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Commentary

Government's role in urbanization: A brief overview

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Abstract. This paper examines the influence of government on urbanization processes. Starting from the urbanization drivers, it develops the main forms of government interventions, which are divided into intra-urban and inter-urban measures and depicted across three main historical periods: mercantilist era, industrial society and knowledge economy. Historical perspectives are supported by relevant examples from the Ancient Rome, the Soviet Union and the contemporary Sweden. The paper concludes that governments have historically played a varied role in promoting urbanization through direct interventions, infrastructure investments, or institutional frameworks. The knowledge economy initially created a wave of re-urbanization and concentration to a few core areas, but over time, ICT's decentralizing effects became stronger and stronger, also changing the government's role in these processes.

Keywords: urbanization factors, intra-urban measures, inter-urban measures, historical perspective

Résumé. Cet article examine l'influence de l'État sur les processus d'urbanisation. Partant des moteurs de l'urbanisation, il développe les principales formes d'intervention de l'État, divisées en mesures intra-urbaines et interurbaines, et décrites à travers trois grandes périodes historiques : l'ère mercantiliste, la société industrielle et l'économie du savoir. Les perspectives historiques sont étayées par des exemples pertinents de la Rome antique, de l'Union soviétique et de la Suède contemporaine. L'article conclut que les États ont historiquement joué un rôle varié dans la promotion de l'urbanisation par des interventions directes, des investissements en infrastructures ou des cadres institutionnels. L'économie du savoir a initialement engendré une vague de réurbanisation et de concentration dans quelques zones centrales, mais au fil du temps, les effets décentralisateurs des TIC se sont renforcés, modifiant également le rôle de l'État dans ces processus.

Mots-clés : facteurs de l'urbanisation, mesures intra-urbaines, mesures interurbaines, perspective historique

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Introduction

In 2022 the urban population accounted for 55 percent of the total global population. Compared with a little more than two centuries ago, the year 1800, when only three percent of the world's population is estimated to have been living in cities (see e.g. Raven at al. 2011) this urban revolution is an upheaval of a scale that the world never have experienced before.

Urbanization is traditionally considered a result of individual's and families' decisions to move from countryside to cities and towns and the role of government in these processes have often been neglected. With the help of historical examples, this paper aims at taking a step towards filling this research gap.

1. Urbanization, prerequisites and driving forces over time

1.1. Factors behind urbanization

The appearance of cities can in itself be seen as a path-breaking reduction of transaction costs for countless activities. By concentrating trade, religious services, defense, law enforcement, etc. to specific points, people have literally saved time and other resources. There have been a number of different motivations for urban formations (see Westlund 1998c). Roughly estimated, urban origin should be sought in at least five different functions, which itself can be divided further. In general, several functions subsequently generated in the same geographic point, but there is often a primary cause of an urban emergence.

Trade and transportation are one of the driving forces in the emergence of built-up areas. Local market places, places of transshipment between different transport modes or simply places where two roads cross each other have been natural urban embryos. An important distinction can be made here between the towns that developed primarily as regional centers, often in rich agricultural areas, with local and regional trade, and on the other hand, the agglomerations that primarily had interregional transshipment and trade functions, e.g. major port cities and other large commercial cities.

One historically important reason for the emergence of towns and cities consists of man's religious activities. Temples, shrines, churches and mosques became gathering places, but not only for worshiping. The clergy needed serving staff and a place like a temple where many people gather naturally was a great place for commerce and information exchange. By gifts, fees, taxes and similar revenues the religious business continuance was secured. If the revenues exceeded the clergy's direct needs, surplus could be invested in new construction and another expansive activities. When religions' organization grew, there was also a religious urban hierarchy emerging.

One of the religious functions related factors behind the emergence of cities is the function of worldly center of power. As well as the religious bodies, the king, the court and the political power, i.e. the state acquired early a right of taxation. The political power's long-term impact on the city its choice to its seat was clearly demonstrated by the fact that the capitals usually are by far the largest cities in each country. In Europe, this is despite the fact none of the capitals of Europe constituted a typical industrial city - while industrialization undoubtedly was the main driving force in the European urbanization of the 19th and 20th centuries. The importance of the political power for urban development, however, is far from limited to apply to the national capital. City founding has been a major political method to extend and strengthen the political power's influence ever since the Greeks spread their colonies around the Mediterranean. In late developing countries such as Sweden, city founding during the 16th and 17th centuries, alongside the county government organization, became something of a main method for the strengthening of the country's cohesion.
The role of military forces behind urban growth has a clear connection with the political power's spatial expansion or consolidation. During troubled times civilians have sought refuge at military posts and fortifications. During the chaotic times of the Great Migration and also in the later wars the fortified estates of the squires were often the only safe place in vulnerable regions. In peacetime, military installations formed the natural markets for goods and services, which laid a foundation for local civilian production and urban emergence.

A fifth factor behind the built-up areas and urban origins is what can be denominated as the natural resource factor. Mining cities are a common type of cities that emerge as a consequence of commodity exploitation. Fishing and oil extraction are other natural resource-based activities that give rise to formation of agglomerations. Generally, the industrial structure in such district types very one-sided, and stands and falls with the availability of natural recourse. The American ghost towns are the most extreme examples of what can happen to these places when the raw material is short, but also in other parts of the world there are many ex-mining towns that seemingly have no future. A type of agglomeration that is substantially different from those mentioned above, but which nevertheless base their existence on natural resources is the resort. The baths of ancient Rome, the medieval practice of wells in the cult of saints and today's bath and ski resorts, have in common that they are based on exploitation of specific natural resources. Unlike mining towns, recreation centers are in principle built on renewable resources. Against them there is no threat to the raw material to end, but peoples' over time shifting leisure preferences do still constitute a somewhat uncertain future for these towns with their very unilateral industrial structure. The natural resource factor has also been of decisive importance for cities whose emergence and growth has been based on the surrounding hinterland's agriculture, even if it is

not the natural resources of the place that is the driving force but the resources of the surrounding area.

Thus, trade and transportation, religious, political and military power and natural resources are the origins to the emergence of cities. But which of these factors has been the most important? From a basic point of view it can be claimed that it is the natural resource factor. Without a surplus in agriculture, "everyone" would need to work in agriculture to survive, and agriculture's production would not be enough to feed any traders, artisans, priests, kings, soldiers or other urban dwellers.

The increasing productivity of agriculture has over history yielded an increasing surplus of foodstuff and labor; both factors completely necessary for the emergence of towns and cities. It goes outside the scope of this paper to make a deeper analyze of the sources of this long-term productivity increase of agriculture, but innovations and the spread of them, and institutional conditions are without doubt two of the general most important causes.

1.2. Can government control urbanization?

The classic picture of the industrial revolution in England is that a change in institutions (the land enclosure movement) and improvements in agriculture created a surplus of both labor and agricultural products, and that this was the foundation of the urbanization that went hand in hand with industrialization. Rural surplus labor sought their living in existing cities but also in rural industries, around which urban agglomerations arose. This perspective gives government an indirect role as a fairly passive acceptor of the transformation of the land right institutions, while the market is playing all the other roles. However, as the example of the Soviet Union below shows, government can play a much more active role and with extremely brutal means enforce industrialization and get urbanization as an unintended by-product. We will here give a very brief summary of the possible role of government in processes of urbanization.

As suggested above, government in general plays an important role in the forming and changing of institutions, which functions like "the rules of the game" in human societies (North 1990). Laws and charters can set up general regulations on e.g. land use and whom who has the right to use land. These regulations can be in favor of forces of urbanization or not. They can have an impact on agriculture's productivity, labor's mobility, the form and size of build environment, etc. This universal type of interference by government is normally praxis in all countries.

Government's other possible influence on urbanization can be divided in intra-urban and inter-urban measures. The former includes urban planning of various extent, governmental welfare and services, investments in urban infrastructure (local transportation, commercial services, education and housing), location of state or publicly owned enterprises, development projects in cooperation with private actors,

provision of amenities and other benefits that increases the city's attractiveness, etc. The latter includes connecting cities with the countryside, with each other and with the rest of the world by investments in regional and national transportation and communication infrastructure.

It should be underscored that these measures refer to possibilities for government to influence urbanization but does not necessarily mean that government does take or should take all these measures. The extension of government's measures and what should be the responsibility of the market is a policy issue whose outcome varies with countries' political traditions and majorities. One example of these differences between countries is the railway building in the industrialization period. At that time the railroad was *the* measure to connect cities with the countryside, with each other and with the rest of the world. In many countries the main railway net was built and operated by the national government, sometimes with the possibility for private lines to connect to the state lines (see e.g. the example of Sweden below). In these countries, government could use the railway as a tool to develop lagging regions as the enormously improved transportation possibilities that government's railway building brought, functioned as a strong measure in support of industrialization and urbanization at the places where the stations were established. However, in countries like the United Kingdom and the United States, railway building was not considered a governmental task, but a task for the free market. The railways in the UK and the US did promote urbanization as well, but in these countries the location of stations and junctions was decided by market considerations.

"Government" has so far been referred to as a unity without any consideration of levels. Still, an important question is of course what level is best to take responsibility for each action? What can and should be done by the national level and what should be done at local level? However, such a question is not so easy to give an unequivocal answer to, since it depends on established division of labor between the levels of government, local government's autonomy, power to tax, right to control land use, set up and control enterprises, and other institutional arrangements. As a rule it can be claimed that central government should set up general rules and legislations, be responsible for national infrastructure, and possibly provide resources for local measures and investments, but that it is local government that has the necessary information to adapt measures to the local conditions.

It can also be claimed that the transition from a manufacturing-industrial economy to a knowledge economy has made local government's role more important. Table 1 illustrates a number of fundamental differences between the two types of economies. While urban growth and development in the industrial economy to a large extent was about exploiting or processing natural resources to physical products by the use of the homogeneous production factor "labor" and physical capital, urban growth in the knowledge economy is about attracting the very heterogeneous

production factor "human capital" which increasingly produces experiences, culture, knowledge and information and other non-material products.

From Table 1, it can be noticed that the industrial society is based on physical resources, transportation of goods and a vertical organization of society, all of which national government can exert certain control over and use to control processes of urbanization if there is political will. The knowledge society is for its part based on knowledge and information, of which individuals are the owners and bearers of.

Table 1. Key attributes of the knowledge and industrial societies and of the mercantilist era of the pre-industrial society.

Attribute	**Knowledge society**	**Industrial society**	**Mercantilist era**
Key assets / production factors	Labor with knowledge and information, intellectual property	Physical capital, transportation	Land and trading assets
Extent of market	Global	Mainly national	Mainly local
Polity	"Supra-state" organizations increase in importance	Nation-state democracy	Autocracy /oligarchy
Central principle(s)	Application of know-ledge	Use of non-muscle power, division of labor	Increase muscle power through population growth, organize trade
Owners of decisive production factor	The individuals	Capitalists	Landowners
Central conflict	Access / rights to knowledge, information and benefits	Justice: Division of social accumulation between labor and capital	Liberty: business autonomy, the individual's freedom from feudal restraints
Management principles	Horizontal, cooperative	Vertical	Vertical
Dependency relations	Organization/collective needs the individual who possesses knowledge	The individual needs the organization / collective (enterprise, trade union, etc)	Mutual collective dependencies between crown, nobility, church, burghers and peasants
Central individual qualification	Creativity	Adaptability	Fidelity
Gender relations	Growing equality	Emerging emancipation	Patriarchal
Infrastructure	Digital nets, social infrastructure, airports, roads, rail	Land transportation systems	Waterways and ports
Central spatial units	Metropolitan region	Industrial town	Agricultural region, market town

Source: Westlund (2006). The table is partly based on Lakshmanan (1994) who, however, does not deal with the knowledge society. Some aspects are also picked up from Karlsson, Johansson and Stough (2001).

Digital and social infrastructure plays a much greater role in peoples' life and the vertical organization of society is challenged by horizontal methods and principles of organization. These conditions make it much more difficult for central government to successfully promote and control urban development. Instead, if government wants to influence the processes of urbanization, there are strong arguments for that it should take place at the local level, by local government who knows the local conditions.

2. Government and market influence on urbanization - examples

2.1. Government: from ancient Rome to Soviet Russia

There are many examples throughout history of how government has influenced urbanization. The majority of these examples concern individual cities and most often the capital city. One of the grandest projects of this type is Brazil's decision to create a new capital, Brasilia, which was founded 1960. There are also examples of governmental "counter-urbanization" decisions, of which the Red Khmer's emptying of Phnom Penn 1975 probably is the most bizarre event.

Rome is perhaps the most striking example of how a city even in ancient times was able to collect foodstuff and other resources from vast areas and become the "capital of the world". In the 2nd century Rome probably had over one million inhabitants. Other major cities in the Roman Empire had not more than a few hundred thousand inhabitants. The key to Rome's capacity to sustain such a large population was without doubt its building of a sustainable and efficient transportation infrastructure. While Rome's predecessors in the Mediterranean almost solely had relied on sea transportation, Rome already during the republic invested unbelievable resources in roads. At its peak the road network comprised over 400,000 km of roads, of which more than 80,500 kilometers were stone-paved (Grant 1978). With access to both the "Mare Nostrum" and the land transportation infrastructure that the roads constituted, Rome was able to achieve a population that was not equaled by any Western city until the 19th century (Bairoch 1988).

Any discussion on government's role in urbanization would be incomplete without an overview of the development in the Soviet Union 1922-91. The Soviet Union represented the world's largest and longest attempt to implement a governmentally, centralized planning system, not only of the economy but of society as a whole. Russia, the largest of the Soviet republics had an urbanization rate of 13.3% in 1926. In 1990 the share had risen to 73.5%. In particular the years between 1929 and 1937 were characterized by an extreme urbanization. During this eight-year period, Russia's urban population more than doubled (Pivovarov 2003).

Urbanization in pre-revolutionary Russia had a strong focus on the two centers of power, St Petersburg and Moscow. With rising industrialization and other influence from abroad, building of railways started in Russia. From 1891 to 1916 the longest

railway line in the world, the Trans-Siberian Railway between Moscow and Vladivostok at the Pacific Ocean was build. In order to avoid costly expropriation conflicts with land owners, it was decided to lay the railway outside the existing cities. In this way, a string of station cities along the railway became a more or less unintended by-product of the wish to knit the country closer together.

More than half of Russia's cities (630 of 1090) were founded after the revolution 1917. However, from the beginning and onwards, urbanization was only a by-product of what the communist party and its government really was striving for: industrialization: "…both the total growth and distribution of urban population in the Soviet era is largely a story of industrialization and industrial policy. This is no surprise: cities were created to serve industry and grew as industrial enterprises (and mines and power plants) expanded. There were cities that developed as administrative centers, but planners made sure that industry followed" (Becker et al. 2012, p. 40).
The industrialization of the Soviet Union and its spatial consequences for regions and cities was unique in an international comparison. While the market-led industrialization that had taken and took place in most countries seemed to follow a pattern in which industrialization increased the regional differences and promoted the urbanization of certain regions (Williamson 1965) the Soviet Union showed a completely different pattern. From the beginning of the 20th century until about 1950/60, when the country went through an extremely rapid industrialization, the regional differences within the Soviet Union decreased and a large number of cities emerged in previously almost non-urbanized regions. The explanation was the particular type of "un-balanced" industrialization strategy with focus on exploiting natural resources (primarily coal, iron ore, water power and oil) most often in very peripheral areas, for building heavy industry (Westlund 1998a, 2000).

The command economy built up under Stalin had the almighty power to force through this rapid industrialization. "…there is no formal analysis of the extent to which population movements to and from Russia's cities were forced, quasi-voluntary or voluntary. (…) However, while the net flows of different categories are not established, it is clear that no other advanced, fairly high-income society has had such a large proportion of population movement occur as the result of directives rather than voluntary choices" (Becker et al. 2012, p. 44).

Already 1932 the Soviet government started to implement a system of internal passports as a means to restrict internal migration. With the collectivization of agriculture and the terrible squeeze of resources from the agricultural sector, migration from the countryside increased. With migration control the peasants could be sent to some of the new cities in the periphery that needed labor for its new industry, instead of going to Moscow that already experienced very strong growth. This aspect of the command policies probably held down the expansion of Moscow and St Petersburg in favor of the growth of the new industrial cities.

Based on a study of regional disparities in a large number of countries in different development stages, Williamson (1965) assumed that these disparities over time would describe an inverted U-curve, with first increasing disparities that sooner or later would reach a maximum after which the disparities would start to decrease. As mentioned above, the Soviet Union did not follow the first phase of this development, as the regional disparities decreased during the first, heavy industrialization phase. Consequently, the Soviet Union and Russia also reverted the second phase of the U-curve. When the Union during Khrushchev and Brezhnev turned over to a more balanced industrialization with certain consumer industries, the regional disparities started to grow (Westlund 1998a, 2000). After the dissolution of the Soviet Union and the introduction of market economy in Russia, the shortcomings of the Soviet localization policy have become even more obvious. After 1991 a "re-urbanization" has occurred, in which many of the Soviet industrial cities have shrunk considerably while Moscow in particular with St Petersburg on second place, and some inter-regional and regional centers with populations over 500,000 have experienced strong growth (Bradye et al. 2004, cited in Becker et al. 2012).

Thus, the Soviet type of planned urbanization seemed successful in quantitative terms for a long time in both Russia and the other republics, but the transition to a market economy revealed that the Soviet urban system was not sustainable. From an economic point of view, this is obvious since many of the Soviet industries could not survive in the market economy, and so fell the cities that were built around them. However, also the environmental and social sustainability problems that the Soviet industrialization and urbanization caused must be brought into light.

The huge environmental problems in the Soviet Union became known in the end of the 1980s during Gorbachev's glasnost era, but they were of course as old as the Russian industrialization. The de-industrialization and re-urbanization that the transition to a market economy caused after 1991 meant that certain of the environmentally destructive industries were closed down and thus eased local environmental degradation. However, the fact that Russia today is one of the world's largest producers and exporters of oil, gas and coal, and that environmental concerns are given low priority still means that the Russian base industries and the cities build around them have a very long way to go to become environmentally sustainable.

The social sustainability of the cities of Russia has been given much less attention than the natural environmental issues. However, concerning issues of livability, attractiveness and amenities that today are considered as decisive factors for urban development in the Western world, Russian studies point out the total lack of understanding of these issues in the Soviet planning system. Even if the industry of Russia and the Soviet Union after Stalin shifted from an almost hundred percent focus on heavy industry to a scanty proportion of consumer industries (Westlund 1988a,

2000), it was not until Gorbachev that wider arrays of consumer goods was given priority (Becker et al. 2012).

The Soviet cities were built around industry while human, cultural and social issues mainly were neglected, in particular in all the new cities that were built up in the Soviet period. Pivovarov (2003, p 53f) describes this in terms of "Rigid, centralized regulation of urban development with minimal investment in human resources. (…) The excessive and time-accelerated concentration of population in the major cities during the period of forced industrialization required the widespread establishment of rigid, centralized planning in urban development (…) Given the limited resources, the chief condition for accomplishing these plans was how cheaply industrial and other kinds of economic construction could be carried out. This was accomplished on the basis of a particular system of organizing production, which included miserable living standards for workers and a peculiar "urban policy," the essence of which involved minimizing any spending on people living in the town by rigidly economizing on housing and communal facilities, the social and cultural sphere, urban transportation, and so on". Pivovarov (2003, p 59f) also underscores the difference between "growth of urban population" on the on hand and "urbanization" in terms of urban culture and diversity on the other, and claims that Soviet Russia succeeded with the first but that current Russia still lags considerably regarding the latter.

To sum up the Soviet Russian example, the centralized planning system implemented a rapid, forced industrialization which as a by-product brought a concentration of population to these industrial locations. The Soviet focus on production and heavy industry (as opposed to consumption and light industry) meant that industrialization – and thus urbanization – was based on exploitation of natural resources, often in remote areas without any urban traditions. The legacy of this planned, forced industrialization and urbanization has shown severe problems of sustainability, from an economic point of view, but foremost from the environmental and social point of views.

2.2. Government and market: the example of Sweden[2]

Sweden represents an example on how government at both national and local level created the infrastructure for industrialization and urbanization, while it was the market that utilized the new infrastructure and urbanized Sweden.

At the middle point of the nineteenth century Sweden was an agricultural society in all essentials. However, it was not a static agrarian society but one in which enclosure reforms, new crops, new methods of cultivation, new implements and growing domestic and foreign markets made agriculture a dynamic force for economic

[2] This section is partly based on Westlund (1998b) and is published with permission of Taylor & Francis www.tandfonline.com.

transformation. The position of agriculture was also manifested in the urban structure of the day. The degree of urbanization in Sweden compared with Europe as a whole was extremely low, about 10%, which was the same proportion as at the turn of the century in 1800 (Nilsson 1989).[3] In 1850 Stockholm had 93 000 inhabitants, Gothenburg 26 000 and Norrköping, which was then the third city of Sweden, barely 17 000. Most towns had between 1 000 and 5 000 inhabitants, but some did not even have a population of 1 000 persons. Side by side with the localities and urban districts endowed with town charters there were also a number of non-administrative population centers, mainly *bruk* communities (combining metalworking with agriculture) and other such centers of manufacturing and early industry. Most of these, however, had a population of only 200-400 persons (Nilsson 1989).

Over large tracts of southern Sweden the lowest level of the urban system - the villages - was in fact dissolving or had already done so. The enclosure reforms introduced after the adoption of the Field Consolidation Act (*Storskiftesstadgan*) in 1749 were certainly not implemented at the same time everywhere, but their effects were the same everywhere: densely-settled villages disintegrated and were replaced by individual farms, often several hundred meters apart from one another.

The urban system, which had been shaped for some centuries in symbiosis on the one hand with the state's efforts to create economic centers and tax-collection points and on the other with regional economic conditions, was thus at a very undeveloped stage. The transportation networks which bound the system together consisted of main roads, on which the horse and carriage was the most efficient means of transport; natural waterways along coasts and navigable watercourses and lakes; the canals which linked together the natural waterways; and during the cold season the "winter roads" over ice and by land. The only big innovation was the steamboat, but sailing vessels had still not been driven out of business. A telegraph network had not yet been established, and newspapers (most of them founded relatively recently) existed only in ten or a dozen towns.

The 1850s mark a decisive turning point in the transformation of the urban system. From this decade onwards the degree of urbanization has risen steadily from 10% to the 87% of today. The driving forces underlying this extreme change are numerous and many-faceted. What is beyond all doubt, however, is that the general explanations are to be found in the change of economic structure and transportation. The growth of industry and the modern service sector, and the transportation networks which fostered them, completely recreated the Swedish urban system.

In the case of Sweden it is apparent that the railway, more than any other means of transport, was the factor which made possible a strong increase in the concentration

[3] While the period 1800-1835 is actually characterized by a slightly reduced degree of urbanization, the curve turns upwards after 1835.

of human production and consumption, and - as a necessary ingredient of the same process - a powerful increase in the exchange of goods between different places and regions.

The Swedish railway network was fashioned as a compromise between a "state planning principle" and a "free market principle". The state trunk lines were laid out in accordance with clear political aims, viz. to link Sweden's three biggest cities but otherwise to nurture less developed parts of the country by routing the lines so as to by-pass the existing towns to a large extent. However, the possibility for towns, other centers and business firms to form private railway companies and build lines meant that the railway network came to be adapted to where demand was greatest, viz. to large and/or expanding centers. Places with functions as regional centers usually had sufficient resources or enough of a transport market to finance these investments. In other words what happened was that these places "propelled" the railway rather than the railway being an initial propulsive force for them. The transport market's critical level for railway investments lay in the smaller centers.

The railways filled a dual linking function. Firstly they improved the inter-regional links between different regions and between the capital city and the rest of the country, and secondly they improved the intra-regional links between towns and their surrounding areas, which strengthened the economic and cultural links between them and gradually switched the countryside over to an urban tack.

At the national level, the railway swept away considerable transport-cost obstacles and practical hindrances to a national market, thereby raising peripheral regions for the first time up to a transport level almost comparable to that of the key areas of the country.[4] Compared with what had gone before, the railways had improved considerably the conditions for economic development and industrialization in peripheral regions.

The mechanisms for the railway's influence on regional development, however, were at the local level - at the individual stations. Through these, rural areas not only became linked to their own centers but also to "the whole country". Railway towns grew up around the stations, often with newly-established industries as important workplaces employing locally-recruited labor. Many of these railway towns underwent a stable growth process and were raised administratively to the status of "village community", "urban district" and even "borough". Of the 34 places which received town charters between 1910 and 1950, all had railways, and several of these newly-established towns have to thank the railway almost exclusively for their expansion.

[4] Cf. Adam Smith's (1776/1904, p 146) remark: "Good roads, canals and navigable rivers, by diminishing the cost of carriage, put the remote parts of the country more nearly upon a level with those in the neighbourhood of the town. They are upon that account the greatest of all improvements...".

In this way the railways created urban centers in the countryside with transport facilities as good as in the towns, which in turn created good incentives for industrialization of the countryside. Nor were stations along the lines at a disadvantage compared with junctions in terms of freight rates (Heckscher 1907).

It is important to emphasize that industrialization and urbanization of the countryside was not accomplished at the expense of the towns. More than a million people, about a fifth of the population, left Sweden during the great wave of emigration to America. The towns' ability to absorb this surplus population would more likely have been even less if they had not strengthened their links with the countryside in a physical and economic sense. In other words, at the regional level the railways contributed to a relatively stable process of demographic and industrial development. Underlying the building of the trunk lines there was an explicit goal of developing the whole country by commercializing agriculture and broadening the markets for industry. It can be claimed that - with the exception of the very sparsely populated areas of Northwestern Sweden - this aim was achieved.

Because the railways, and later on the motor car, considerably reduced hindrances to transport and thereby broadened the markets, they hastened the structural transformation from agriculture to industry and services. The "low level" of industrialization and urbanization which took place around the railway stations was optimal in economic terms. It availed itself of local raw materials which were dearer to use in the cities for reasons of transport cost. It employed local labor and thereby avoided the migration threshold which makes labor a relatively immobile factor of production compared with capital. This optimal exploitation of resources was probably a not insignificant factor underlying the growth, unique in international terms, enjoyed by Sweden between 1870 and 1970.

In this way the railway came to influence different levels of the Swedish urban system in different ways. Perhaps its principal effects were felt at the lowest level, where the railway created a new basic level of the urban system, the railway village, which became in large measure the Swedish method of accomplishing the transition from rural locality to population center. The railway became the main factor in both the industrialization and urbanization of the Swedish countryside and in commercialization. When the railway opened markets for farm produce Swedish agriculture switched over from (mainly) self-sufficiency to production (mainly) for the market.

The influence of the railway on the three large metropolises Stockholm, Gothenburg and Malmö must be emphasized likewise. In addition to becoming the main nodal points of the railway network these were and continued to be the country's leading ports. The improved communications in which the railway was a chief factor gradually caused the country to divide up into three informal spheres of influence, each with its metropolis as its key center. To the regional centers, the railway meant

that they could extend their trading areas considerably. Improved food, fuel and raw material supplies from the enlarged trading area created conditions for expansion which had been lacking previously. When the enlarged trading area became drawn into the monetarized economy of the towns, the trading area's purchasing power also increased, to the benefit of the urban merchants. Inasmuch as the railway brought greatly increased access to the "world market", imports and exports of raw materials and finished goods were considerably facilitated.

With respect to intra-regional conditions such as the settlement pattern the railway secured a strong and in the long-term concentrated influence. As regards inter-regional development, most of the indications are that while on the one hand the railway helped to enlarge the areas of influence of the three metropolises enormously, on the other hand it exercised a strong levelling effect on the economic and cultural differences between the regions. The railway drew "the whole country" into the industrialization process, and the increased contacts between the regions, to which the railway contributed, slowly homogenized many regional and local cultural forms into a single "national Swedish" urban version.

During the latter half of the 20th century, Swedish urbanization slowly went into a new phase. Most of the smaller urban centers that were based on one local industry stagnated or started to decrease when that industry ceased to grow and no other industry emerged to replace it. Larger, more diversified urban centers continued to grow. Regional centers absorbed labor from the smaller centers. The metropolitan regions had the strongest growth, with the exception of some years of counter-urbanization in the 1970s. To counteract the depopulation of the small industrial towns and the countryside, Sweden introduced a regional policy 1965 with subsidies for industry investments in depopulating regions. Simultaneously local government got new tasks and went through a strong growth, and a large number of new jobs were created in care and education. This slowed down the depopulation for a certain period. With the emergence of the knowledge economy in the 1980s a new urbanization pattern emerged. The metropolitan regions and a few larger regional centers with universities continued to grow while most other regional and smaller centers stagnated. Cities' natural and cultural amenities and attractiveness become a major issue in urban planning and design.

The Swedish example shows that national government, by investing in essential infrastructure "in the right time", deliberately could exert a long-term influence on the Swedish urban system during the industrial era (Andersson and Strömquist 1988). National governmental expenditure has also been decisive for the winners in the competitive re-urbanization that has characterized the knowledge economy. With few exceptions, the cities with the largest universities stood out as the growth centers in Sweden's knowledge economy. Thus, the regional allocation of the state budget has had an impact on regions' and their centers' development. However,

when it comes to the more concrete local and regional development policy in Sweden, it is decentralized to the regions and municipalities. This in turn means that regions and cities differ in their ability to develop such policies as well as in resources to implement it, and that it is the major cities that have the greatest ability and resources.

3. A turnaround led by technology and the market?

The pandemic turned the previous development upside down. The closedowns made city centers very empty, not only in Sweden. London was described as a doughnut, with an empty center and with suburbs full of people working from home. Tokyo showed negative net migration and so did Paris, Stockholm and the largest cities in Germany and many other countries (Dilley et al. 2022; Stawarz et al. 2022).

Was this "counterurbanization" just a temporary reaction on the pandemic? Or was it an indication of a transformation towards decentralization after 40 years of re-urbanization – and if so, what forces can have created this transformation? Here we hypothesize that the same force, i.e. ITC, caused both the long wave of concentration and agglomeration advantages in the initial phase of the knowledge economy and the current decentralizing tendencies.

ICT emerged in small districts of big city-regions, e.g. Silicon Valley in the Bay Area and Route 128 in Greater Boston, but over time, ICT became applied not only in metropolitan regions but also in towns and rural areas. When the pandemic appeared, ICT could offer new applications to work, communicate and collaborate online. Some agglomeration advantages that have been considered exclusive urban phenomenon can nowadays be obtained by virtual networks, and complemented by working at the regular office one to three days a week.

Thus, a tentative hypothesis could be that ITC's decentralizing effects have facilitated living outside city centers for large groups of people in certain occupations. The pandemic, with its close-downs of workplaces, enforced this development, and this counterurbanizing development might continue until a new equilibrium is established (Eliasson et al. 2024).

Some preliminary results from an ongoing Swedish study give support to this hypothesis. A 40 years long period of strong population concentration in Sweden has been weakened during and after the pandemic, but Stockholm was in a stage of counterurbanization already 2016, way before the pandemic. Since then, Stockholm has had a negative migration net. Most of the out-migration in absolute terms from the Stockholm region has, hardly surprising, gone to the other two metropolitan regions and to the regional centers, but expressed in percent of population of the receiving municipalities, it is the most popular tourism municipalities, all in peripheral areas, that have had the highest increase of in-migration from Stockholm. If we look at who the out-migrants from Stockholm mainly are, we find that they are mainly in the age

between 30 and 44, they have university education and they work in occupations that have a high potential for working from home (Eliasson et al. 2024).

Conclusions

This paper has presented historical examples of the impact of governmental measures on urbanization in a capitalist country (Sweden) and a socialist one (the Soviet Union) during the manufacturing industrial epoch. Both examples showed that government played an important role in promoting urbanization, albeit by quite different measures. However, both examples also showed that when a new economy emerged, the old measures became obsolete. The knowledge economy, with ICT at the forefront, initially created a wave of re-urbanization and concentration to a few core areas, but over time, ICT's decentralizing effects became stronger and stronger. Government's role in these processes is mainly an unexplored field, but at least in Europe, both national governments and the EU have supported broadband expansion.

Today, urbanization is a major trend in developing countries and China stand out as the main example of government-led urbanization. Further studies of both historical examples and current urbanization will shed more light on governments' possible role in urbanization, urban-rural relations and regional development.

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No potential conflict of interest was reported by the authors.

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