (B) of government bonds and building companies shares

Years	Government bonds		Building companies		General	
	(A)	(B)	(A)	(B)	(A)	(B)
1958	100.0	6.17	100.0	6.49	100.0	6.70
1961	123.9	4.98	120.2	5.40	126.4	5.30
1966	112.6	5.48	108.2	6.00	105.4	6.37
1971	87.6	7.04	87.8	7.39	83.5	8.02
1976	43.9	14.07	62.6	10.36	50.7	13.22

Source: Bank of Italy

Table 8. Number of residential building (a) and cubic metres (b), number of dwellings (c) and rooms (d). 1951-77.

Years	(a)	(b) x 1000	(c)	(d)	c/a	d/c	b/a
1951			92,582	346,265		3.7	
1952	64,455		116,126	435,134	1.8	3.7	
1953	81,253		148,956	554,442	1.8	3.7	
1954	71,347		175,812	658,378	2.4	3.7	
1955	81,115		213,660	788,436	2.6	3.7	
1956	80,226		229,665	839,463	2.8	3.6	
1957	86,179		271,226	976,950	3.1	3.6	
1958	88,886	103,600	274,046	977,834	3.1	3.6	1,165
1959	91,098	113,585	290,737	1,055,497	3.2	3.6	1,246
1960	90,224	113,207	288,588	1,060,717	3.2	3.7	1,254
1961	93,136	125,570	311,301	1,157,604	3.3	3.7	1,348
1962	105,127	146,659	360,346	1,342,828	3.4	3.7	1,395
1963	112,253	167,519	414,811	1,537,828	3.7	3.7	1,492
1964	119,591	183,305	447,683	1,677,388	3.7	3.7	1,532
1965	78,897	157,507	372,907	1,370,796	4.7	3.7	1,996
1966	73,327	129,122	287,153	1,089,580	3.9	3.8	1,760
1967	75,373	125,265	268,739	1,043,370	3.6	3.9	1,662
1968	73,135	137,982	279,843	1,096,079	3.8	3.9	1,886
1969	74,882	145,032	292,654	1,167,536	3.9	4.0	1,936
1970	89,892	189,683	374,566	1,506,065	4.1	4.0	2,110
1971	90,488	183,536	357,526	1,450,578	3.9	4.0	2,028
1972	64,607	129,036	256,823	1,038,636	4.0	4.0	1,997
1973	52,668	99,733	194,369	796,993	3.7	4.1	1,893
1974	48,298	91,437	178,585	743,083	3.7	4.2	1,893
1975			219,647	907,499		4.1	
1976			183,000				
1977 (est)			160,000				

Source: ISTAT.

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Table 9. Gross national income (A); gross fixed investments (B); investments in housing (C).
Billions lire of current value.

Years	(A)	(B)	(C)	C/A %	C/B %
1951	10, 748	1, 894	352	3.3	18.6
1952	11, 591	2, 210	442	3.8	20.0
1953	12, 826	2, 480	523	4.1	21.1
1954	13, 656	2, 735	647	4.7	23.6
1955	15, 050	3, 093	797	5.3	25.8
1956	16, 394	3, 371	907	5.5	26.9
1957	17, 622	3, 808	1, 056	6.0	27.7
1958	18, 923	888	1, 088	5.7	28.0
1959	20, 113	4, 185	1, 172	5.8	28.0
1960	21, 828	4, 804	1, 221	5.6	25.4
1961	25, 289	5, 514	1, 376	5.7	24.9
1962	27, 303	6, 331	1, 711	6.3	27.0
1963	31, 261	7, 360	2, 087	6.7	28.3
1964	34, 179	7, 402	2, 453	7.2	33.1
1965	36, 818	6, 904	2, 311	6.3	33.5
1966	39, 829	7, 238	2, 303	5.8	31.6
1967	43, 804	8, 323	2, 516	5.7	30.2
1968	47, 280	9, 322	2, 901	6.1	31.1
1969	52, 149	10, 700	3, 630	7.0	33.9
1970	58, 329	12, 336	3, 885	6.7	31.5
1971	63, 508	12, 793	3, 613	5.7	28.5
1972	69, 593	13, 624	3, 874	5.6	29.0
1973	82, 471	17, 156	4, 996	6.0	29.1
1974	99, 087	22, 831	6, 937	7.0	30.4
1975	112, 053	23, 807	6, 945	6.2	29.2
1976	141, 482	28, 810	8, 179	5.8	29.4

Sources: ISTAT and Bank of Italy.

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Table 10. Permanent (a) and desultory (b) workers (N° x 1000) in all industrial sectors and in the building sector.

C = percentage of building workers.

Years	Build. sector		All ind. sectors		
	(a)	(b)	(a)	(b)	C
1951	1,109	55	5,803	499	19.1
1952	1,267	90	6,002	552	21.1
1953	1,437	129	6,274	603	22.9
1954	1,540	50	6,539	581	23.5
1955	1,617	74	6,655	642	24.2
1956	1,590	84	6,812	760	23.3
1957	1,622	96	7,044	899	23.0
1958	1,645	96	7,077	930	23.2
1959	1,668	91	7,176	932	23.2
1960	1,775	131	7,388	809	24.0
1961	1,896	158	7,646	678	24.7
1962	1,989	137	7,810	576	25.4
1963	2,072	140	7,986	570	25.8
1964	2,090	152	7,996	585	26.1
1965	1,942	185	7,728	652	25.1
1966	1,837	164	7,621	523	24.5
1967	1,903	140	7,782	409	24.4
1968	1,916	151	7,890	467	24.2
1969	1,970	184	9,048	499	24.5
1970	1,970	180	8,209	466	23.4
1971	1,900		7,561		25.1
1972	1,838		7,433		24.7
1973	1,787		7,460		23.4
1974	1,768		7,586		23.3
1975	1,749		7,577		23.1

Source: ISTAT.

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Table 11. Number of builders (A) by size and percentage of its jobs (B)

	1951		1961		1971	
	(A)	(B)	(A)	(B)	(A)	(B)
under 3	11,854	3.1	15,170	2.8	67,635	9.8
from 3 to 10	11,861	14.0	27,547	18.6	45,995	27.7
from 11 to 100	9,684	54.7	18,187	60.5	18,672	47.7
from 100 to 500	662	23.5	731	15.8	609	12.2
over 500	31	4.7	26	2.3	23	2.6
Total	34,092	100.0	61,661	100.0	132,934	100.0

Source: ISTAT.

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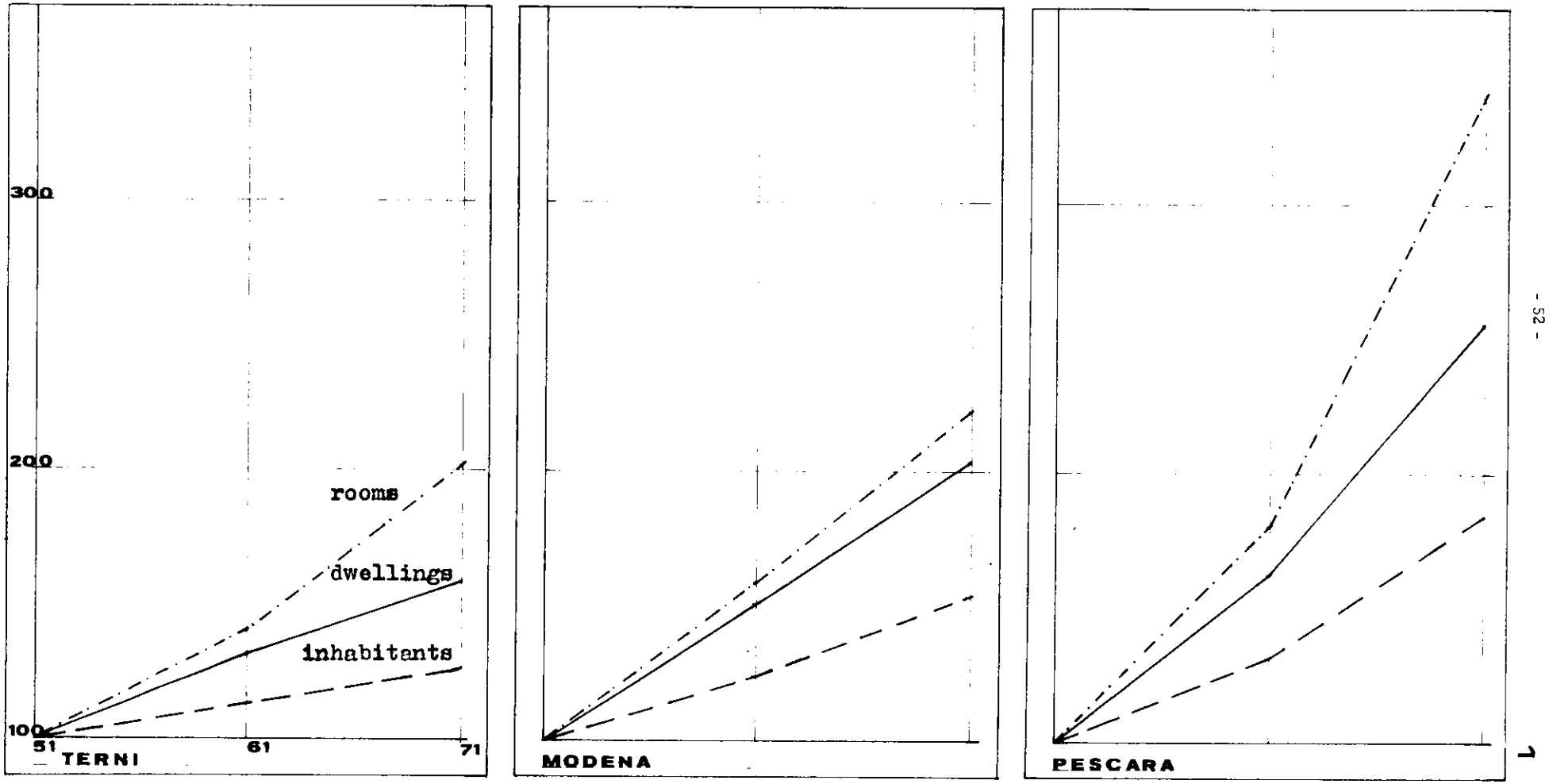
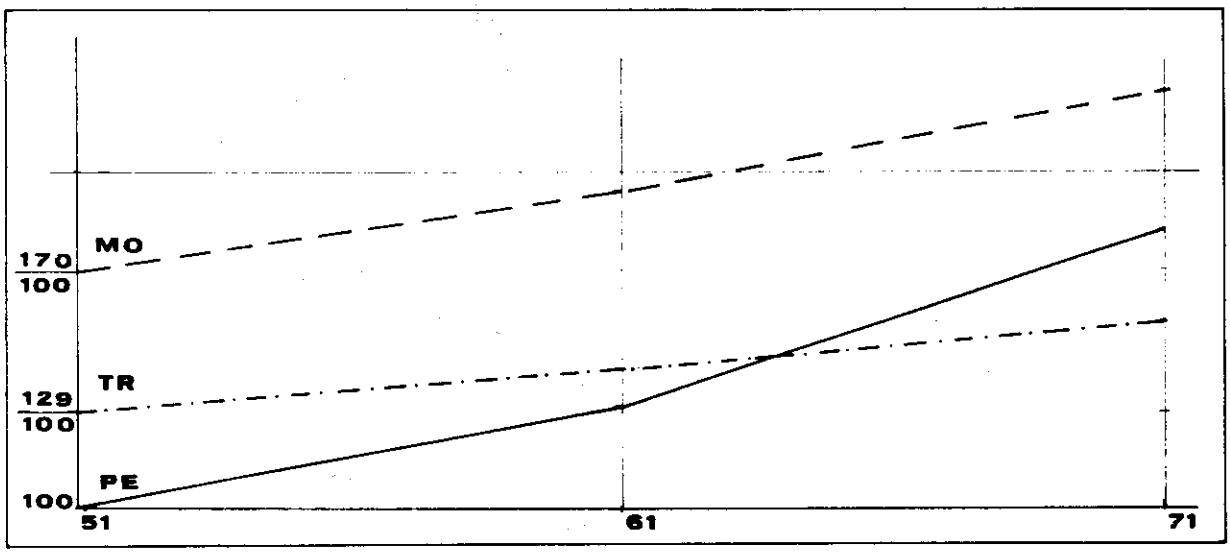
Increase of inhabitants, dwellings and rooms from 1951 to 1971.

1951 = 100



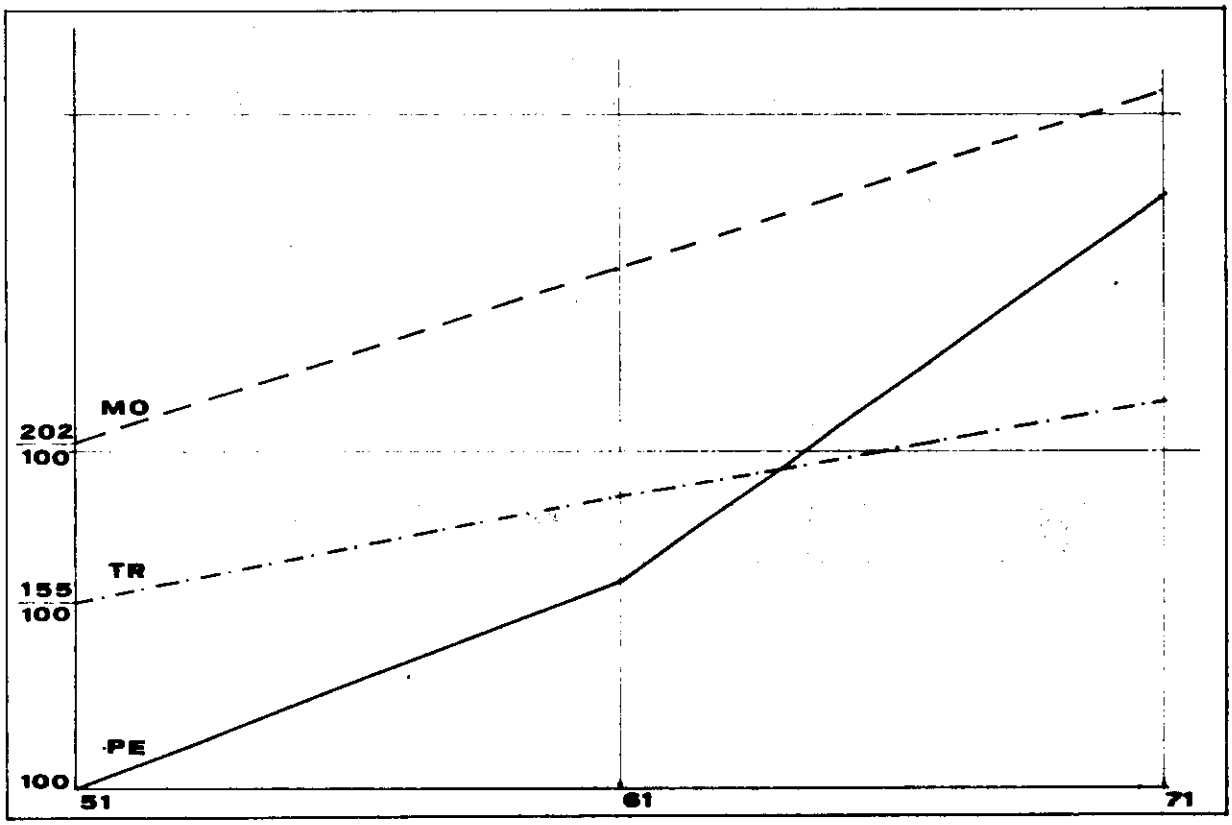
Trend of inhabitants

Pescara, 1951 = 100
Terni, 1951 = 129 = 100
Modena, 1951 = 170 = 100

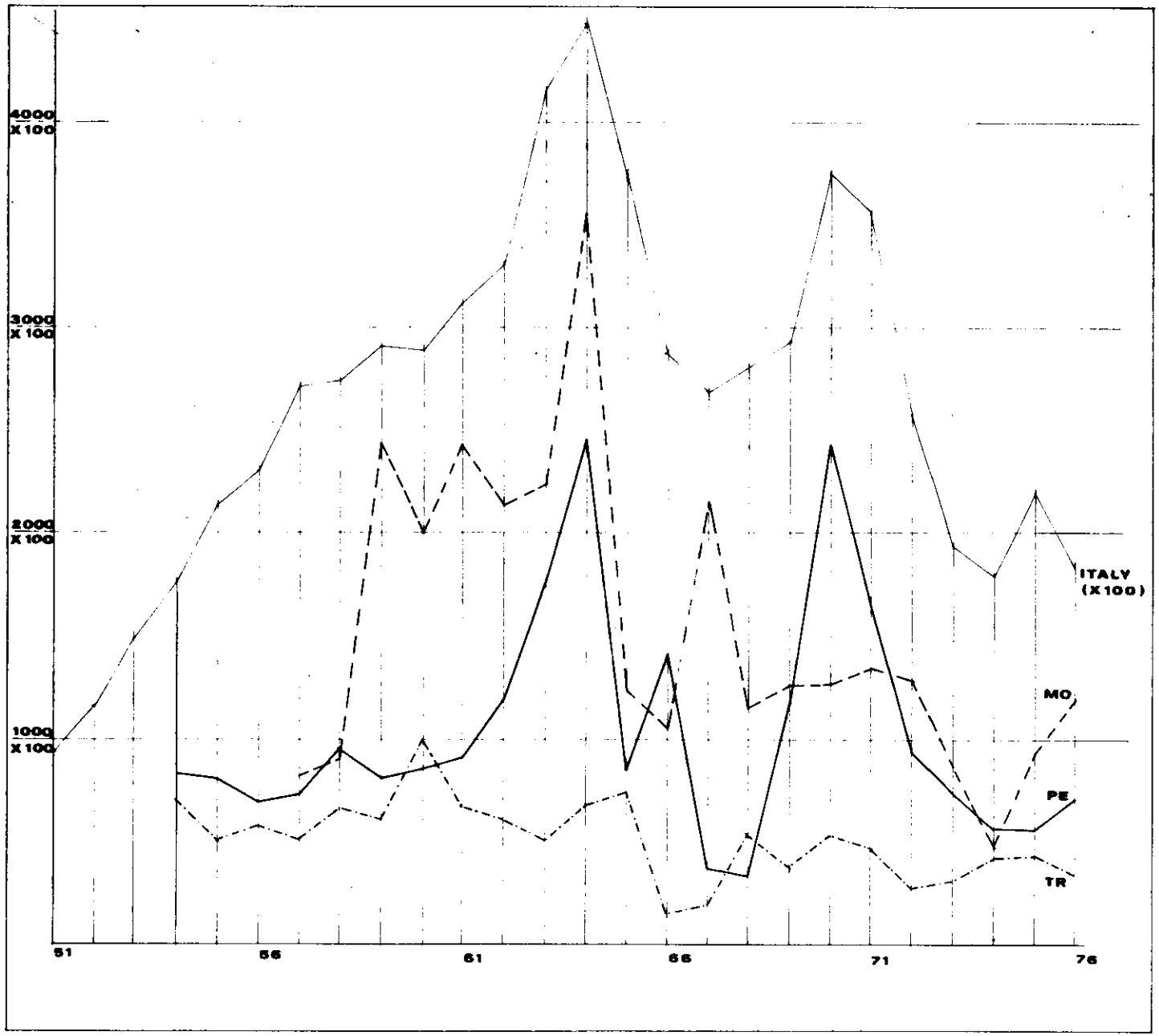


Trend of dwellings

Pescara, 1951 = 100
Terni, 1951 = 155 = 100
Modena, 1951 = 202 = 100



Annual production of dwellings (number of units) 1951-1976.



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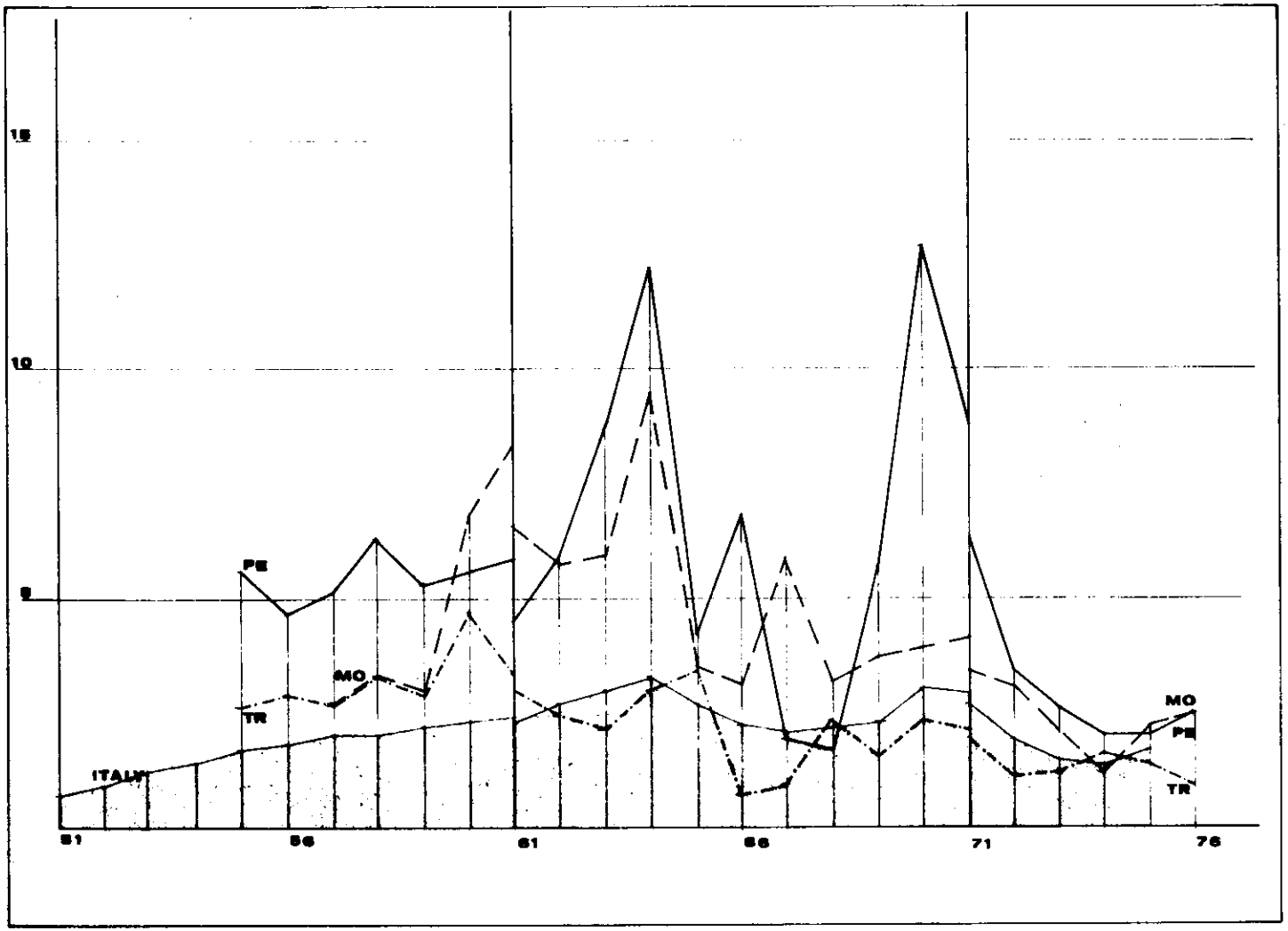
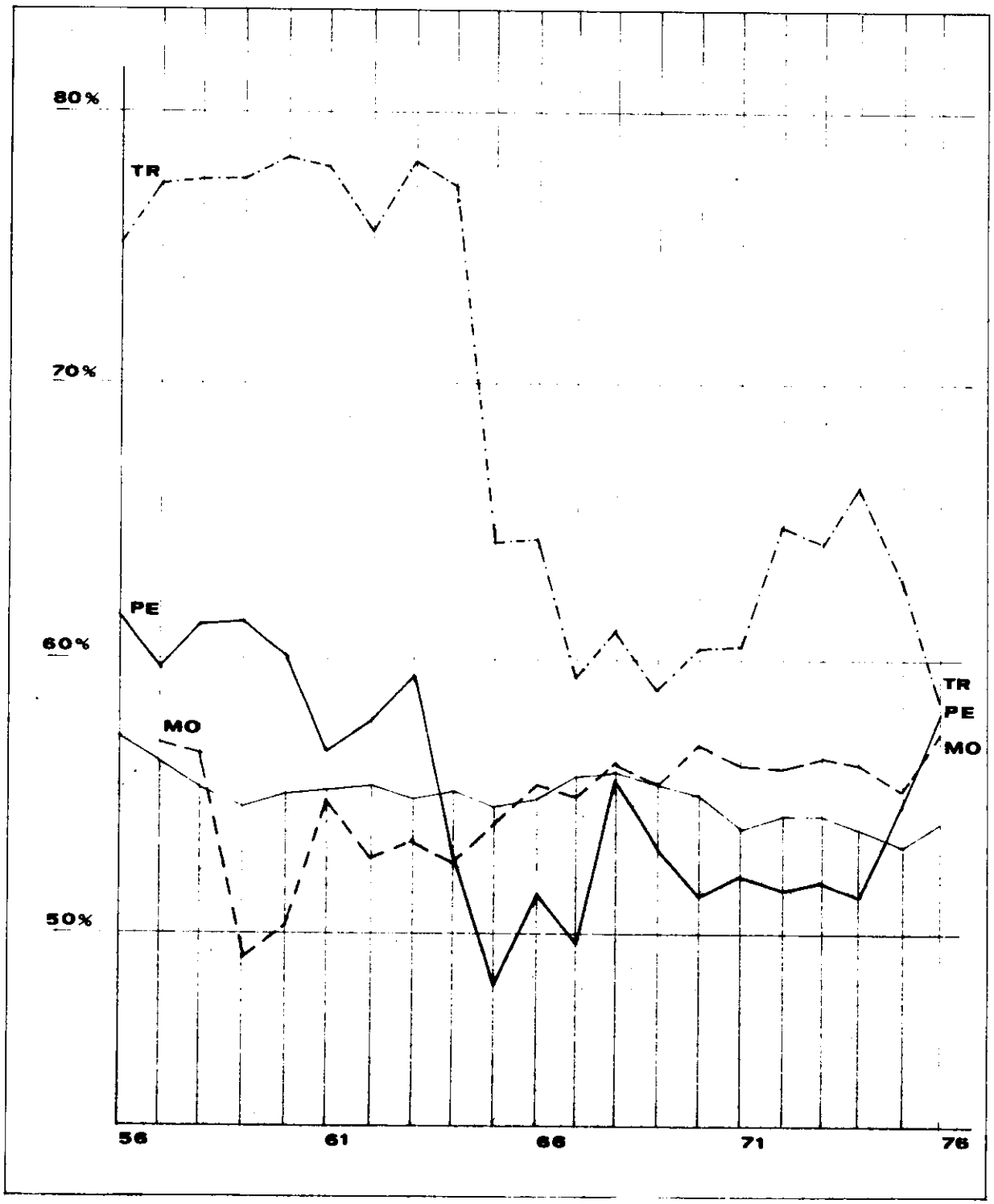
Annual production of rooms for every 100 inhabitants (1951-1961-1971).



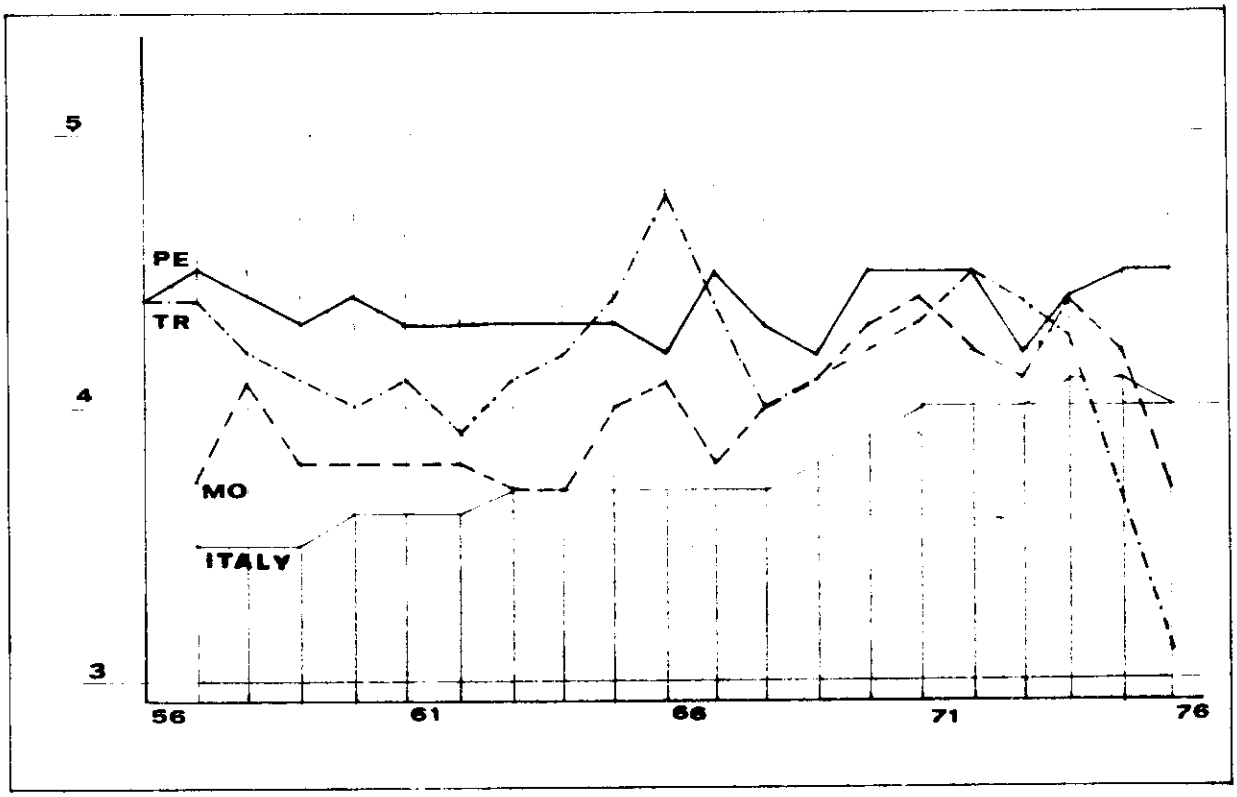
Percentage of rooms over total residential spaces (production per annum).

ITALY: average of district main towns.



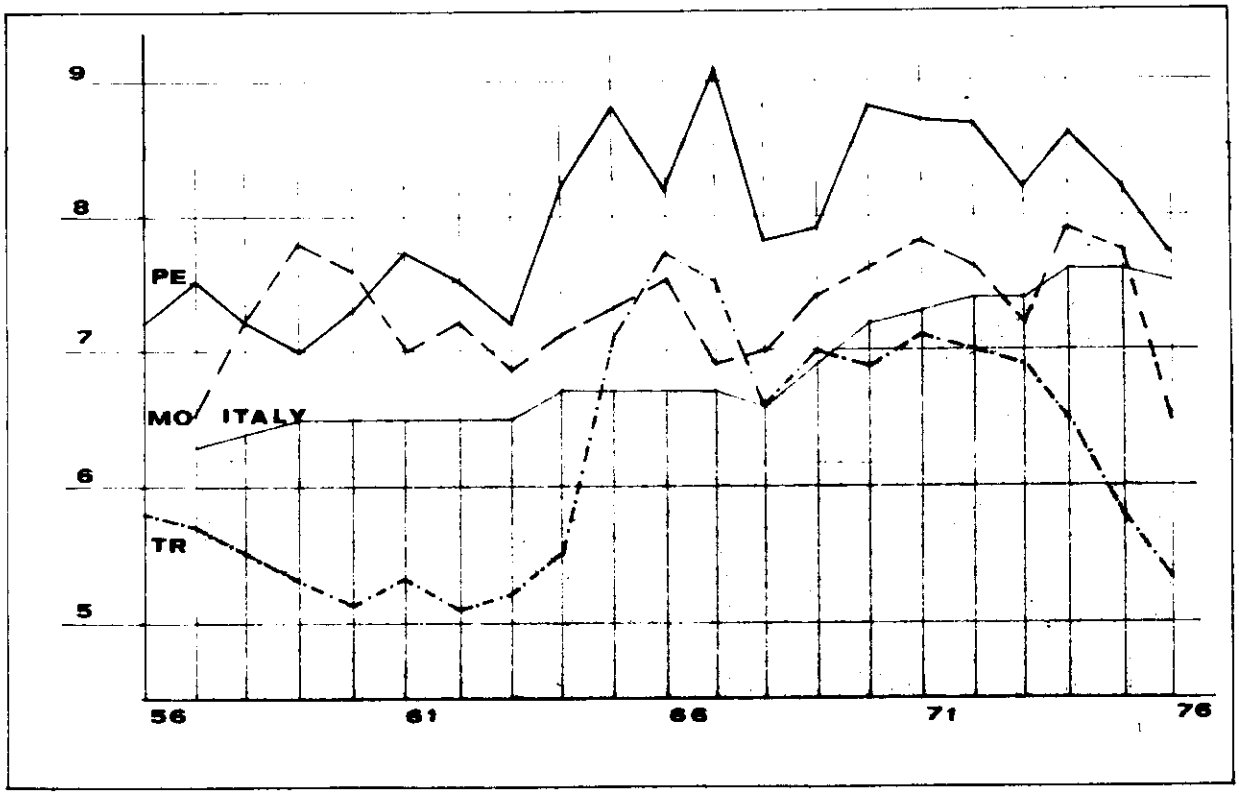
Ratio between rooms and dwelling (production per annum).

ITALY: average of district main towns.



Ratio between total residential spaces and dwellings (production per annum).

ITALY: average of district main towns.



APPENDIX I and II

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APPENDIX I

Analytical relationships existing between residential densities and the price of building ground in Italy

Whatever may be the form of payment, the price of the building ground is eventually paid for by the users of the dwellings: owners or tenants, as they may be. To simplify the problem at hand, we will assume that the total cost of the dwelling will be paid in cash. This hypothesis could be considered - and presumably is - as an over-simplification. It is a well known fact, indeed, that credit is an extremely important factor in the building industry. However, it would have been an overwhelming problem to get involved in such kind of calculations. Using proper conversion tables, it will always be possible to shift from one form of payment to the other.

It is also essential to make a clear distinction between the price of the building ground and the construction cost. The builder and the landlord may merge into a unique person - and they often do. However, for the sake of clarity, we will assume that one function is independent of the other.

A last statement is necessary. We will consider only those users which are immediately above or under the threshold of the accessibility to the market price of dwellings. This makes it possible to take into account only one construction cost and a determined ratio of cubic metres per inhabitant.

The above figures are the following:

- the number of cubic meters per inhabitant has been stated by the DECRETO INTERMINISTERIALE, 28 April 1968 No. 1444; this deed determines a minimum of 80 cubic metres per resident;

- the same deed limits the cost of construction within the sum of 65,000 lire per cubic metre (for low-cost housing).

This said, we may assume that the price p paid by the individual user of the dwelling is composed of two parts: the first one p_c is the equivalent of the construction cost of the building; the second one p_t is equal to the price of the building site. We could then write:

$$p = p_c + p_t$$

and, subsequently:

$$p_t = p - p_c$$

Such an approach could lead to a general evaluation of the market prices of dwellings. However, such an evaluation may prove to be very awkward in dealing with the prices of the building grounds. With this in mind, we may try another way to cope with this problem. Starting from the identity.

$$p_t = p_t$$

multiplying and dividing the second member of such an identity by p_c we will now have:

$$p_t = \frac{p_t}{p_c} \quad p_c$$

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We may now think of a new variable:

$$\frac{p_t}{p_c} = q$$

It is then possible to write:

$$p_t = p_c \; q$$

The importance of this last variable is quite evident. As we could assume an unitary cost for the construction, the ratio between the construction cost and the price of the land becomes the essential factor in defining the different residential areas. On the other hand, in connection with the value of residential density, this is the factor which determines the level of building ground rent.

Given the construction cost and the number of cubic metres per inhabitant, we may be able to write the following:

$$p_t = 80 \times c \; q;$$

where:

x = the number of residents;

c = the cost of construction (65,000 lire/mc.);

q = the variable considered above.

However, the most significant parameter is not the total cost of the site, but its cost per square metre. We may then divide the first and second member of the above equation by a factor s which represents the total surface of the site (measured in square metres). We will have, then:

$$\frac{p_t}{s} = \frac{x}{s} \; 80 \; c \; q.$$

On the other hand, the expression x/s is the equivalent for the density of population, which we may call d. If we now decide to call p the price of building ground per square metre, we may write:

$$p = 80 \; c \; q \; d,$$

and therefore:

$$p = 80 \; 65,000 \; q \; d,$$

which is equivalent to:

$$p = 5.2 \; 10^6 \; q \; d.$$

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This represents a tridimensional surface and it might be cumbersome to deal with it in such a short appendix to the main report. It will be much easier to examine different cross-sections of a similar surface. We may begin by considering two cross-sections:

$$q = \text{const.} = m;$$

$$d = \text{const.} = m;$$

both of which could be represented by two straight lines:

$$p = 5.2\ 10^6\ m\ d;$$

$$p = 5.2\ 10^6\ m\ q.$$

If we consider, instead, the cross-sections:

$$p = \text{const.} = m,$$

we will have a series of hyperboles:

$$qd = \frac{m}{5.2\ 10^6}$$

This means that, given the price of the building ground, the density of a residential settlement may vary according to the variable q. We will then be able to decide the residential density suitable for a certain price of the dwellings. On the other hand, we could determine the price of the dwellings, in accord with a given density of population.

This said, we may be able to draw up the following table, which shows the values of residential densities (measured in inhabitants per hectare) given the value of the variable q and the price of the building ground (in lire per square metre):

Table 1

Values of residential density (inhabitants per hectare) depending on the variable q and on the price of building ground.

Values of q	Prices of building ground (in lire per square metre)				
	10, 000	50, 000	100, 000	200, 000	300, 000
0.1	200	1, 000	1, 900	3, 800	5, 800
0.2	100	500	1, 000	1, 900	2, 900
0.5	40	200	400	800	1, 100
1.0	20	100	200	400	600
2.0	10	50	100	200	300

The above Table 1 is significant enough of the unusual variations in population density, according with the price of dwellings and with the ratio between the price of the building ground and the cost of the construction. Some of the figures shown in the first and second row of Table 1 are clearly unacceptable and this emphasises the need of a policy intended to increase control of the price of building ground and extend public aid to housing.

At last, it may be useful to consider the possible variation in the price of what may be considered an average dwelling (4 rooms), given a determined density and depending on the different prices of the building ground. The residential density (400 inhabitants per hectare) may be considered reasonable according to the Italian building standards (see Appendix II).

Table II

Theoretical cost of a medium-sized dwelling (4 rooms) depending on the cost of the building ground, given a population density equal to 400 inhabitants per hectare.

Prices of building ground (lire/sq. m.)	Prices of a dwelling (in lire current value)
10, 000	21, 800, 000
50, 000	26, 000, 000
100, 000	31, 000, 000
200, 000	40, 000, 000
300, 000	51, 000, 000

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APPENDIX II

Analytical relationships existing between residential density and the available ground space per inhabitant

The afore-mentioned DECRETO INTERMINISTERIALE, 28 April 1968, No. 1444 states that there should be a minimum surface of 18 square metres per inhabitant within any single residential settlement. This space should be free of residential construction to be devoted to children's playground, nursery schools, green areas etc. This said, we may proceed into a few considerations.

The free space is, by definition, the space which is not occupied by residential buildings. If we consider a site whose area may be measured by the variable s and if we agree to call y the number of square metres of free space per inhabitant and to call x the number of persons living on the site, we may be able to write:

$$y = \frac{s - s_c}{x}$$

where s_c stays for the area actually occupied by the residential buildings. Since the majority of such buildings have rectangular shapes, the surface s_c will be equal to the volume of the buildings divided by their height. For the sake of simplicity, we may presume that all the buildings in the plot are equally high. We may now write the equation:

$$y = \frac{s - V/h}{x}$$

where V stays for the total volume of the residential buildings on the plot (in cubic metres) and h stays for their height (in metres). If we now divide the total volume by the number of inhabitants, we will obviously determine the built-in volume per inhabitant (V). We may now write:

$$y = \frac{s - (V)\ x/h}{x}$$

and then, subsequently:

$$y = \frac{s}{x} - \frac{(V)}{h}$$

It is quite clear that the parameter (V)/h represents an area: in particular, the portion of the built-in surface which may be attributed to each individual resident.

For the sake of simplicity, the variable s (which stays for the surface of the entire plot) may be considered as equal to 10,000 square metres (ie an hectare). If we do so, the number of inhabitants will automatically represent the value of the residential density.

This said, given an average space of 80 m^3 per inhabitant (see Appendix I) we may write the following:

$$y = \frac{10,000}{x} - \frac{80}{h}$$

multiplying the first and second member of the preceding equation by xh, we may write:

$$xyh = 10,000\,h - 80\,x.$$

Even in this case we are confronted with a tridimensional surface. We will then proceed by drawing cross-sections of such a surface:

$$x = \frac{10,000\,h}{yh + 80}$$

$$y = \frac{10,000}{x} - \frac{80}{h}$$

$$h = \frac{80\,x}{10,000 - x\,y}$$

The first equation makes it possible to determine the maximum density of population. We could then write:

$$\lim_{h \to \infty} \frac{10,000\,h}{y\,h + 80} = \frac{10,000}{y}$$

Given the afore-mentioned minimum of 18 square metres per inhabitant, the theoretical limit will be equal to:

$$\frac{10,000}{18} = 555,55$$

This is, of course, a merely theoretical approach, as we have assumed the hypothesis of an infinite height for the residential buildings. Notwithstanding, the height of constructions in many residential settlements in the suburbs of the major Italian cities may average 25-28 metres of height. In such conditions, the density of population within a single settlement may reach a value of 470-480 inhabitants per hectare without infringing the current law. A residential density of 400 inhabitants per hectare (see Appendix I) may then be considered appropriate, according to the Italian standards.