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URBAN SWEDEN

Changes in the Distribution of Population—the 1960s in Focus

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For Eva and Cecilia
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The great population redistribution from rural to urban habitation, generally referred to as the urbanization process, is one of the most conspicuous social and economic developments in the last hundred years. The concentration of the population to agglomerated areas is a finite process concomitant of the change from an agrarian to an industrial society. This study analyzes a late stage of that process in a highly industrialized country.

The 1960s and the early 1970s saw a lively discussion in Sweden on the role of the metropolitan areas in the urbanization process. The debate disclosed our limited knowledge of the spatial anatomy of urban Sweden; it became obvious that a better understanding of the pattern of population change in metropolitan as well as in non-metropolitan areas was needed.

The object of this study was twofold: Primarily it was necessary to achieve a wider basic knowledge of the changes in the urban population distribution of contemporary Sweden. The analysis should be capable of unravelling general directions and major breaking points in the development, and provide the means for anticipating future changes. As a rule a relative rather than an absolute measure of population change was
therefore employed. An allometric approach was pursued as the development of the total system was related to its various subsystems, whereby it became possible to distinguish residual developments such as concentrations and deconcentrations within the urban system.

It was regarded as imperative that the study should encompass all urban places in Sweden, and bring down the analysis to the development of individual places. An outline of inter-regional changes was attempted and the relative location of urban places considered. Because our prime interest was changes in the residential pattern, the emphasis was laid on the study of agglomerations as places of residence rather than places of work.

The inquiry was confined to the period 1960 - 1970. A study of changes in the urban population distribution with only one decade in focus may seem to offer limited scope for a penetrating analysis. But the circumstance governing this choice was a statistical one. The attainment of the objectives demanded detailed and fully comparable data which Sweden actually lacked until 1960. The unequivocal urban place definition in use since then, and the carefully prepared delimitation procedures, have together ensured a continuity in the urban statistics and provided a degree of comparability unparalleled in the history of the Swedish census. In no decade prior to 1960 had conditions been more suitable for unbiased comparisons of the population of individual places between censuses.

The second objective of this study was to provide a background and a conceptual framework for the detailed analysis of the sixties. This part of the study involved an appraisal of the extent to which various interpretations of the urban concept were reflected in the present Swedish urban statistics. It also involved a discussion of the operationalization of the urban population and the urban place definitions as well as the development of urban statistics in Sweden. Finally, it involved an outline of the earlier urban development. The length of these chapters attests to the abscence of such material
in literature concerning Sweden.

Chapter 2 reviews the literature on the urban concept and attempts to catch the mainstream of thought in the present conceptual disorder surrounding the meaning of the term. The closing section of the chapter contains an appraisal of contemporary urban statistics in Sweden against this background.

Chapter 3 introduces the population census of Sweden. A discussion of the way in which urban population and urban place definitions have been operationalized in Swedish research follows. A large section is devoted to the development of urban place statistics.

Chapter 4 outlines some general aspects of population development and the main characteristics of the growth and spread of urban settlement before 1960. The chapter closes with a review of earlier studies concerning Swedish urban development.

Chapter 5 raises the question "How do we measure population change?" Most of the chapter is devoted to metropolitan growth. In the last section, the design of the study of urban development in Sweden 1960 - 1970 (and the material used) are discussed.

Chapter 6 is devoted to the analysis of urban development in Sweden 1960 - 1970. After some general aspects concerning the system of urban places there follows a discussion of the development by groups of places and by regions. The material is gradually disaggregated down to the level of individual places. After a discussion of their development, data are aggregated again on the basis of the relative location of urban places. The concluding section concerns a series of local subsystems of interconnected places thus distinguished (urban regions).

The closing chapter points out some possible directions of future research concerning metropolitan growth, and ends with a discussion of how changes in residential preferences may be responsible for intra-regional population shifts. The arguments are based on the color map series Four Maps of Sweden in the back of the book.
II. THE URBAN CONCEPT

The urban phenomenon is, without doubt, one of the most striking features of contemporary civilisation. Even the use of the expression 'phenomenon', signifying an astonishing appearance, demonstrates something paradoxical in the development of cities. We do not, after all, speak of a rural phenomenon, as it seems to us perfectly natural that men should scratch the earth and sow seed in order to gain their bread. Perhaps there was a time when even that seemed extraordinary, when men, ceasing to drive their flocks before them, stayed in their own fields. But since prehistoric times there has never been any question of finding anything astonishing in rural life.¹

A subset of the total population of an area may be referred to as urban; its antonym is then rural. Before considering the various definitions of the urban concept, some common expressions related to this concept must be introduced. Urbanisation is usually understood as a process of change, involving a redistribution of the total population that increases the share of the urban subset. Urbanism (urban mode of life), on the other hand, refers to cultural traits that are said to accompany this process. The amount of urbanness found in a population at any given time is commonly, though somewhat inconsistently, called the degree of urbanisation. (Thus, in the literature, the term urbanization sometimes has static and sometimes dynamic

¹Beaujeu-Garnier & Chabot (1967:1)
connotations.) The enlargement of the urban subset in absolute terms is referred to as *urban growth*. The terms *city*, *town*, *urban place*, *agglomeration*, *place*, and *locality* refer to subsets of the urban population. The term *urban unit* will be used here as a common designation for all these subsets.²

### An Ambiguous Concept

A vast literature testifies to the countless attempts that have been made to define the urban population. In everyday usage the difference between "urban" and "rural" seems easy to identify and understand, while in a scientific context the precise meaning of the terms has been difficult to establish. The significant question seems to be whether it is possible to distinguish a *sine qua non* of an urban population.

Let us first consider the United Nations' *Handbook of Population Census Methods* which concludes that

> The basic meaning of the terms *urban* and *rural* is fairly clear, the former referring to the city and the latter to the country or to areas outside the city ... (But) ... the terms themselves have taken on overtones and added meaning whereby they have come to refer to ways of life, cultural patterns, attitudes, value systems, etc.³

The complexity of the whole question is highlighted in the following passage in which Webber elaborates on the above:

> ... the terms 'city', 'urban', 'metropolitan', and the various other synonyms are applied to a wide variety of phenomena. Sometimes we speak of the city as though it were simply an artifact - an agglomeration of buildings, roads, and interstitial spaces that marks the settlements of large numbers of people. On other occasions we refer not to physical buildings but to concentrations of physical bodies of humans, as they accumulate in nodal concentrations at higher densities than in 'non-urban' places. At other times we refer to the spatial concentration of the places at which human activities are conducted. At still other times we mean a particular set of institutions that mark urban systems of human organization, where we mean to identify the organization—

²Cf. Gibbs (1961:14 ff.)
³United Nations (1959:65)
al arrangements through which human activities are related to each other — the formal and the informal role allocating systems and the authority systems controlling human behavior. In turn, we sometimes refer to patterns of behavior, and sometimes we mean to distinguish the social value systems of those people and groups that are 'urban' from those that are 'nonurban'.

Again and again a lack of agreement recurs among authors as to the precise nature of the urban concept. Dewey, who scrutinized eighteen books and articles dealing with urban and rural matters provides an illuminating example of this. After listing the items believed by the various authors to be the base for distinguishing ruralism from urbanism, Dewey found a remarkable lack of consensus. His heterogeneous list comprised 40 items referred to in the various definitions of urbanism. He concluded that if the terms urban and rural are to be of any real use in teaching and research, objective referents for them must be found. Otherwise the terms will have to be abandoned, since the only thing generally agreed "... is that in some vague way the terms in question are related to city and country, to community variations in size and density of population."

Students have not responded to Dewey's ultimate exhortation: they have not rid themselves of these expressions, probably realizing that any substitutes would necessarily be specific to particular purposes and that conventional scientific wisdom requires concepts allowing for generalizations about reality and permitting comparisons in time and space rather than concepts tailor-made for the analysis of unique cases. Despite an initial temptation to rebel against this wisdom, the terms urban and rural have been employed in the present study: the creation of a terminology specific to this study would only have added to the conceptual confusion. The justification for this standpoint is that, despite the great variety of definitions of the urban concept, it is quite clear from the literature that

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4 Webber (1963:26 f.)
5 Dewey (1960:60). This diversity in the conception of urban life was not confined to authors interested primarily in rural-urban matters; it can also be found in 19 well-known introductory text-books in sociology.
students do undoubtedly have a general idea of the meaning of these terms. They subscribe to a general notion of the urban concept in which (1) the concept of place (perceived as an agglomerated settlement of population, i.e., a locus of collective residence in closely juxtaposed dwellings) is fundamental, and in which (2) urbanization is regarded as a process of population concentration to agglomerated settlements (and the social and economic changes associated with that process, notably a shift to non-agricultural pursuits). The term urban serves, then, as a useful umbrella construct covering all the facets of societal life that can possibly be conceived in connection with this notion.

Although the scientific interpretation of the urban concept is somewhat amorphous and is used with widely differing connotations, it should nevertheless be remembered that no usage is ever entirely divorced from this basic notion. Consider, for example, the various national census practices of the world. The urban concept is operationalized by means of detailed definitions of urban units, constructed specifically for the different countries, but in each case clearly reflecting the general notion. Let it be understood then, that any discussion of the urban concept implicitly or explicitly emanates from a discussion of the origin and growth of cities, and of the social and economic organization of cities.

This chapter is not intended to provide a complete account of how the urban concept has been treated in the literature; it does attempt to catch the mainstream of thought and establish some order in the present conceptual disorder. The purpose of this is to lay the foundations for an appraisal of contemporary urban statistics in Sweden.

If we are to unravel the scientific ambiguity surrounding the meaning of the urban concept, the definition of the urban population must be treated apart from the definition of urbanization.

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Defining the Urban Population

URBAN PLACES

Since agglomerated settlements of human collective residence (urban units: cities, towns, and other urban places) first became the objects of scientific inquiry, sociologists, anthropologists, architects, geographers, economists, and other social scientists have adopted an abundant variety of urban place definitions. However, three basic approaches to the definition of urban units can be found in the literature, all departing from the concept of place as discussed above: 7 (1) the urban unit defined as a morphological entity, where the "bricks and mortar" aspects of built-up areas and the presence of urban characteristics are considered, 8 (2) a social entity (a specific form of human community), and (3) a functional entity (e.g., cultural, economic, and political activities, as well as the role of the urban place in a regional setting). Let us consider some examples.

In a classic and widely accepted definition, population size and density, urban characteristics and the industrial structure of the locality (employment predominantly in non-agricultural activities) are determinants of urban places. 9 The relevance of the non-agricultural criterion depends on the time perspective employed. To start with, most urban places had a large agricultural population which gradually diminished with increasing specialization, in favor of industry and commerce. 10 Apparently recognizing this, Bobek finds the prime determinant of an urban place to be the

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7 An agglomerated settlement of population, i.e., a locus of collective residence in closely juxtaposed dwellings.

8 The expression urban characteristics is used to denote a densely built-up area having a recognizable street formation and contiguously aligned buildings, etc. Cf. United Nations (1959:61).

9 See, e.g., Nelson (1918:1-10). Cf. Chapter 3 for a further discussion, as well as criticism by Frödin (1946).

presence of a social differentiation rather than a specific industrial structure. An urban place must exhibit a minimum size and density, as well as a Städtisches Leben (by which he means division of labor, and the fact that each household has a production above the subsistence level). Large agricultural agglomerations that fail in this respect, are not urban places. But some social differentiation will occur with the emergence of a class of craftsmen which trades its services for agricultural products. For this reason, Bobek regards agricultural agglomerations, e.g. in southern Spain and Italy, Greece, and northern Africa as urban places when they reach a certain size and density.11

Jacobs advances a definition strictly confined to the economic growth aspects of human settlements. Implicitly arguing against the notion of a settlement continuum (see below), she writes: "Our ordinary vocabulary does not take account of the differences between the nature of cities and the nature of other settlements; e.g., 'town' and 'city' are often used interchangeably, as if cities were larger towns." Jacobs narrows the scope of the urban concept so that only a specific type of agglomeration is to be considered as an urban place: "A settlement that consistently generates its economic growth from its own local economy." She calls this type of settlement a city, but does not regard what is usually known as a town as an urban place, since it is "A settlement that does not generate its growth from its own local economy and has never done so. The occasional export a town may have generated for itself has produced no consistent self-generating growth thereafter."12

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11 Bobek (1938:89 ff.) here quoted from Frödin (1946:180 ff.). Cf. also Dickinson (1964:21): "... the functions of the city throughout its history have been threefold - cultural, administrative, and economic. It is a serious error to regard the economic functions as exclusive criteria of the character of a city, important as these may be in our time. The earliest cities in south-western Asia, north-western India and north-western China, as well as in western Europe, were in the first place permanent seats of cultural institutions."

12 Jacobs (1969/1972:245 f.). Stagnant cities are also regarded as urban places. A stagnant city is "A settlement that formerly grew as a city, but has stopped doing so."
Hall distinguishes three meanings of the urban place concept. First there is a physical one: "That which is urban looks like a town. It has large numbers of buildings close together. They are functionally differentiated: some are designed for work, some for residence, some for shopping, some for recreation." There is also a functional one: "That which is urban functions like a town. The economic functions of a town are manufacturing and the provision of services. The social functions are intercommunication and interaction on a large scale." And there is a political one: "That which is urban is governed, as a town, by a town council." 13

Wirth finds that Ratzel

... gives one of the earliest and soundest geographical definitions of the city: 'A permanent condensation (or dense settlement) of human beings and human habitations covering a considerable area and situated in the midst (or at the juncture) of several routes of transportation.' 14

From the sociologist's point of view the city is a "distinct form of human community." 15 and for sociological purposes Wirth, in his classic article Urbanism as a Way of Life, defines it as "... a relatively large, dense, and permanent settlement of socially heterogeneous individuals." 16 After making a systematic study of various definitions, Maunier advanced his conclusive definition of the city as a complex community with a geographic extension extremely small relative to its population. Ahlmann defined the city as an agglomeration with a distinct functional land-use pattern. William-Olsson combined these definitions, stating that a city is a differentiated community with regard both to its sociological structure and to its settlement pattern. 17

13 Hall (1973:42)
14 This summary of Ratzel (1903) appears in Wirth (1925:177), an early comprehensive bibliography of the urban community.
15 Reiss (1957 a:17)
16 Wirth (1938:8)
17 Maunier (1910) quoted in William-Olsson (1937:16 f.), Ahlmann et al. (1934:7).
The difference between the physical (morphological) and the functional aspects of urban places is often stressed. "The city has to be interpreted as an organic part of a social group, as well as described as a mass of materials."\(^{18}\) William-Olsson also makes this distinction very clearly, arguing that buildings in the city are just tools for the mode of life there. "A palace is a palace as long as the nobility lives there. If they move the building may become a government office, a laundry, a ruin, or almost anything."\(^{19}\)

Following Hassinger, William-Olsson defined the base for delimiting the city population as the people who take part in its daily life, irrespective of their place of residence.\(^{20}\)

**THE URBAN POPULATION**

A considerable amount of scientific work has been devoted to establishing the cultural traits characteristic of urban societies and to describing their specific social and economic organizations. As we have seen, a great variety of phenomena and attributes characterizing urban communities has thus emerged. Let us consider some examples.

Wirth advances three basic characteristics of urban society. As the size and the density of a population develop, a concomitant "heterogeneity of inhabitants and group life" will also evolve.\(^{21}\) According to Reiss, variables

\(^{18}\)Aurousseau (1924:444)

\(^{19}\)William-Olsson (1937:6, my translation).

\(^{20}\)Hassinger (1910) quoted in William-Olsson (1937:29), William-Olsson (1941:9 f.). Cf. the arguments of Webber and Mandelbaum below.

\(^{21}\)Wirth (1938:10 ff., italics added). "Large numbers account for individual variability, the relative absence of intimate personal acquaintanceship .... Density involves diversification and specialization, the coincidence of close physical contact and distant social relations, glaring contrasts, a complex pattern of segregation, the predominance of formal social control, and accentuated friction .... Heterogeneity tends to break down rigid social structures and to produce increased mobility, instability, and insecurity, and the affiliation of the individuals with a variety of intersecting and tangential social groups with a high rate of membership turnover" (ibid., 1).
that define the urban community in sociological terms can be found under four headings, referring to characteristics that define it as (1) an ecological community, (2) a unique demographic structure, (3) a characteristic form of social action or organization, and (4) a set of values or subjective perceptions. 22

Many definitions focus on the industrial structure of the population, the implicit or explicit assumption being that the spatial arrangement of the population is determined by economic activities. According to Aurousseau:

... the dense clusters of folk, who have no immediate interest in the production of the materials for their food and clothing or general comfort, but are engaged in transporting, manufacturing, buying and selling them, or in educating the people, or in managing the affairs of the state, or in merely 'living in town', become the urban section. 23

In their classic work on rural sociology Sorokin and Zimmerman used occupation as the principal criterion for the definition of the rural world. "Rural society is composed out of a totality of individuals actively engaged in an agricultural pursuit, such as collection and cultivation of plants and animals, and the totality of their

22 Reiss (1957 a:19). This is further elaborated by Reiss (1957 a:20, 1964:738 f.). In a summary of the writings of Sorokin & Zimmerman, Simmel, Park, Spykman, and Wirth he epitomizes the characteristics of urbanism (the special mode of life pertaining to urban communities) by emphasizing the following nine factors: (1) Qualitative differences in the occupational structure and complex division of labor with diversified occupational structure which forms a major basis of the system of social stratification, (2) high territorial and social mobility, (3) participation in voluntary interest groups or associations, (4) marked functional dependence of the population, (5) spatial segregation, (6) substantial personal anonymity in interpersonal contacts and segmentalization of social roles and role interaction, (7) reliance on indirect modes of social control, (8) the toleration of social differences, (9) normative deviance.

23 Aurousseau (1921:568)
This standpoint is further underlined when the authors define rural sociology as, "... in the first place a sociology of an occupational group, namely, the sociology of the agricultural occupation." Analogously, the urban world is defined as the "Totality of people engaged principally in manufacturing, mechanical pursuits, trade, commerce, professions, governing, and other non-agricultural occupations."

Loomis and Beegle classify activities into two types: field activities and center activities, each presupposing the other. Field activities comprise the production of foods and raw materials (e.g. ores and fibres) in small and dispersed human groupings which in general may be classed as rural. The authors find that center activities "... which have to do with processing, distributing, and the coordination of field products, lead to the agglomeration of larger groups. From these activities cities

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24 Sorokin & Zimmerman (1929:15). Cf. Aurousseau (1921: 568). Needless to say, the methodological and theoretical problems associated with a scientific definition of the rural concept are analogous to those relating to the definition of the urban concept. Ecological, occupational, demographic, social, organizational, and cultural characteristics have been used in the definitions proposed (Larson, 1968:582). Cf. Zimmerman (1934:469): "Rural society as compared with urban society is marked by a relative predominance of the agricultural occupations, by the closeness of the people to a natural as contrasted with a human environment, by the smallness of its communal aggregates, by a relatively sparse population, by greater social homogeneity, by less internal differentiation and stratification and by less territorial, occupational and vertical social mobility of the population. The individual in rural society as a rule has fewer contacts with others, he associates with people from a smaller geographic and social area, a greater proportion of his social contacts are face to face and his relationships with any particular individual tend to have a longer duration. The people of rural society live in systems of organization which tend to include a higher proportion of status as contrasted with contract relationships; they are bound to a greater extent by organic ties rather than by the cooperation made necessary by economic division of labor." A summary of some empirical investigations of urban-rural differences in habits and attitudes, published in 1939-1960 is to be found in Swedner (1960:30-51).

25 Ibid., 56

26 Ibid., 56
emerge."27 Earlier, both McKenzie and William-Olsson had adopted this distinction. McKenzie distinguishes between *field work* and *center work*,28 and William-Olsson between *areal-bound production* (areell produktion) and *point-bound production* (lokal produktion).29 The concept of areal-bound production does not include mining but does include fishing. Apparently Loomis and Beegle include mining in their "field activities," while Sorokin and Zimmerman exclude it from rural population activities.30

William-Olsson also distinguishes between *exchange production* and *local production*; exchange production for trade with the outside world and local production for consumption within the producing community. In the rural world William-Olsson includes exchange and local areal-bound production as well as local point-bound production. These rural non-farm activities include retail services, schools, handicraft etc. Sorokin and Zimmerman exclude this category from their object of study.31

To summarize, it thus seems that the urban concept is approached in the literature under three headings:

1. **As a mode of habitation.** Fundamental here is the concept of place as discussed above. Population size and density, as well as certain morphological characteristics of built-up areas are considered.

2. **As a mode of work** (the industrial structure of society

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27Loomis & Beegle (1950:204)
28McKenzie (1933:50 ff.)
29William-Olsson (1938:262 ff., 1941:11 ff., 1946:9). The author uses the concept of production in its widest possible meaning, including transport and cultural activities as well as material production. The terms areel produktion and lokal produktion cannot be directly translated into English. Areal-bound and point-bound production have been suggested here. In his English version of the Economic Map of Europe, William-Olsson (1953:4) speaks of areal production (low concentration activities) and local production (high concentration activities). Later William-Olsson (1975:5) has introduced the terms areal and stigmal activities, derived from the Greek words area (surface) and stigma (point, mark).
30Sorokin & Zimmerman (1929:16)
31Ibid., 56
- an economy predominantly based on non-agricultural pursuits).

(3) As a mode of life (the social characteristics and cultural traits, apart from those specified under (1) and (2), that are associated with life in agglomerated settlements.32

THE RURAL-URBAN CONTINUUM

The community variables considered above imply by their very nature a polar distinction between societies. "The city and the country may be regarded as two poles in reference to one or the other of which all human settlements tend to arrange themselves."33 This rural-urban dichotomy belongs to what Reissman calls the "theories of contrast" and has its roots in the contrast typologies of society advanced by the classic social philosophers.34 "Since the emergence of the cities of antiquity, social philosophers have attempted to characterize and account for the contrast between tribal or rural life and the ways of city men."35 Prominent examples of such dichotomies are status-contract (Henry Maine), Gemeinschaft-Gesellschaft (Ferdinand Tönnies), and mechanical solidarity - organic solidarity (Emile Durkheim).36 Of specific interest here is the distinction between folk and urban societies advanced in the writings of the anthropologist Robert

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32Cf. Lampard (1965:519 f.)
33Wirth (1938:3)
34Reissman (1970:123)
35Miner (1968:174)
36Cf. agricultural - non-agricultural, static-dynamic, preliterate-literate, primitive-civilized, sacred-secular, military-industrial, traditional-rational, and folkways-stateways found in the writings of Becker, Spencer, Weber, Simmel, Sumner, and others, here quoted in Miner (1968), Reissman (1970:123), Berry (1973:9 ff.), and Dewey (1960:63). In the static-dynamic dichotomy the differentiating factor between urban and rural is the degree of dynamism in society. Cf. the suggestion by Pallin (1948) to account for the dynamism of society by measuring the movement within it. Movement is here understood operationally as the volume of traffic generated.
Redfield.37

With urban society as its logical opposite, folk society is characterized as "... small, isolated, nonliterate, and homogeneous, with a strong sense of group solidarity." It lacks any division of labor and could be conceived as a group of people economically independent of all others.38 Redfield points out that this is a mentally constructed ideal type of society with no exact equivalent in reality.39

In most studies the variables used to measure the rural-urban dichotomy have a range of variation. Hence, most writers recognize a conceptual continuum between the two ideal types of societies implied by the rural-urban dichotomy. A rural-urban continuum postulates a continuous gradation from rural to urban, so that any community can be placed at some point along the scale.40 The idea of a settlement continuum seems to have been accepted by many students on logical grounds, but it is a controversial and often disputed matter in empirical application. Redfield appears to have been the first to conceive of a rural-urban continuum; his distinction between the folk and urban societies can be expressed as a folk-urban continuum.41

Duncan tested the hypothesis of the rural-urban continuum. From the very beginning he acknowledged the limitations on operationalizing an empirical test. "Even if a 'continuum' exists, it can be analyzed only by using discrete categories."42 As an approximation of the independent variable, namely the rural-urban continuum, Duncan used eleven intervals of community size. As dependent variables he took several criteria of urbanism (cf. above),

38 Redfield (1947:297 f.)
39 Ibid., 294
40 Reiss (1964:739), Miner (1968)
42 Duncan (1957:36)
and studied their regression on community size. He found that several of the urban characteristics did not vary consistently with community size. He concluded that the hypothesis could not withstand a close statistical examination, but that his results did support "... the merely negative assertion that there is no unique, sharp breaking point between rural and urban."\(^{43}\)

### Defining Urbanization

#### THE URBAN AND RURAL AMALGAMATION

Duncan's conclusion raises the following question: is it possible to delimit independent rural and urban entities and if so, where does the rural end and the urban begin? The United Nations' *Handbook of Population Census Methods* concludes: "In reality, there is no definite point, in the continuum from scattered dwellings or small clusters to the great metropolitan agglomerations, where the rural ends and the urban begins."\(^{44}\)

The ambiguity of the urban concept probably stems from the fact that cultural traits first observed in cities were gradually reported for urban units further and further down the size continuum. Reiss even argues that many traits claimed to be characteristic solely of urban communities may occur in other types of communities as well.\(^{45}\)

In modern industrialized economies, factors which were once easily recognized as distinct social and economic features of city life (thus rendering the border between

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\(^{43}\) Ibid., 44

\(^{44}\) United Nations (1959:65). Cf. for example Davis (1969: 10): "Since human settlements vary in size from isolated farmsteads to huge city agglomerations, they vary also in how urban they are. It is obviously arbitrary, therefore, to designate a single point in the continuum as the dividing line between rural and urban." Cf. also the contradicting argument by Jacobs (1969/1972:245 f.) above.

\(^{45}\) Reiss (1955)
rural and urban life indisputable), eventually came to describe society as a whole.

Except in terms of the density of habitation, no distinction between the urban and rural worlds seems meaningful any longer. The primary agent of this social and economic integration that has made the population urban i.e., the urbanization of the population, is the improved technology for the transfer of goods, people and messages. This technological evolution gradually increased the spatial mobility and contact accessibility of the population at the same time fostering social intercourse in society. It is also responsible for a constantly widening spatial conception of urban places. Improved transport technology made possible the outward extension of urban built-up areas (the "suburban" growth or "urban sprawl," subsequently giving rise to metropolitan regions). For the same reason the need for physical proximity between urban functions, places of work and places of residence gradually diminished. Thus, greater spatial mobility made it less easy to set definite limits between what had formerly been physically discrete entities. The rural-urban amalgamation was further encouraged by an increase in commuting from rural to urban areas, and by people moving from urban to rural residence.

Referring to the United States, Webber explains this conceptual disorder by arguing that the idea of city can

46 Compare, e.g., the discussion by Firey, et al. (1957) on the "fusion of urban and rural" for which the highway is held as a principal nexus. The authors' interest focuses on the influence of highway development on rural settlement patterns, rural social interaction, and rural culture.

47 For studies concerning Sweden see, e.g., Bosaeus (1958), Kant (1957), Lewan (1960, 1963, 1967), Micklander (1971), and K. Olsson (1961). In this context we may quote Stewart (1958:153): "... in advanced countries employment is much more nucleated than residence ...", and note his further argument that urban statistics therefore usually underestimates the urban population defined in terms of the population employed in urban places (and their dependents).

48 For studies concerning Sweden see, e.g., Gustavsson (1974) and Stahre & Wretblad (1972).
no longer be distinguished from the idea of society. "If we lack consensus on an organizing conceptual structure of the city, it is mainly because we lack such a structure for society as a whole."\textsuperscript{49} Despite Webber's focus on the American example, his argument is also valid in the case of other advanced industrial societies.

In another work, Webber goes on to describe the end-result of the economic and cultural integration in the industrial state as a non-place urban realm. He disregards the common recognition of the urban place as a physically separate unit. Arguing against the conceptual tie between the idea of city and the idea of place, Webber finds the place-community representing

... only a limited and special case of the larger genus of communities, deriving its basis from the common interests that attach to propinquity alone.\textsuperscript{50} As accessibility becomes further freed from propinquity cohabitation of a territorial place - whether it be a neighborhood, a suburb, a metropolis, a region, or a nation - is becoming less important to the maintenance of social communities.\textsuperscript{51}

For industrial societies Webber finds that the urban place concept must be replaced by the concept of non-place urban realms, which are "... interest-communities whose members conduct their affairs within roughly the

\textsuperscript{49}Webber (1963:23 f.). "In previous eras, when the goals, the beliefs, the behavior, and the roles of city folk were clearly distinguishable from those of their rural brethren, and when urban settlements were spatially discrete and physically bounded schoolboy common sense was sufficient to identify the marks of 'urbanness'. Now all Americans are coming to share very similar cultural traits; the physical boundaries of settlements are disappearing; and the networks of interdependence among various groups are becoming functionally intricate and spatially widespread: (ibid., 24).

\textsuperscript{50}Webber (1964:111)

\textsuperscript{51}Ibid., 109
same spatial field."\(^{52}\)

In his study of rural settlement in the Swedish province of Skåne since World War I, Lewan expects that the concept of city or town will in future have a morphological significance only. From a functional point of view he suggests the concept of the *urbanised region*, which is an area "... where both small towns and villages and sparsely populated areas are included in a continuous complex with a common field of employment."\(^{53}\) Lewan suggests that this situation is neatly summarized in the expression *urbs in rure*, which is used by Pahl in a study of the metropolitan fringe in Hertfordshire.\(^{54}\) Also notable in this context is Stewart's argument: "The size of the small settlement is certainly less important for its participation in urban life and outlook than its location relative to large towns and cities."\(^{55}\)

In yet another study of Skåne, Swedner examined the differences in habits and attitudes in urban and rural areas. Starting from the assumption of a rural-urban continuum, Swedner confirms the presence of such differences in Sweden but suggests, in view of developments

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\(^{52}\) Ibid., 114. "An urban realm ... is neither urban settlement nor territory, but heterogeneous groups of people communicating with each other through space. At any of the lower levels in the hierarchical continuum of specialization, the spatial distances over which the people interact are relatively short; but the spatial extent of each realm is ambiguous, shifting instantaneously as participants in the realm's many interest-communities make new contacts, trade with different customers, socialize with different friends, or read different publications" (ibid., 116 f.). Cf. Friedmann & Miller (1965) and Hägerstrand (1963). Cf. also, e.g., Mandelbaum (1972:27) who argues that it is necessary to "... abandon the spatial model of the city and the association of the word community with a pattern of settlement. A man's community is, quite simply, the set of people, roles, and places with whom he communicates."


\(^{54}\) Pahl (1965)

\(^{55}\) Stewart (1958:156). He gives the following example: "The isolated farm homestead in the Middle West, perhaps a mile from the nearest similar homestead, may seem at first sight to be the epitome of rural isolation. But it is far more a part of urban society in outlook, in contact, and in background and behavior than a household in an eastern European peasant village" (ibid., 155).
in modern communication technology (notably television and the private car), that these differences will probably diminish rapidly. He predicts that the material on which the study was based (gathered in 1957) will be outmoded fairly soon. In fact it was expected to be somewhat out of date already at the time of writing (August 1960).

Swedner also suggested that if the study had covered the whole range of residential variation, it would probably have been necessary to abandon the idea of a rural-urban continuum. "A first trial in this direction would probably be to substitute the classic dichotomy, Town and Countryside, by a trichotomy, Town, Countryside, and Suburbia, or some more complicated scheme."56

Let us conclude this section by noting that observations of an urban and rural fusion were made at an early stage in the social sciences. The blurred distinction between the two concepts was discussed as early as 1899 by Adna F. Weber in the remarkable volume *The Growth of Cities in the Nineteenth Century*. The ancient and medieval cities were enclosed towns, cut off from the scattered population outside. This clear distinction between rural and urban was further reinforced by law, since cities held special rights to commerce and trade by royal charter. (Cf. Chapter 3 for the Swedish experience.) Thus, at an early stage, this situation fostered the role of manufacturing industry and commerce as the principal marks of urbanness. Arguing that the privileged towns lived an isolated life exerting little impact on the rural popula-

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56 Swedner (1960:332 f.). Swedner's findings are corroborated, e.g. by Constandze (1962). He talks of a mental urbanization, meaning the change of attitude in the rural population that accompanies increasing spatial mobility and contact accessibility in society. For many goods, services, cultural activities, etc., the small nearby urban centers are by-passed in favor of larger ones. This is exemplified by the reclamation of the Northeast polder in Holland, an experience which has in turn influenced the planning of the new polder of Oostelijk Flevoland. Another example of mental urbanization is the many part-time farmers in West-Germany who, since World War II, have let their land lie uncultivated ("social fallow"). Constandze contends that there is no economic rationale for this since it was not the inferior land that was abandoned first.
tion, Weber saw such towns as the "oases of civilization."
But the change came rapidly,

... in the last half-century all the agencies of modern
civilization have worked together to abolish this rural
isolation; the cities have torn down their fortifica­
tions, which separated them from the open country;
while the railways, the newspaper press, freedom of
migration and settlement, etc., cause the spread of the
ideas originating in the cities and lift the people
of the rural districts out of their state of mental
stagnation. Industry is also carried on outside of
the cities, so that the mediaeval distinction between
town and country has lost its meaning in the advanced
countries. 57

In 1915 Galpin coined the widely used term *urban* to
denote the population living in the urban-rural fringe, 58
and two years later Jefferson reported "the unity of city an
and country." Recognizing their interdependence he argued
that: "It is a wholly mistaken conception that attempts to
separate them." 59

We shall return to the issues discussed in this section
in Chapter 7.

THE MEANING OF URBANIZATION

The scientific ambiguity of the urban concept is further
underscored by the discussion of the meaning of
urbanization. It seems that two logically inconsistent
approaches to a definition of urbanization are responsible
for this confusion. It is regarded either as (1) the total
social and economic process culminating in agglomerated
settlement, i.e. the process which makes urban places, or
as (2) the diffusion of cultural traits (said to character­
ize agglomerated settlements) from urban places to sur­
rounding areas. The latter approach presupposes the exist­
ence of cities before urbanization; cities are regarded as
the impetus of social and economic change. Tisdale argues
lucidly against the logic of regarding

57 Weber (1899:7 f.)
58 Galpin (1915) quoted in Carter (1972:17). For a
bibliography on matters concerning the rural-urban fringe
zone see, e.g. Hassbring (1971).
59 Jefferson (1917:6)
... urbanization as a process of radiation whereby ideas and practices spread out from the urban center into surrounding areas. This is an objectionable definition because it makes the city the cause of urbanization rather than the result or the product of urbanization. It does not explain the appearance and growth of cities. Any definition of urbanization which calls for a transcendence of cities is a definition of something else, because urbanization must culminate in the city if it is to be the process which makes the city.

Tisdale then subscribes to a strictly demographic definition: "Urbanization is a process of population concentration. It proceeds in two ways: the multiplication of points of concentration and the increase in size of individual concentrations." This definition "... comprehends the totality of the process both in time and in space" and is the only one not leading to ambiguity. As for other aspects of urbanization Tisdale writes: "The concomitants of urbanization are not to be ignored; they are simply to be distinguished from it." Besides people, Tisdale regards technology as the necessary condition for urbanization. "Urbanization is so closely bound up with technology that we can say without qualification that technology is the sine qua non of urbanization." The various definitions of urbanization in the literature embrace a wide range of phenomena, both spatial and aspatial. But in one way or the other they are connected with the notion of the urban concept as discussed above. A typical use of the term urbanization is to "... indicate both the steady shift of population from rural to urban areas and the process of social and economic change associated with that shift." Similarly, Thompson finds that

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60 Tisdale (1942:311)
61 Ibid., 312
62 Ibid., 311
63 Ibid.
64 Ibid.
65 Ibid., 315
66 United Nations (1970:1)
Urbanization is characterized by movements of people from small communities concerned chiefly or solely with agriculture to other communities, generally larger, whose activities are primarily centered in government, trade, manufacture of allied interests... Urbanization depends largely on the extent to which industrial and mercantile products are divorced from agriculture.\textsuperscript{67}

A common approach is to state that the term urbanization is used with two connotations: either as the growth of agglomerated built-up areas or as the growth of urban industries (non-agricultural activities).\textsuperscript{68} In some cases a narrow approach is followed, according to which urbanization is related to the growth of metropolitan areas only.\textsuperscript{69} In other cases, urbanization has the widest possible application and implies a "new way of life," i.e. a process of cultural integration. In operational terms, urbanization is usually understood as an increase in the percentage of the population living in urban places.

\section*{THE EVOLUTION OF CITIES}

According to the classic and widely accepted explanation of the emergence of urban societies, the city emerged as man's response to the neolithic revolution - the fundamental change when men learned how to grow food. Occurring between 9,000 and 5,000 B.C. in the Middle East, this societal transformation meant a change in the human economy from gathering and hunting to the domestication of animals and the cultivation of plants. This in turn permitted life in settled communities. The existence of neolithic villages were the prerequisite of cities in their ability to grow food above the requirements of subsistence.\textsuperscript{70}

Childe refers to this dramatic social change, which led to the first cities, as the urban revolution. Occurring in Mesopotamia in the third millenium B.C., it is claimed to have resulted in about three cities with an estimated

\textsuperscript{67}Thompson (1935:189 f.)
\textsuperscript{69}See, e.g., B. Olsson (1972:107) and Andersson & Jungen (1968:60).
\textsuperscript{70}Jones (1966:17 f.)
population of 12,000 in the smallest and one of twice this size in the largest. Mumford characterized this transformation as a centripetal process, which he calls the urban implosion. "The many diverse elements of the community hitherto scattered over a great valley system and occasionally into regions far beyond, were mobilized and packed together under pressure, behind the massive walls of the city." Following Duncan, Hauser argues that the emergence and development of the city is a function of four factors: (1) the size of the total population, (2) the control of the natural environment, (3) technological development and (4) developments in social organization.

A platform for the inquiry in the following pages has been provided by Adna Weber: "... a successful investigation of the causes of the city growth ... must begin with a study of social, or more strictly speaking, economic evolution." Mabogunje suggests a functional specialization theory of urbanization, following the classic approach outlined above. Fundamental to the emergence of agglomerated settlements - hence "the essence of urbanization" - is the occurrence of a functional specialization between communities through a division of labor, which in turn results in an increased production of goods and services. But functional specialization per se does not necessarily give rise to urban communities. For this to happen three conditions must prevail:

(1) a surplus of food production to feed the urban dwellers withdrawn from agriculture

(2) a class of people exerting power over the food producers to make the surplus available for the urban population (it could more easily be retained by the produc-

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71 Childe (1942:90-94) quoted in Reissman (1970:1)
72 Mumford (1961:34)
73 Hauser (1965:1) quoting Duncan (1959:681 ff.)
74 Weber (1899:158)
75 Mabogunje (1968:33-43)
ing community to facilitate a population increase there); this group is also responsible for stable and peaceful conditions in society.

(3) a class of merchants and tradesmen for the distribution of food and raw materials.\textsuperscript{76}

In \textit{The Conditions of Agricultural Growth}, Boserup argues that it is difficult to induce people in non-industrialized societies to produce a food surplus above their immediate needs.\textsuperscript{77}

The classic theory of the emergence of cities has been challenged by Jacobs. In \textit{The Economy of Cities} she puts forward an opposing theory, arguing against "the dogma of agricultural primacy" which postulates "agriculture first, cities later."\textsuperscript{78} Basing her arguments on archeological and anthropological findings, Jacobs swings the developing order of agriculture and cities around: cities first and rural development later. Crucial is her suggestion that "... permanent settlements within hunting territories were ordinary features of pre-agricultural life."\textsuperscript{79}

Regarding such settlements as the embryos of the first cities, Jacobs argues that agriculture and animal husbandry in fact arose in cities.

If my reasoning is correct, it was not agriculture then, for all its importance, that was the salient invention, or occurrence if you will, of the Neolithic Age. Rather it was the fact of sustained, interdependent, creative city economies that made possible many new kinds of work, agriculture among them.\textsuperscript{80}

The argument is then pushed even harder as Jacobs claims that agriculture, first developed in cities, was in fact transplanted to the rural world. The most likely reason

\textsuperscript{76} Ibid., 34 ff. Cf. also, e.g. Davis (1955), Childe (1950), and Sjoberg (1955, 1965 b).
\textsuperscript{77} Boserup (1965)
\textsuperscript{78} Jacobs (1969/1972:15)
\textsuperscript{79} Ibid., 49
\textsuperscript{80} Ibid., 42
for this was that animal husbandry eventually took up too much room. Pasturage that lay more than a day's journey from the city created a need for herdsmen. Together with their families, these people brought with them the means to grow grain for themselves, and eventually there arose the rural village based on agriculture. A discussion of the mechanisms behind economic growth in cities leads Jacobs to conclude that:

Rural production is literally the creation of city consumption. That is to say, city economies invent the things that are to become city imports from the rural world, and then they reinvent the rural world so it can supply those imports. This, as far as I can see, is the only way in which rural economies develop at all, the dogma of agricultural primacy notwithstanding.\(^{81}\)

Following Sjoberg we may distinguish at least three types of cities: the preindustrial (feudal), the transitional (the modernizing or developing) and the industrial.\(^{82}\) In addition we may also conceive of a post-industrial city. But Reissman cautions that the ancient, the medieval, and the industrial city are different social phenomena.\(^{83}\)

"We ought not to be misled by our own semantics: the word 'city' has been transformed throughout our history, as has the phenomenon that it denote."\(^{84}\)

It seems to be the consensus among authors that there was no massive growth of urban places before the advent of the industrial revolution. Let us pass over ten millennia of human history and confine the rest of this section to the emergence of the industrial city.\(^{85}\)

**INDUSTRIAL CITIES**

According to Sjoberg, the major differentiating factor between the preindustrial and the industrial city is the

\(^{81}\) Ibid., 47
\(^{83}\) Reissman (1970:16)
\(^{84}\) Ibid., 19
\(^{85}\) For a treatment of urbanization in the classical world see, e.g. Pounds (1969). A discussion of the spread and growth of medieval, renaissance, and baroque towns in Europe is found in Dickinson (1959).
kind of energy used. While the former relied on animate (human or animal) sources of energy, the latter uses inanimate sources. Sjoberg further claims that in preindustrial cities commercial functions were always secondary to the governmental and the religious.

The industrial revolution may be regarded as an economic contingency, the fundamental condition for industrialization being innovations in two major areas: technology (the machine, notably the steam engine) and organisation in terms of work (the factory system) and in terms of capital (the joint financing of economic enterprises). The term industrialization is used here to denote the whole set of demographic, social, economic, and political effects that accompany these innovations.

Urban development under the impetus of industrialization is the result of push and pull forces, each of which are responsible for a great change in the distribution of population. The push force is accounted for primarily by

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86"The type of social structure required to develop and maintain a form of production utilizing inanimate sources of power is quite unlike that in the preindustrial city. At the very least, extensive industrialization requires a rational, centralized, extra-community economic organization in which recruitment is based more upon universalism than on particularism, a class system which stresses achievement rather than ascription, a small and flexible kinship system, a system of mass education which emphasizes universalistic rather than particularistic criteria, and mass communication.... Industrialization, moreover not only requires a special kind of social structure within the urban community but provides the means necessary for its establishment" (Sjoberg, 1955:444).

88Cf. Lampard (1955:85)
89Cf. Reissman (1970:17). Industrialization may be conceptualized comprehensively by such key factors as: the machine, the factory system, division of labor and other forms of functional specialization, economies of scale, the creation of an open market, a rational pursuit of profit, the development of corporate firms, the expansion of bureaucracies, and the use of inanimate sources of energy together with the technology for converting the energy into fuels, increasing man's productivity and releasing him from much time that used to be needed for mere survival (Reiss, 1957 b: 79 ff.; Reissman, 1970: 16-20).
the agricultural revolution, as rising agricultural productivity gradually released people from the land.\(^90\)

Urban settlement demands an agricultural system capable of producing a surplus. The increase in agricultural productivity has been enormous. In the United States, for example, the surplus production of nine farms was needed to feed one urban family in 1787; one hundred and fifty years later a single farm family could feed seven urban families.\(^91\) The pull force, of course, was the demand for manpower in the factories. The new organization of work that was introduced with the factory system made it necessary for people to congregate.

The change to mass production created a need for markets larger than the previous local markets; subsequently, both national and international exchange systems emerged. This commercial revolution generated a demand for greater spatial mobility and communication, which was met initially by the development of the railway, the telegraph and the steamboat, followed later by the automobile, the aircraft and the telephone (the transport and communications revolution).

Industrial urbanization thus means a severence of people from the land, and the agglomeration of population in urban places is the spatial consequence of industrialization. Lampard remarks "The growth of the modern city and the march of the industrial revolution are joint products of a single cultural strand - specialization."\(^92\) Hägerstrand

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\(^90\) In England where the industrial revolution began (in the latter half of the 18th century), agricultural productivity alone did not push people off the land. An important factor was also the movement of people caused by the Enclosure Acts.

\(^91\) Jones (1966:29) finds that urbanization in the second half of the 19th century would have been impossible without the new sources of food developed in the Americas and Australia.

\(^92\) Lampard (1955:91, italics removed). Lampard's paper contains a good illustration of the rise of the urban-industrial center.
characterizes the transformation from a subsistence economy to the functionally specialized economy of today as a shift from a vertically to a horizontally organized society.  

The factors that have been considered responsible for industrial urbanization are not confined to questions of propinquity. The literature abounds in theoretical statements seeking the economic rationale for urban places, from the early theories of Ratzel and Cooley which explain the location of cities by reference to cost minimization at transport junctions or breaks in transportation to Hagerstrand's proposition that urbanization saves time:  

Many studies have tried to understand why people and firms agglomerate. Arguing from a socio-ecological point of view, Lampard regards city growth as "... the concentration of differentiated but functionally-integrated specialisms in rational locales. The modern city is a mode of social organization which furthers efficiency in economic activity." According to the same author, Haig was probably the first economist to adapt locational analysis to a general theory of urbanization. Haig found that from a transfer-efficiency point of view, cities were optimum points for both production and consumption. Starting from the pioneering work of Christaller, a great many writers have explained the rationale of the urban place as a service center for a surrounding population. Similarly many others have discussed the economic base and

93 Hagerstrand (1965)  
94 Cooley (1894), Ratzel (1903) both quoted in Berry & Horton (1970:2-7). See also, e.g., Ullman (1941).  
95 Hagerstrand (1970:9, 104 ff.)  
96 See, e.g., Isard (1956), Kristensson (1967), and Thorn- gren (1972). A good review of literature, particularly as regards administrative agencies, business offices and the secretariats of interest groups, can be found in Ahnström (1973:17-24, 125-212). For a general treatment of the geography of concentration see, e.g., Ullman (1958).  
98 Lampard (1955:94 ff.), Haig (1926 a, b)  
99 Christaller (1933/1966)
functional specialization of urban places, the economic rationale here being the comparative advantages of these places in the national and international exchange system of goods and services.\textsuperscript{100}

In his theory of urbanization, Reissman criticizes the "narrow economic interpretation" that sees cities solely as a response to industry. "The city is a social consequence; it takes more than rational, economic motives to stimulate and sustain the growth of the city."\textsuperscript{101} Also necessary to the new industrial order was the emergence of the ideologies of democracy and nationalism, and the rise of a middle class and middle class leadership. As for nationalism, Reissman remarks: "Loyalty to the nation replaced the former narrower loyalties. Village loyalties were too narrow a basis to support an effective integration of the whole society...."\textsuperscript{102}

**URBANIZATION AND INDUSTRIALIZATION**

Given that urbanization is defined as a process of population concentration to agglomerated settlements, it may be said that "... urbanization and industrialization have gone hand-in-hand."\textsuperscript{103} Many studies have established a strong statistical co-variation between urbanization (as defined above) and industrialization. Three examples are given here.

Davis and Golden found a correlation coefficient of 0.86 between the degree of urbanization and the degree of industrialization of the world.\textsuperscript{104} In other words, about

\textsuperscript{100} Both William-Olsson (1943) and Harris (1943) independently introduced the first functional classification of urban places based on quantitative data. See also e.g., William Olsson (1946, 1953, 1974), Alexander (1954), Alexandersson (1956), Ullman, Dacey & Brodsky (1969).

\textsuperscript{101} Reissman (1970:182)

\textsuperscript{102} Ibid., 17

\textsuperscript{103} Davis & Golden (1954:24)

\textsuperscript{104} Davis & Golden (1954:8). They studied 155 countries with data from 1950. The degree of urbanization was measured as the percentage of total population in cities above 100,000 inhabitants; the degree of industrialization as the percentage of economically active males engaged in non-agricultural pursuits.
74 per cent of the variation between countries with regard to urbanization could be explained by the variation in industrialization. After stating that urbanization is not a uniformly distributed phenomenon in the world, Davis and Golden conclude: "The achievement of high levels of urbanization anywhere in the world had to wait for the industrial revolution." In a study of 95 countries Berry found a high positive correlation between economic development and urbanization. In a similar study Schnore established several other correlates of urbanization besides industrialization, and this led him to conclude that it is necessary "... to consider especially carefully the evidence suggesting that urbanization is an intrinsic part of modernization in general." 

Not all authors, however, have accepted the apparent interchangeability of the terms urbanization and industrialization. Hoselitz warns that there need not necessarily be any causal connection between them. "Industries can be and have been established in rural districts and cities have grown up without large industrial plants." This standpoint is shared by Breese. He also emphasizes that in the study of urbanization in newly developing nations it is important for the student to divest himself of the Western image of urbanization. After all, in developing nations the urban population consists mainly of recent migrants to the cities, most of whom lack any control over the environment in which they are living. In the developed countries, on the other hand, "... delegative, representative governments have been developed to

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105 Ibid.
106 Berry (1962). Berry used 43 indices of economic development. After performing a principal component analysis, he found that the indices collapsed into four patterns of association. The first dimension was a technological scale, the second a demographic scale, the third isolated poor trading countries with low national products and high population growth rates, the fourth differentiated between very large and very small countries.
107 Schnore (1961:243). A total of 75 countries and territories were studied for the period 1950-1955 (circa).
108 Hoselitz (1955 a:167)
109 Breese (1966:5 f., 51 ff.)
the point where by means of such representation, as well as by pressure group activities, the ordinary citizen can make some impact on the environment in which he lives. Breese then introduces the term *subsistence urbanization*, meaning a situation where "... the ordinary citizen has only the bare necessities, and sometimes not even those, for survival in the urban environment." The release of people from the land - people who, unemployed, will subsequently congregate in the urban centers - is said to give rise to overurbanization. Overurbanization is usually said to exist if the proportion of a country's population living in urban places is larger than is justified by the degree of economic development. But Breese admits that it is extremely difficult to establish a point at which overurbanization can be said to exist. To begin with, it is not easy to establish an unambiguous norm to apply in comparisons between countries. Davis and Golden used a regression line that they had worked out, and distinguished overurbanized nations as those with a high positive residual, i.e. nations whose index of urbanization was larger than their degree of industrialization would have led one to expect. Egypt, Greece, Korea, and possibly Lebanon are said to be overurbanized countries. In a study that is very critical of these results, Sovani finds that "... the definitions of 'overurbanization' developed so far are chimerical and

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110 Ibid., 4 f. For a discussion of similarities and differences in urban development between developing and developed countries see, e.g., Reissman (1970:150-194) and Hoselitz (1955 a). On the subject of cityward migration Hoselitz remarks: "Most of the European migrants to the cities in the eighteenth and nineteenth centuries came from the countryside, just as the migrants to cities in underdeveloped countries today. But whereas the European, once he had reached the city and lived there for a short time was able to cut himself loose from his old home because he found a new home with new loyalties in the city, the Asian or African does not experience such a transfer of loyalty. He continues to belong to the place whence he came and he never feels fully and exclusively at home in the city" (ibid., 176).

111 Breese (1966:5)


113 Davis & Golden (1954:16 ff.)
Sovani based his sharp criticism on a recapitulation of the study by Davis and Golden (and an analysis of a study issued by UNESCO where developments in the United States, France, Germany, and Canada were regarded as the norm against which developments in the rest of the world were compared). He studied those countries for which he could obtain data on urbanization and occupational distribution for the same year during the period 1946 - 1951. The correlation coefficient between urbanization and industrialization that was thus established was 0.70.\textsuperscript{115} Sovani then split the material into two groups, treating the highly industrialized nations (the United States, Canada, and 15 European countries) apart from the rest. The result was a 0.395 correlation coefficient for the highly industrialized nations, and a coefficient of 0.85 for the remaining group.

Sovani's results suggest that the two variables are much more closely linked in the developing nations than in the highly industrialized countries, or "... that the pace of urbanization in the underdeveloped countries is much more closely dependent on the pace of industrialization than in the highly industrialized areas."\textsuperscript{116} This view is reinforced by an analogous analysis regarding the United States, Canada, and eleven western European countries in 1891, which gives a coefficient of 0.84.

From a methodological point of view, this study is a good illustration of the potential risk of a fallacy of composition when a cross-section analysis of data for a large number of countries is made. Sovani's study did indeed reveal the ",.. non-homogeneous character of the two groups of countries and the invalidity of deriving corre-

\textsuperscript{114} Sovani (1964:117)

\textsuperscript{115} The study included 41 countries. Source: UN's Demographic Yearbook. Sovani finds that the somewhat lower correlation coefficient obtained in comparison with the Davis and Golden study may be due to the smaller number of countries examined in his study.

\textsuperscript{116} Sovani (1964:115)
lation coefficients for all countries together in one lump.

In his work *Population Trends and Urbanization in Sweden 1911 - 1950*, Ahlberg regards "the emergence and growth of urban places" as the commonly accepted meaning of the urbanization concept. But Ahlberg finds this meaning questionable. He doubts whether it is possible to formulate any definition of urban places that is truly definitive. Even if this were possible, the emergence of urban places would still have to be regarded as a discontinuous process. To get round this problem, we must regard urbanization as equivalent to the expansion of non-agricultural pursuits (urban industries) irrespective of the character of the built-up areas. Ahlberg justifies this view by arguing that the growth of urban industries in rural areas eventually gives rise to urban places. Accordingly, he subscribes to the broadest possible concept of urbanization, and sets forth a study of all phases and aspects of it, ranging from non-agricultural activities in rural areas to the growth of large cities.

Tryggveson assumes to the same standpoint as Ahlberg in his work on urban development in Sweden 1951 - 1960. However, he points out that the transition from agriculture to urban industries does not necessarily give rise to urban places, since increased spatial mobility has made it possible to commute from a rural residence to an urban place for work.

**CITIES AS DIFFUSION POINTS OF SOCIAL AND ECONOMIC CHANGE**

To many authors urban places are the primary agents in a cultural and economic diffusion process. "... cities have been important centers providing an impetus for

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117 Ibid.
118 Ahlberg (1953:4)
119 Tryggveson (1967:17 f.)
120 Cf. especially Jacobs (1969/1972 *passim*).
economic growth and cultural change..."121 The social change emanating from the cities is even said to be the principal factor behind the rise of "civilization" itself,122 and with reference to the city in newly developing countries, Breese argues that "... it serves as the primary agency and diffusion point of social change for the new nation."123

A definition of urbanization that starts from urban places as the diffusion points of social and economic change does not, as Tisdale rightfully argues, explain the evolution of urban places themselves. Apparently, urban units must attain a certain size before they can be considered as places of diffusion. "In a primary phase of urbanization," Redfield and Singer write, "when cities are developing from folk societies, it seems meaningless to assert, e.g., that the direction of cultural flow is from city to country ... it would make more sense to see the process as one of a series of concentrations and nucleations within a common field."124

In his analysis of the components of the early city, Mumford emphasizes "... the essential function of the closed container, which concentrated the social agents and gave them a closed field that promoted the maximum inter-

121 Hoselitz, 1955 b:279.
122 See, e.g., Weber (1899:5 f.): "The development of the arts and sciences, the prosecution of industry, and political activity - all the social forces going to make up civilization - were phenomena of the great capitals like Memphis, Thebes, Nineveh, Babylon. In classic antiquity, indeed, the identification of city and civilization becomes complete; the Greek republics were city states, and when Aristotle wishes to characterize man as a social or gregarious animal he says man is by nature a citizen of the city.... The essential identification of the city with all the higher interests of humanity by the Greeks and Romans is to be observed at the present day in the English word 'city' and 'civilization', both of which are derived from the latin 'civis'. The tremendous influence of the classic city on the life of society has since been equaled by the mediaeval city republics in Italy (Venice, Florence, Genoa) and Germany (the Hansatowns and free imperial cities)."

123 Breese (1966:41)
124 Redfield & Singer (1954:71)
action.\textsuperscript{125} He also distinguishes a "magnet" aspect of the city, but for a great part of urban history he finds the functions of the container more important: "... for the city was primarily a storehouse, a conservator and accumulator. It was by its command of these functions that the city served its ultimate function, that of transformer."\textsuperscript{126}

Redfield and Singer distinguish two types of cities in their discussion of the cultural role of cities. The city of \textit{orthogenetic transformation} develops a great tradition and carries "... forward into systematic and reflective dimensions an old culture." The first cities in early civilizations were of this kind. In the city of \textit{heterogenetic transformation} we find a disintegration of local cultures and the creation of "... original modes of thought that have authority beyond or in conflict with old cultures and civilizations."\textsuperscript{127} The authors further discuss the differing cultural roles of cities by speaking of a \textit{primary} and a \textit{secondary} phase of urbanization. When "... a precivilized folk society is transformed by urbanization into a peasant society and correlated urban center" it is regarded as primary urbanization because "... the peoples making up the precivilized folk more or less share a common culture which remains the matrix too for the peasant and urban cultures which develop from it in the course of urbanization."\textsuperscript{128} A secondary pattern of urbanization occurs when this society is further urbanized" ... by contact with peoples of widely different cultures from that of its own members."\textsuperscript{129} Secondary urbanization is claimed to be the rule in modern Western civilization.

\begin{itemize}
\item[]\textsuperscript{125} Mumford (1961:82)
\item[]\textsuperscript{126} Ibid., 97
\item[]\textsuperscript{127}Redfield & Singer (1954:58 f., italics removed). The first type is also called the city of moral order; the latter the city of the technical order.
\item[]\textsuperscript{128}Ibid., 60. Cf. Lampard (1965) who calls incipient urban development \textit{primordial urbanization}. Subsequent development is denoted \textit{definitive urbanization} subsumed into \textit{classic urbanization} and \textit{industrial urbanization} to cover the periods before and after A.D. 1700 respectively.
\item[]\textsuperscript{129}Redfield & Singer (1954:61)
\end{itemize}
The cultural integration occurring with the diffusion of the city way of life is accounted for by Wirth in the following manner:

Urbanization no longer denotes merely the process by which persons are attracted to a place called the city and incorporated into its system of life. It refers also to that cumulative accentuation of the characteristics distinctive of the mode of life which is associated with the growth of cities, and finally to the changes in the direction of modes of life recognized as urban which are apparent among people, wherever they may be, who have come under the spell of the influences which the city exerts by virtue of the power of its institutions and personalities operating through the means of communication and transportation. The degree to which the contemporary world may be said to be 'urban' is not fully or accurately measured by the proportion of the total population living in cities. The influences which cities exert upon the social life of man are greater than the ratio of the urban population would indicate, for the city is not only in ever larger degrees the dwelling-place and the workshop of modern man, but it is the initiating and controlling center of economic, political, and cultural life that has drawn the most remote parts of the world into its orbit and woven diverse areas, peoples, and activities into a cosmos.

It was argued above that this cultural integration is more or less completed in the industrialized countries today.

Finally, following Hoselitz, we may question whether cities always have a favorable impact on their surroundings in terms of economic growth. Hoselitz calls a city generative "... if its formation and continued existence and growth is one of the factors accountable for the economic development of the region or country in which it is located." Cities exerting the opposite impact are called parasitic. Hoselitz closely follows partial economic equilibrium theory in an example concerning the regional economic impact of generative cities. Income advantages, greater in the city than in the countryside, attracted migrants; the labor force that grew up as the population increased, made the establishment of industry attractive. He continues:

130 Wirth (1938:5, italics added)
131 Ibid., 2
132 Hoselitz (1955 b:279)
This in turn exerted a favorable influence upon the potentialities of economic development of the wider countryside in which the raw materials for the industries, which had developed in the cities, were produced. It also created increased demand for food, and in some instances, export crops. The net result was the gradual improvement of economic conditions in the countryside and the widening of economic development over an increasing area affecting a growing proportion of the population outside the city.133

Hoselitz exemplifies parasitic cities with the establishments of colonial capitals.

It is granted that the new techniques introduced by the colonizing power, the increase of trade and commerce carried on by the Europeans, did result in economic growth within the city itself and its immediate environs. But the advantages accruing from this kind of urban growth to the wider region in which such a city was located were counterbalanced by an excessive depletion of natural resources, and the exploitation of peasants and other primary producers. This had the consequence that often stagnation and economic decline rather than economic growth of the region as a whole ensued.134

The Operationalization of the Urban Concept

To make the urban concept operational for statistical purposes, the geographic extension of urban communities has to be delimited. In operational terms, an urban unit is defined either on a basis of intrinsic properties of the unit itself, or from a legal (political) point of view. In the first case the geographic extension of the urban unit coincides with an area delimited in accordance with established criteria, e.g. various population size and density requirements, urban characteristics (as defined above), and the predominant economic activity (non-agricultural

133 Ibid., 281 f. Cf., e.g., Hicks' (1959:162-166) discussion of interregional equalization. Such positive economic influences from an urban center is called spread effects by Myrdal (1957:31 f.) and trickling-down effects by Hirschman (1958:187 ff.).

134 Hoselitz (1955 b:280). In Myrdal's (1957:27 f.) terminology a parasitic city causes backwash effects; the same phenomenon is called polarization effects by Hirschman (1958:187 ff.).
pursuits). In the second case the geographic extension of the urban unit is defined by the border of an administrative area (e.g. a local government area).\textsuperscript{135}

It should be noted that the \textit{rural} population is seldom defined specifically. The rural population is usually regarded as the residual of the urban (i.e., the "rest of the country"). In most countries the rural-urban distinction is therefore based on a definition of the urban population only.\textsuperscript{136}

All over the world a great variety of definitions are used to delimit urban places. However, for purposes of international comparison a uniform definition of urban places is required. The United Nations called attention at an early stage to the variety of criteria that prevailed and to the resulting lack of commensurable statistics. The frequent use of an urban-rural classification based on the administrative sub-divisions of the various countries is a case in point. This practice hampers international comparisons, since each country has a specific administrative and institutional organization - generally with a unique historical background. Furthermore, when an administrative border is used operationally as a demarcation line between urban and rural settlement, the continuous built-up area and the administrative area do not necessarily coincide. In most instances, therefore, the urban place is either \textit{overbounded}, which means that part of the delimited area is in fact rural country, or \textit{underbounded}, in that the continuous built-up area extends beyond the administrative border with the result that the urban population reported is too small. Countries often allow a combination of criteria to be applied, and sometimes an area is designated urban if it meets any one or two of the requirements dis-

\footnotesize\textsuperscript{135} These main categories of criteria are identified by the United Nations' \textit{Handbook of Population Census Methods} (United Nations, 1959:60 ff.). For a very detailed treatment of the delimitation of urban boundaries in various countries, see Linge (1965).

\footnotesize\textsuperscript{136} United Nations (1959:60 f.)
cussed above. Hence, several types of urban units may be
distinguished within a single country.\footnote{137}

To get round these difficulties the United Nations has
recommended a delimitation of \textit{localities}; countries are
to report their rural-urban distinction on a basis of
\textit{locality statistics}.\footnote{138} According to the United Nations' \textit{Handbook of Population Census Methods} it is recommended
for census purposes that

\begin{quote}
... a 'locality' be defined as a distinct and indivisible
population cluster (also designated as agglomeration,
inhabited place, populated centre, settlement, etc.) of
any size, having a name or a locally recognized status
and functioning as an integrated social entity. This de-
finite embraces population clusters of all sizes, with
or without legal status, including fishing hamlets,
mining camps, ranches, farms, market towns, communes,
villages, towns, cities and many others. Localities as
defined above should not be confused with the smallest
administrative divisions of a country. In some cases,
the two may coincide. In others, however, even the
smallest administrative division may contain two or more
localities. On the other hand, some large cities or
towns may contain two or more administrative divisions,
which should be considered only segments of a single
locality rather than separate localities.\footnote{139}

This is further qualified in \textit{Principles and Recommendations for the 1970 Population Censuses}: a locality "... should be defined as a distinct population cluster ... of
which the inhabitants live in neighbouring buildings
..."\footnote{140} The possible distance and density criteria in-

\footnote{137}\textit{Ibid.}, 61 ff. An invaluable source for the analysis of
urban data throughout the world is Davis (1969). This
book provides data on urban development in the world
1950 - 1970 by country, with a view to achieving inter-
national comparability. Davis classifies the world's
countries in nine categories with respect to their urban
definitions in 1950 and 1960.

\footnote{138}"Because of national differences in the characteristics
which distinguish urban from rural areas, the distinction
between urban and rural population is not yet amenable to
a single definition which would be applicable to all
countries. For this reason, each country should decide
for itself which areas are urban and which are rural....
For national purposes as well as for international
comparability, the most appropriate unit of classifica-
tion is the locality ..." (United Nations, 1967:63).


\footnote{140}United Nations (1967:51)
volved are outlined in a report from a working group on censuses of population and housing within the United Nations Statistical Commission and The Economic Commission for Europe.

The population cluster may be defined as the population living in neighbouring buildings which either: ... form a continuous built-up area with a clearly recognizable street formation; (Two such areas will normally be regarded as continuous if separated by less than 200 metres ...) ... (or) constitute a group none of which is separated from its nearest neighbour by more than 200 metres and which comprises at least ten housing units or is inhabited by at least 50 people ... the figures are inserted as a guide and may be varied according to national conditions and practices and even in different parts of one country.\(^1\)

The Swedish census already reports locality statistics of this kind; it recognizes as a locality (tätort) any agglomeration with a population of 200 or more, if the distance between the houses does not normally exceed 200 meters. These criteria were accepted as a common Nordic definition in the 1960 census, and have been employed ever since. In this study the terms urban and rural are used with reference to these locality statistics. Each locality is regarded as an urban unit. The entire population living in localities designates the urban population; the residual - the people in sparsely populated areas (glesbygd) - make up the rural population. No other distinction between urban and rural is presently drawn in Sweden.

The terms city, town, urban place, agglomeration, place, and locality are employed in this study. The first two terms are used in a legal or political connotation; the others are regarded as synonyms and used interchangeably to denote any urban unit. A detailed discussion of the delimitation of urban places and the development of urban statistics in Sweden follows in Chapter 3.

\(^1\) Statistical Commission and Economic Commission for Europe (1959:3 f.)
Conclusions

The review of the urban concept in this chapter reveals three basic, although not mutually exclusive, approaches to the definition and study of the urban population and of urban communities.

1. The social and cultural approach, which puts the main emphasis on cultural traits, habits and attitudes, value systems, personality aspects, social roles, and other social characteristics.

2. The industrial approach, putting the main emphasis on the mode of work (the industrial structure of society - an economy predominantly based on non-agricultural pursuits).

3. The density of habitation approach, putting the main emphasis on the mode of habitation. The size and density of populations, as well as morphological aspects of built-up areas, are considered here. The concept of place, perceived as an agglomerated settlement of population (i.e. a locus of collective residence in closely juxtaposed dwellings), is fundamental here.

This study of the literature suggests that the third of these approaches is paramount: the sine qua non of an urban population that we sought at the beginning of this chapter proves to be the density of habitation - the agglomerated settlement of population. Current Swedish urban statistics reflect the density-of-habitation approach only, and the rural-urban distinction is thus reduced to the single question of whether communities are densely or sparsely habitated. As for the first two approaches, it seems reasonable to assume that, for the period of this study (1960-1970), neither of them would make any distinction between rural and urban in Sweden. In both these respects
Sweden is fully urbanized. This statement is borne out by the following facts:

Technological improvements in the transfer of goods, people, and messages was held above to be mainly responsible for an increase in social interaction and a blurring of the distinctions between urban and rural. Already in his study of the late 1950s Swedner predicted, in a reference to the increase in car ownership and the spread of television sets, that any major differences in habits and attitudes between rural and urban areas were going to diminish rapidly in Sweden. No study has yet tested this supposition, but the following figures for the 1960 - 1970 period certainly support Swedner's argument.

The 1970 census reported a total Swedish population of some 8,077,000 people, an urban population (i.e. living in localities as defined above) of about 6,574,000 people (81.4 per cent of the total population), and some 3,050,000 households. About 54 per cent of the households had a car in 1970, as compared to 36 per cent in 1960. In 1970, 83 per cent of the households were located in urban places. These households had relatively fewer cars than households in rural areas. In the former category 53 per cent of the households had a car; in the latter 58 per cent. The number of passenger cars almost doubled between 1960 and 1970, from about 1,193,900 to about 2,287,700. In 1960 Sweden had 159 cars per thousand inhabitants; ten years later this figure had increased to 283. Television was introduced in the late 1950s. This new medium spread fast and the number of licenses increased by 143 per cent during

\[142\text{ We may argue, however, that this view is valid only as long as the scales of measurement discussed in this chapter are employed. More sophisticated measurements with more refined scales, adjusted to the present living conditions, would probably still distinguish differences between rural and urban in Sweden.}

\[143\text{ Swedner (1960:330 ff.)}

the decade, reaching 2,513,000 by 1970. This is equivalent to an increase of 138 to 310 licenses per thousand inhabitants.

As regards the industrial approach, we can turn to Table 2.1 which shows the working population of Sweden in 1970, by certain groups of industries, according to place of residence and place of work.

**Table 2.1. Economically active population in 1970 by place of residence and place of work**

<table>
<thead>
<tr>
<th>Place of residence (night-time population)</th>
<th>Place of work (day-time population)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban</strong></td>
<td><strong>Rural</strong></td>
</tr>
<tr>
<td>A: Economically active population 1970*</td>
<td>2,837,197</td>
</tr>
<tr>
<td></td>
<td>575,471</td>
</tr>
<tr>
<td>B: Economically active population 1970 in agriculture, forestry and fishing</td>
<td>55,573</td>
</tr>
<tr>
<td>C: A minus B &quot;urban industries&quot;</td>
<td>2,781,624</td>
</tr>
<tr>
<td></td>
<td>354,539</td>
</tr>
<tr>
<td>Unspecified**</td>
<td>2,861,627</td>
</tr>
<tr>
<td></td>
<td>191,696</td>
</tr>
<tr>
<td>Total economically active population 1970</td>
<td>3,412,668</td>
</tr>
<tr>
<td></td>
<td>90,063</td>
</tr>
</tbody>
</table>

* Persons who worked at least 20 hours during the census week.

**Place of work not specified (abroad, at sea, varying, or unknown).

*Source: FoB (1970-VIII), table C.*

Statistisk årsbok för Sverige 1962, table 370.
Statistisk årsbok för Sverige 1975, table 379.

For a discussion of the reliability of the figures for the economically active population in the 1970 census, see Chapter 3.
Roughly eight per cent of the total working population was engaged in agriculture, forestry, and fishing. A quarter (25.2 per cent) of the population employed in this sector lived in urban places. Agriculture alone engaged only 6.4 per cent of the economically active population.\(^{147}\) The table further indicates commuting from urban places to rural areas by people employed in agriculture, forestry, and fishing (and from rural areas to urban places by people engaged in urban industries). Of the working population with a place of work in rural areas, 45 per cent were employed in urban industries. Sweden had a substantial rural non-farm population. Only 38.4 per cent of the economically active population living in rural areas were engaged in agriculture, forestry, and fishing (agriculture alone gives the figure 32.2 per cent).\(^{148}\) Hence, almost 62 per cent of the working population with a rural residence was employed in urban industries.

This is confirmed by Figure 2.1 a and b. Here Sweden is divided into 70 statistical regions (A-regions, see Chapter 5 for definition). Figure 2.1 a shows the percentage of the economically active population living in rural areas. Less than a third of the regions have a percentage below the national average (16.9 per cent). These are notably the three big-city regions (Stockholm, Göteborg and Malmö), the majority of regions in the eastern half of central Sweden, and two regions in the extreme North. Even though more than two thirds of the regions have a percentage above the national average (and almost a third have a percentage above 30), Figure 2.1 b clearly indicates the predominant engagement in urban industries. This map shows the rural non-farm population, measured as the economically active population living in rural areas engaged in activities other than agriculture, forestry, and fishing. The picture is striking: in all regions except three more than 50 per cent of the working population was engaged in non-agricultural activities. We may also note that, with one exception, all

\(^{147}\) FoB (1970-V), table A.

\(^{148}\) Ibid.
Figure 2.1 a. Economically active population resident in rural areas. Number of persons 1970 and percentage of total economically active population, by A-regions.


Figure 2.1 b. Economically active population resident in rural areas. Number of persons 1970 and percentage rural non-farm population (engagement in other activities than agriculture, forestry, and fishing).

the regions in northern Sweden had a rural non-farm ratio above the national average (61.6 per cent).

The 1970 census recognized 1,774 localities. Although most of these were small (65.5 per cent had a population below 1,000 inhabitants and 42.5 per cent below 500), it could be maintained that Sweden has no agricultural villages. A simple investigation of the industrial structure of the localities reveals that only 36 places (all except five with a population of less than 400), had more than 35 per cent of their economically active population engaged in agriculture, forestry, and fishing. Nine of these places had more than 35 per cent of their working population in forestry; by the same measure, six could be classified as fishing hamlets and three as agricultural places.\(^{149}\)

From this review of literature we can conclude that the term urbanism should be used as a common expression embracing all facets of societal life associated with urban communities; that, the distribution of a population is determined by its economic activities, and the agglomeration of human settlement is a response to the locational requirements of the new economic organization of society; that the term urbanization implies a force of integration within a population, which increases the proportion of the urban subset; urbanization must be understood as a finite process.

In the present study a demographic definition of urbanization in line with that of Tisdale has been adopted: "Urbanization is a process of population concentration. It proceeds in two ways: the multiplications of points of concentration and the increase in size of individual concentrations."\(^{150}\) Thus, operationally, urbanization is taken to mean an increase in the percentage of the total population living in urban places while urban growth refers

\(^{149}\) Only ten agglomerations had more than 50 per cent of their economically active population engaged in agriculture, forestry, and fishing. Of these, three places could be assigned to fishing alone, one to forestry, and one to agriculture (FoB 1970-V, table 4; Folk- och bostaderäkningen 1970, råtabell E2).

\(^{150}\) Tisdale (1942:311)
to the absolute increase of the urban population. Hence, given this definition, before we can speak of urbanization the urban population must be increasing faster than the population as a whole - a situation which results from two circumstances (by themselves or in combination):

(1) a net migration to urban places from rural areas and
(2) a natural population growth in urban places more rapid than that in the rural areas. Further, we may have *urban growth without urbanization* (for example, if the rural population increases at least at the same rate as that of the urban), and also *urbanization without urban growth* (for example, if the total population decreases more rapidly than the urban population).¹⁵¹ It must be noted that the population growth of an urban place is not a function of the natural population increase and the net migration from rural areas only; the net influx from other urban places is also a contributory factor.

¹⁵¹ See, e.g., Davis (1965) where the distinction between urbanization and urban growth is discussed with examples concerning developing nations.
III. THE POPULATION CENSUS
AND THE DEVELOPMENT OF
URBAN PLACE STATISTICS IN
SWEDEN

A census of population may be defined as the total
process of collecting, compiling and publishing
demographic, economic and social data pertaining, at
a specified time or times, to all persons in a country
or delimited territory.... The original and perhaps
fundamental purpose of the census is to provide the
facts essential as a basis for governmental policy and
administration.... In addition to specific administra­
tive uses, the population census provides indispensable
data for scientific analysis and appraisal of the com­
position, distribution and growth of the population.¹

The term census has been borrowed from the Roman
institution whereby the registration of male adults and
their property was required for taxation and military pur­
poses, together with the determination of each man's
political status. The first modern censuses consistent
with the definition quoted above were various counts made
at a relatively early date in Sweden, Canada, and the
United States, e.g. in Virginia 1624 - 1625 and 1634 -
1635, in New France 1665, and in Quebec 1754; Sweden claims
its first census in 1749.²

¹United Nations (1958 a:3 f.). Unless otherwise stated the
terms census and census of population (or population
census) are used interchangeably in this study.
²Willcox (1930)
The State of the Population

Sweden possesses a unique series of population statistics.\(^3\) From an early stage the maintenance of population registers was of paramount interest to the ecclesiastical and the civil communities. The clerical authorities needed records for parish management, while the civil community used them for taxation purposes and military drafting. The embryo of population statistics in Sweden can be found in connection with the beginnings of individual taxation. One example is an estimate of the Swedish population based on tax registers dated 1571. The maintenance of population registers in parishes became customary during the 17th century. The oldest Swedish parish register still in existence dates from 1608. The practice of keeping registers was institutionalized by law in 1686. Each pastor was instructed to keep a list of his parish members and to maintain *vital records*, i.e. registers of births, deaths and marriages as well as in- and out-migration.

Suggestions for the establishment of a national population count based on the parish records led to a Royal decree in 1748, requiring tabular compilations of the parish registers. Each parish was to prepare three tables, two for births and deaths and a third for the whole population. National totals were obtained from summaries of these tables. Inasmuch as the third table was a measure of the *state* of the population, the first census of population was in fact taken in 1749. Since then Sweden has an unbroken series of population statistics, both *vital records* and the *state* of the population. Until the mid 1760s it was the practice, in the national interest, to keep the total Swedish population figure secret.

Originally, the state of the population was to be measured every year. But the laborious compilation of the third table aroused opposition among the clergy, who forced

\(^3\)This section is based on: Wicksell (1922), Arosenius (1928), SOU (1938-XLI), SCB (1949), Lublin (1952), Högb erg (1953), Widstam (1955), SCB (1955), FoB (1960), FoB (1970-IV), FoB (1970-XII).
through a revision of the census program. Annual censuses were only taken three times. After that the census was taken every third year until 1775, and from then until 1860 it was taken quinquennially. In 1860 the production of population statistics was reorganized with the establishment of the Central Bureau of Statistics. Belgium provided the model for the new official Swedish statistics. From 1860 until 1930 the inter-censal period was 10 years. Since 1930 the census has again been taken every fifth year (except for 1955 when the population census was cancelled).

Prior to 1860 the main source of the census of population was the compilation of the parish records. After the establishment of the Central Bureau of Statistics these tables were replaced by extracts from the parish registers sent direct to the Bureau. The new procedure guaranteed uniform treatment of the material. Since 1950 the major source of the census has been a copy of the annual national register (mantalslängd). Prior to 1967 this register was drawn up annually by the local authorities for taxation purposes. Each household supplied statements on their real estate property and household members (mantalsskrivning). Since 1967 this registration has been conducted without the participation of the households.

It can be seen from the above account that the Swedish population census has always recorded the resident (de jure) population. The 1970 census and its two immediate predecessors relate to the situation on November 1; the earlier censuses refer to conditions at the end of the census year.

Since 1960 the census of population has been coordinated with the census of housing. Over the years the scope of the census has been extended and elaborated to meet a

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4 The de jure population of a given area consists of the people who habitually live in that area. Cf. the de facto population (the actual population, enumerated population or present-in-area population) which is the population present in the area on the census day i.e. permanent residents (temporary absentees included) together with visitors or transients (United Nations, 1958 b:18).
continually expanding demand. With the computer and the introduction of questionnaire surveys, the census has gained recognition as a comprehensive record of the state of the population and the complexity of its daily life, representing a record of great importance for both scientific and planning purposes.

The Urban Population

In Chapter 2 it was argued that the term urban has taken on numerous meanings, ranging from a "way of life" to strictly applied rules about the continuity of built-up areas. To make this concept operational for statistical purposes, it is necessary to determine the areal extent of urban communities. Thus, for both scientific and planning purposes, a principal issue has been the development of operational methods for defining and delimiting urban place boundaries.

In this section the discussion in Chapter 2 on urban population and urban place definitions is followed by an account of: (1) how these definitions are operationalized in the case of Sweden, and (2) the development of urban place statistics in Sweden.

ADMINISTRATIVE URBAN PLACES

The early Swedish censuses made no distinction between urban and rural settlement. For more than a hundred years, from 1800 onwards, urban population data were reported exclusively for agglomerations that had been granted municipal status i.e. communities with local governments. These administrative urban places were: städer (towns), köpingar, and municipalsamhällen.\(^5\) The first urban data

\(^5\)The basic administrative unit at the local level in Sweden is the kommun (municipality, commune or local government; in this study referred to as a municipality).

(continues)
The principle of self-government is fundamental to the administrative structure in Sweden and a large amount of responsibility is placed in the hands of the municipality (which is governed by an elected municipal council). This form of self-government is the same throughout the country regardless of whether the areas are urban or rural in character.

These local governments were established by the first Municipality Act of 1862 and were based on the parishes. Their ecclesiastical and civil administrative duties were separated (although still performed for the same geographical area). Up to 1952 Sweden had some 2,500 municipalities, but there then followed two local government reforms. Through amalgamations, the number of municipalities was reduced to about one thousand in 1952 and to 278 by 1974. These reforms were thought necessary to create financially strong municipalities in response to increasing social responsibilities and interregional population changes. The aim of the border adjustments was the establishment of adequate population thresholds for public services. Most of the activities carried out in the municipality are delegated from the central government (e.g. social welfare, education, planning etc.). Sports and recreational facilities, libraries, theaters, and public transport exemplify matters supported optionally. To cover the costs of all these activities the municipality levies taxes primarily on personal income but also on real estate; considerable grants-in-aid from the state budget are received as well. A measure of equity between rich and poor municipalities is achieved by means of transfers via the state budget.

Stad (town). Towns in Sweden for a long time had an exceptional position. In law and in practice a clear distinction was made between towns and rural areas. Before the liberal trade laws were enacted in 1846 (partially) and in 1864 (completely), towns held exclusive rights to middleman trading and certain crafts. This was encouraged by the Government in a policy to support the rising "urban industries" by a concentration of outlets. With the liberalization of trade, towns lost their position as trade monopolists, although they retained their status as municipal units; from 1862 each town formed a municipality. Due to the density of habitation, by-laws concerning public health, building regulations, public order, and fire regulations applied. For example, towns had public prosecution authorities and tax charge departments of their own, and they formed special road districts.

Köping. The rigorous trade laws prevailing until the middle of the last century, and the long distances between towns, created a need for complementary trading places to restrict the widespread but unlawful trading outside towns. (Middleman trading in rural areas was never altogether stopped. With reference to the 16th century, Heckscher (1935:34 f.) claims that trade and crafts probably flourished more outside the towns than within them.) Like the towns the köping was granted the rights to commerce. Later, each köping also formed a municipa-
available concerned the population of the Swedish towns in the year 1800, followed later by records on köpingar; population statistics regarding municipalsamhällen are available from 1899 onwards. Although population statistics for settlements without municipal status (the non-administrative urban places) were introduced as early as 1890, the same delimitation principles did not apply to administrative and non-administrative urban places until 1950. Up to that time the administrative urban places were delimited according to existing administrative boundaries, and the records thus reported the population in each urban local government (administrative, incorporated) area. The local authority borders were used operationally as the demarcation line between urban and rural settlement. No attention was paid to existing rural areas within the legal borders, or to contiguous built-up areas outside it. Consequently the dense and continuous built-up area and the administrative area did not necessarily coincide in these urban places. The significance of this will be discussed further below.

In the case of agglomerations without municipal status, there were no legal boundaries along which the limits could be set; their demarcation was a matter of determining the geographic extension of built-up areas that actually

(footnote 5, cont.)

lity. The town by-laws applied, but in other respects a köping municipality was administratively organized as a rural municipality. 

Municipalsamhälle. From 1900 an agglomeration within a rural municipality could form a municipalsamhälle when the density of habitation made it necessary for some, or all, of the town by-laws to be applied. A municipalsamhälle was part of a rural municipality; it had only partial self-government and levied only a small income tax.

From 1971 the town, köping, and municipalsamhälle institutions were abolished. This footnote is based on Heckscher (1923, 1935), J. Olsson (1935), Nothin (1922), Planning Sweden (1973), Schalling (1944), and SFS (1969). 

6Widell (1906)
7Söderberg (1902), Arosenius (1903)
claimed to possess urban characteristics.\textsuperscript{8} The development of statistics for non-administrative urban places therefore gradually cleared the way for the delimitation principles introduced in 1950, where the city and the small agglomeration were treated alike for the first time. Before discussing this development, we can look at three early studies which consider the areal extent of urban boundaries in individual places.

In a study of 13 cities on the Baltic, published in 1912, De Geer delimited the urban boundaries by distinguishing and mapping the continuous residential built-up areas, allowing for interspersed non-residential areas such as marshalling yards, industrial sites, and harbor areas.\textsuperscript{9} In Borlänge Granlund found that the area with urban characteristics far exceeded the local authority area of the town (see further below).\textsuperscript{10} In a study of Gävle, De Geer mapped both a detailed and a generalized urban boundary, the first closely following the built-up area and the latter including related areas separated by narrow rural strips.\textsuperscript{11}

Obviously it is possible to assess the extension of urban communities from detailed maps that recognize variations in population density.\textsuperscript{12} However, with reference to Viktorin's population map of Stockholm (1910), De Geer suggested that this approach did not allow for the establishment of a distinct demarcation line between urban and rural areas.\textsuperscript{13} The early geographic urban studies were comprehensive descriptions of individual places, comprising

\textsuperscript{8}The expressions urban characteristics and urban type built-up area (introduced below) are used synonymously to denote a densely built-up area with properties such as a recognizable street formation, contiguously aligned buildings etc. Cf. United Nations (1959:61).

\textsuperscript{9}De Geer (1912)

\textsuperscript{10}Granlund (1916)

\textsuperscript{11}De Geer (1924)

\textsuperscript{12}For examples regarding Stockholm, see e.g., Ahlmann et al. (1934), William-Olsson (1937, 1961). Walldén (1953) has mapped the population in 1900, 1910, 1940, and 1945, as well as houses by year of construction from 1870 to 1944, in the suburbs of Solna and Sundbyberg.

\textsuperscript{13}Viktorin (1910), De Geer (1912:42 ff.).
both economic, social and morphological aspects. With varying degrees of sophistication these studies described the areal extension of the continuous built-up area of an urban place; most studies also contained detailed population maps as discussed above.\textsuperscript{14}

NON-ADMINISTRATIVE URBAN PLACES

Before 1920

Urban places without municipal status remained unrecognized in the census until 1890, when population figures for non-administrative urban places were reported for the first time. A morphological aspect was introduced, in that localities with an urban type built-up area and a population of 100 inhabitants or more were distinguished. The material, however, was too incomplete to be included in the census report.\textsuperscript{15} In connection with both the 1900 and the 1910 censuses, population figures were prepared for some non-administrative places that possessed urban characteristics,\textsuperscript{16} but again the material was incomplete.\textsuperscript{17}

The need for satisfactory urban statistics was pointed out by Heckscher in his study of the impact of the railway on the Swedish economy.\textsuperscript{18} The author cites Meuriot's discussion of criteria for distinguishing between urban and rural populations.\textsuperscript{19} Meuriot argues that since the growth of the small agglomerations is negligible, it does

\textsuperscript{14}Three extensive studies are Ahlmann et al. (1934) and William-Olsson (1937) on Stockholm; Weiler (1936) on Jönköping. See also e.g. Holm (1924) and Ekstrand (1925) on Göteborg, Mauritzon (1925) on Höganas, Weiler (1926) on Huskvarna, De Geer (1928) on Visby, Johansson (1932) on Kungälv, Pettersson (1932) on Boliden, Hallonsten (1934) on Trelleborg, Rydberg (1934) on Karlskrona, Tengstrand (1934) on Alingsås, and Lundström (1934) on Karlskrona.

\textsuperscript{15}Arosenius (1903:101)

\textsuperscript{16}Arosenius (1903, 1911). Included were agglomerations with a population of at least 1,000 inhabitants "and several others which, because of their location or for other reasons, could be of general interest" Arosenius (1903:105, my translation).

\textsuperscript{17}Fo (1920-II:6), Overton (1937:147)

\textsuperscript{18}Heckscher (1907)

\textsuperscript{19}Meuriot (1898)
not matter which category they are placed in. Heckscher did not accept this view. He maintained that the attribution in itself was not so important, but the existence and development of the small agglomerations was certainly of great importance, and he emphasized that the study of these matters should be given priority in Sweden.\textsuperscript{20} Due to gaps in the available population statistics, he was unable to obtain population figures for several small localities of interest to his study.\textsuperscript{21}

In his study on towns and other localities in Sweden with urban characteristics, Nelson made the first extensive contribution in this country to the theoretical discussion on the delimitation of the urban population.\textsuperscript{22} As determinants of urban places he suggested: population size and density, urban characteristics and the industrial structure of the locality (employment predominantly in non-agricultural activities). However, since the study was confined to the location of the urban places only, Nelson made no effort himself to make these criteria operational. Instead he relied on the available statistics. Nevertheless the delimitation of urban places in the 1920 census and in the four subsequent censuses (to be discussed below) makes use of the concepts developed by Nelson.\textsuperscript{24}

Twenty-eight years after the publication of Nelson's study, Frödin raised a strong objection to the suggested urban place definition, claiming that it provided no basis for a universal comparison of urban units.\textsuperscript{25} A major point in his criticism concerned the role of agriculture in the economy of urban places and the prevalence of specific urban industries. Firstly, Nelson's industrial structure criterion did not accord with agricultural activities as observed in Swedish towns before 1850. Virtually no towns at that time would have been urban places in Nelson's

\textsuperscript{20} Heckscher (1907:54)

\textsuperscript{21} Ibid., 54 ff., 163 ff.

\textsuperscript{22} Nelson (1918:1-10)

\textsuperscript{23} For agglomerations without municipal status, notably Arosenius (1911)

\textsuperscript{24} See Fo (1920-II:4)

\textsuperscript{25} Frödin (1946)
terms, since their economies were based mainly on agricultural production. Many towns were not only self-sufficient in agricultural products, they even had an overcapacity allowing them to export to the surrounding agricultural population.26

Secondly, Frödin questioned the exclusion from the urban place concept of those small agglomerations in present-day Sweden which have agriculture as their main source of income. Thirdly, Nelson's criterion was not in concordance with the presence of large agricultural agglomerations with an urban type built-up area such as those to be found in Central and Southern Europe, in Northern Africa and in Southern Sudan for example. Frödin thus linked his urban place criteria to morphological aspects, size, and density only, and ignored the industrial structure of urban places.

In reply Nelson questioned whether it is in fact possible to formulate an urban place definition that is universal in time and space.27 The suggested definition pertained to what was considered relevant to Sweden at the time, and it did in fact have sufficient merit to be applied in the censuses up to 1945. Nelson had also shown that he was not unaware of the dominant role of agriculture in the Swedish towns prior to 1850.28

The first operational delimitation of urban settlement in Sweden appeared with the innovative population map of Sweden by De Geer, published in 1919.29 This carefully prepared map did not purport to demarcate urban areas, as did the author's study of 13 cities on the Baltic.30 That the map is operational in this respect is incidental to the method used for mapping the population distribution in Sweden.

De Geer used the parish population statistics from 1917 and a mapping technique in which the spatial distribution

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26 Cf. also, e.g., Heckscher (1923:343 f.) and Herlitz (1924:33-37, 197-211).
27 Nelson (1947:144 f.)
28 Nelson (1928:7)
29 De Geer (1919)
30 De Geer (1912)
of the population was symbolized by dots.\footnote{De Geer (1919:17-44). For a comprehensive English version of this text see De Geer (1922a).} The parish population aggregates were broken down into groups of 100 people, each group represented by a dot. With the use of detailed physical maps the dots were allocated according to the location of the dwellings. A condensation of dots disclosed agglomerated settlement. As the density of the dots increased it became necessary to arrange them in matrix patterns. De Geer did this with agglomerations up to about 5,000 inhabitants; above this figure proportionate spheres were substituted for the dots. Although De Geer had earlier given 1,000 inhabitants as a lower limit for urban places in the Scandinavian countries, he acknowledged the presence of smaller agglomerations. A cluster of three to four dots, i.e. 300 to 400 inhabitants, could easily be separated from the rural population. De Geer generalized his findings by distinguishing four degrees of population density in Sweden: uninhabited areas, scattered habitation, semi-densely populated areas and densely populated areas.\footnote{De Geer (1919:45-55)}

De Geer first applied his mapping technique to a map of Gotland,\footnote{De Geer (1908). In this case each dot denoted ten people. De Geer (1919:5) mentions five regional population maps based on this method and published prior to the population map of Sweden: Johansson (1911), Sjögren (1913), Swedberg (1913), Sahlström (1915), and Norlindh (1917). An early map on which the same principle is used is that of Kihlman (1897-99), see Stolpe (1908:413). This footnote is based on Claeson (1964:6, 128 ff.) and De Geer (1919).} a study which had been preceded by his map of the same area in 1906. On that map he had worked out an early model for the co-ordinate system map of the population distribution – a system reintroduced by Arpi, Claeson, Godlund and Hedbom.\footnote{See Claeson (1963). One application on the county of Kronoberg is found in Claeson (1964).}
Apparently De Geer's map was not used extensively by the census authorities in 1920; it is only mentioned in a footnote in the census report. Later, however, the map became the foundation of subsequent Swedish population maps.

The 1920 census

The first census in which an attempt was made to delimit urban places without municipal status systematically and comprehensively appeared in 1920. No less than 805 non-administrative urban places were observed. Included were agglomerations with at least 250 inhabitants, a predominance of non-agricultural occupations, and a built-up area with urban characteristics (cf. Nelson above). The delimitation was carried out by the Central Bureau of Statistics (the Central Bureau) with the use of parish population records and physical maps. Little field-work was done and the boundaries were mostly established without recourse to first-hand local knowledge. Due to uncertainty, the population figure for each urban place was rounded off and given to the nearest 50. Thus the reliability of the data was questionable and its comparability with subsequent censuses limited.

The 1930—1945 period

The unreliable nature of the population figures for non-administrative urban places in the 1920 census contrasts with the 1930 figures, which marked the beginning of improved census procedures. The reliability of the population figures increased gradually in each census after 1930. The delimitation criteria were the same from 1930 through 1945.

References:
35 Fo (1920-II:6)
37 Fo (1920-II)
38 See Overton (1937) for a critical appraisal of the material.
Apart from two alterations, the criteria were also basically the same as in the 1920 census. The lower population limit was set at 200 and the maximum population allowed in agriculture was specified at 40 per cent of the total population. Accordingly, agglomerations larger than 200 people where the non-agricultural population accounted for less than 60 per cent were excluded from the census report. To assure first-hand local information, the delimitation procedure was decentralized; the clergy, with instructions from the Central Bureau, were asked to demarcate the urban place boundaries in their own parishes. To the greatest possible extent the Central Bureau wished to establish uniformity in the material thus received. A regular correspondence was therefore maintained with the various pastors and the material was checked against physical maps and scrutinized in frequent consultation with the chief land surveyors. The population threshold for urban places has been 200 inhabitants ever since. This is a low figure in comparison with most other countries, but it has proved useful in a sparsely populated country like Sweden.

39 Fo (1930-I), Fo (1935/36-I), Fo (1940-I), Fo (1945-I). For an evaluation of the delimitation of non-administrative urban places in the 1930 and 1935 censuses, see Overton's detailed study of the province of Skåne (Overton, 1937). The author questioned the comparability between the two censuses of the population figures for individual urban places. To overcome irregularities found in the delimitation of urban places between censuses, and to ensure continuity, Overton (1937:160 f.) suggested that the Central Bureau should list the real estate comprising each urban place. The Central Bureau seems to have followed this recommendation, since lists of this kind referring to 1940 were prepared and submitted to the parishes to facilitate the delimitation of urban places in the 1945 census (Fo, 1945-I:33). However, Ahlberg (1953:312) points out that the questionable comparability of urban data between the censuses could be partly explained by the fact that each census improved the completeness and the accuracy of the data. The summed population of the reported urban places thus reflected the actual urban population of Sweden with increasing accuracy. This was indicated by the fact that each census recognized several new urban places (i.e. places not previously reported), some of which were so large that they ought to have been included in a preceding census.
In his work on a population forecast for Stockholm, William-Olsson needed figures giving the total urban population in Sweden before 1920.\textsuperscript{40} Since the available material was mainly connected with administrative areas, and the non-administrative urban places reported did not have reliable population figures, William-Olsson developed a method for assessing the urban population in Sweden back to 1880. Population figures for municipalities were plotted over time at ten-year intervals on the abscissa.\textsuperscript{41} The population-development curve thus obtained was compared with the typical development in purely rural neighboring municipalities. If the graph deviated in relation to this development by a pronounced positive kink due to an increased rate of growth, William-Olsson inferred the development of an urban place (or places). The graph was completed with the population figures for the urban places reported in the 1910-1935 censuses and, in the comparison with the expected development curve for a purely rural community, the lag between the curves constituted the urban population.\textsuperscript{42}

The curve typical of a purely rural community in southern and middle Sweden was slightly bow-shaped and showed a population that doubled itself between 1810 and 1870-1880 and which then tapered off to return to much the same figure in 1935 as it had initially shown in 1810. In northern Sweden the rural curve deviated markedly from this progression; the rural population increased throughout the investigated period. This is explained by the colonization (traditionally encouraged by the Government and still in progress in the 1930s) and by a high natural population increase.\textsuperscript{43} For the coastal areas and the

\textsuperscript{40} William-Olsson (1938, 1941)

\textsuperscript{41} Sweden counted 2,524 municipalities in 1938 (out of which 165 were towns), a fact indicating the arduous work behind this material (Årsbok för Sveriges kommuner 1938, p. 1).

\textsuperscript{42} A similar approach is found in Ahlberg (1953:160 ff.), used for the establishment of comparable city areas 1910-1950.

\textsuperscript{43} See, e.g., Bylund (1966).
middle and southern parts of this region a typical curve of a purely rural community showed a steady increase that levelled around 1920; for the far North the curve had a steep progression with no sign of saturation at the end of the investigated period.

If a municipality had no urban places reported in the censuses but did have a graph indicating an urban development, the increased population growth had to be explained by other factors. The author suggested such factors as water regulation schemes or colonization, both of which enlarge the area of arable land. When municipalities had more than one locality, it was impossible to establish population figures for individual urban places back to 1880. But the total urban population could be calculated. For Sweden as a whole this figure was 879,000 in 1880, or 19.3 per cent of the total population. The method was first introduced by William-Olsson in a delimitation of the greater Stockholm area.

The 1950 census

The delimitation criteria were changed again at the 1950 census. No distinction was made between administrative and non-administrative urban places. Any agglomeration with a population of 200 inhabitants or more, irrespective of its legal status and regardless of its industrial struc-

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44 Cf. Jonasson (1949) who made an assessment of the population in individual non-administrative urban places for the year 1865 in the north and west of Svealand. The material was assembled from various sources, notably: published material in encyclopedias (e.g. the trade directory), parish records, and physical maps etc. Due to the uncertainty of the material it was published in even 200s (Jonasson, 1949:250 ff.).

45 William-Olsson (1938:253 f.)

46 Other delimitations of greater Stockholm were made by, e.g., Söderlund (1922 a, b; 1930) who used commuting time (isochrones) and Grytzell (1951, 1963, 1969) who attempted to delimit equal population density areas for Stockholm and some large metropoles of the world in order to establish uniform population comparisons. See also, e.g., De Geer (1912, 1922 b), Ahlmann et al. (1934) and William-Olsson (1961).
ture, was recognized as an urban place. In the delimitation of the localities, the demarcation line between urban and rural settlement was drawn operationally in relation to residential building density. 47 Hence, for agglomerations with municipal status the existing administrative boundaries were ignored. Only the population in the continuous built-up areas was reported. 48 Various circumstances may have contributed to this change in the conception of the urban place. Let us examine some of them.

The practice of separating administrative and non-administrative urban places in the census made the scientific use of urban data difficult. In most administrative urban places the continuous built-up area (or areas) and the total administrative area did not coincide. Nelson pointed out the implications of letting urban place boundaries follow the continuous built-up areas rather than the total administrative boundaries. 49 Some administrative urban places were overbounded, i.e. a large part of the incorporated area was rural country, and Nelson cited the example of Västerås in 1910, 50 where the built-up area with urban characteristics covered about one fifth of the administrative area of the town but accounted for 98.5 per cent of its population (about 19,000). 51

47 FoB (1970-IV:67)
48 Fo (1950-1:31 ff.)
50 Nelson (1918:9 f.)
51 Jonasson (1949:341 and map 13) recognized the problem of overbounded urban places. In a population map of western and northern Svealand (1940) he broke down the population figures for towns to show the rural and urban populations within the urban administrative areas separately. Another example is William-Olsson (1946:16). In his classification of the Swedish urban places according to their industrial structure he found several administrative urban places having such a large rural area and agricultural population that they should in fact have been classified as "agricultural places". To obtain a basis for a classification of the continuous built-up area only, the agricultural population was excluded from the employment figures in these urban places.
Some urban places on the other hand were underbounded. An early example was Borlänge, discussed by Granlund. In 1910 the built-up area with urban characteristics in Borlänge extended over 1.8 sq.km. while the administrative town covered a mere 0.3 sq.km. The official population figure for the town of Borlänge was 1,500; Granlund found a population six times as large as this in the continuous built-up area.

In several administrative urban places the divergence between the continuous built-up area and the administrative area increased over the years, as a result of the incorporation of surrounding rural communities (after which the rural population was automatically reported as urban in the statistics).

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52 Granlund (1916)
53 The history behind this practice goes back to the 1860s. As we have seen, pre-industrial towns held exclusive rights to middleman trading and certain crafts. To facilitate the exercise of these privileges and (before 1810) the collection of town-tolls, it was necessary to have well-defined boundaries vis-à-vis the surrounding area. To get an area which would be easy to control, towns were enclosed to encompass the smallest possible area. As a result the habitation was concentrated. Agricultural production in the often large areas outside the built-up area (but within the administrative border) had to supplement incomes from trade and handicrafts. Towns were stagnating with a low population growth; the number of migrants from rural areas barely offset a natural population loss caused by high mortality rates. No need had yet arisen for areal enlargements. A fundamental change came with the rise of manufacturing industry and the enactment of the liberal trade laws. Towns began to report a rapid population growth. A need for areal expansion was evident. By 1910 the 89 towns of 1860 had grown by 210 per cent. The demand for new residential space was soon met by the incorporation of surrounding communities, in full or in part (Rosman, 1912; Larsson, 1912 a. See also Améen, 1964:7-57). By 1929 towns existing in 1880 had increased their areas by 22 per cent, the 20 largest places reporting an areal increase of 212 per cent (Silen, 1930:5 f.).

In his extensive work on the history of incorporations, Larsson (1912 b:90-234) distinguished two primary types of incorporation: (1) Incorporations of satellite residential developments. The centrifugal growth of the
The significance of the new census procedures regarding the treatment of urban places with municipal status can be exemplified by the cases of three administrative urban places: Stockholm, Askersund, and Luleå. Facts and figures relate to the 1950 census.54

Askersund. If the town had been delimited according to the pre-1950 methods, the population of the total administrative area of Askersund would have been declared urban. In 1950 the figure was 4,211 inhabitants, as against 2,065 for the urban place of Askersund delimited in accordance with the new criteria. Had the old principles been applied, Askersund would have been overbounded, since 50 per cent of the population then reported as urban was in fact rural.

(Footnote 53, cont.)

Urban places necessitated an adjustment of the administrative boundaries to the geographic extension of the continuous built-up area. In this case an area considered for incorporation was socially and economically already part of the administrative urban place. (II) Colonizing incorporations, i.e. the administrative urban places secured land for future expected growth by incorporating large rural areas. Apparently some administrative urban places acted against being underbounded by incorporating satellite residential areas. Hence, in such cases, the population figures reported in the censuses concerning administrative areas must, in the long run, have reflected the actual population in the continuous built-up areas fairly accurately. Obviously the colonizing incorporations did the opposite, by exaggerating the differences between administrative and continuous built-up areas. The increasing occurrence of this type of incorporation seems to be the reason why the census stopped reporting population figures for the administrative urban places in 1950. Between the 1945 and the 1950 censuses, about 90 municipalities largely rural in character were incorporated by towns. The administrative areas of these places increased nearly five-fold during this period. (This figure is largely explained by Kiruna in the far north. Kiruna became a town in the intercensal period with the exceptionally large administrative area or 13,181 sq.km. See Fo, 1950-I:12^x, 33^x.) See also Frödin (1948) for examples.

54Fo (1950-I), tables 1, 12. The urban population delimited with the new procedures in 1950 totalled 4,660,000. Had the old principles been employed, a further 122,000 people would have been reported as urban (ibid., 37^x).
Stockholm. The continuous built-up area defined in 1950 as the urban place of Stockholm extended into, and was part of, six administrative areas: Stockholm, Sundbyberg, Solna, Nacka, Huddinge, and Segeltorp. According to the old census principles, each of these would have been reported as an individual administrative urban place.

Luleå. According to the new delimitation principles, the administrative urban place of Luleå was split into six individual localities. The total administrative area of Luleå had a population of 22,646 people. The urban place of Luleå accounted for only 50 per cent of this population. The census recognized five additional urban places within Luleå's administrative area, which answered together for the rest of the population. What would have been reported as a single unit according to the old criteria, was accounted for by six individual agglomerations in 1950.

No industrial-structure criterion was applied in the 1950 census. Earlier delimitations had implied an emphasis on the functions of urban places. The idea of disqualifying agglomerations engaged predominantly in agriculture had its roots in the notion that urban places should be central places for the surrounding rural area. However, it was found that, although populations were predominantly engaged in agriculture, small agglomerations could be regarded as central places in sparsely populated parts of Sweden. But it seemed to be difficult to establish an operational standard for the nation in this respect, and the earlier practice of not publishing population data for agglomerations with more than 40 per cent of the population in agriculture was abandoned in 1950.

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55 Arpi (1958:89)

56 Both Enequist (1947:247) and Frödin (1946:174) had earlier argued against having this constraint in the population agglomeration statistics.
Before the 1950 census Enequist had drawn a distinction between the concepts of agglomeration and urban place, and agglomeration being any cluster of residential buildings and an urban place (tatort) an agglomeration possessing urban industries ("city functions"), in other words it was a central place. Enequist argued that whether or not an agglomeration was to be considered as an urban place should be determined by its function in its regional setting.

As we have seen in 1950 the demarcation line between urban and rural settlement was related operationally to residential building density. The 1950 census thus conformed to Enequist's agglomeration concept. She recognized

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57 Enequist (1947, 1950, 1951)

58 We may summarize the main arguments of Enequist (1947, 1950, and 1951) thus: To serve as a commercial center for the surrounding area, i.e. to be a central place, was regarded by her as the prime function of an urban unit (at least in contemporary western societies). This view was said to be corroborated by consent of most geographers. Hence, referring to Christaller and Dickinson the author considered an agglomeration to be an urban place if it was such a "central place", "zentraler Ort", "regional centre", or "service centre" (Christaller, 1938; Dickinson, 1947). Enequist inferred from empirical research that, as its population increased an agglomeration would develop urban industries and a central business district. It was found that localities with 1,000 inhabitants or more showed urban characteristics, but the beginnings of a central business district could be noted once a population reached about 500. The author therefore argued that urban places reported in the census with a population below 500 inhabitants should be excluded from the material in a manipulation of urban place data, since they were generally found to lack urban industries and could not thus be considered central places.

Enequist (1954, 1970) pursues this belief in Atlas of Sweden. In the map Types of Agglomerations and Rural Districts According to the Occupations of the Inhabitants 1950 (pp. 59-60), revised for 1960 (pp. 127-128), localities with less than 500 inhabitants were included in the rural districts. This view seems also to have been supported in the preparation of the 1950 census report, as urban places with less than 500 inhabitants were listed separately (Fo, 1950-I:35).
only two determinants of an agglomeration: size and dwelling density. This concept had been introduced by Kristoffersson in 1924 and was later used by Enequist.\textsuperscript{59}

For the description of the intermediate stages between rural and urban settlement, Kristoffersson distinguished as an agglomeration any cluster of 10 dwellings or more with a distance between dwellings not exceeding 50 meters. Following Kristoffersson and Carol, Enequist suggested that, being agglomerations, the officially delimited non-administrative urban places should meet Kristofferson's density requirement for agglomerations.\textsuperscript{60} She found several examples of urban places reported in the census which failed in this respect.\textsuperscript{61}

After carrying out further empirical investigations, Enequist extended the maximum distance between the dwellings from 50 to 70 meters.\textsuperscript{62} At the 1950 census the clergy were still responsible for delimiting urban places, with the help of written instructions from the Central Bureau. But these instructions included no density criterion. The delimitation of individual urban places was very much left to the judgement of the pastors. If anyone asked, the Central Bureau recommended 100-200 meters as a suitable maximum distance separating the houses.\textsuperscript{63} Enequist's criterion of 70 meters could not be applied, since several urban places reported in the previous census might then have been split up into smaller agglomerations. For some of these the population threshold would have been too low for inclusion in the statistics. The practice among the

\textsuperscript{59}Kristoffersson (1924:141), Enequist (1937:392 ff.)
\textsuperscript{60}Kristoffersson (1924), Carol (1946), Enequist (1947:273)
\textsuperscript{61}Enequist (1947:276 ff.)
\textsuperscript{62}Enequist (1950). Interspersed non-residential areas with a typically urban land-use (e.g. churchyards, sports grounds, marshalling yards, industrial sites etc.) were not regarded as a break in the settlement.
\textsuperscript{63}FoB (1970-IV:67)
pastors seems to have been to take 130-150 meters as a maximum distance between dwellings.\textsuperscript{64}

To help the pastors in their task, the written instructions contained not only a list of the properties constituting the urban places reported in the previous census, but also a list of what the Central Bureau considered to be possible urban places. The material received from the parishes was scrutinized for uniformity in the same manner as for the 1930-1945 censuses.\textsuperscript{65}

THE CURRENT DELIMITATION OF URBAN PLACES

Sweden currently subscribes to a common Nordic definition of localities that follows the recommendations of the United Nations. (See Chapter 2.)

According to this definition all groups of houses having at least 200 inhabitants are counted as localities as long as the distance between the houses does not normally exceed 200 meters. The distance may however be permitted to exceed 200 meters in the case of groups of houses within the sphere of influence of a major community. On the other hand the maximum distance between the houses may be put at less than 200 meters when this is called for by the character of the settlement, that is to say in small localities where no distinct centres are apparent and in cases where the boundary between locality and sparsely populated area

\textsuperscript{64} Bylund (1958). Cf. Godlund (1954:38 ff.). In his study on the function and growth of the bus traffic within the sphere of urban influence, 350 meters was used as a maximum separating distance between the buildings. (Godlund recognized any kind of building.) In the investigated areas the delimitations of the non-administrative urban places in the 1920-1945 censuses were adjusted accordingly through field studies, physical maps, source material from the censuses, parish records, and the population maps of De Geer (1919) and William-Olsson (1946).

Bergsten (1950) studied the agglomerative tendencies in Swedish settlement by using a simple distance criterion only. He studied the clusters of dwellings in six sample areas using 200 meters as the maximum distance separating houses. Cf. also Jonasson (1949:339) who suggested a lower density limit for non-administrative urban places of 300 inhabitants/sq.km.

\textsuperscript{65} Fo (1950-1:34)
is ill-defined. Areas used for public purposes such as parks, sports grounds, churchyards, wharfs, etc. are not to be regarded as a break in the settlement. The localities are demarcated irrespective of the administrative divisions.66

All sorts of buildings are considered (uninhabited houses, working places, summer cottages etc.), but only the resident (de jure) population is reported. The definition was first employed in the 1960 census and has not been altered since.

The new element in the urban place definition of 1960 was the formalized distance criterion; but the really important modification concerned the modus operandi. Compared with 1950, the delimitation of urban places in 1960 was a highly centralized procedure. The boundaries were established by one person only (the same for the whole of Sweden). The configuration of each agglomeration was depicted on the best large-scale physical maps available (notably the economic map in the scale of 1:10,000 but also air photos and other detailed physical maps). Necessary adjustments were made after consultations with various local authorities, such as the district offices of the land surveying authority and representatives of the municipalities. To establish the resident population in each urban place, the maps were sent to the municipalities where specially appointed scrutinizing bodies checked them against the annual national register (mantalslängd) and determined the size of the population resident within the depicted urban place boundaries.67

In this way the Central Bureau hoped to achieve the overall aim of the 1960 delimitation: a demarcation of urban places in accordance with uniform principles applying throughout the country. The concepts on which the current delimitation principles rest, were originally laid down in the 1950 census. The operational procedures

66FoB (1970-II:5)
67This section is based on Fo (1960-V:40-46)
were also tested at that time in the counties of Kalmar, Västmanland, and Norrbotten. The current definition draws on the work of Enequist (cited above), and on suggestions by Erik Bylund based on his experience of the test delimitations.

The change in delimitation principles again hampered comparison between censuses. Comparing population figures for individual urban places between 1950 and 1960, Arpi called attention to what could be a fictitious urban growth: given the longer distance between houses generally accepted in 1960, buildings which were located outside the urban boundary in 1950 would now be included. This suggestion was supported by Norling in a study of a sample of 26 urban places in the county of Gävleborg. He used the 1960 delimitation principles to reconstruct the 1950 borders, and found substantial discrepancies. Norling claimed that 80 per cent of the population increase in these urban places was attributable solely to the new demarcation procedures.

Jakobsson investigated eight urban places in the province of Småland. Each dwelling reported in the censuses of 1940, 1950, and 1960 respectively was assigned co-ordinates with an accuracy of ten meters. In a computerized delimitation, the urban areas were approximated in cells of 100 x 100 meters. The maximum distance allowed between buildings was found to be equally generous in the three censuses, and Jakobsson could not verify any fictitious urban growth in this area. Rather, his results indicated the reverse: the official figures tended to underestimate the urban growth of the 1950s.

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68 Fo (1950-I:35^). Sweden is subdivided into 24 administrative provinces (län), here referred to as counties. Each county has an administrative board headed by a provincial governor. Before 1968 Sweden had 25 counties, the city and the county of Stockholm being counted as separate units.

69 Ylander (1961:35)
70 Arpi (1958)
71 Norling (1962)
72 Jakobsson (1969:154-163)
The aim of the 1965 delimitation was to achieve full comparability with the preceding census; the same objective was set for the 1970 demarcation. These delimitations were primarily updatings of the groundwork done in 1960. The district offices of the land surveying authority adjusted the borders to allow for new settlement. In those parts of the country where new sheets of the economic map had been issued in the intercensal periods, the boundaries were established by one geographer at the Central Bureau. The resident population in each urban place was determined in the same way as in 1960. A series of checks on the reliability of the material was carried out by the local and the regional authorities, and by the Central Bureau.

The unequivocal urban place definition used since 1960 permits a computorized demarcation of urban places according to a method developed by Nordbeck. The current urban place definition allows a maximum distance between houses of 200 meters. By definition any point within the urban boundary must then be situated less than 100 meters from at least one dwelling. Thus, any point within a radius of 100 meters from a house could be ascribed a "density of buildings" of at least one. In other words, the urban boundary is equal to the l-isarithm on a map showing the distribution of houses. (The reference area used for this map is a circle with a radius of 100 meters; the l-isarithm is a line connecting the midpoints of the reference areas within which one house is situated.) Nordbeck shows that the housing density can be replaced by population density; the l-isarithm on a population map will closely follow the urban boundary, provided the population density in the sparsely populated areas is considerably less than one inhabitant per 3.14 hectares. (The reference area is the same here as for the housing map above.) With population data on a co-ordinate basis for squares of 100 x 100 meters, the computor establishes the l-isarithm on the population map - and hence the approximated urban boundary. In most Swedish municipalities the rural population density is less than 0.3 inhabitants per 3.14 hectares; in areas with a higher density the l-isarithm cannot be used (the 5 or the 10-isarithm
might be more appropriate). However, since the urban boundary appears where there is a marked increase in population density, it is easy to distinguish it on a isarithmic population map as a concentration of several isarithms. Nordbeck concludes from empirical testings that the computorized delimitations and the official (manually established) equivalents are almost identical. Corrections to the automatic boundaries are sometimes necessary; provisions have to be made for interspersed non-residential areas with a typically urban land-use (e.g. parks, sportsgrounds, churchyards, etc.) which, according to the urban place definition, should not be regarded as a break in the settlement. According to Nordbeck, any remaining disparities between the manually and the automatically established borders are a question of definition only. He contends that urban places could be delimited automatically throughout Sweden with the help of this method, as soon as population statistics on a co-ordinate basis become available for all counties.\textsuperscript{73}

THE RELIABILITY OF THE CURRENT STATISTICS

The continued use of the urban place definition laid down in 1960, and the carefully prepared delimitation procedures, have together ensured continuity in the urban place statistics and provided a degree of comparability unparalleled in the history of the Swedish census. Conditions have never been better for unbiased comparisons of the population of individual places between censuses. However, sources of error still exist. The three main sources are:

1. Variations in the up-to-dateness and the detail of maps. The quality of the maps used was not the same throughout the country. This could hamper comparison between areas and between censuses. Several new or revised sheets of the economic map were issued each year. Since

\textsuperscript{73} Nordbeck (1969 \textit{passim})
the Central Bureau always uses the best map sheets available, some urban places may have been delimited on different maps on different occasions during the ten-year period. In 15 counties the maps were substantially the same in 1960 as in 1965. In 1965 the economic map was used for most delimitations in 14 counties; 11 of these counties used this map in 1960 as well.\textsuperscript{74} In 1970 another four counties used the economic map for most delimitations. It is felt that the lack of economic map sheets for the counties of Blekinge, Kristianstad, and Malmöhus makes it more difficult to compare these regions with the rest of Sweden.\textsuperscript{75}

(2) The determination of the resident population. This source of error concerns the ability of the scrutinizing body to determine the resident population within the established borders. This task requires extensive knowledge of every local community. In his investigation of urban places in the county of Gävleborg, Norling found that in 1960 a few people were assigned to the wrong category (urban or rural) in almost every case. For six places the disparity ranged from 5 to 12 per cent.\textsuperscript{76} To cope with this problem, Norling was invited to design checks for the 1965 census.\textsuperscript{77} Several checks on the accuracy of the separate urban place figures were suggested and carried out, in 1965 and again in 1970. Despite checks of this kind, some minor irregularities are still likely to remain. Olsson studied the 1970 demarcations in the counties of Göteborg & Bohus and Älvsborg and found minor discrepancies from the

\textsuperscript{74}Norling & Jeansson (1967:213 f.). In the related figures the city and the county of Stockholm are treated as one unit.

\textsuperscript{75}FoB (1970-II:10)

\textsuperscript{76}Norling (1962). Cf. the similar result found by R. Olsson (1966) who studied the 1960 demarcations in the county of Göteborg & Bohus. The major differences that he found, concerned two urban places which he had demarcated but which were not reported in the census.

\textsuperscript{77}Norling & Jeansson (1967:218 f.)
official figures in about 50 per cent of the places.78

(3) The enlargement of continuous built-up areas. A fictitious population increase may be reported for an urban place if its built-up area extends into adjacent agglomerations whose populations are less than 200. This type of error is illustrated in Figure 3.1 Case A shows the configuration of two agglomerations, 300 meters apart, in 1965. Alpha has exactly 200 inhabitants and is reported in the urban statistics; Beta has only 95 inhabitants and is unrecognized in the census. By 1970 Alpha has a reported increase of 50 inhabitants (25 per cent), while Beta remains unchanged. If, as in

Figure 3.1.

78 R. Olsson (1972:42 f.)
case B, a house with five inhabitants had been built in the intercensal period half-way between the agglomerations, a fictitious population increase would have been reported for Alpha. Since Beta by definition becomes part of Alpha, this place thus has a reported population of 350 people. The 75 per cent population increase can be largely explained by the inclusion of the stationary agglomeration Beta. Had Beta been an urban place, this error would not have occurred; an amalgamation between urban places is always noted in the census report. The significance of this error is, of course, greatest in the case of the small urban places. But the advantages of full comparability between censuses has to be weighed against the drawbacks of ignoring the real size of the agglomeration. 79

Norling and Jeansson discuss the quality and the comparability of the urban statistics for 1960 and 1965. Although they maintain that the quality of the data is primarily a function of the ability of the relevant scrutinizing bodies to determine the resident population within the urban boundaries, they point out that the varying quality of the maps should not be ignored. 80 Ylander and Altvall maintain that the introduction of new or improved maps in an area is likely to suggest some fictitious urban growth, since the greater detail which becomes possible in the delimitation of the areas may now reveal some previously unrecognized fringe settlement. They find support for their argument in the urban growth figures for 1960-1965, for counties in which old maps with less detail were replaced by newly issued sheets of the economic map. In these counties, reported urban growth slightly exceeded the average for all regions. 81

Taking into account both the nature of the map material and the quality of the delimitations, Norling and Jeansson assessed the average accuracy with which the urban popula-

80 Norling & Jeansson (1967:212)
81 Ylander & Altvall (1971:58)
tion could be determined in each county. Assigning to each county a figure between 1 and 5, the authors gave eleven counties a rating of 2 or less; only seven counties achieved a rating of 4 or 5. This seemingly discouraging result did not prevent the authors from assigning a favorable rating to the overall comparability between 1960 and 1965. "For the first time in the history of the census, comparability of urban statistics exists between two censuses.... The objective of the 1965 urban statistics, which was to establish direct comparability with the data of 1960, has been achieved. For all normal research needs, this comparability could probably be regarded as acceptable."\(^8^2\) The major reason for the high degree of comparability was said to be that the 1965 demarcations were primarily updatings of those of 1960.

The central Bureau does not publish any appraisal of the urban place statistics. But corrected figures are supplemented in those cases where irregularities are discovered. For example, if in 1970 a place was found to have been incorrectly delimited in 1965, the population figure for that year was recalculated and the correct figure was given in the 1970 census report.

**A note on economic activity statistics**

Statistics on the economically active population are collected from questionnaires returned by the households to the census authorities. The reliability of the data thus collected for the 1970 census was subjected to an evaluation study, which showed that the number of economically active persons in Sweden in 1970 had been underestimated by 4.6 per cent (with an interval estimate of ± 0.6 per cent). The underestimation was relatively greatest in the case of agriculture, forestry, and fishing (11.8 per cent with an interval estimate of ± 5.0 per cent).\(^8^3\) The results of the evaluation study have not been taken into account

\(^{8^2}\)Norling & Jeansson (1967:222, my translation)

\(^{8^3}\)SCB (1974)
in the present study; the use of corrected figures on the economically active population would not have substantially altered the general findings.

Conclusion

Prior to 1960 urban statistics in Sweden varied considerably in quality and reliability. This applies particularly to the figures regarding non-administrative urban places, where frequent changes in the definitions and a lack of formalized delimitation procedures hampers a comparison of data between censuses. A first step towards the achievement of greater reliability was taken in the 1950 census. The distinction between administrative and non-administrative urban places was dropped, and all urban places were delimited according to a residential building density criterion only. But the important improvement came in the 1960 census, when a system of formalized delimitation on physical maps was introduced. It is not within the scope of this study to test the reliability of the urban data available for the 1960-1970 period; the census material for the decade has been accepted in its entirety, and it should be noted that most of the delimitation errors discussed above were in any case negligible. However, the possibility of such errors was taken into account in the design of the study (see Chapter 5). Despite minor irregularities, it is assumed that the data for 1960, 1965, and 1970 are sufficiently reliable and comparable for the present purpose.
IV. A NOTE ON POPULATION DEVELOPMENT IN SWEDEN SINCE 1750

This chapter provides a necessary background to the following analysis of urban development in Sweden 1960 - 1970. A short survey of some general aspects of the population development in the country since 1750 is followed by an outline of the main characteristics of the growth and spread of urban settlement prior to 1960. The final section of the chapter provides a review of earlier studies concerned with Swedish urban development.

General Aspects

A country's total population growth consists of natural increase (the excess of births over deaths) and the balance of external migration (emigration and immigration). The unique properties of Swedish population statistics allow analysis from 1750 onwards. The development of the population since that year is illustrated in Figure 4.1. In 1750 Sweden had a population of about 1.8 million. By 1850 the population had almost doubled (to 3.5 million); a hundred years later it had doubled again to a little over 7 million. In 1970 a population of 8.1 million was reported. The annual population increase from 1750 to 1970 was 0.69 per cent.
Figure 4.1. Population development in Sweden 1750 - 1970. Annual change of births, deaths, population increase, and net migration (left scale); mean population (right scale).


The diagram shows a parallel progression for births and deaths until the beginning of the 19th century, when the death rate became stable. The birth rate continued to increase until the 1870s, when the curve levels out; it begins to fall just after the turn of the century, swings upward again in the mid-1930s, and culminates with some high birth rates during the years of World War II. In response to the continuous decline in births during the 1910 - 1935 period, a pro-natal population policy was advocated by Alva and Gunnar Myrdal (1934). In their classic work Kris i befolkningsfrågan (The Population Crisis) they opposed the Neo-Malthusian school which had been introduced in Sweden during the 1880s and which (cont.)
The rural population declined at a rather homogeneous rate in the three decades between 1930 and 1960. However, rural depopulation accelerated during the 1960s. (Table 4.7. See also Table 5.2.)

Table 4.7. Percentage rural population decrease 1920 - 1970 by decades.

<table>
<thead>
<tr>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920-1930</td>
</tr>
<tr>
<td>1930-1940</td>
</tr>
<tr>
<td>1940-1950</td>
</tr>
<tr>
<td>1950-1960</td>
</tr>
<tr>
<td>1960-1970</td>
</tr>
</tbody>
</table>

Sources: SCB (1955), table A 15; Census compilation 1960 - 1970.

We now turn to the development of urban places by size-groups. To secure an unbiased comparison of growth the agglomerations must be arranged in a cohort of permanent places, so that only those which existed both at the beginning and the end of the investigated period are included. The places must be classified according to their size either at the beginning or at the end of the period. (Cf. the discussion in Chapter 5.) A body of material that meets these requirements has been assembled from four studies for the periods 1920 - 1935, 1940 - 1945, and 1950 - 1960. It is presented in Tables 4.8 - 4.10. Two studies for the period 1950 - 1960 have been juxtaposed in Table 4.10, showing that although Arpi and Tryggveson formed their cohorts differently, their results were similar. Again, a surprisingly homogeneous development is indicated. In each of the three periods the small-place groups show the most pronounced deviation from the average growth. Other size-groups followed the national average fairly closely.
### Table 4.8. Percentage change in urban population 1920—1935 by size of urban place (1935). Cohort of urban places existing in 1920, 1930, and 1935.

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>Number of places</th>
<th>Growth 1920—1935 per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>429</td>
<td>7.3</td>
</tr>
<tr>
<td>500—2,000</td>
<td>386</td>
<td>12.0</td>
</tr>
<tr>
<td>2,000—5,000</td>
<td>87</td>
<td>21.5</td>
</tr>
<tr>
<td>5,000—20,000</td>
<td>72</td>
<td>16.0</td>
</tr>
<tr>
<td>20,000—50,000</td>
<td>14</td>
<td>19.5</td>
</tr>
<tr>
<td>50,000—200,000</td>
<td>3</td>
<td>18.5</td>
</tr>
<tr>
<td>200,000—500,000</td>
<td>1</td>
<td>20.2</td>
</tr>
<tr>
<td>500,000—1,000,000</td>
<td>1</td>
<td>31.7</td>
</tr>
<tr>
<td><strong>Cohort total</strong></td>
<td><strong>993</strong></td>
<td><strong>19.6</strong></td>
</tr>
</tbody>
</table>

*Source:* William-Olsson (1941:82).

### Table 4.9. Percentage change in urban population 1940—1945 by size of urban place (1945). Cohort of urban places existing in 1940 and 1945.

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>Number of places</th>
<th>Growth 1940—1945 per cent**</th>
</tr>
</thead>
<tbody>
<tr>
<td>200—1,999*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2,000—4,999</td>
<td>103</td>
<td>12.6</td>
</tr>
<tr>
<td>5,000—9,999</td>
<td>43</td>
<td>15.8</td>
</tr>
<tr>
<td>10,000—19,999</td>
<td>33</td>
<td>20.2</td>
</tr>
<tr>
<td>20,000—49,999</td>
<td>18</td>
<td>18.9</td>
</tr>
<tr>
<td>50,000—99,999</td>
<td>7</td>
<td>13.9</td>
</tr>
<tr>
<td>100,000—</td>
<td>3</td>
<td>13.0</td>
</tr>
<tr>
<td><strong>Cohort total</strong></td>
<td><strong>207</strong></td>
<td><strong>15.2</strong></td>
</tr>
</tbody>
</table>

*In 1945 a total of 1,089 urban places was reported for the size-group 200—1,999 inhabitants. The population figure for this size-group in 1940 is uncertain, but its growth between 1940 and 1945 has been estimated at between 8 and 16 per cent.

**In the original version of this table, which appeared in SOU 1951—VI, the percentage growth for 1940—1945 was computed with 1945 as the base year. The table has been recalculated here with 1940 as the base year.*

*Source:* SOU (1951—VI), table 12; Fo (1945—I), table S.

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of places</td>
<td>Growth 1950-60 per cent</td>
</tr>
<tr>
<td>200-499</td>
<td>733</td>
<td>10</td>
</tr>
<tr>
<td>500-999</td>
<td>396</td>
<td>7</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>237</td>
<td>21</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>145</td>
<td>24</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>46</td>
<td>24</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>33</td>
<td>23</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>100,000-</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Cohort total</td>
<td>1,621</td>
<td>17</td>
</tr>
</tbody>
</table>

Sources: A: Arpi (1963:190); B: Tryggveson (1967:155).

As regards Stockholm, Göteborg and Malmö, the tables corroborate what several other studies have testified: for a long time the three largest urban places have had a rate of growth close to the average for all urban places together. We shall return to this issue in the next chapter. However, in Table 4.8 Stockholm's percentage growth (size-group 500,000 - 1,000,000) is shown as being well above the national average. As we shall see in Chapter 5, since 1920 Greater Stockholm has shown a rate of increased far above the national average urban growth during one decade only. This was during the 1920s, when the area reported twice the growth rate of all the urban places together.

For the smaller urban places, Arpi showed that about 50 per cent of those with less than 1,000 inhabitants exhibited a population increase in the 1950s (see Table 4.11). However, only a fourth of the places in this group increased at a rate faster than the national average. The table further reveals that very few of the places with
a population above 2,000 inhabitants registered a decline. In most of these size-groups, over 50 per cent of the places showed growth above the national average.


<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>Percentage of urban places in sizegroup with population increase 1950-1960</th>
<th>Percentage of urban places in cohort (17 per cent)</th>
<th>Number of places</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-499</td>
<td>51</td>
<td>29</td>
<td>733</td>
</tr>
<tr>
<td>500-999</td>
<td>54</td>
<td>27</td>
<td>396</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>74</td>
<td>45</td>
<td>237</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>90</td>
<td>51</td>
<td>145</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>94</td>
<td>70</td>
<td>46</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>100</td>
<td>61</td>
<td>33</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>95</td>
<td>47</td>
<td>19</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>100</td>
<td>56</td>
<td>9</td>
</tr>
<tr>
<td>100,000-</td>
<td>100</td>
<td>33</td>
<td>3</td>
</tr>
<tr>
<td>Cohort total</td>
<td>62</td>
<td>35</td>
<td>1,621</td>
</tr>
</tbody>
</table>

Source: Arpi (1963:188)

The main characteristics of the present geographical distribution of the population are discussed in Chapter 5, where the development of the population during the period 1960 - 1970 is outlined in aggregated terms.

STUDIES OF URBAN DEVELOPMENT IN SWEDEN—A BIBLIOGRAPHY

This chapter closes with a selected bibliography of urban studies. For this to be more complete most of the studies referring to Sweden that have been cited in the above discussions should have been included. However, to
keep the review within manageable limits, only some of these studies are mentioned again. Studies relevant to the discussion in forthcoming chapters, will be referred to again in the appropriate contexts.

Surprisingly few extensive studies exist on urban development in Sweden. The first penetrating study to appear was Nelson's, published in 1918, in which the location of some 240 towns and other agglomerations with urban characteristics was explained. 27 The two most extensive general studies hitherto published are Ahlberg's Population Trends and Urbanization in Sweden 1911 - 1950 (Befolkningsutvecklingen och urbaniseringen i Sverige 1911 - 1960) from 1953 and Tryggveson's Urbanization in Sweden 1951 - 1960 (Urbanisering och tätortsutveckling 1951 - 1960) from 1967. 28 Both studies contain a penetrating statistical analysis.

An overview of urbanization and urban growth can be obtained from some shorter surveys. 29 As regards retrospective studies going back earlier than 1900, most rely on data for towns only. Two exceptions are the aforementioned studies by William-Olsson and Jonasson. 30 In a series of stochastic migration models Morrill simulated the spread and growth of urban settlement in a section of southern Sweden 1860 - 1960. 31

Several shorter studies are available on urban growth and the degree of urbanization during different periods since 1950. Most of these contain a class-wise analysis of aggregated data for urban places, 32 while others are

27 Nelson (1918)
28 Ahlberg (1953), Tryggveson (1967). Tryggveson's study contains a summary in English. Ahlberg's main findings are also available in English, see Ahlberg (1956).
30 William-Olsson (1938, 1941), see the discussion in chapter 3; Jonasson (1949), see Chapter 3, footnote 44.
31 Morrill (1963, 1965)
based on computerized isarithmic maps. A class-wise analysis of the development of urban places in Sweden during the period 1960 - 1970 is also included in a monograph on smaller urban places published by Mattsson in 1974.

An early discussion of suburban development in Sweden can be found in a study by Silén from 1930; Larsson had already earlier dealt with the incorporation of suburban residential developments by towns. Suburban development around Stockholm between 1870 and 1970 is treated extensively by Johansson, while Walldén concentrates on the development of the suburbs of Solna and Sundbyberg (1870 - 1945). The suburbs around Lake Mälaren and Lake Hjälmaren were studied in a monograph by Ohre in 1966.

Ohre-Aldskogius held that residential building construction was the main factor governing population change during the period 1950 - 1960 in 14 large and medium-sized urban regions. Alexandersson and Falk studied the population development in 26 urban regions during the 1960s, and found that the satellites generally increased at a faster rate than the urban cores.

Smaller urban places (less than 2,000 inhabitants) were examined by Enequist, with special attention to their industrial structure and regional distribution (1940). The study, which appeared in 1947, does not include any discussion of population development. This, on the other hand, is covered by Mattson in his study of smaller urban places (also less than 2,000 inhabitants), which focuses on population change between 1960 and 1970.

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34 Mattsson (1974)
35 Silén (1930), Larsson (1912 b)
36 Johansson (1974), Walldén (1953)
37 Ohre (1966)
39 Alexandersson & Falk (1973, 1974)
40 Enequist (1947), Mattsson (1974)
The industrial structure of urban places has been thoroughly investigated. Enequist and William-Olsson have repeatedly returned to this issue and published several classifications of urban places according to their industrial structure. The industrial development of towns between 1867 and 1940 was discussed by Overton, and Nelson sketched the industrial structure of towns during the 1920s. The structure of urban places of 10,000 inhabitants or more in 1965 was studied by Aldskogius, using factor analysis.

Market towns and central places in Sweden were discussed in a historic perspective by Dahl, and several studies have focused on central places in sparsely populated areas. The rural-urban transition was treated by Lewan from a settlement point of view, and by Swedner with reference to sociological aspects. Several monographs on the development of individual towns are available. Regarding Stockholm, Ahlberg has studied the population development since 1850 in a volume published in 1958, while Ahlmann et al. and William-Olsson have made detailed studies of the economic geography.


Overton (1942), Nelson (1928)


Dahl (1965)

See, e.g., Bylund & Weissglass (1970), Bylund (1972), and Enequist & Bück (1966)

Lewan (1967, 1969), Swedner (1960)

See, e.g., Chapter 3 footnote 14.

Ahlberg (1958), Ahlmann et al. (1934), William-Olsson (1937, 1961)
Finally, several maps showing the population of urban places are available for various periods,\textsuperscript{49} and in connection with the 1960 census both the location and the areal extension of urban places were mapped.\textsuperscript{50} William-Olsson has prepared two maps on the population development of urban places for the periods 1920 - 1935 and 1950 - 1960.\textsuperscript{51}

\textsuperscript{49}See De Geer (1919) and Chapter 3 footnote 36.
\textsuperscript{50}SCB (1963)
\textsuperscript{51}William-Olsson (1938, 1941, 1966)
V. HOW DO WE MEASURE POPULATION CHANGE?

This chapter falls into three parts. The first section outlines the principles governing the choice of relative rather than absolute measures of population change in this study. Next follows a discussion of the role of the metropolitan areas in the urbanization process; because of differences in measurement, two interpretations have been offered in Sweden. The final section describes the design of the study and the census compilation employed in the analysis of urban development in Sweden 1960 - 1970.

Relative Changes

Should relative or absolute measures of population change be employed? There is neither a "right" nor or "wrong" answer to this question: Whether the rate or the absolute magnitude of a population change should be measured will depend on the purpose of the inquiry. In this study of urban development in Sweden 1960 - 1970 a relative measure of population change is generally used.

The overall aim here is to focus the analysis (both description and explanation) on the dynamics of population development and the settlement system. Thus, it is imperative to reveal general directions (tendencies) and major breaking-points in the development. Although the purpose
is not primarily to provide a forecast, a predictive element is clearly recognized; the analysis should provide the means for anticipating future changes. Further, an allometric approach is pursued, i.e., the urban population development in a place (or a region) is related to the national average urban population development. When the development of the total system is related to the progress of its various subsystems, it becomes possible to distinguish residual developments such as concentrations and deconcentrations within the urban system.

A common objection to the use of percentage measures of change in urban places is an elementary one: it is maintained that the small place needs only a small population increment to reach a high percentage rate, whereas the large metropolis has to have a large increment to reach the same rate. On the other hand, the relative measure allows comparison of changes irrespective of the magnitudes involved. In the present study, however, to attain the objective discussed above, an emphasis on relative rather than absolute measures is a prerequisite.

The Role of the Metropolitan Areas in the Urbanization Process

We now turn to the question of inter-regional comparisons of population change. During the 1960s and the early 1970s a discussion took place between urban planners, politicians, economists, geographers, and other social scientists in Sweden on the role of the metropolitan areas in the urbanization process. On the one hand it was contended that the population of Sweden was becoming concentrated to the three big-city regions (Stockholm, Göteborg, Malmö), and especially to the Stockholm metropolitan area. On the other hand it was maintained that the population development of the metropolitan areas was on par with the average for all urban places in Sweden. This discussion will not be reviewed in any great detail here. Only some fundamental aspects of the argument will be highlighted. We will focus particularly on a problem of measurement - namely, how the geographical redistribu-
tion of the population should be measured. Let us first outline the main features of the population development in Sweden between 1960 and 1970 in aggregated terms.

**POPULATION DEVELOPMENT IN SWEDEN 1960—1970. A BROAD OUTLINE BY A-REGIONS**

The analysis below is based on the *A-regions* which are employed by the Central Bureau of Statistics. For statistical purposes the municipalities have been amalgamated to form 70 statistical areas (A-regions), each region comprising at least one major urban center. The 70 A-regions are presented in Figure 5.1.¹

The population of Sweden reported in the 1970 census totalled 8,077,000 people; 6,574,000 of these (or 81.4 per cent) lived in urban places. The total population had increased by 582,000 (7.8 per cent) since 1960, while the urban population gained 1,122,000 (20.6 per cent). The rural population declined by 26.5 per cent during the decade, reaching a total of 1,503,000.

Figures 5.2 a and b show the distribution of the urban and total population by A-regions. Sweden has a skewed population distribution. In 1970 the Stockholm/Södertälje, the Göteborg, and the Malmö/Lund/Trelleborg A-regions together accounted for 32 per cent of the total population, and for 37 per cent of the urban population. As will be seen later, this fundamental feature of the regional population distribution of Sweden is very much a historical legacy, and its origins can be traced back at least to the mid-19th century. Whereas all regions except two (Mora and Härnösand/Kramfors) had an increasing urban population during the 1960s (Figure 5.2 a), more than a third of the regions — particularly in the northern two-thirds of Sweden — reported a total population loss.

¹This regionalization dates from 1966 when a former subdivision by the Labor Market Board was adapted for statistical purposes. See SCB (1966). The subdivision employed here includes changes as of 1 January 1973. See SCB (1972 a).
Figure 5.1. A-regions.
(Figure 5.2 b). The decrease in these regions reflects the characteristic north-south drift of the population, which was accentuated after World War II as a result of the decline in forestry and agriculture. The three big-city regions each had a total population increase rate of more than twice the national average (7.8 per cent). However, in the case of urban development, the picture is strikingly different. Stockholm/Södertälje and Göteborg each exhibited an urban population growth that lay close to the average for all urban places (19.0 and 22.0 per cent respectively), while Malmö/Lund/Trelleborg was somewhat above the average (25.7 per cent).

Without exception, all regions exhibited a depopulation of their rural areas (Figure 5.2 d). The rural decrease during the decade was surprisingly homogeneous. Except for Göteborg, which had a loss of 4.7 per cent, all regions reported a rural rate of decline ranging between 17 and 45 per cent. The national average was 26.5 per cent.

Besides the three big-city regions, both Karlskoga and Västerås had a degree of urbanization (i.e. the proportion of the total population living in urban places) above 90 per cent (Figure 5.2 c). The lowest degree of urbanization was slightly below 50 per cent (Arvika). The ratio increased in all regions during the decade, but the change was minimal in the metropolitan areas (Figure 5.3). Even though most regions in the eastern portion of Central Sweden had reached above 80 per cent by 1970, a further increase in the urban proportion must still be expected for a majority of regions.

Inter-regional comparisons of the total population change on the one hand, and of the urban population change on the other, appear to lead to different conclusions about the growth of the metropolitan areas. The total growth rate in these regions was twice the national average; but their urban population increase more or less paralleled the average urban growth rate in Sweden. As we shall see, the controversy about metropolitan growth in Sweden resolves into the question of whether the geographical redistribution of
Figure 5.2 a. Urban population. Number of persons 1970 and percentage change 1960 - 1970 by A-regions. National average urban growth 20.6 per cent.

Figure 5.2 b. Total population. Number of persons 1970 and percentage change 1960 - 1970 by A-regions. National average total population growth 7.8 per cent.
Figure 5.2 c. Total population. Number of persons and degree of urbanization 1970 by A-regions. National average degree of urbanization 81.4 per cent.


Figure 5.2 d. Rural population. Number of persons 1970 and percentage decrease 1960 - 1970 by A-regions. National average rural population decrease 26.5 per cent.

the population should be measured in terms of the total population or of the urban population. Let us examine these two approaches.

**THE COMPONENTS OF POPULATION CHANGE**

The argument that the population was being concentrated to the three big-city regions, and especially to the Stockholm metropolitan area, was based on comparisons of the total population development in administrative regions (municipalities, A-regions, or counties). A typical and frequently recurring example of this argument is presented in Table 5.1. Here the total populations of the counties of Stockholm, Göteborg & Bohus, and Malmöhus, and of six other groups of counties, are compared over time. The table is quoted from "Balanced Regional Development" (SOU 1970-III), table 1.2.1, which is a report from the Expert Group of Regional Studies within the Ministry of Labor. Figures for 1970 have here been substituted for the original 1965 and 1968 figures. The table also appeared in Hägerstrand (1966:276). The same approach can be found in a number of reports, see, e.g., Proposition (1970-LXXV), table 5; SOU (1971-XVI), figure 3:1; Proposition (1972-CXI), figure. 3:8; Planning Sweden (1973), figure 9:2; ERU (1975), figure 2:7.
Table 5.1. Total population by groups of counties 1870 - 1970. Percentage distribution.

<table>
<thead>
<tr>
<th>Counties</th>
<th>1870</th>
<th>1900</th>
<th>1930</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockholm</td>
<td>6.4</td>
<td>9.3</td>
<td>12.5</td>
<td>17.1</td>
<td>18.3</td>
</tr>
<tr>
<td>Göteborg &amp; Bohus</td>
<td>5.6</td>
<td>6.6</td>
<td>7.5</td>
<td>8.4</td>
<td>8.9</td>
</tr>
<tr>
<td>Malmöhús</td>
<td>7.6</td>
<td>8.0</td>
<td>8.3</td>
<td>8.4</td>
<td>8.9</td>
</tr>
<tr>
<td>Uppsala, Södermanland, Östergötland, Örebro, Västmanland</td>
<td>18.5</td>
<td>17.8</td>
<td>16.5</td>
<td>16.6</td>
<td>17.1</td>
</tr>
<tr>
<td>Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Kristianstad</td>
<td>23.3</td>
<td>19.6</td>
<td>17.6</td>
<td>15.0</td>
<td>14.7</td>
</tr>
<tr>
<td>Halland, Älvsborg, Skaraborg</td>
<td>15.6</td>
<td>12.9</td>
<td>11.4</td>
<td>10.5</td>
<td>10.6</td>
</tr>
<tr>
<td>Värmland, Kopparberg, Gävleborg</td>
<td>13.9</td>
<td>13.8</td>
<td>13.1</td>
<td>11.6</td>
<td>10.6</td>
</tr>
<tr>
<td>Västernorrland, Jämtland</td>
<td>4.9</td>
<td>6.7</td>
<td>6.7</td>
<td>5.7</td>
<td>4.9</td>
</tr>
<tr>
<td>Västerbotten, Norrbotten</td>
<td>4.0</td>
<td>5.4</td>
<td>6.6</td>
<td>6.7</td>
<td>6.0</td>
</tr>
<tr>
<td>Sweden</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Sources: SOU (1970-III), table 1.2.1; FöB (1970-I), table 1.

graphic extension of these administrative areas is shown in Figure 5.4.

The table has commonly been interpreted as follows. The Stockholm region has more or less doubled its share of the Swedish population since the turn of the century. Even though the Göteborg region increased its share considerably, this increase is modest compared with that of Stockholm. The Malmö region has maintained a more or less constant share, but a small increase is noticeable during the 1960s. The counties of Uppsala, Södermanland, Östergötland, Örebro, and Västmanland constitute a stable region, while the rest of central and southern Sweden shows decreasing shares. Until recently the counties in northern Sweden maintained their shares, and for a long time northernmost Sweden even reported increasing shares.  

\(^3\) SOU (1970-III:31 f.), Hågerstrand (1966:276 f.)
Figure 5.4. Counties and groups of counties.
In a series of articles, William-Olsson has argued against this interpretation. He does not dispute that the county of Stockholm has greatly increased its share of the national population since 1900, but contends that this could with equal justification also be reported for many other areas in Sweden, namely the growing urban places. Each administrative region comprises urban places and rural areas in varying proportions. A fundamental feature of Swedish population development has long been an overall concentration of the population to urban places; any comparisons of blunt analytical aggregates would only partly account for the rural-urban migratory movement. The net influx of people into a region's urban places from the rural areas of other regions affects the total population figure of the region concerned, whereas the rural-urban migration within the regions does not. In other words, since the rural population is declining rather uniformly throughout the country and the urban population is expanding, the ratio of the two components greatly affects the growth rate of the total population in an administrative region.

Take for example a region delimited in such a way that it consists of one large urban place and a surrounding rural area. Assume that the urban place grows more populous solely because of an influx from its own rural area. The total population figure in this region will not be affected since the rural loss is counterbalanced by a corresponding gain in the urban place. Thus, the total population in this region will not increase its share of the national population; obviously the expanding urban place will do so. William-Olsson therefore concludes that whether or not a region can report an increasing share of the national population, will depend largely on the way it has been


\footnote{Cf. also e.g., Plan (1965, editorial), Holm (1969), and Rasmussen (1969:36 ff.) for similar arguments.}
In a comparison of the total population developments in different administrative regions, intra-regional migration from rural areas to urban places remains concealed. Since each administrative region has a different degree of urbanization, and since the total population consists of two components (an increasing urban population and a decreasing rural population), William-Olsson contends that comparisons of regional totals are in fact comparisons of noncomparable magnitudes. If changes in the geographical distribution of the population are to be correctly interpreted, a distinction must be made between urban and rural components. An analysis based on a subdivision of the country into urban places and rural areas, would be much more revealing than comparisons of arbitrarily delimited administrative regions. Hence, urban and rural population developments should be analyzed separately. This is especially important in the case of metropolitan areas which are more or less totally urban in character. (As noted above, each of the three metropolitan A-regions had a degree of urbanization above 90 per cent in 1970, and Stockholm/Södertälje had a ratio of 97 per cent.) Thus, the urban population development in the metropolitan areas should be compared with developments in other urban places in Sweden. Focusing on Greater Stockholm, William-Olsson then shows that this area has maintained a constant share (around 20 per cent) of the Swedish urban population since 1880. This, he claimed disproves the alleged concentration of population to this region.

Let us further examine these interrelationships from a formal point of view.

The total population change in a country during a specific period could be expressed as:

\[ T = (B-D) + (I-E) \]  

where \( T \) = the total population gain (or loss)

\( B \) = births

\( D \) = deaths

\( I \) = immigrants

\( E \) = emigrants
If the country is subdivided into administrative regions, the total population change in one region during a specific period would read:

\[ T_r = (B-D) + (I-E) + (M_t - M_f) \]  \hspace{1cm} (2)

where \( T_r \) = the total population gain (or loss) in the region

\( M_t \) = migrants to the region from other regions

\( M_f \) = migrants from the region to other regions

If the national population is broken down into its urban and rural components, we obviously get:

\[
\text{Total population} = \text{Urban population} + \text{Rural population}
\]  \hspace{1cm} (3)

The redistribution of the population from rural to urban settlement leaves the total population column in equation (3) unaffected; in other words, equation (1) does not allow for the most conspicuous population change in Sweden in the course of almost a century. The urban population change in a country during a specific period could be expressed:

\[ U = (B-D) + (I-E) + (M_u - M_r) \]  \hspace{1cm} (4)

where \( U \) = the urban population gain (or loss)

\( M_u \) = migration to urban places from rural areas

\( M_r \) = migration from urban places to rural areas

Similarly, the rural population change in a country during a specific period could be expressed:

\[ R = (B-D) + (I-E) + (M_m - M_n) \]  \hspace{1cm} (5)

where \( R \) = the rural population gain (or loss)

\( M_m \) = migration to rural areas from urban places

\( M_n \) = migration from rural areas to urban places

If equation (4) is rewritten to show the urban population change in one administrative region during a specific period, we get:

\[ U_r = (B-D) + (I-E) + (M_a - M_b) + (M_c - M_d) + (M_e - M_f) \]  \hspace{1cm} (6)

where \( U_r \) = the urban population gain (or loss) in the region

\( M_a \) = migration from rural areas within the region
The expression \( (M_c - M_d) + (M_e - M_g) \) is equal to \( (M_t - M_f) \) in equation (2).

The rural population change in one region during a specific period is written:

\[
R_r = (B-D) + (I-E) + (M_p - M_q) + (M_1 - M_s) + (M_z - M_u)
\]  

where \( R_r \) = the rural population gain (or loss) in the region

- \( M_p \) = migration from urban places within the region
- \( M_q \) = migration to urban places within the region
- \( M_1 \) = migration from urban places in other regions
- \( M_s \) = migration to urban places in other regions
- \( M_z \) = migration from rural areas in other regions
- \( M_u \) = migration to rural areas in other regions

In a situation with a declining rural and an expanding urban population, the urban gain must be greater than the total population change in both absolute and relative terms. This is illustrated in Table 5.2, which covers the period 1920 - 1970. The urban population in Sweden increased more rapidly than the total population during each decade - on an average, three times as fast. Taking the 1960s as an example, we find that the absolute urban increment was almost twice as large as that of the total population.

By definition, urban and total population change must be identical when one hundred per cent of the population is reported as urban. With two exceptions, the A-regions reported an absolute urban gain \( (U_r) \) exceeding the total population change \( (T_r) \) during the 1960s (Figure 5.5). In the cases of Mora and Härnösand/Kramfors (* in the figure), both the total and the urban population decreased. But the total population decline was larger than that of the urban.
Table 5.2. Total, urban, and rural population changes 1920 - 1970, by decades.

<table>
<thead>
<tr>
<th>Absolute population change</th>
<th>Relative population change, per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Urban</td>
</tr>
<tr>
<td>1920-1930</td>
<td>237,700</td>
</tr>
<tr>
<td>1930-1940</td>
<td>229,200</td>
</tr>
<tr>
<td>1940-1950</td>
<td>672,600</td>
</tr>
<tr>
<td>1950-1960</td>
<td>451,100</td>
</tr>
<tr>
<td>1960-1970</td>
<td>581,800</td>
</tr>
</tbody>
</table>

Sources: SCB (1955), table A 15; Census compilation 1960-1970.

Figure 5.5. Population change 1960-1970 by A-regions (numbered, see Figure 5.1). Columns proportional to urban and total population change.

Figure 5.5 further reveals that $U_r$ may increase even if $T_r$ is zero or negative. In this case the urban gain is maintained solely by the net migration from rural areas within the region ($M_a - M_b$) and by the natural increase ($B - D$). If $T_r$ declines while $U_r$ increases (or is stationary), the rural decline is not fully counterbalanced by a corresponding urban gain; the region will thus show a net loss of population (see Figure 5.6). Clearly, the rural-urban redistribution is a function of both a migratory movement and of differences between the rural and urban components in terms of births and deaths.

But Swedish statistics do not allow a break-down of the regional population change into the components given in equations (6) and (7). The census provides stock data, and comparisons over time yield only the net outcome of population changes between censuses. However, if we take migration as an example, we can see clearly that comparisons of population change based on a holistic approach (i.e. on total population development), will not fully recognize all migratory movement. The rural-urban migration within administrative regions will be ignored. An urban increment due to migration from rural areas will affect the total population change ($T_r$) differently, depending on whether the migrants' place of origin is within the region or in the rural areas of some other region. These aspects of regional population development have important practical implications. If, for example, funds for residential housing are allocated to regions on a basis of their total population development, then the supply and the demand for housing will almost certainly fail to match.

The significance of the intra-regional redistribution of the population from rural areas to urban places is illustrated further in Figure 5.6. Ascending columns are proportional to the net urban gain. Shaded areas depict the net rural loss. If the rural loss exceeds the urban gain, the region shows a decreasing total population (downward black columns). Unshaded columns depict the sum of the net migration from other regions (including foreign areas) and the natural population increase, i.e. the net
Figure 5.6. Population change 1960 - 1970 by A-regions (numbered, see Figure 5.1). Columns proportional to urban population gain, counterbalancing rural loss, and the net regional population change.


In a situation where the rural population declines homogeneously and the urban population increases, a varying degree of urbanization in each region will affect the relation between the total and the urban population change. As the degree of urbanization increases in regions reporting urban gains, the proportion of the urban increment that is counterbalanced by a rural loss will decrease. For example, Stockholm/Södertälje, Göteborg, and Malmö/Lund/Trelleborg had a high degree of urbanization in 1970, but only a minor share of the urban increment in these A-regions was accounted for by a corresponding rural loss. The lower the proportion of the urban increment that is
matched by a corresponding rural loss, the higher the proportion of the regional urban gain which affects the total population figure. It can be shown that regions with a high total growth rate tend to have a low proportion of their urban increment counterbalanced by a rural loss, and vice versa.

The proportion of the regional net urban increment which is counterbalanced by a corresponding net rural loss is expressed as a simple ratio (K).

\[ K = \frac{|DR|}{DU} \]  

(8)

where \(|DR| = \) the absolute value of the net rural population decline in the region during a specific period

\( DU = \) the net urban increase in the region during the period

A regression analysis was performed for 68 A-regions. Mora and Härnösand/Kramfors were excluded, since these regions reported both rural and urban depopulation. With the percentage total population growth 1960 - 1970 (DT) in each region as the dependent variable, and K as the independent variable, it was possible to explain 80 per cent of the variance in DT by the variance in K.\(^5\)

The shortcomings of inter-regional comparisons of population change on a total population basis have been clearly demonstrated in this lengthy excursus. Since each region has a different degree of urbanization, comparisons of regional totals conceal the rural-urban redistribution within the regions. Hence, to reveal the role of the metropolitan areas in the urbanization process, the urban population development of these areas should be viewed in relation to the development of all urban places, not to the total population.

\(^5\)The regression was not linear. After a log-transformation of the independent variable an adjusted coefficient of determination of 0.805 was reached. (The correlation coefficient was 0.899.)
THE GROWTH OF THE METROPOLITAN AREAS

We now return to population developments in the groups of counties discussed in Table 5.1. The table has been recalculated so that the urban development is discernible. The three metropolitan counties of Stockholm, Göteborg & Bohus, and Malmöhus reached a high degree of urbanization earlier than any other group of counties - in the case of Stockholm, more than 50 per cent as early as 1870 (Table 5.3).

Table 5.4 below, in which the urban population by groups of counties has been related to the national urban population, provides a completely different picture of the growth of the big-city regions than that presented in Table 5.1 above. Having initially answered for a larger share of the urban population, the county of Stockholm has maintained a more or less constant share (just above 20 per cent). Since 1900, the county of Göteborg & Bohus has reported a decreasing share; so has Malmöhus, except for 1970 when a small increase was again recorded. The remaining groups of counties have generally increased their shares of the urban population since 1900, but counties in the northern half of Sweden reported falling shares in the 1960s.

Table 5.1 should also be compared with Table 5.5, which illustrates the obvious fact that, in all groups of counties, the urban population has increased its share of the national population.

If the rural-urban redistribution within the administrative regions is allowed for, then the alleged concentration of the population to the three big-city regions -

---

6 For other studies showing a metropolitan concentration with the use of total population data for administrative regions see, e.g., Törnqvist (1970) and Kristensson (1967). Kristensson recognized, but disregarded, a possible distortion of the results due to the intra-regional migration from rural areas to urban places.
Table 5.3. Degree of urbanization by groups of counties 1870 - 1970.

<table>
<thead>
<tr>
<th>Counties</th>
<th>1870*</th>
<th>1900*</th>
<th>1930</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockholm</td>
<td>53.3</td>
<td>66.7</td>
<td>84.9</td>
<td>94.3</td>
<td>96.4</td>
</tr>
<tr>
<td>Göteborg &amp; Bohus</td>
<td>28.4</td>
<td>43.2</td>
<td>75.6</td>
<td>87.6</td>
<td>90.3</td>
</tr>
<tr>
<td>Malmöhus</td>
<td>19.4</td>
<td>31.9</td>
<td>63.4</td>
<td>81.1</td>
<td>87.1</td>
</tr>
<tr>
<td>Uppsala, Södermanland, Östergötland, Örebro, Västmanland</td>
<td>11.8</td>
<td>19.1</td>
<td>46.1</td>
<td>73.5</td>
<td>82.9</td>
</tr>
<tr>
<td>Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Kristianstad</td>
<td>8.2</td>
<td>12.5</td>
<td>36.0</td>
<td>61.6</td>
<td>72.7</td>
</tr>
<tr>
<td>Halland, Älvsborg, Skaraborg</td>
<td>5.9</td>
<td>12.1</td>
<td>35.3</td>
<td>59.2</td>
<td>70.5</td>
</tr>
<tr>
<td>Värmland, Kopparberg, Gävleborg</td>
<td>7.0</td>
<td>11.3</td>
<td>37.8</td>
<td>66.7</td>
<td>75.9</td>
</tr>
<tr>
<td>Västernorrland, Jämtland</td>
<td>5.8</td>
<td>9.4</td>
<td>33.3</td>
<td>56.1</td>
<td>67.7</td>
</tr>
<tr>
<td>Västerbotten, Norrbotten</td>
<td>4.6</td>
<td>6.8</td>
<td>28.2</td>
<td>58.6</td>
<td>71.1</td>
</tr>
<tr>
<td>Sweden</td>
<td>12.9</td>
<td>21.5</td>
<td>48.5</td>
<td>72.7</td>
<td>81.4</td>
</tr>
</tbody>
</table>

* Towns only

Sources: SCB (1955), tables A5, A7; Fo (1930-I), table P; Fo (1960-I); FoB (1965-II), table A; FoB (1970-I); FoB (1970-II), table A; Census compilation 1960 - 1970.

and especially to the Greater Stockholm area — cannot be corroborated. The concentration-to-the-big-city notion was basic to regional planning and policy during the 1960s and the early 1970s; as has been demonstrated here, this notion was largely based on a dubious way of interpreting the statistics.

In fact, it can be shown that the skewed population distribution of today is a legacy of the past. The metropolitan counties early acquired a dominant position as population centers, but their initial weight was not augmented over the years. These areas developed more or less pari passu with the total urban system in Sweden. The map series in Figure 5.7 provides three snapshots of the
Table 5.4. Urban population by groups of counties 1870 - 1970. Percentage distribution.

<table>
<thead>
<tr>
<th>Counties</th>
<th>1870*</th>
<th>1900*</th>
<th>1930</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockholm</td>
<td>26.4</td>
<td>28.6</td>
<td>21.9</td>
<td>22.0</td>
<td>21.7</td>
</tr>
<tr>
<td>Göteborg &amp; Bohus</td>
<td>12.2</td>
<td>13.2</td>
<td>11.6</td>
<td>10.0</td>
<td>9.8</td>
</tr>
<tr>
<td>Malmöhus</td>
<td>11.4</td>
<td>11.8</td>
<td>10.9</td>
<td>9.3</td>
<td>9.5</td>
</tr>
<tr>
<td>Uppsala, Södermanland, Östergötland, Örebro, Västmanland</td>
<td>16.9</td>
<td>15.8</td>
<td>15.8</td>
<td>16.8</td>
<td>17.5</td>
</tr>
<tr>
<td>Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Kristianstad</td>
<td>14.7</td>
<td>11.5</td>
<td>12.9</td>
<td>12.8</td>
<td>13.1</td>
</tr>
<tr>
<td>Halland, Älvsborg, Skaraborg</td>
<td>7.1</td>
<td>7.3</td>
<td>8.4</td>
<td>8.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Värmland, Kopparberg, Gävleborg</td>
<td>7.6</td>
<td>7.2</td>
<td>10.2</td>
<td>10.6</td>
<td>9.9</td>
</tr>
<tr>
<td>Västernorrland, Jämtland</td>
<td>2.2</td>
<td>2.9</td>
<td>4.6</td>
<td>4.4</td>
<td>4.1</td>
</tr>
<tr>
<td>Västerbotten, Norrbotten</td>
<td>1.4</td>
<td>1.7</td>
<td>3.8</td>
<td>5.4</td>
<td>5.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Towns only

Sources: SCB (1955), table A7; Fo (1930-I), table P; FoB (1965-II), table A; FoB (1970-II), table A; Census compilation 1960 - 1970.

Emerging urban pattern in Sweden. In 1800, the earliest year for which urban statistics are available, Stockholm stands out as the metropolis of pre-industrial Sweden with its 76,000 inhabitants. The dominance of the capital was explained not only by its governmental function, but also by its importance as a port and as a center for wholesaling. A large amount of seaborne trade passed through the city, whose hinterland included the eastern part of the Bergslagen district. Stockholm still handled more of Sweden's important iron exports than Göteborg. This city was second (13,000 inhabitants) but not substantially more populous than Karlskrona (10,000) and Norrköping (9,000). Towns in the county of Malmöhus were small, but
Figure 5.7. Towns 1800, 1870, 1900.
Table 5.5. The ratio between the urban population in groups of counties and the national total population 1870-1970, per cent.

<table>
<thead>
<tr>
<th>Counties</th>
<th>1870*</th>
<th>1900*</th>
<th>1930</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockholm</td>
<td>3.4</td>
<td>6.2</td>
<td>10.6</td>
<td>16.0</td>
<td>17.6</td>
</tr>
<tr>
<td>Göteborg &amp; Bohus</td>
<td>1.6</td>
<td>2.8</td>
<td>5.6</td>
<td>7.3</td>
<td>8.0</td>
</tr>
<tr>
<td>Malmöhus</td>
<td>1.5</td>
<td>2.5</td>
<td>5.3</td>
<td>6.8</td>
<td>7.8</td>
</tr>
<tr>
<td>Uppsala, Södermanland, Östergötland, Örebro, Västmanland</td>
<td>2.2</td>
<td>3.4</td>
<td>7.6</td>
<td>12.2</td>
<td>14.2</td>
</tr>
<tr>
<td>Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Kristianstad</td>
<td>1.9</td>
<td>2.5</td>
<td>6.3</td>
<td>9.3</td>
<td>10.7</td>
</tr>
<tr>
<td>Halland, Älvsborg, Skaraborg</td>
<td>0.9</td>
<td>1.6</td>
<td>4.1</td>
<td>6.3</td>
<td>7.4</td>
</tr>
<tr>
<td>Värmland, Kopparberg, Gävleborg</td>
<td>1.0</td>
<td>1.6</td>
<td>4.9</td>
<td>7.7</td>
<td>8.0</td>
</tr>
<tr>
<td>Västernorrland, Jämtland</td>
<td>0.3</td>
<td>0.6</td>
<td>2.2</td>
<td>3.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Västerbotten, Norrbotten</td>
<td>0.2</td>
<td>0.4</td>
<td>1.9</td>
<td>3.9</td>
<td>4.3</td>
</tr>
</tbody>
</table>

*Concerns towns only

Sources: SCB (1955), tables A4, A7; Fo (1930-I), table P; Fo (1960-I); FoB (1965-II), table A; FoB (1970-I); FoB (1970-II), table A; Census compilation 1860 – 1970.

The embryo of an urban population axis in western Skåne can clearly be seen. In 1800 this county had a town population ranking third after the counties of Stockholm and Göteborg & Bohus.

By 1870 Göteborg had consolidated its position as the second town in Sweden. The port of Göteborg answered for a growing seaborne trade, and was by now the leading gateway for Sweden's iron and steel exports. In this period of incipient industrialization, Malmö emerged as the third town in Sweden. Altogether the county of Malmöhus had a town population of 61,000 (Malmö and adjacent towns predominating), which was almost as large as that of Göteborg & Bohus (66,000). The 1870 picture had not
changed substantially by 1900.\textsuperscript{7}

After the initial period of domination, the three metropolitan population centers grew more or less with the urban system.\textsuperscript{8} This is clearly demonstrated by Figure 5.8. The urban population in the three metropolitan counties accounted for 50 per cent of the town population in 1800, and about 40 per cent of the urban population in 1970. The county of Stockholm reported a 35 per cent share of the urban population in 1800; both Göteborg & Bohus and Malmöhus accounted for less than 10 per cent. While Stockholm reported steadily decreasing shares in the perindustrial period, Göteborg & Bohus and Malmöhus increased their shares somewhat. This continued after 1850, and these counties reached a peak of about 13 per cent by 1910. By 1970 the two counties had fallen back and held about 10 per cent each. The influence of

\textsuperscript{7}Cf., e.g., Friedmann (1973:238): "Rudimentary patterns of urbanization and regional social structure, established quite early in a country's history, tend to maintain themselves over long periods of time. Subsequent flows of controlling decisions, innovation diffusion, migration, and economic location will tend to reinforce this pattern. The most probable future pattern will therefore resemble that of the past. Planned changes may require decades and even generations of counter-intuitive effort to alter this structural pattern in a significant way." The argument was illustrated by an analysis of the geographical distribution of the population in the United States. The relative proportions of major regions changed very little between 1850 - 1960. Similarly, Clark (1967:288 f.) compared population densities in western Europe and found that present-day densely populated areas were generally the same as the densely inhabited areas of the late 18th century.

\textsuperscript{8}The map series also provides an excellent example of the influence of the railway on incipient urban development in Sweden. Before 1870 an eastern rather than a western urban population axis dominated southern Sweden. Kalmar, Karlskrona, Karlskamn, and Kristianstad in the east had together a population of 19,000 in 1800, while Malmö, Lund, Landskrona, and Helsingborg in the west had 13,000. Since the southern trunk-line by-passed the eastern towns and connected western Skåne with the system, the population development in these areas was greatly affected. By 1900 an increase of 35,000 (185 per cent) was recorded for the eastern axis, whereas the towns in western Skåne had increased about three times as much, by 104,000 (824 per cent). Cf. Nordström (1962).
Figure 5.8. Urban population in the counties of Stockholm, Göteborg & Bohus, and Malmöhus. Percentage share of the national urban population 1800 - 1970. Prior to 1920 data concern towns only.

Sources: SCB (1880), tables 7,8; SCB (1955), table A 7; Fo (1920-II), table A; Fo (1930-I), table P; Fo (1940-I), table U; Fo (1950-1), table Q; FoB (1965-II), table A; FoB (1970-II), table A; Census compilation 1960 - 1970.

Industrialization on the population development in the Stockholm region is clearly indicated by an increasing share between 1880 and 1900. After a dip in 1920, the urban population in the county of Stockholm has since answered for an average of 22 per cent of the national urban population.

To comply with Table 5.1, we have so far been discussing metropolitan development in terms of the urban population within counties. This section concludes with a discussion of Greater Stockholm and its development since 1920. Figure 5.9 shows urban development in Greater Stockholm and in Sweden as a whole. Greater Stockholm is here defined as the municipality of Stockholm and the southern and northern suburban municipalities within the Regional Planning Area as of 1 January 1971 (see figure for details).
Figure 5.9. Urban population 1920 - 1970. Sweden and Greater Stockholm.

Greater Stockholm is defined as the municipality of Stockholm and the southern and northern suburban municipalities within the Regional Planning Area as of 1 January 1971, except for the municipality of Upplands-Bro and the parishes of Sigtuna, Sankt Olof, Sankt Per, and Haga in the municipality of Sigtuna. For the extension of The Regional Planning area and a list of the southern and northern suburban municipalities see Statistisk Årsbok för Stockholm 1971, pp. 316 f.

Sources: SCB (1955), table A 15; Census compilation 1960 - 1970; Fo (1920-I), table 1; Fo (1930-I), tables 1, 2; Fo (1935-I), tables 1, 2; Fo (1940-I), tables 1, 16; Fo (1945-I), tables 1, 15; Fo (1950-I), table 1, 12.
In 1920 Greater Stockholm had a degree of urbanization as high as 91.2 per cent; by 1970 it had reached 98 per cent (Table 5.6).


<table>
<thead>
<tr>
<th>Year</th>
<th>Per cent population urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>91.2</td>
</tr>
<tr>
<td>1930</td>
<td>92.1</td>
</tr>
<tr>
<td>1935</td>
<td>93.6</td>
</tr>
<tr>
<td>1940</td>
<td>94.4</td>
</tr>
<tr>
<td>1945</td>
<td>95.7</td>
</tr>
<tr>
<td>1950</td>
<td>95.9</td>
</tr>
<tr>
<td>1960</td>
<td>97.3</td>
</tr>
<tr>
<td>1965</td>
<td>97.9</td>
</tr>
<tr>
<td>1970</td>
<td>98.0</td>
</tr>
</tbody>
</table>

Sources: see Figure 5.9.

The urban population in Greater Stockholm increased almost twice as fast as the national average between 1920 and 1930. Apart from this period, the area has developed more or less with the national urban population, keeping a constant share of some 20 per cent of the urban population in Sweden (see Tables 5.7 and 5.8). The most pronounced deviation from the national urban growth since the 1920s occurred during the 1940s and the 1960s. Between 1940 and 1945 the increase in Greater Stockholm was somewhat above average; in the following five-year period it was somewhat below. During the 1960s Stockholm increased by 16.0 per cent, and the national urban population by 20.6 per cent. Greater Stockholm's share thus decreased from 20.6 per cent in 1960 to 19.8 per cent in 1970.
Table 5.7. Percentage urban growth 1920 - 1970, Sweden and Greater Stockholm.

<table>
<thead>
<tr>
<th>Period</th>
<th>Sweden</th>
<th>Greater Stockholm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920-1930</td>
<td>11.5</td>
<td>21.1</td>
</tr>
<tr>
<td>1930-1935</td>
<td>7.8</td>
<td>7.7</td>
</tr>
<tr>
<td>1935-1940</td>
<td>11.6</td>
<td>11.5</td>
</tr>
<tr>
<td>1940-1945</td>
<td>13.7</td>
<td>15.8</td>
</tr>
<tr>
<td>1945-1950</td>
<td>14.5</td>
<td>12.0</td>
</tr>
<tr>
<td>1950-1960</td>
<td>17.0</td>
<td>17.7</td>
</tr>
<tr>
<td>1960-1965</td>
<td>10.3</td>
<td>8.8</td>
</tr>
<tr>
<td>1965-1970</td>
<td>9.3</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Sources: see Figure 5.9.

Table 5.8. The ratio between the urban population in Greater Stockholm and the national urban population 1920 - 1970, per cent.

<table>
<thead>
<tr>
<th>Year</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>18.9</td>
</tr>
<tr>
<td>1930</td>
<td>20.6</td>
</tr>
<tr>
<td>1935</td>
<td>20.5</td>
</tr>
<tr>
<td>1940</td>
<td>20.5</td>
</tr>
<tr>
<td>1945</td>
<td>20.9</td>
</tr>
<tr>
<td>1950</td>
<td>20.5</td>
</tr>
<tr>
<td>1960</td>
<td>20.6</td>
</tr>
<tr>
<td>1965</td>
<td>20.3</td>
</tr>
<tr>
<td>1970</td>
<td>19.8</td>
</tr>
</tbody>
</table>

Source: see Figure 5.9.
The retarded population development in Greater Stockholm during the 1960s was highlighted in a study by Ahnström who investigated the industrial development of the Capital region since 1950 by computing location quotients (LQ). Most activities reported falling LQs (see Table 5.9). Ahnström's most striking find was the declining LQ for activities believed to be particularly big-city oriented. For example, in 1950 Greater Stockholm had three times the national average employment in Business services but by 1970 this LQ had dropped to less than two and a half.

Several authors have testified that for various periods the three largest cities, Stockholm in particular, have not increased more rapidly than the national urban population. But with few exceptions, the ultimate conclusion of these findings seems to have been overlooked when the concentration of population to the metropolitan areas has been discussed.

9 Ahnström (1976). To determine whether a region has more or less than its share of a specific activity, the location quotient (LQ), a simple ratio of ratios, may be computed. Let us illustrate with the case of manufacturing.

\[ LQ = \frac{M_r}{T_r} \times \frac{M_t}{T_t} \]

where

- \( M_r \) = region's employment in manufacturing
- \( T_r \) = region's employment in all activities
- \( M_t \) = national employment in manufacturing
- \( T_t \) = national employment in all activities

If the region's percentage employment in manufacturing is greater than the corresponding ratio for the nation, the region has more than its share of this activity. An LQ of 2 thus means that the region has twice the national average employed in manufacturing and LQ = 1 indicates an employment on par with the national average.


11 See footnote 4 above.

<table>
<thead>
<tr>
<th>LQs</th>
<th>**</th>
<th>per cent</th>
<th>1950</th>
<th>1960</th>
<th>1965</th>
<th>1970</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Agriculture, hunting, forestry, and fishing</td>
<td>0.09</td>
<td>0.10**</td>
<td>0.09**</td>
<td>0.12**</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II Industry</td>
<td>0.80</td>
<td>0.90</td>
<td>0.76</td>
<td>0.70</td>
<td>29.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>0.02</td>
<td>0.16</td>
<td>0.17</td>
<td>0.20</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing and repairing</td>
<td>0.89</td>
<td>0.89</td>
<td>0.71</td>
<td>0.64</td>
<td>19.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>0.94</td>
<td>0.94</td>
<td>0.92</td>
<td>0.89</td>
<td>8.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity, gas, and water</td>
<td>1.32</td>
<td>1.35</td>
<td>1.23</td>
<td>1.21</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III Retail and wholesale trade</td>
<td>1.64</td>
<td>1.36</td>
<td>1.44</td>
<td>1.33</td>
<td>16.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV Transport, storage, and communication</td>
<td>1.26</td>
<td>1.29</td>
<td>1.26</td>
<td>1.28</td>
<td>9.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V Banking, insurance, and real estate; Business services of which Business serv.(3.12)</td>
<td>2.91</td>
<td>2.78</td>
<td>2.47</td>
<td>2.24</td>
<td>11.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI Community, social, and personal services</td>
<td>1.59</td>
<td>1.47</td>
<td>1.38</td>
<td>1.31</td>
<td>32.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public administration and defence</td>
<td>2.12</td>
<td>1.93</td>
<td>1.70</td>
<td>1.59</td>
<td>7.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education and research</td>
<td>1.36</td>
<td>1.32</td>
<td>1.29</td>
<td>1.27</td>
<td>6.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical, dental, veterinary, and health serv; Welfare institutions</td>
<td>1.34</td>
<td>1.26</td>
<td>1.13</td>
<td>1.06</td>
<td>9.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business, professional, and labor associations</td>
<td>3.91</td>
<td>3.35</td>
<td>2.96</td>
<td>3.09</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious organizations and other social and related community serv.</td>
<td>0.84</td>
<td>0.74</td>
<td>0.77</td>
<td>0.77</td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational and cultural serv.</td>
<td>2.79</td>
<td>2.59</td>
<td>2.91</td>
<td>2.03</td>
<td>2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants and hotels</td>
<td>1.81</td>
<td>1.66</td>
<td>1.53</td>
<td>1.34</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic serv.</td>
<td>1.00</td>
<td>0.73</td>
<td>0.64</td>
<td>0.65</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other personal and household serv. (Incl. Sanitary serv.)</td>
<td>1.57</td>
<td>1.49</td>
<td>1.41</td>
<td>1.29</td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII Activities not adequately defined</td>
<td>1.90</td>
<td>1.65</td>
<td>1.82</td>
<td>2.60</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Greater Stockholm is defined as the municipality of Stockholm and the southern and northern suburban municipalities within the Regional Planning Area as of 1 January 1971. See Statistisk årsbok för Stockholm 1971, pp. 316 f.
** Revised figures
*** In order to complete the industrial profile of Stockholm the percentages were added.

Source: Ahnström (1976)
The material used for the analysis of the urban development in Sweden 1960 - 1970 was the corrected data for urban places contained in the publications of the three censuses of 1960, 1965, and 1970. This material was updated according to further corrections supplemented by the census.

For regionalization purposes the central point of each urban place was assigned co-ordinates with an accuracy of one kilometer in the national system. The source was the register of co-ordinates prepared by Micklander and Torstensson in connection with the 1960 census which was later revised by Micklander for 1965 and 1970.

For an unbiased study of the population development in urban places, a cohort of permanent places was prepared. Included were those urban places which had been reported in each of the 1960, 1965, and 1970 censuses. Excluded were places entering the statistics after 1960 and places dropped from the statistics after that year. Urban places which had been amalgamated by an areal extension of built-up areas after 1960, were treated as one agglomeration throughout the ten-year period. If, for example, two places that were accounted for separately in the 1960 census had been amalgamated by 1965, the two population figures for 1960 were added and treated as one unit.

---

12 Fo (1960-VI), table 3; FoB (1965-IV), table 5; SCB (1972 b, c), table T1; SCB (1973 a, b), table T 1.
13 FoB (1965-II), bilaga 2; FoB (1970-II), bilaga 2.
14 In the national system of co-ordinates, which is used for the economic map, the y co-ordinate is designated by the eastward distance from a line 1,500 kilometers west of the meridian 2,5W, and the x co-ordinate by the distance from the equator. In the y-line co-ordinates range between 1,200 and 1,900 kilometers; in the x-line between 6,100 and 7,700 kilometers (Wallner 1971:99).
15 Micklander & Torstensson (1964). The revised edition was generously made available for this study by the Expert Group of Regional Studies within the Ministry of Labor.
cohort of permanent places thus established comprises 1,569 urban places or 98.8 per cent of the urban population in 1970.

It was considered imperative to bring the analysis down to the development of individual places. But such an approach is not without shortcomings. Explanations of the population development in urban places will be sought from a few generic factors. But the development of individual places may be determined by a host of randomly interplaying factors. Furthermore, Chapter 3 dealt with possible sources of error in the delimitation of urban places which might hamper the comparability between places and between censuses. By having a large number of observations brought together in a class-wise analysis, it is possible to unravel the generic development for groups of places and for regions. It is then possible to relate the development of each individual place to this generic development. It is of paramount importance that such a class-wise analysis is performed for a cohort of permanent places, the places being classified according to their size either at the beginning or the end of the period of study. Otherwise the picture may become completely warped by the possibilities of observations "changing classes" during the period. The class-wise analysis was performed for the cohort of permanent urban places; places were classified according to their size in 1960. Nine classes were used in accordance with the recommendations of the United Nations. 16

Total population figures for administrative areas were also obtained from the census, 17 and the rural population was represented by the residual of the urban.

16 See Chapter 4, footnote 23.
17 Fo (1960-I), FoB (1965-I), and FoB (1970-I).
VI. URBAN DEVELOPMENT IN SWEDEN 1960—1970

We now turn to a detailed analysis of urban development in Sweden between 1960 and 1970. The first section of this chapter points out some general aspects concerning the system of urban places. It is followed by a discussion of the development by groups of places and by regions. The material is gradually disaggregated down to the level of individual urban places. Following a discussion of the development of individual places the material is aggregated again, but this time on the basis of the relative location of places; the population development by urban regions is studied.

General Aspects

As emphasized in Chapter 4, the Swedish urban system embraces a large number of small agglomerations. But these account for a small proportion of the urban total. The population and number of places by size-groups 1960 - 1970 are reintroduced in Table 6.1 which also shows the mean population of each group. In 1970 the proportion of the population living in urban places was 81.4 per cent. If, for example, the threshold for urban places were set at 2,500 inhabitants, Sweden's degree of urbanization would still be as high as 69.3 per cent, but the
Table 6.1. Urban population 1960 - 1970 by size of urban place

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>1960</th>
<th></th>
<th>1965</th>
<th></th>
<th>1970</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of places</td>
<td>Population</td>
<td>%</td>
<td>Number of places</td>
<td>Population</td>
<td>%</td>
</tr>
<tr>
<td>200-499</td>
<td>882 (48.6)</td>
<td>281,118 (5.2)</td>
<td>848 (46.6)</td>
<td>269,864 (4.5)</td>
<td>753 (42.4)</td>
<td>240,741 (3.7)</td>
</tr>
<tr>
<td>500-999</td>
<td>402 (22.2)</td>
<td>281,882 (5.2)</td>
<td>390 (21.4)</td>
<td>275,061 (4.6)</td>
<td>409 (23.1)</td>
<td>285,823 (4.3)</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>224 (12.3)</td>
<td>317,630 (5.8)</td>
<td>229 (12.6)</td>
<td>321,300 (5.3)</td>
<td>231 (13.0)</td>
<td>330,126 (5.0)</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>160 (8.8)</td>
<td>489,760 (9.0)</td>
<td>189 (10.4)</td>
<td>576,326 (9.6)</td>
<td>208 (11.7)</td>
<td>664,522 (10.1)</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>70 (3.9)</td>
<td>484,947 (8.9)</td>
<td>69 (3.8)</td>
<td>473,652 (7.9)</td>
<td>65 (3.7)</td>
<td>460,488 (7.0)</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>37 (2.0)</td>
<td>533,777 (9.8)</td>
<td>48 (2.6)</td>
<td>660,945 (11.0)</td>
<td>59 (3.3)</td>
<td>838,123 (12.7)</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>26 (1.4)</td>
<td>744,457 (13.7)</td>
<td>33 (1.8)</td>
<td>999,662 (16.6)</td>
<td>32 (1.8)</td>
<td>998,032 (15.2)</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>10 (0.6)</td>
<td>688,721 (12.6)</td>
<td>10 (0.5)</td>
<td>744,344 (12.4)</td>
<td>14 (0.8)</td>
<td>1,032,468 (15.7)</td>
</tr>
<tr>
<td>100,000-</td>
<td>3 (0.2)</td>
<td>1,629,649 (29.9)</td>
<td>3 (0.2)</td>
<td>1,691,254 (28.1)</td>
<td>3 (0.2)</td>
<td>1,723,924 (26.2)</td>
</tr>
<tr>
<td></td>
<td>1,814 (100.0)</td>
<td>5,451,941 (100.0)</td>
<td>1,819 (100.0)</td>
<td>6,012,408 (100.0)</td>
<td>1,774 (100.0)</td>
<td>6,574,247 (100.0)</td>
</tr>
</tbody>
</table>

Mean population

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-499</td>
<td>320</td>
</tr>
<tr>
<td>500-999</td>
<td>699</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>1,429</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>3,195</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>7,084</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>14,205</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>31,188</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>73,748</td>
</tr>
<tr>
<td>100,000-</td>
<td>574,641</td>
</tr>
</tbody>
</table>

Source: Census compilation 1960 - 1970
urban places would only number 327 (18 per cent of the present total). Outside the metropolitan areas (defined as the A-regions of Stockholm/Södertälje, Göteborg, and Malmö/Lund/Trelleborg) Sweden reported a degree of urbanization of 75.1 per cent.

The geographical distribution of urban places is presented below in Figure 6.11a (and in the map series supplemented in the back of the book). Four main characteristics of the urban population distribution stand out on the maps: (1) the metropolitan concentration around Stockholm, Göteborg, and Malmö; (2) the predominance of small urban places in the interior parts of northern Sweden; (3) the almost exclusive coastal location of larger urban places in the northern half of Sweden; (4) the even spread of small, medium-sized, and large urban places in the interior of the central and southern parts of the country.

As regards the number of places in different size-groups, the most pronounced changes in the 1960s concerned size-groups 200-499 (a net loss of 129 places) and 2,000-4,999 (an increase from 160 to 208). Sweden counted only three agglomerations with more than 100,000 people throughout the ten-year period.

Although the total number of places decreased from 1,814 to 1,774 new places were added during the period. As shown by Table 6.2 no less than 1569 places were reported in all the three censuses. A total of 148 agglomerations fell below the population threshold of 200 inhabitants and were subsequently dropped from the statistics; 197 new urban places were recognized and added. (We shall later return to these two categories of agglomerations for a discussion of their location, see Figure 6.12). A net loss of 40 places during the 10-year period was obtained by the subtraction of 89 places, which by areal extension of their built-up areas, had been amalgamated with other places. The total area occupied by urban places was small; the urban built-up areas covered only one percent of Sweden's total land surface (411,406 sq.kilometers) in 1970.1

1 SCB (1972 d)
Table 6.2. The urban system 1960 - 1970. Permanent and new places, places dropped from the statistics.

<table>
<thead>
<tr>
<th>Population</th>
<th>1960</th>
<th>1965</th>
<th>1970</th>
<th>Number of places</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent places 1960-70</td>
<td></td>
<td></td>
<td></td>
<td>1,569</td>
</tr>
<tr>
<td>Places dropped from the statistics in 1970</td>
<td>17,719</td>
<td>15,811</td>
<td>-</td>
<td>71</td>
</tr>
<tr>
<td>Places dropped from the statistics in 1965</td>
<td>17,245</td>
<td>-</td>
<td>-</td>
<td>77</td>
</tr>
<tr>
<td>New places in 1965</td>
<td>-</td>
<td>32,388</td>
<td>47,867</td>
<td>103*</td>
</tr>
<tr>
<td>New places in 1970</td>
<td>-</td>
<td>-</td>
<td>32,356</td>
<td>94**</td>
</tr>
<tr>
<td>Places reported in 1960 and 1970 but dropped from the statistics in 1965</td>
<td>1,782</td>
<td>-</td>
<td>1,904</td>
<td>8</td>
</tr>
<tr>
<td>Places reported in 1965 but dropped from the statistics in 1960 and 1970</td>
<td>-</td>
<td>2,894</td>
<td>-</td>
<td>13</td>
</tr>
</tbody>
</table>

5,451,941 6,012,408 6,574,247 1,935

*A further 5 places were added to the statistics in 1965 but were amalgamated with other places between 1965 and 1970 (see below).

**In the 1970 census one agglomeration was split up and reported as two urban places. In the cohort of permanent places 1960-1970 it is regarded as one place.

Amalgamated places: 58 urban places reported both in 1960 and in 1965 were amalgamated with other places between 1965 and 1970; 31 places reported in 1960 were amalgamated with others during the 1960-1965 period; 5 new places in 1965 were amalgamated with others between 1965 and 1970.

Source: Census compilation 1960 - 1965.

The distribution of population with regard to sex and age differs strongly between urban places and rural areas (Figure 6.1). The rural areas are considerably marked by the extensive out-migration of working-age people;
an excess in the older age-groups is clearly seen. The relatively few children born in rural areas are the offspring of a small parent generation.

Figure 6.1. Population by sex and age 1970, urban places and rural areas. Percentage distribution.

URBAN REDISTRIBUTION BY REGION

This section closes with an overall picture of the urban change in the 1960s. Figure 6.2a presents the urban population in 1970 and the percentage change 1960 - 1970 by A-regions (the map was also referred to in Chapter 5). Figure 6.2b shows the relative redistribution expressed in absolute quantities. Since the population redistribution in terms of positive or negative deviations from the national average growth rate is computed at various generalization levels throughout this chapter, the method is further explained below.

By calculating how many urban dwellers regions should have in 1970 to have grown in the sixties at the rate of the national urban population, gains or losses in relation to the national average can easily be expressed in absolute quantities. For the 1960s the redistribution figure (R) is obtained by the multiplication of the region's urban population figure in 1960 by the national urban growth rate for the sixties; the product is then compared with the figure actually reported for the region in 1970.

\[ R = A_1 - A_0 \cdot \frac{B_1}{B_0} \]
where \( R \) = redistribution gain/loss

\[
\begin{align*}
A_0 &= \text{region's urban population at the beginning of period} \\
A_1 &= \text{region's urban population at the end of period} \\
B_0 &= \text{national urban population at the beginning of period} \\
B_1 &= \text{national urban population at the end of period}
\end{align*}
\]

A positive value of \( R \) (redistribution gain) indicates that the region has increased its share of the national urban population, and a negative (redistribution loss) the opposite; thus, the value zero indicates a development on par with the national urban population. Obviously the sum of redistribution gains and losses is zero.

It must be emphasized that the redistribution figures are not measures of net migrations among regions. A redistribution loss of 1,000 people does not mean that the region actually lost 1,000 people by out-migration. It simply means that the urban population in the region would have been 1,000 people more if the region's urban population had grown at the same rate as the national average.\(^2\)

All regions in northern Sweden except Umeå and Piteå showed an urban growth rate below the national average (20.6 per cent) and hence reported redistribution losses. (As already noted both Mora and Härnösand/Kramfors actually showed urban depopulation.) With an increase of 32.1 per cent, Umeå was among the 12 fastest growing A-regions during the sixties. While Stockholm/Södertälje had a growth rate just below the national average (19.0 per cent, equivalent to a redistribution loss of 18,400), seven surrounding regions reported growth rates well above the national average. The redistribution gains for the seven regions totalled 52,500; they include some of the fastest growing A-regions of the 1960s. The highest urban growth rate in Sweden was registered for Enköping (73.3 per cent). Other regions with growth rates exceeding 30 per cent were Norrtälje (41.0), Nyköping (40.5), Uppsala (36.6), and Västerås (31.6).

Since the Göteborg A-region had an urban growth rate just above the national average (22.0), the region registered a redistribution gain of 7,500; Malmö/Lund/Trelleborg had a rate of increase of 25.7 per cent which is equivalent to a redistribution gain of 16,600.

\(^2\)Cf. for example Zelinsky (1958).
Figure 6.2 a. Urban population. Number of persons 1970 and percentage change 1960 - 1970 by A-regions. National average urban growth 20.6 per cent.


Figure 6.2 b. Urban population. Regional redistribution 1960 - 1970 by A-regions. Gains and losses relative to equal growth in all regions (see text).

A string of regions in the south-east showed redistribution losses, whereas the opposite was mostly true for regions in the central and western parts of southern Sweden. Five regions in the south had a growth rate exceeding 30 per cent: Ljungby (42.8) followed by Värnamo (41.7), Karlshamn (39.7), Falkenberg/Varberg (39.0), and Växjö (37.2). With a 42.4 per cent increase Mariestad on Lake Vänern completes the list of the 12 regions exhibiting growth rates above 30 per cent.

The maps once again illustrate that the metropolitan areas in an inter-regional perspective compare unfavorably with many other regions. The urban rate of increase was close to the average in Stockholm/Södertälje and Göteborg and somewhat higher in Malmö. Several other regions reported growth rates (and redistribution gains as well) which exceeded those of the metropolitan regions. Later in this chapter we shall return to the intra-regional redistribution of the urban population.

Development by Size-Groups of Urban Places

REGIONALIZATION

For practical purposes, larger regions than those used in the previous analysis had to be found for the study of places by size-groups. The regionalization should comprise as few areas as possible but still discriminate between major areas from the point of view of demographic and industrial structure. In view of what has been said above about the geographical distribution of urban places in Sweden, such a subdivision should at least differentiate between the interior and the coastal areas of northern Sweden and the southern part of the country. The metropolitan regions should also be treated separately.

An operational regionalization that suits the present study would depart from the official division of Sweden into support areas under the regional development program.
(The inner aid area and the general aid area.) Figures 6.3 and 6.4 show the break-down of Sweden into the major regions employed in the present study. To separate the coastal and the interior parts of northern Sweden, four main areas were initially discerned: Norrland Interior accords with the inner aid area, while the general aid area was divided into Norrland Coast and Svealand North-West; the residual region was called Sweden Central and South.

In the next stage, Sweden Central and South was subdivided into three major areas: Skåne and West Coast, Småland, and Sweden Central. A third stage treated the metropolitan regions and their residual areas separately. The metropolitan areas were also taken together and analyzed separately from the rest of Sweden. Altogether the step-wise subdivision comprises 15 regions. A list of municipalities making up each region follows below (Appendix).

Figure 6.3 also shows that Norrland Interior, Norrland Coast, and Svealand North-West together accounted for only 15 per cent of the national urban population in 1970. Skåne and West Coast and Småland answered for 28 and 11 per cent respectively, while Sweden Central's proportion amounted to 46 per cent. Of the three metropolitan regions (which together answered for 37 per cent), Stockholm alone accounted for 21 per cent.

3 The extent of the aid areas as of April 1974 was obtained from the Ministry of Labor (RU-enheten vid Arbetsmarknadsdepartementet).

4 The municipalities of Vansbro, Malung, and Torsby, which belong to the inner aid area, were included in Svealand North-West. The municipalities of Gotland, Borgholm, and Mörbylånga, which belong to the general aid area, were included in Sweden Central and South.

5 The metropolitan areas of Stockholm, Göteborg, and Malmö were here defined as the Stockholm/Södertälje A-region, the Göteborg A-region and the Malmö/Lund/Trelleborg A-region respectively.

6 For convenience the three metropolitan areas taken together will be called a region although it is obviously not contiguous.
Figure 6.3. Break-down of major regions. Figures denote region's percentage share of the national urban population.

Norrländ Interior and Svealand North-West reported the lowest degree of urbanization (below 70 per cent) among the regions and they alone had an urban growth rate that deviated strongly from the national average (Table 6.3). Both regions together registered a redistribution loss of almost 60,000 people during the decade. Sweden reported a somewhat decreasing urban growth rate in the latter half of the decade as compared with the first (10.0 and 9.3 per cent). This holds for all regions with the exception of Norrländ Interior and Norrländ Coast, which reported the reverse.

According to Table 6.1 urban places with less than 2,000 inhabitants accounted for 79 per cent of the places in 1970 but for only 13 per cent of the urban population in Sweden. But the picture was strikingly different in Norrländ Interior (especially) and Svealand North-West. The predominance of small urban places in these areas was already noted above. Table 6.4 emphasizes this by demonstrating that in Norrländ Interior 89 per cent of the
Figure 6.4. Major Regions.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Norrland Interior</td>
<td>259,176</td>
<td>61.2</td>
<td>5.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Norrland Coast</td>
<td>479,465</td>
<td>74.8</td>
<td>20.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Svealand North-West</td>
<td>273,807</td>
<td>68.0</td>
<td>11.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Sweden Central and South</td>
<td>5,561,799</td>
<td>84.2</td>
<td>21.9</td>
<td>11.0</td>
</tr>
<tr>
<td>Småland</td>
<td>706,264</td>
<td>72.1</td>
<td>24.4</td>
<td>12.1</td>
</tr>
<tr>
<td>Skåne and West Coast</td>
<td>1,825,525</td>
<td>83.9</td>
<td>22.2</td>
<td>11.0</td>
</tr>
<tr>
<td>Sweden Central</td>
<td>3,030,010</td>
<td>87.7</td>
<td>21.1</td>
<td>10.8</td>
</tr>
<tr>
<td>Malmö Metropolitan Area</td>
<td>408,033</td>
<td>92.3</td>
<td>25.7</td>
<td>12.9</td>
</tr>
<tr>
<td>Göteborg Metropolitan Area</td>
<td>645,933</td>
<td>91.0</td>
<td>22.0</td>
<td>10.7</td>
</tr>
<tr>
<td>Skåne and West-Coast, Metropolitan Areas Excluded</td>
<td>771,559</td>
<td>75.3</td>
<td>20.7</td>
<td>10.3</td>
</tr>
<tr>
<td>Stockholm Metropolitan Area</td>
<td>1,400,272</td>
<td>97.3</td>
<td>19.0</td>
<td>9.8</td>
</tr>
<tr>
<td>Sweden Central Metropolitan Area Excluded</td>
<td>1,629,738</td>
<td>81.3</td>
<td>23.0</td>
<td>11.6</td>
</tr>
<tr>
<td>Metropolitan Areas</td>
<td>2,454,238 (94.7)</td>
<td>20.9</td>
<td>10.5</td>
<td>9.3</td>
</tr>
<tr>
<td>Sweden Total Metropolitan Areas Excluded</td>
<td>4,120,009</td>
<td>75.1</td>
<td>20.4</td>
<td>10.1</td>
</tr>
<tr>
<td>Sweden Total</td>
<td>6,574,247</td>
<td>81.4</td>
<td>20.6</td>
<td>10.3</td>
</tr>
</tbody>
</table>

*Gains and losses relative to equal growth in all regions (see text).

Table 6.4. Urban population 1970 by size of urban place
and major regions.

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>Number of places 1970</th>
<th>Population 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1970</td>
<td>%</td>
</tr>
<tr>
<td><strong>Norrland Interior</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200-499</td>
<td>104</td>
<td>(51.2)</td>
</tr>
<tr>
<td>500-999</td>
<td>48</td>
<td>(23.6)</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>28</td>
<td>(13.8)</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>13</td>
<td>(6.4)</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>7</td>
<td>(3.4)</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>1</td>
<td>(0.5)</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>2</td>
<td>(1.0)</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>100,000-</td>
<td>203</td>
<td>(100.0)</td>
</tr>
<tr>
<td><strong>Norrland Coast</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200-499</td>
<td>82</td>
<td>(43.6)</td>
</tr>
<tr>
<td>500-999</td>
<td>37</td>
<td>(19.7)</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>31</td>
<td>(16.5)</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>25</td>
<td>(13.3)</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>1</td>
<td>(0.5)</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>7</td>
<td>(3.7)</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>4</td>
<td>(2.1)</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>1</td>
<td>(0.5)</td>
</tr>
<tr>
<td>100,000-</td>
<td>188</td>
<td>(100.00)</td>
</tr>
<tr>
<td><strong>Svealand North-West</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200-499</td>
<td>69</td>
<td>(45.4)</td>
</tr>
<tr>
<td>500-999</td>
<td>43</td>
<td>(28.3)</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>12</td>
<td>(7.9)</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>18</td>
<td>(11.8)</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>5</td>
<td>(3.3)</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>3</td>
<td>(2.0)</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>2</td>
<td>(1.3)</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>100,000-</td>
<td>152</td>
<td>(100.0)</td>
</tr>
<tr>
<td><strong>Sweden Central and South</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200-499</td>
<td>498</td>
<td>(40.5)</td>
</tr>
<tr>
<td>500-999</td>
<td>281</td>
<td>(22.8)</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>160</td>
<td>(13.0)</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>152</td>
<td>(12.3)</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>52</td>
<td>(4.2)</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>48</td>
<td>(3.9)</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>24</td>
<td>(1.9)</td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>13</td>
<td>(1.1)</td>
</tr>
<tr>
<td>100,000-</td>
<td>3</td>
<td>(0.2)</td>
</tr>
<tr>
<td>1,231</td>
<td>1,231</td>
<td>(100.0)</td>
</tr>
</tbody>
</table>

Source: Census compilation 1960 - 1970
agglomerations had less than 2,000 inhabitants. The small places, however, accounted for no less than 40 per cent of the urban population in the region. The corresponding figures for Svealand North West were 82 and 26 per cent, respectively.

This argument may be further illustrated by a Lorenz-diagram (Figure 6.5). The curves in the figure are heavily bow-shaped, indicating the dominance of large urban places. Norrland Interior and Svealand North-West are less

**Figure 6.5.** Lorenz-diagram, urban places and urban population by major regions.

*Source: Census compilation 1960 - 1970.*
bow-shaped than the others due to their larger proportion of small places. In Norrland Interior, for example, 80 per cent of the agglomerations answered for 30 per cent of the urban population; in Sweden Central and South the same proportion of urban places accounted for less than 15 per cent.

The urban system registered a net loss of 40 places during the decade. Norrland Interior showed a net loss of 38 urban places, Norrland Coast and Svealand North-West reported a reduction of 19 and 3 respectively. On the other hand, Sweden Central and South showed a net gain of 20 places.

ANALYSIS BY SIZE-GROUPS

The investigation of urban change by size-groups and major regions was based on the cohort of permanent places 1960 - 1970 (Chapter 5). The cohort comprised 1,569 places which accounted for 98.8 per cent of the 1970 urban population. The percentage distribution of places and inhabitants by size-groups (according to the 1960 size) was more or less equal to that of all places reported in 1970 (Table 6.5; Table 6.1).

The average growth rate of the cohort during the decade was somewhat lower than that of the total urban population: 19.9 and 20.6 per cent. In most cases the cohort exhibited a growth rate slightly below that of the urban total for the region (Table 6.6; Table 6.3). Two obvious exceptions were Norrland Interior and Norrland Coast where the cohort places showed a more rapid growth rate than the total urban population. These regions registered a net loss of 57 agglomerations during the decade.

In the first series of diagrams, columns are proportional to the percentage of urban population change (Figures 6.6 - 6.7). In the following series (Figures 6.8 - 6.9) they show absolute changes. Each size-group has three columns or bars: the left (white) illustrates urban change during the whole decade (1960 the base year); the center (black), urban change 1960 - 1965 (1960 the base year); and the right (black), urban change 1965 - 1970 (1965 the base year).

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>Population</th>
<th>%</th>
<th>Number of places</th>
<th>%</th>
<th>Mean population</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-499</td>
<td>270,801</td>
<td>4.2</td>
<td>674 (43.0)</td>
<td>402</td>
<td></td>
</tr>
<tr>
<td>500-999</td>
<td>376,204</td>
<td>5.8</td>
<td>389 (24.8)</td>
<td>967</td>
<td></td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>398,303</td>
<td>6.1</td>
<td>210 (13.4)</td>
<td>1,897</td>
<td></td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>611,245</td>
<td>9.4</td>
<td>151 (9.6)</td>
<td>4,048</td>
<td></td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>638,664</td>
<td>9.8</td>
<td>68 (4.3)</td>
<td>9,392</td>
<td></td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>661,396</td>
<td>10.2</td>
<td>37 (2.4)</td>
<td>17,876</td>
<td></td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>995,164</td>
<td>15.3</td>
<td>27 (1.7)</td>
<td>36,858</td>
<td></td>
</tr>
<tr>
<td>50,000-99,999</td>
<td>816,966</td>
<td>12.6</td>
<td>10 (0.6)</td>
<td>81,697</td>
<td></td>
</tr>
<tr>
<td>100,000-</td>
<td>1,723,924</td>
<td>26.6</td>
<td>3 (0.2)</td>
<td>574,641</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6,492,667</td>
<td>(100.0)</td>
<td>1,569 (100.0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chapter 4 (Tables 4.8 - 4.10) showed a rather consistent pattern of urban growth for various periods between 1920 and 1960: smaller size-groups reported growth rates below the national average; medium-sized and large urban places exhibited a growth close to the average.

Sweden registered a pattern of urban change during the 1960s that contrasts with those reported for the previous periods.

Sweden Total. With the exception of the very smallest places, agglomerations with less than 10,000 inhabitants increased considerably faster than the national average for the sixties (above 30 per cent). Medium-sized agglomerations (10,000-49,999) were also somewhat above the national average (24 and 26 per cent) while larger urban places showed a retarding population. A further change in the urban pattern was observed; whereas places with less than 5,000 inhabitants reported increasing growth rates during the second half of the sixties as compared to the first, the opposite applied to places above this size. The beginning of a population dispersal towards smaller

\[ \text{But the size-group 200-499 reported a more rapid growth than the national average in the 1965 - 1970 period.} \]

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Norrland Interior</td>
<td>256,535</td>
<td>9.1</td>
<td>3.9</td>
<td>4.9</td>
</tr>
<tr>
<td>Norrland Coast</td>
<td>475,026</td>
<td>21.0</td>
<td>9.4</td>
<td>10.6</td>
</tr>
<tr>
<td>Svealand North-West</td>
<td>268,870</td>
<td>10.7</td>
<td>5.4</td>
<td>5.0</td>
</tr>
<tr>
<td>Sweden Central and South</td>
<td>5,492,236</td>
<td>20.8</td>
<td>10.7</td>
<td>9.2</td>
</tr>
<tr>
<td>Småland</td>
<td>698,881</td>
<td>23.9</td>
<td>12.0</td>
<td>10.6</td>
</tr>
<tr>
<td>Skåne and West-Coast</td>
<td>1,796,053</td>
<td>20.8</td>
<td>10.5</td>
<td>9.3</td>
</tr>
<tr>
<td>Sweden Central</td>
<td>2,997,302</td>
<td>20.2</td>
<td>10.5</td>
<td>8.7</td>
</tr>
<tr>
<td>Malmö Metropolitan Area</td>
<td>404,858</td>
<td>25.2</td>
<td>13.0</td>
<td>10.8</td>
</tr>
<tr>
<td>Göteborg Metropolitan Area</td>
<td>631,903</td>
<td>19.5</td>
<td>9.6</td>
<td>9.0</td>
</tr>
<tr>
<td>Skåne and West-Coast,</td>
<td>759,292</td>
<td>19.7</td>
<td>10.1</td>
<td>8.8</td>
</tr>
<tr>
<td>Metropolitan Areas Excl.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stockholm Metropolitan Area</td>
<td>1,388,783</td>
<td>18.0</td>
<td>9.6</td>
<td>7.7</td>
</tr>
<tr>
<td>Sweden Central, Metropolitan Area Excl.</td>
<td>1,608,519</td>
<td>22.0</td>
<td>11.3</td>
<td>9.6</td>
</tr>
<tr>
<td>Metropolitan Areas</td>
<td>2,425,544</td>
<td>19.5</td>
<td>10.1</td>
<td>8.6</td>
</tr>
<tr>
<td>Sweden Total, Metropolitan Areas Excl.</td>
<td>4,067,123</td>
<td>20.1</td>
<td>10.0</td>
<td>9.1</td>
</tr>
<tr>
<td>Sweden Total</td>
<td>6,492,667</td>
<td>19.9</td>
<td>10.1</td>
<td>8.9</td>
</tr>
</tbody>
</table>


urban places was discernible.

It must be emphasized that the low figure (4.5 per cent) for Stockholm, Göteborg, and Malmö (size-group 100,000 and above) concerns the metropolitan cores only. As will be demonstrated below, the 1960s was a decade of strong suburbanization and exceptionally high growth rates were recorded in urban places around the three largest agglomerations (Figure 6.7). The development of populous residential areas in the environs of larger urban places partly explains the growth rates of smaller urban places shown in Figure 6.6 a. A conspicuous example was found in size-group


500-999 which registered the highest growth rate (38.3 per cent). This number was partly explained by the exceptional increase of Bollmora, a suburb of Stockholm which grew from some 600 inhabitants to 19,000 - an increase of 2,900 per cent. With Bollmora excluded from the analysis, the size-group recorded an increase of 31.6 per cent.

Although the largest urban increment in absolute terms was reported for places in size-group 20,000-49,999 (a total increase of 205,500 people in the decade), places below 10,000 inhabitants answered for over 50 per cent of the urban increment exhibited by the cohort (Figure 6.8).

**Norland Interior and Svealand North-West.** These regions recorded a modest population development. With the exception of Stockholm which registered a decrease between 1965 and 1970, the only case of depopulation found in the entire material was reported for places with less than 1,000 inhabitants in Norland Interior. In this region, agglomerations showing an increase close to the national average were found in size-groups 2,000-19,999. Although in Svealand North-West, urban places in all size-groups increased, it was at a below average rate.

**Norland Coast** exhibited a more promising development, but smaller places deviated negatively from the national average. Of interest here was the fast growth of agglomerations in size-group 1,000-1,999 (especially in the second half of the decade) and of the medium-sized places (10,000-49,999) which also reached above the average growth rate.

Thus the unfavorable development of smaller urban places was characteristic for northern Sweden; higher growth rates were reported for medium-sized places only.

**Sweden Central and South.** The diagrams make it obvious that places in central and southern Sweden dominated the shaping of the national urban pattern by size-group. In Småland all groups of places, with the exception of the group comprising the largest agglomerations, reported increases between 21 and 30 per cent during the sixties. In several instances Skåne and West Coast, as well as Sweden Central, had an even faster increase. In Skåne and
West Coast the rapid development of places with less than 10,000 people was contrasted by growth rates below 20 per cent for places above this size. But in Sweden Central, places in size-groups 10,000-49,999 showed growth rates well above 30 per cent in the sixties. The high percentage increase for places in size-group 500-999 in this region was reduced to 39.4 per cent when Bollmora was excluded.

**Metropolitan growth**

Let us now turn to the role of the metropolitan areas. Figure 6.7 demonstrates the strong suburbanization of these regions. The series of diagrams clearly indicate that after the exclusion of metropolitan regions from the analysis, remaining places registered a development different from that which was illustrated in Figure 6.6. Skåne and West Coast, as well as Sweden Central, showed considerably lower growth rates when the metropolitan regions had been excluded. Central Sweden outside the Stockholm metropolitan area exhibited somewhat lower growth rates for most size-groups than were found in Småland or in Skåne and West Coast (metropolitan areas excluded).

We learned above that the metropolitan areas compared unfavorably with many other regions during the 1960s. The metropolitan rate of increase was close to the national urban average in Stockholm and Göteborg, and somewhat higher in Malmö. With data from the material concerning A-regions, it can be demonstrated (Table 6.7) that in each region the metropolitan core reported a low growth rate in comparison to other places (referred to below as the suburbs). During the decade a substantial intraregional redistribution of the population was recorded for these areas. In the case of Stockholm, a redistribution loss of nearly 200,000 in the core (which increased by 0.2 per cent in the sixties) was not fully counterbalanced by a redistribution gain of 180,000 in the suburbs (an increase of 107.8 per cent). The region totalled an urban redistribution loss of 18,000 people in the sixties.

<table>
<thead>
<tr>
<th>A-region</th>
<th>Population 1970</th>
<th>Percentage change 1960-70</th>
<th>Regional redistribution (gains/losses)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
<td>Suburbs</td>
<td>Re-core</td>
</tr>
<tr>
<td>Stockholm/ Södertälje</td>
<td>972,700</td>
<td>427,600</td>
<td>19.0</td>
</tr>
<tr>
<td>Göteborg</td>
<td>486,700</td>
<td>159,300</td>
<td>22.0</td>
</tr>
<tr>
<td>Malmö/ Lund/ Trelleborg</td>
<td>264,600</td>
<td>143,400</td>
<td>25.7</td>
</tr>
</tbody>
</table>

*Gains and losses relative to equal growth in all regions (see text).


The Stockholm metropolitan core actually decreased by 1.8 per cent between 1965 and 1970; in absolute figures the loss amounted to 17,800 people (Figures 6.8 and 6.9).

This is as far as the class-wise analysis will take us. The conclusion must obviously be that on this level of generalization the three metropolitan areas played a dominating role in the shaping of the urban patterns by size-groups as shown in Figure 6.6. The shortcomings of this class-wise analysis are evident. The picture given here of the growth of urban places in non-metropolitan areas will be substantially altered when the material is further disaggregated and the analysis is extended to include individual places. The subsequent discussion will reveal several places reporting rapid growth rates as well as areas with a strong suburbanization outside the metropolitan regions. Intra-regional population dispersal, characteristic of the metropolitan areas, were also found in other areas.

Before proceeding to the development of individual places, the class-wise analysis is completed by Figure 6.10, where columns are proportional to the percentage of urban places which reported population growth between 1960 and 1970. Black areas show the proportion of agglomerations that grew more rapidly than the national average during the sixties. In Sweden Total the pattern of the 1960s was

very similar to that of the 1950s (Table 4.11). Just above 50 per cent of the places with less than 1,000 inhabitants exhibited population increase. In size-groups below 5,000 inhabitants the proportion of places that increased more rapidly than the national urban population was greater in the sixties than in the fifties. The opposite applied to most other size-groups. The largest proportion of places with decreasing population was found in Norrland Interior.

Development by Individual Places

The analysis of individual agglomerations is based on three maps. The color map *Urban Change 1960 - 1970*, found in the back of the book, distinguishes five categories of urban places: (1) new places, (2) urban places with decreasing population, (3) places with a below average growth rate, (4) places with increases between 20.6 and 50 per cent, and (5) places with growth rates of 50 per cent or more. Symbols are proportional to the population in 1970.

The color map was simplified in Figure 6.11. The left map (A) shows the urban population in 1970 (proportionate symbols). Place names were inserted for agglomerations with more than 30,000 inhabitants. The right map (B) shows the redistribution gains and losses. This map divides places into two categories: those with a below average growth rate (including those with a decrease) and those with an above average growth. For all maps the source was the *Census compilation 1960 - 1970*. The material was discussed in Chapter 5.

Although, at first glance, places in the environs of the three largest agglomerations are the most conspicuous on the maps, a large number of other places also exhibited rapid growth rates. Consider, for example, several of the larger agglomerations on the coast of northern Sweden; places in areas around the lakes of Mälaren, Vättern, and

---

8With the exception of three Stockholm suburbs: Sollentuna, Roslags-Näsby, and Handen.
Vänern; places in the central parts of southern Sweden (e.g. the region of small-scale industry in Western Småland centered on Gnosjö and Anderstorp south of Jönköping); and places on an axis Karlskrona - Hälssingborg.

Altogether 36 places with a population of 2,000 or more in 1960 reported growth rates exceeding 50 per cent in the sixties. No less than 15 of these were found in the vicinity of Stockholm (a prominent example was Södertälje which increased by 70 per cent). Another 6 places in this category were close to Göteborg, and one was found in the environs of Malmö. Places of this kind outside the metropolitan surroundings were Enköping, Oxelösund, Växjö, and Mariestad (all with a population close to 10,000 or more). Places with rapid growth but of less size were: Bankeryd, Markaryd, and Emmaboda in Småland; Olofström in Blekinge; Perstorp, Sjöbo, and Bjuv in Skåne; Strömsund, Bergnäset, and Kalix in the north.

Places decreasing in size were largely confined to northern Sweden and particularly to the interior. The great majority of agglomerations reporting depopulation were small. Only 19 places larger than 2,000 inhabitants had population losses in the sixties, 11 of which were situated in the northern half of the country. Two had a population of 5,000 or more: Norberg in central Sweden and Skelleftehamn on the coast of Norrland.

A fundamental feature of the maps are the fast growing places around medium-sized and large non-metropolitan agglomerations. The maps clearly indicate the existence of local subsystems of interconnected places, each comprising an urban core and surrounding satellites. We may call such a subsystem an urban region.

A study of the map series suggests a closer look at the relative location of places. Proximity to large agglomerations influenced growth rates of smaller and medium-sized urban places. The maps suggest that agglomerations within urban regions registered higher growth rates than places outside, and that satellites generally showed higher growth rates than the core areas. In order to examine these sup-
Figure 6.11 a. Urban population 1970.

Figure 6.11 b. Redistribution of the urban population 1960 - 1970. Gains and losses relative to equal growth in all places (see text).
positions data were again rearranged. The material was aggregated according to the relative location of urban places to permit a study of urban regions.

**Relative Location of Places—Urban Regions**

Our findings suggested that the urban region comprises a core and surrounding satellites. The threshold size of such a core is not well defined. The analysis was performed for three definitions of regions according to the size of the core. The following thresholds of urban cores were chosen: (1) 30,000 inhabitants, (2) 20,000, and (3) 15,000. The urban regions were delimited with an average commuting distance as a radius. The limit was drawn 25 km from the center of each core; all urban places within this radius were included. During the sixties, 30 km was generally regarded as the maximum distance tolerated for travel to work. A straight-line distance of 25 km was used as an operational approximation of a road distance of 30 km. For the three largest agglomerations, Stockholm, Göteborg, and Malmö, a more generous limit was allowed: all satellites within a radius of 40 km were included. Urban places within overlapping areas were assigned to the closest core. Each region was checked against physical maps. Places were omitted if interspersed bodies of water considerably hampered accessibility.

---

9 Although larger than 15,000, the suburbs of Märsta, Upplands-Väsby, Sollentuna, Roslags-Näsby, Lidingö, Bollmora, and Hanen were included in the Stockholm region; Tumba was included in the Södertälje region and Oxelösund in the Nyköping region. Frösön and Östersund together formed a core of 36,300 inhabitants.

10 See e.g. Kindahl (1965).

11 The regionalization was performed using Euclidean distances between pairs of co-ordinates. Since urban places were assigned co-ordinates with a margin of error of one kilometer, a maximum distance of 25.5 km was actually allowed.

12 In a few cases of equal distance, urban places were assigned to the largest core.
The three sets of regions thus distinguished are presented in Figure 6.15 (symbols are proportional to the population in 1970). The areal extension of regions is seen in Figure 6.12 (circles drawn around urban places define the urban regions with the center of each core indicated by an x). Altogether 63 regions with a core of at least 15,000 inhabitants were delimited. A total of 44 regions with a core of at least 20,000 and 30 regions with a core of 30,000 people or more were distinguished. Urban regions answered for the main part of the urban population in Sweden. More than 80 per cent of the urban population in 1970 was found in urban regions with a core of at least 15,000 inhabitants. On an average satellites accounted for just above a quarter of the regional total (Table 6.8).

RESULTS

Table 6.8 clearly indicates that urban regions had higher growth rates than places in the residual areas (or the country outside the urban regions). An intra-regional deconcentration occurred during the sixties: the satellites grew some five times more rapidly than the cores.

Proximity to larger urban places strongly influenced growth rates of small urban places and the rise of new agglomerations. Three quarters of the new places in the sixties were located within urban regions. Only a third of the places that were dropped from the statistics in the same period were found within the limits of urban regions (Figure 6.12; Cf. Table 6.2). As demonstrated in Figure 6.13, small and medium-sized places reported far more rapid growth rates in urban regions than in residual areas.\(^\text{13}\) The figure shows the development of urban places.

\(^{13}\) In his study of the development of smaller urban places 1960 - 1970 Mattson (1974) found that suburbs showed higher growth rates than other places of equal size (see pp. 35 and 44 ff.). He did not investigate suburban growth further, since his study emphasized smaller urban places outside the environs of larger cores.

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<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Core</td>
<td>Satellites</td>
</tr>
<tr>
<td>30,000 and above</td>
<td>30</td>
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<td>3,244,552</td>
<td>1,248,651</td>
</tr>
<tr>
<td>20,000 and above</td>
<td>44</td>
<td>4,927,898</td>
<td>3,598,876</td>
<td>1,329,022</td>
</tr>
<tr>
<td>15,000 and above</td>
<td>63</td>
<td>5,430,139</td>
<td>3,948,844</td>
<td>1,481,295</td>
</tr>
</tbody>
</table>

by size-groups in urban regions (A) and in residual areas (B). Columns are proportional to the population change percentage for the 1960s. In section A of the diagrams, three columns are shown for each size-group: places in urban regions with a core of at least 30,000 inhabitants (left), those in regions with a core of at least 20,000 (center), and those in regions with a core of 15,000 or more (right). In section B the three columns in each size-group refer to places in the corresponding residual area.

The regions of Stockholm, Göteborg, and Malmö reported high growth rates for small and medium-sized agglomerations (Figure 6.14). After the exclusion of metropolitan areas from the analysis, considerably higher growth rates were still recorded for these size-groups in urban regions than in the residual areas.

Table 6.9 lists the 63 urban regions with a core of at least 15,000 inhabitants. No region reported depopulation during the 1960s (even though a few satellites did). The table clearly emphasizes the inter-regional redistribution of population. The regions of Stockholm, Göteborg, and Malmö reported growth rates below the national average in spite of the rapid growth of the satellites. With regard to Malmö the table indicates that two adjacent regions, Lund (which increased 52.5 per cent) and Trelleborg (38.8 per cent), were largely responsible for the growth of 25.7 per cent in the Malmö/Lund/Trelleborg A-region. Almost 50 per cent of the regions registered growth rates below the national average. Besides Lund and Trelleborg, another 15 regions showed growth rates of 30 per cent or more: Umeå, Piteå, and Luleå on the coast of Norrland; Södertälje, Uppsala, Enköping, and Västerås surrounding Stockholm; Finspång, Lidköping, Skövde, and Mariestad in central Sweden; Växjö and Karlshamn in the south; Varberg and Alingsås in the south-west.

The table indicates a generally more rapid growth of

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<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Core</td>
</tr>
<tr>
<td>Stockholm</td>
<td>1,288,298</td>
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<tr>
<td>Göteborg</td>
<td>595,863</td>
<td>486,657</td>
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<tr>
<td>Malmö</td>
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<td>Vänersborg</td>
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</tr>
<tr>
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<td>Östersund</td>
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<tr>
<td>Boden</td>
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<td>18,638</td>
</tr>
<tr>
<td>Kiruna</td>
<td>25,034</td>
<td>23,279</td>
</tr>
</tbody>
</table>

Source: Census compilation 1960 - 1970
Figure 6.12. New places (black dots) and places dropped from the statistics (white dots) 1960 - 1970. Circles define urban regions with a core area of 15,000 inhabitants or more 1970.

Figure 6.13. Urban regions (A) and residual areas (B). Percentage population change 1960 - 1970 by size of urban place (1960) and regions. Cohort of urban places existing in 1960, 1965, and 1970.

A: The three columns in each size-group refer to places in urban regions: with a core $\geq 30,000$ inhabitants (left); with a core $\geq 20,000$ inhabitants (center); with a core $\geq 15,000$ inhabitants (right).

B: The three columns in each size-group refer to places in corresponding residual areas.

Figure 6.14. Urban regions (A) and residual areas (B). Percentage population change 1960 - 1970 by size of urban place (1960) and regions. Cohort of urban places existing in 1960, 1965, and 1970.

A: The three columns in each size-group refer to places in urban regions: with a core ≥ 30,000 inhabitants (left); with a core ≥ 20,000 inhabitants (center); with a core ≥ 15,000 inhabitants (right).

B: The three columns in each size-group refer to places in corresponding residual areas.

Figure 6.15. Urban regions. Population 1970 and intraregional comparison of population change 1960 - 1970 expressed as the quotient: growth rate of satellites/growth rate of core. Three versions. Names on middle and left maps indicate regions added when core threshold was set at ≥ 20,000 and ≥ 15,000 inhabitants respectively.

satellites than of cores. In Figure 6.15 an intra-regional comparison of growth is demonstrated. For each region the growth rate of the satellite has been related to that of the core. (A quotient of one indicates an equal growth rate.) Only five of the largest 30 regions reported a faster increase of the core. In no less than 20 regions satellites grew more than twice as rapidly as the cores. In two regions core and satellites had about equal growth rates, and three regions had a quotient averaging 1.5. When the threshold for the core was lowered to 20,000 inhabitants, another four regions reported a slower growth rate of the satellites than of the core. With the threshold set at 15,000 people almost a third of the regions reported a higher growth rate in the core.

Conclusion

The evidence presented suggests a two-way redistribution of the population in the sixties.

On various levels of generalization, tendencies of an inter-regional deconcentration from the metropolitan areas was observed. The notion of a concentration of population to metropolitan regions, which was basic to much regional policy and planning in the 1960s, finds no support here. Although suburban places within the metropolitan regions registered unsurpassed growth rates, the regions on the whole showed a rate of increase below, or close to, the urban average. Considerably faster growth rates were found in numerous nonmetropolitan areas.

Small and medium-sized agglomerations in the proximity of a larger urban core often reported rapid growth rates. Within such local subsystems of places (urban regions) an intra-regional deconcentration was evident: satellites generally reported higher growth rates than the cores.

14Norling & Jeansson (1967) delimited 17 urban regions with at least 50,000 inhabitants in 1965 and studied the population changes 1960 - 1965. In all but three of the regions the satellites grew more rapidly than the core area; in two regions growth rates were more or less equal.
VII. TOWARDS AN EXPLANATION

Inter-Regional Redistribution

The purpose of this study was to widen the basic knowledge of the geographical anatomy of urban Sweden. The emphasis was laid on agglomerations as places of residence rather than places of work. The geographical arrangement of the population is assumed to be determined by economic forces. This at least is true for industrial societies (Chapter 2). The inter-regional redistribution of the population is a result of structural changes in the economy. We may therefore postulate that, in the long run, urban places will survive only if job opportunities are available in the place itself or within acceptable commuting distance. An explanation of inter-regional shifts of the population would ultimately become an explanation of the structural changes in the economy. Such an explanation is an undertaking beyond the scope of this study. It would involve a linkage between empirical observations and the theory of economic growth - and that is a book in itself. We must therefore leave the explanation of inter-regional population shifts for future research. In the first section of this concluding chapter some promising directions of such research are discussed.
An urgent task in a research program concerning inter-regional population shifts in Sweden would be to unravel the role of the metropolitan areas in the Swedish economy. It has been shown here that over the years Greater Stockholm has maintained a constant share of the national urban population, a proportion that commenced to decrease during the 1960s. The below average increase of this region became a sudden absolute decline in the early 1970s. In 1972 Stockholm was the first metropolitan area in Sweden to report a decreasing population (Table 7.1). In the absence of data from the 1975 census, the table shows the total population for the area discussed in Chapter 5. Since the degree of urbanization in Greater Stockholm had reached 98 per cent in 1970, the table should be comparable with the data presented in Chapter 5. After two successive years of depopulation, increase was recorded anew and by 1974 the population of Greater Stockholm reached a point just below the 1971 level.¹ A development towards zero population growth was also indicated for the Göteborg and the Malmö metropolitan regions between 1971 and 1973.²

The manufacturing industry stagnated and was gradually decentralized from Greater Stockholm in the decades following World War II. Ahnström shows a location quotient of 0.89 for manufacturing in Greater Stockholm in 1950 as

¹Evidence from the United States suggests that a metropolitan decline might also be imminent in other industrial countries. A development that has been labelled a "... remarkable recent reversal of long-term population trends ..." in terms of a "... revival of population growth in non-metropolitan America" was reported in the early seventies (Beale, 1975). Between April 1970 and July 1973 non-metropolitan counties increased by 4.2 per cent as compared with a 2.9 per cent population increase in metropolitan counties. During the 1960s only one of the 25 largest Standard Metropolitan Statistical Areas (SMSAs) reported a population decline; by 1974 ten of these largest SMSAs no longer reported population growth. See Beale (1975) and Morrison (1975).

Reversed population developments were also reported for metropolitan Köpenhamn and metropolitan Oslo in the early 1970s. See SOU (1974-LXXXII:172 f.).


<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
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<tbody>
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<td>1970</td>
<td>1,329,310</td>
</tr>
<tr>
<td>1971</td>
<td>1,335,614</td>
</tr>
<tr>
<td>1972</td>
<td>1,332,908</td>
</tr>
<tr>
<td>1973</td>
<td>1,331,399</td>
</tr>
<tr>
<td>1974</td>
<td>1,334,137</td>
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</table>

*For the definition of Greater Stockholm see Figure 5.9.

Source: SSK (1975), table 1.

well as in 1960. In 1965 the LQ had fallen to 0.71 and by 1970 it had reached a low 0.64 (Table 5.9)³ Greater Stockholm's proportion of the total number of job opportunities in manufacturing decreased from 14.1 per cent in 1965 to 13.7 per cent in 1970.⁴ Between 1963 and 1970 about 150 manufacturing establishments were relocated across a county border. Half of these establishments originated from the county of Stockholm. Location changes in manufacturing between 1963 and 1970 resulted in a net decrease in employment of 27,000 people; more than half of this decrease was accounted for by the three metropolitan counties.⁵ The growth of Greater Stockholm was obviously maintained by expansion in other sectors.

William-Olsson found the impetus of Stockholm's growth to be a set of pyramidally organized specific city-forming functions: central government and private administrative functions, wholesaling, financing, and high-level cultural activities whose prime locational requirements were easy accessibility. The industrial apparatus in the city was largely adapted to these city-forming functions (the printing industry was a case in point). William-Olsson regarded the major constraints on Greater Stockholm's development to be high costs accruing from intensified competition for central location.⁶

³Ahnström (1976)
⁴The corresponding figures for Greater Göteborg and Greater Malmö also decreased, from 8.3 to 8.1 and from 5.1 to 4.8 respectively. See SOU (1974:LXXXII:190 f.).
⁵Ibid., 141
⁶William-Olsson (1941)
Against this background, three directions of research concerning metropolitan development are suggested:

(I) What was the impact of the regional development policy enacted by Parliament in 1964 and extended in 1970 and 1972? It is believed here that this program did not come early enough to have any influence on the population development in metropolitan Stockholm during the 1960s. If the policy measures did exert some influence on this development, the effects must only have been marginal reinforcements of an already ongoing structural change. The below average growth of Greater Stockholm which foreshadowed the absolute decline in the early 1970s must be regarded as a spontaneous development. To what extent the regional development program was responsible for the population decline in 1972 and 1973 is still to be investigated. An obvious non-policy factor which might have tipped the scales towards depopulation was the economic recession in the early seventies with a resulting low immigration (Figure 4.3). By the same token the turning business cycle should be credited for the population increase reported again for Greater Stockholm in 1974.

(II) What caused the spontaneous population retardation in metropolitan Stockholm during the 1960s? At least two approaches seem to be appropriate here. One would regard stagnating metropolitan growth as a problem of sector balance. In his population projection for Greater Stockholm, published in 1941, William-Olsson used a model which divided the economy into areal-bound and local- or point-bound production (Chapter 2). Assuming a continuously declining rural population and an increasing urban, the future national urban population was determined by the projected balance

7 See, e.g., Planning Sweden (1973) or Sundquist (1975:214-238) for an outline in English of this policy.
8 In both Sundquist (1975:228 f.) and SOU (1975-XCI:12) the regional development program is given some credit for this decline.
9 William-Olsson (1941)
between areal-bound and point-bound production. Greater Stockholm's share of the future national urban population was to be determined by its ability to attract rural-urban migrants. William-Olsson actually forecasted the urban population curves for Sweden and Greater Stockholm to level in the 1960s, after which the population would stagnate or possibly decline. The urban population figures projected for Sweden and Greater Stockholm for the 1960s were found to have been underestimated. This was largely due to false assumptions about births and immigration, but also because Sweden experienced a more rapid rural decline than was expected (which among other things was caused by massive mechanization in forestry). The second approach would be a study of metropolitan areas as undesirable environments, in terms of noise, pollution, etc. as well as in terms of rising costs accruing from such things as high labor turnover, high cost for meeting increasing demand for floorspace or decreasing transferability within the regions due to congestion. A useful conceptual framework for such a study would be the model developed by Kristensson, in which various demands for regional structures are outlined.

(III) With the stated aim of curbing the population increase in Metropolitan Stockholm, Parliament enacted schemes in 1971 and 1973 for relocating Government offices comprising some 10,000 civil servants. To what extent will Greater Stockholm be affected by this dispersal of specific city-forming functions?

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10 William-Olsson (1968)
11 Kristensson (1967)
Intra-Regional Redistribution

To a large extent intra-regional population shifts are the result of changes in residential preference. In this section some factors behind the observed development are discussed. The arguments are based on the color map series, *Four Maps of Sweden*, in the back of the book.

Slower growth rates in the urban cores could result from an increasing standard of living in terms of per capita demands for urban space (larger homes, more space for roads and other public uses etc.). An increase of population in the satellites is a reflection of the desire for residence in the attractive surroundings of a smaller community, away from noise, pollution, congestion, and other environmental drawbacks characteristic of many urban core areas. The residential preference materializes as an increased demand for single-family houses; there was a drastic decline in the share of apartments in the output of dwelling units from the late 1960s. Since land near urban cores was mostly preempted by other land uses, such houses had to be sought in the satellites. A high standard of private transportation made it possible to separate places of residence and places of work.

The map series clearly indicate a residential pattern highly dependent on personal transport facilities. The increased spatial mobility, especially the expansion of private car ownership, have facilitated a concentration of service outlets and a dispersed residential pattern. A fundamental feature of urbanization is the gradual separation of places of work and places of residence. The triangle (Figure 7.1) illustrates that with modern transport technology places of work, service and residence do not necessarily have to coincide. The far-reaching implications of the transport revolution were discussed in Chapter 2.
According to Figure 7.2, the number of passenger cars in Sweden almost doubled in the sixties and reached about 2,29 million in 1970 (or 283 cars per thousand inhabitants). The family car was more common in the small and medium-sized urban places than in the largest ones (Table 7.2).

In each of the color maps, symbols are proportional to the population in 1970. The first map in the series, *Urban Change 1960 - 1970* was introduced in Chapter 6. On the map *Journey to Work 1970* the economically active day-time population is related to the economically active night-time population. A percentage above 100 thus indicates an excess of day-time population due to commuting. A great daily mobility of the population is evident. It resolves into two basic patterns of commuting. Firstly there is a radial pattern of commuting, between satellites and urban cores. A second pattern is found outside the urban regions, where people travel between urban places, and between rural areas and urban places. In 1970 almost three quarters of the economically active population travelled to work in one way or the other; no less than 54 per cent of these people used the private car.\(^\text{12}\)

The map *Houses 1970* shows one- and two-family houses in per cent of total number of residential units. Obviously apartment buildings are predominant in larger urban places.

\(^\text{12}\)SOU (1974-I:69)
Figure 7.2. Passenger cars 1923 - 1974. Number of registered vehicles.

_Sources:_ Various issues of _Statistisk Årsbok för Sverige._ (Statistical Abstract of Sweden).

(see also Table 7.3). Smaller urban places mostly reported high proportions of one- and two-family houses. Residential units comprising one-family houses increased by 64 per cent between 1960 and 1970. The number of apartments increased by only 32 per cent (Table 7.4). The increase of one-family houses was faster in the 1960 - 1965 period than in the following five-year period. In each size-group of urban places one-family houses increased more rapidly than apartment units between 1960 and 1970. This applied to the 1960 - 1965 period as well, whereas in the latter period the picture was reversed for some size-groups. In the short run, the supply of residential units may be important in determining the population devel-
Table 7.2. Households with cars. Percentage of total number of households, by size of urban places (1970).

<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
<th>Sweden Total</th>
<th>Sweden Total, Metropolitan areas excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>200- 499</td>
<td>58.9</td>
<td>58.8</td>
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<tr>
<td>500- 999</td>
<td>60.1</td>
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<td>2,000- 4,999</td>
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<td>5,000- 9,999</td>
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<td>20,000-49,999</td>
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<tr>
<td>50,000-99,999</td>
<td>52.7</td>
<td>52.7</td>
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<tr>
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<td>41.1</td>
<td>-</td>
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<tr>
<td>National average</td>
<td>53.0</td>
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</table>


Table 7.3. One- and two-family houses. Percentage of total number of dwelling units, by size of urban places (1970).

<table>
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<th>Sweden Total</th>
<th>Sweden Total, Metropolitan areas excluded</th>
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<tr>
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<td>80.7</td>
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<td>74.1</td>
<td>73.4</td>
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<tr>
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<td>66.9</td>
<td>66.5</td>
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<td>2,000- 4,999</td>
<td>54.7</td>
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<tr>
<td>5,000- 9,999</td>
<td>41.8</td>
<td>41.5</td>
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<td>32.7</td>
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<td>20,000-49,999</td>
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<td>50,000-99,999</td>
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<table>
<thead>
<tr>
<th>Size (inhabitants)</th>
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<th>One- and two-family houses</th>
<th>Apartments</th>
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<td>200-499</td>
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<td>24.3 10.7 12.4</td>
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<td>500-999</td>
<td>62.6 28.3 26.7</td>
<td>34.4 14.7 17.2</td>
<td>61.5 22.9 31.4</td>
</tr>
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<td>1,000-1,999</td>
<td>63.5 30.8 25.1</td>
<td>30.7 14.0 14.7</td>
<td>51.6 19.0 27.4</td>
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<td>2,000-4,999</td>
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<td>10,000-19,999</td>
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<td>50,000-99,999</td>
<td>100.7 56.5 28.2</td>
<td>36.6 20.2 13.6</td>
<td>26.6 10.5 14.6</td>
</tr>
<tr>
<td>100,000-</td>
<td>44.3 23.2 17.1</td>
<td>22.3 10.7 10.5</td>
<td>20.5 8.0 11.6</td>
</tr>
<tr>
<td>National average</td>
<td>63.9 33.1 23.2</td>
<td>29.1 14.4 12.8</td>
<td>32.3 13.0 17.1</td>
</tr>
</tbody>
</table>

ment of urban places (both in terms of the market situation and in terms of building permits supplied by the local planning agencies). During the 1960s, a shortage of apartments was considered to hamper population growth in many places. Ohre-Aldskogius studied population growth in 14 large and medium-sized urban regions. With population growth 1950 - 1960 as the dependent variable in a multiple regression analysis, residential housing construction was found to explain most of the variance in the dependent variable.\(^{13}\) Obviously the reversed relationship is equally plausible depending on the local market and planning situation.

Finally, the map *Retail Trade 1970* clearly indicates a highly concentrated retailing in Sweden. The map shows the economically active day-time population engaged in retail services as a percentage of the population in each urban place. On an average places with more than 5,000 inhabitants fall close to the national average (4.0 per cent, Table 7.5). The map suggests that older centers, established in pre-industrial Sweden, tend to have a somewhat more labor-intensive retail structure than later established manufacturing places. An explanation to this observation could be that older places traditionally have had large trading areas and an initially large number of small outlets.

In summary, the residential pattern that has evolved is presently much dependent on a high standard of personal transport. In our local subsystems of interconnected places, satellites are predominantly places of residence comprising mostly one- or two-family houses. The satellite populations rely on the cores for work and service; private car ownership seems to be imperative.\(^{14}\) A new phase of the Swedish regional development program envisages a policy for the settlement system based on subsystems of interacting places.\(^{15}\) A basic model behind

---

\(^{13}\) Ohre-Aldskogius (1968)

\(^{14}\) See, e.g. Hägerstrand (1972) and Mårtensson (1974) who show that lack of public transport facilities in settlement systems of this kind sometimes makes a privately owned car almost imperative.

\(^{15}\) See, e.g. SOU (1974-I) and ERU (1974)
this policy has been Hägerstrand's time-space geography of society.¹⁶

Table 7.5. Retail trade. Employment, percentage of population, by size of urban places (1970).

<table>
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<th>Sweden Total</th>
<th>Sweden Total, Metropolitan areas excluded</th>
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<tr>
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<tr>
<td>National average</td>
<td>4.0</td>
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</table>


Appendix

BREAK-DOWN INTO MAJOR REGIONS

The two-digit code denotes A-region and the four-digit code denotes municipality according to the subdivision as of 1 January 1973. See SCB (1972 a).

**Norrland Interior**

A-region 55 except 2010 Malung and

A-regions 57-70 except:

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<th>Municipality</th>
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<tbody>
<tr>
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<td>Umeå</td>
</tr>
<tr>
<td>2402</td>
<td>Nordmaling</td>
</tr>
<tr>
<td>2404</td>
<td>Vännäs</td>
</tr>
<tr>
<td>2405</td>
<td>Robertsfors</td>
</tr>
<tr>
<td>2406</td>
<td>Skellefteå</td>
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<tr>
<td>2202</td>
<td>Sundsvall</td>
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<td>2205</td>
<td>Härnösand</td>
</tr>
<tr>
<td>2206</td>
<td>Kramfors</td>
</tr>
<tr>
<td>2209</td>
<td>Örnsköldsvik</td>
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<tr>
<td>2110</td>
<td>Nordanstig</td>
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<tr>
<td>2109</td>
<td>Hudiksvall</td>
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<tr>
<td>2105</td>
<td>Söderhamn</td>
</tr>
<tr>
<td>2106</td>
<td>Bollnäs</td>
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<tr>
<td>2107</td>
<td>Ovanåker</td>
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</table>

**Norrland Coast:**

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<th>Code</th>
<th>Municipality</th>
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<td>Piteå</td>
</tr>
<tr>
<td>2502</td>
<td>Älvsbyn</td>
</tr>
<tr>
<td>2505</td>
<td>Luleå</td>
</tr>
<tr>
<td>2506</td>
<td>Boden</td>
</tr>
<tr>
<td>2401</td>
<td>Umeå</td>
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<td>Robertsfors</td>
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<tr>
<td>2202</td>
<td>Sundsvall</td>
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<tr>
<td>2204</td>
<td>Timrå</td>
</tr>
<tr>
<td>2205</td>
<td>Härnösand</td>
</tr>
<tr>
<td>2206</td>
<td>Kramfors</td>
</tr>
<tr>
<td>2209</td>
<td>Örnsköldsvik</td>
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<tr>
<td>2110</td>
<td>Nordanstig</td>
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<td>2106</td>
<td>Bollnäs</td>
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<td>2107</td>
<td>Ovanåker</td>
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Svealand North-West
A-regions 52, 53, 44, 43
and
2010 Malung
1714 Torsby
1717 Hagfors
1703 Filipstad
1718 Munkfors
1713 Sunne
1504 Mellerud
1503 Färjelanda
1413 Munkedal
1415 Strömstad
1414 Tanum

Sweden Central and South
Residual areas

SUBREGIONS OF SWEDEN CENTRAL AND SOUTH

Småland
A-regions 11 - 23
and
1512 Herrljunga
1513 Ulricehamn
1514 Tranemo
1515 Svenljunga

Skåne and West-Coast
A-regions 24 - 33
and
1516 Mark
1517 Borås
1505 Vänersborg
1506 Trollhättan
1507 Lilla Edet
1601 Grästorps
1409 Orust
1410 Uddevalla
1411 Lysekil
1412 Sotenäs

Central Sweden
Residual areas
Metropolitan areas

A-region
01 (Stockholm)
28 (Malmö)
33 (Göteborg)
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In each map, symbols are proportional to the population in 1970.

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Statistiska Meddelanden (Statistical Reports), Be 1972: 9,12; 1973: 2,6.

Urban Change 1960—1970

National average increase
All urban places: 20.6 per cent.
Cohort of places existing in all three census years: 19.9 per cent.

Sources:
Folkräkningen den 1 november 1960: VI. (Census of the Population in 1960: VI.)
Statistiska Meddelanden (Statistical Reports), Be 1972: 9,12; 1973: 2,6.
Journey to Work 1970

Economically active day-time population as a percentage of economically active night-time population.

Source:

Houses 1970

One- and two-family houses as a percentage of the total number of residential units.

Source:

Retail Trade 1970

Economically active day-time population in retail trade as a percentage of the population in each urban place.

Source:
URBAN CHANGE 1960—1970

Decrease

New places

Increase (per cent)

- 0.00—19.89
- 19.90—49.99
- 50.00—

National average increase 19.9 per cent.
JOURNEY TO WORK 1970

Day-time working population, percentage of night-time working population:

- 0.00—49.99
- 50.00—99.99
- 100.00—109.99
- 110.00—
HOUSES 1970

One- and two-family houses, percentage of total number of dwelling units:

- Open circle: 0.00—31.19
- Medium circle: 31.20—49.99
- Dark circle: 50.00—74.99
- Filled circle: 75.00—

National average 31.2 per cent.
RETAIL TRADE 1970

Employment, percentage of population:

- 0.00—2.99
- 3.00—3.99
- 4.00—4.99
- 5.00—

National average 4.0 per cent.