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Urban demographic transition

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Abstract

Urban demographic transition can be defined as the historical period in which the population growth of cities structurally changes the settlement of territories. During this period, the urban population rate, which was previously very low, less than one-tenth of the population from the origins of humanity at least until the beginning of the 19th century, grew to be more than half of the population and sometimes much more. On a global average, the urban demographic transition was complete by 2008. Yet this transition is a double surprise in the history of the earth. The authors of the past had by no means envisaged it, and it is unprecedented in the history of the settlement of our planet. It will therefore be necessary to explain the unforeseen process that led to it. But it is essential to understand that urbanisation is deployed in a very differing way according to territories and countries. Finally, it is important to examine the period of post-transition, which concerns all countries whose urbanisation rate exceeds half the total population.

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Urban demographic transition is a process that has been an object of analyses, even before being defined, since the beginning of 20th century. In 1909, A. Landry published a work entitled *Les trois th ories principales de la population* (*Three main theories on population*). By this title he meant that the new demographic regime consists of the third basic theory after those of T. R. Malthus¹ and R. Cantillon². In 1934 these findings were summarised (Landry 1934)³ by distinguishing three periods (regimes): primitive, intermediate and contemporary. In 1945, this idea was further developed by this author in his *Trait  de d mographie*. Next, F. W. Notestein proposed the term *demographic transition* within which he describes – following A. Landry – three phases: pre-transitional, transitional and post-transitional. Starting from that baseline, demographic transition has been the subject of numerous publications, e.g. a review study by J.-C. Chesnais (1986). Moreover, the notion of demographic transition enters scientific dictionaries (for instance Pressat 1979 and *Demopaedia*). Definitions of this concept raise questions about perturbations in natality and mortality, not taking into consideration the spatial changes, like urbanisation, that can accompany them.

Taking into account the spatial dimension of demographic transition is therefore a more recent issue. It was developed e.g. by W. Zelinsky (1971), who came to the conclusion that urbanisation can be better explained by mobility than by the changes in mortality patterns on which the idea of demographic transition is based. His findings are limited as they may suggest that societies of the past did not experience mobility, which is incorrect, and because urbanisation also results from demographic transition. Studies by J. de Vries (1984), T. Dyson (2011) or S. Fox (2012) consider that the role of low mortality is essential for the phenomenon called ‘urban transition’. Recently, F. Moriconi-Ebrard (2015), following his previous line of thought (1993), re-defined urban transition by distinguishing its three phases:

- phase A, during which the urbanisation rate is stagnating at a low level;
- phase B, when it rises exponentially, then logarithmically;
- phase C, when the urbanisation rate is stabilising around a certain value, typical for a particular country.

Despite this, the term ‘urban transition’ was not included in the two scientific dictionaries cited above

1. More precisely, A. Landry analyses J. Townsend and his text *A dissertation on the poor law* (1786)

2. *Essai sur la Nature du Commerce en G n ral* (*Essay on the Nature of Trade in General*), written before 1734, published in 1755

3. Its title, “Demographic revolution” is specifically selected for volume II of a recent publication edited by J.-P. Bardet and J. Dup quier (1999) *Histoire des populations de l’Europe*, Fayard, Paris, Fayard.

(Pressat 1979; *Dictionnaire d mographique multilingue* 2013), although ‘urban dynamics’ was the subject of study in numerous recent publications throughout the last two decades of the 20th century, even if we limit this review only to French literature (Claval 1981, Pumain 1982, Bairoch 1985, Beaujeu-Garnier, D zert & Chelma 1991, Gu rin-Pace 1993, Moriconi-Ebrard 1994; Wackermann 2000a, 2000b, Moriconi-Ebrard 2001).

Based on the (inevitably incomplete) literature review presented above, we can see the need to use the new term *urban demographic transition*, which could combine the results of studies on both demographic and urban transition. This is supposed to shed more light on factors behind the rise in the urbanisation rate observed since the beginning of the 19th century, resulting from the combination of these two transitions, at the same time from changes in mortality and natality patterns as well as migration. In other words, without migration and especially: rural emigration, the increase in the urbanisation rate would not have been that high. However, its significance would have been much lower, too, without the decrease in the mortality rate. Thus, the aim of this paper is to discuss the formulation of *urban demographic transition* by explaining its historical and geographical significance.

An unexpected and novel phenomenon

In the preceding centuries, even in the early 20th century, no author anticipated the tremendous growth in the rate of urbanisation that the world has experienced since then.

A totally unforeseen urbanisation

Among the great authors of antiquity, Plato expresses the clearest rejection of urbanisation. According to him, the order that should reign in the city needs the demographic stability of the urban population. Plato presents a set of public measures for “adjusting the number of households to the number of five thousand forty” (Plato, *The Law*, V).

The first scientific work (Graunt 1977) discussing population⁴, published in 1662, describes a big European city: London. Its author, John Graunt – “a citizen of London” (as he introduces himself) – tries not simply to count the population by means of statistical works. Above all, he aims to examine the relationships between the large concentration of population within the city and its environment. By this study, he completes a task that no-one

4. For sure not calling it ‘demography’ which is a term invented by Achille Guillard in 1855 for describing a science that was called ‘political arithmetical’ for a long time, e.g. in the encyclopedias of Diderot and d’Alembert

undertook before him, which is –as he indicates with great modesty in the title of his book– “observations made upon the bills of mortality.”

J. Graunt creates, based on sources that were not dedicated to this, demographic information that is terrifying from a contemporary perspective. These facts reveal that not only the mortality in London was extremely high⁵: “around 36% of the conceived individuals died before 6 years old” (Graunt 1977: 63), but also – that it was higher than in the countryside.

One of the reasons behind that is linked to the insalubrious air in the city. J. Graunt defines a “insalubrious year” as one when “the number of funerals exceeds the one reported in the preceding year and when there are no more than 200 deaths because of plague (since we name the years of plague as those where the relevant number is exceeded)”. However, there are also “insalubrious years” with a significant mortality due to “dysentery, called by some people *the intestinal plague*”. Moreover, “among all the diseases and causes of death, the plague is the most important one. In London, there were four periods of high mortality within our era: 1592, 1603, 1625 and 1636”. For instance, in 1603, 82% of buried individuals were dead of the plague (Graunt 1977: 79–85).

Despite annual variations of the mortality rate due to the degree of insalubrity or intensity of the plague, London showed a general over-mortality when compared to its surroundings. The investigation of the demographic characteristics of the city leads John Graunt to the following conclusion: the city is less healthy than the countryside (Graunt 1977: 114). The possible reasons for this situation are “smokes, vapours and stinks”. In this context, the city of London – whose population is estimated by John Graunt as around 384 000 inhabitants (Graunt 1977: 105) – is anyway growing thanks to “the immigration of the provincial people”. This compensates for natural growth, which is lower than in the countryside, and even often negative, because of excess urban mortality.

In addition, John Graunt writes: ‘I asked myself whether a city becomes more insalubrious as its population grows, just because of that. I am inclined to believe that London is nowadays more insalubrious than it was before, partly because it is more populated but most of all, because – as I have heard – 60 years ago people used to burn less coal, which is now a common practice’. Thus, this part of the text indicates that a city, because of high population density, consumes a lot of fossil energy on a limited surface area, thus creating pollution. This produces – compared to the countryside – more insalubrity and excess mortality.

According to John Graunt, the development of urbanisation based almost exclusively on immigration (which has both a direct and indirect (due to their fecundity) influence on the number of inhabitants), will necessarily become a self-limiting process as living conditions will worsen along with the growing urban population, especially due to pollution coming from the rising consumption of energy. However, from the beginning of the 19th century, urbanisation, a novel phenomenon in the history of humanity, has been intensifying.

A phenomenon with no historical antecedents

Indeed, during the 19th and 20th centuries there are two symbolic dates for the development of urbanisation marking new thresholds of urban settlement: 1840 and 1929. In 1840, the City of London, as the first ever conurbation, achieved a population of 2 million inhabitants. Less than one century later, New York had more than 10 million and could be therefore called a ‘metropolis’. If we consider the 21st century as well, one more date can be pointed out in this respect: 2008, when the urbanisation rate exceeded 50% (Fig. 1). That is, more people nowadays live in cities than in rural areas.

Thus, the Earth’s population faces a major structural change within less than two centuries. In 1800, it was almost entirely rural, with only 8% of people living in towns and cities⁶. The urbanisation of the world started very slowly. In the 19th century, it was limited basically to those countries, which faced a transformation from a rural to industry-based economy, especially in Europe and North America. In these areas, the change from the rural – or primary sector – world to an industrial one represents a major factor in urbanisation as a result of the concentration of economic activities in the vicinity of energy sources.

At the beginning of the 20th century, the world’s average urbanisation rate was still very low, as it did not exceed 16%. In the same period, we have only four ‘big cities’, that is, ones with more than two million inhabitants.

6. Among the numerous definitions of a city, the most relevant ones highlight population features, that is, number of inhabitants and considerable population density. This double demographic dimension of a city, expressed in numbers and population density, is due to its habitat type, which is noted e.g. by one of the most famous sociologists, M. Weber (1921), who writes: „The city does not consist of one or more houses located separately, it is, in any case, a concentrated (at least relatively) habitat, a “locality”. In cities (but not only there), houses are built very close to each other; besides today the general rule is to build them wall against wall” (Weber 1982: 17). One of the additional clarifications provided by M. Weber’s analysis is the degree of reciprocal knowledge among the inhabitants. The city is “a collection of adjoining houses, in close rank, which forms, in one piece, a vast conglomeration so that the ordinary and specific grouping of the neighbourhood, characterised by the personal and reciprocal knowledge of the inhabitants, is lacking” (Weber 1982: 18).

5. Which was, incidentally, the case for most areas in this era

They are: the London conurbation, New York, Berlin and Paris. However, they are really exceptions in a world with dominance of the primary sector and a share of rural population of more than 4/5 of the planet's population. The demographic significance of London, Paris and Berlin can be explained by their functions as capitals of industrialised countries and important colonial empires, while New York serves as a main harbour for millions of Europeans emigrating to North America.

Then, during the first half of the 20th century, urbanisation became a more universal phenomenon. The number of big cities grew from four in 1900 to thirty seven in 1950. The majority of them were found in countries that are nowadays perceived as developed: of the four conurbations mentioned above, we should add, for instance, Tokyo, the built-up area of the Ruhr region, Osaka, Chicago, Moscow, Buenos Aires (Argentina was one of the richest countries in the world), Manchester, Los Angeles or Boston.

As for the developing areas, the phenomenon of big cities was unknown there until 1900. Their emergence results from, on the one hand, the growth of urban centres in which the population already exceeded 500,000 at the beginning of 20th century, while on the other, from the rapid development of small and medium towns. Among the examples of the former, we can list e.g. Calcutta and Bombay in India, Shanghai and Beijing in China or Cairo in Egypt, while the latter group includes e.g. Manila (population multiplied by 11 between 1900 and 1950), the Shenyang-Fushun conurbation in China (multiplied by 11) or Mexico City (8.6 times).

At the same time, the 'big cities' phenomenon continued in areas where it had already been observed: between 1900 and 1950 the population of New York was multiplied by 3.8 and in the case of London – by 3.3. These numbers (in net values) are still higher than the world average. The world's population increased during this period from 1,650 million up to 2,524 million in 1950, so it multiplied by 1.5. The number of inhabitants of Paris and Berlin, in spite of two world wars and low fertility rates following the end of demographic transition, had anyway grown by 80% and 40%, respectively. As a consequence, the average global urbanisation rate rose from 13% in the first half of the 20th century up to 29.6% in 1950 (Fig. 2).

In the second half of the 20th century we observed the continuation of this trend, with the urbanisation rate achieving 46.6% in 2000. The process of urbanisation further multiplied the number of inhabitants of cities and towns from 256 million in 1900 to 746 million in 1950, so with a multiplication by 2.9 times within 50 years. During the following five decades, the number of city

and town dwellers increases 3.9 times reaching 2,856 million in 2000. In total, the urban population was multiplied by a factor of 11 during the 20th century while the global population only multiplied by a factor of 3.9. In 2008 the urban and rural populations were equal, with each amounting to 3,400 million. Starting from 2016, the number of city and town dwellers has exceeded 4 billion and now constitutes 54% of the world's population, even if these figures should be relativized⁷.

A demographic analysis is needed of the mechanism of this unexpected and novel phenomenon of urbanisation that has been noticeable since the beginning of the 19th century, and which is called the scheme of urban demographic transition.

A two-stage process

In fact, the significance of urbanisation should be considered in a more general demographic context, which explains its main feature, which is that it consists of two stages (Fig. 3). This process – analogically to demographic transition⁸ – is called 'urban demographic transition'.

The first stage of urban demographic transition

Before the urban transition, in a rural economy based on agriculture that was dominant worldwide until the 18th century, the urbanisation rate was very low, usually lower than 5%, in most countries. The demographic evolution of cities of this era included periods of stagnation, limited growth or decline resulting from the local situation and the development of civilisations. A few demographically important cities existed in Europe and Asia, like e.g. Paris, London or Beijing. However, there are neither megalopolises nor even big cities if we consider as the latter those with more than 2 million inhabitants. Thus, cities maintain a limited demographic dimension during the whole period.

Then, the beginning of demographic transition also meant a rise in the urbanisation rate. This may be explained by three factors among which the first two are closely linked. Firstly, while cities used to be places of depopulation⁹, they now start to register a positive – sometimes high – rate of natural population increase.

7. International urban statistics are based on national definitions of urban population which are heterogeneous and therefore should be critically examined (e.g. Dumont & Chalard 2010)

8. A period of various duration and intensity, when the population undergoes a change from a demographic regime of high birth and mortality rates, to a regime characterised by a low mortality and then a low birth rate

9. We should distinguish here the two notions: 'depopulation' meaning that we register more deaths than births within a given area, and 'population decline', which means that we observe a decrease in number of inhabitants of a given area (Dictionnaire de g ographie 2005).

FIGURE 1
 The world's urbanisation rate (based on exact data and then averages of forecasts)
 Source: author based on United Nations data: WUP – The 2014 Revision

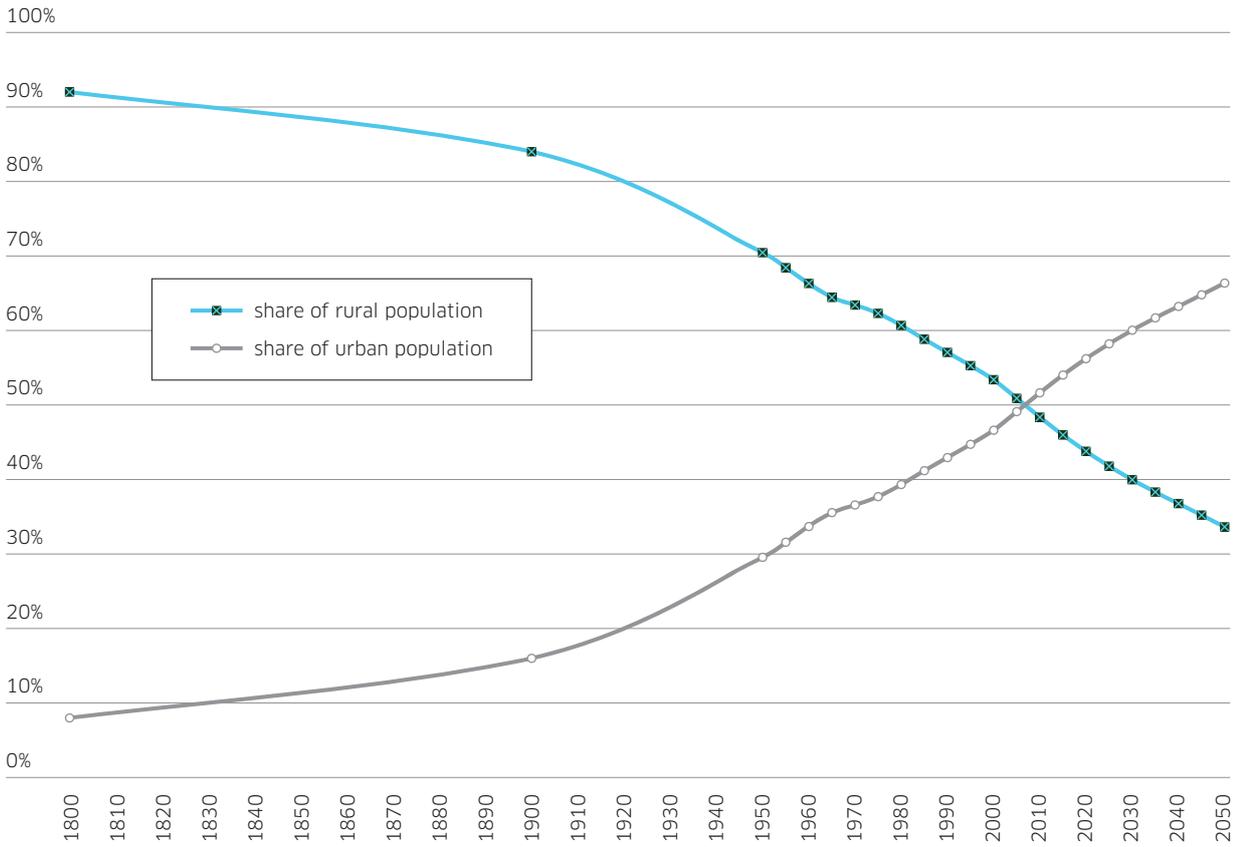
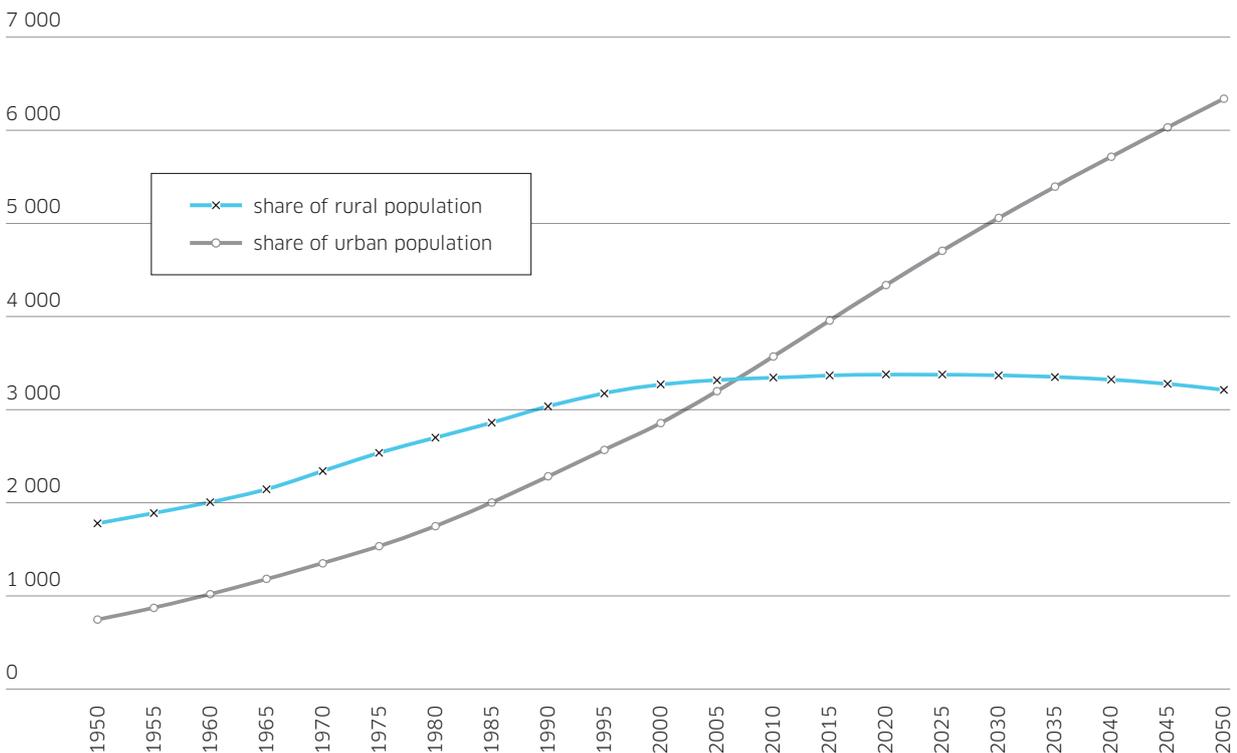


FIGURE 2
 The world's urban and rural populations [in millions of inhabitants] (based on exact data and then average forecasts)
 Source: author based on UN: WUP – The 2014 revision of the WUP



This is most of all due to the decrease in the mortality rate following progress in medicine, pharmaceuticals, hygiene etc. Secondly, mortality rates decrease more rapidly in cities, as the diffusion of the progress mentioned above is also quicker there due to the concentration of population. Finally, urbanisation benefits from rural-urban migration. To sum up, as they enter the urban demographic transition, cities added an increased migratory input to an essentially new phenomenon of a constant natural increase of population.

The first cause for the increase in the population of cities is, of course, the demographic transition. The decline in mortality – of infants, children and women during childbirth in particular – improves the survival and life expectancy rates of city and town dwellers, and therefore augments the urban population. Contrary to the anxiety concerning the further worsening of the situation in London¹⁰ expressed in 1662 by John Graunt, the population of this city was continuously growing. Along with a parallel increase in energy consumption, the improvement of living conditions in cities and more hygienic habits of their inhabitants allow a dramatic reduction in the mortality factors in London identified by John Graunt: smallpox, chickenpox, measles, parasites and plague. Against the overall background, the results are marvellous: the urban environment, transformed by human effort and innovation as well as a more hygienic lifestyle, no longer has all the deadly impacts on its population that it had before.

The second factor tells us that, as we can learn from the history of demography, the environmental conditions improved more quickly and progress against insalubrity was faster in cities and towns than in the countryside. In developed countries (but even in others), the first stage of the urban demographic transition is the period during which the relative excess mortality moves from the cities to the countryside. In fact, the concentration of people in cities facilitated the establishment and profitability of infrastructure and services that could rapidly reduce mortality, and all that constituted what John Graunt called ‘insalubrity’. At the same time, the implementation of environmentally friendly arrangements took place later in the rural areas of the same countries.

The decline of morbidity and mortality of the urban population is particularly associated with the establishment of infrastructure, which closely respected the rules of hygiene. We speak here mainly about water and sanitation systems. The best evidence for the overall

improvement in the cleanliness of air and water in the city was the decline in urban mortality and the increase in life expectancy. If human activities in cities had remained as polluting as in previous centuries, this pollution would have had very significant health effects, for example multiplying the spread of endemic diseases and causing high mortality.

For sure, at the beginning of the 19th century, cities such as Paris or London experienced hygiene problems that seemed impossible to solve and that transformed the rivers that cross them into immense cesspits. However, this was followed by large-scale development of urban technical infrastructure. The quality of water drunk by urban dwellers was greatly improved by the supply of drinking water, which in turn limited the pollution of the water table. Hygiene is supported by an increase in per capita water consumption. The problem of the emptying of pits, which had become too frequent due to an increase in the population density, was regulated with the spread of septic tanks.

In those cities that were in the forefront of progress, storm water and domestic wastewater from buildings was conveyed to the sewer from 1850 onwards. In Paris, the major construction works conducted by Baron Haussmann concentrated on this issue. ‘In 1852, an inhabitant of Paris has 110 litres of water at his disposal, in 1869 – 175 litres and when the Vanne aqueduct began operation – 225 litres... Between 1852 and 1869, the services of the city established nearly 842 kilometres of pipes that add to the 705 kilometres of the old Paris’ (Carmona 2000: 520–521). Studying the technical infrastructure of the city, M. du Camp underlined that ‘It is contemporary Paris that started this enormous movement towards urban hygiene which the others will study and then implement to obtain the same benefits. The construction of the underground pipeline in the city, initiated by Mr. Belgrand, in order to deliver drinking water and to expel soiled waters, would suffice to illustrate an era and a nation. Science has never before reached a higher level in responding to the needs of public health’ (du Camp 1870 after: Carmona 2000: 523). One more innovation supporting a good urban environment in Paris was introduced in 1894: from then on, human excrement was mainly evacuated using pipelines, which took the collective name of sewerage (Dupuy 1992: 32).

The third factor in the growth of big cities is linked with the process of rural-urban migration¹¹. We can list its various mechanisms, e.g.:

10. The London conurbation had more than 8 million of inhabitants in 2015, so more than twenty times more than in 1662 (384 000).

11. It should be mentioned that some areas, like the Vend e in France, have hardly experienced any rural emigration, as they managed to provide jobs in industries based in the countryside.

- departure of active farmers towards towns and cities, where industry is developed;
- departure of those who have no hope for employment in agriculture, following the increase in productivity in the primary sector;
- development of employment in the tertiary sector, which is mostly based in towns and cities;
- economic and fiscal policies discouraging agricultural production and limiting its profitability;
- tendencies of centralisation in the spatial management of territories, maintaining a contrast to a sustainable and balanced development;
- absence or insufficient number of agrarian reforms that would support active farmers.

Usually, rural-urban migration is forced rather than desired. Farmers pin their hopes for better living conditions on their departure to big cities. When immigrating there, they enlarge the city's demographic but also physical dimensions, by settling down in peripheral areas, which is legal in developed countries and often

initially illegal in developing ones. Rural-urban migration is stimulated by the modernisation of agriculture and the more attractive image of a city as having more support from the political authorities of a country and providing more opportunities, including those connected with social advancement (these hopes, however, usually end up in disappointment). Fortunately, this migration is not sterile, which is a significant demographic factor. By contrast, the social group of rural migrants is usually to a great extent composed of young adults, who therefore contribute to the cities' rate of natural increase of population.

As a consequence of the three above-mentioned factors, population growth in cities during the first phase of the urban demographic transition leads to a greater increase in the population growth rate than in the country as a whole. At the global level, the urbanisation rate increased from 29.6% in 1950 up to 41.2% in 1985, when – still on average – the first stage of the urban demographic transition ends.

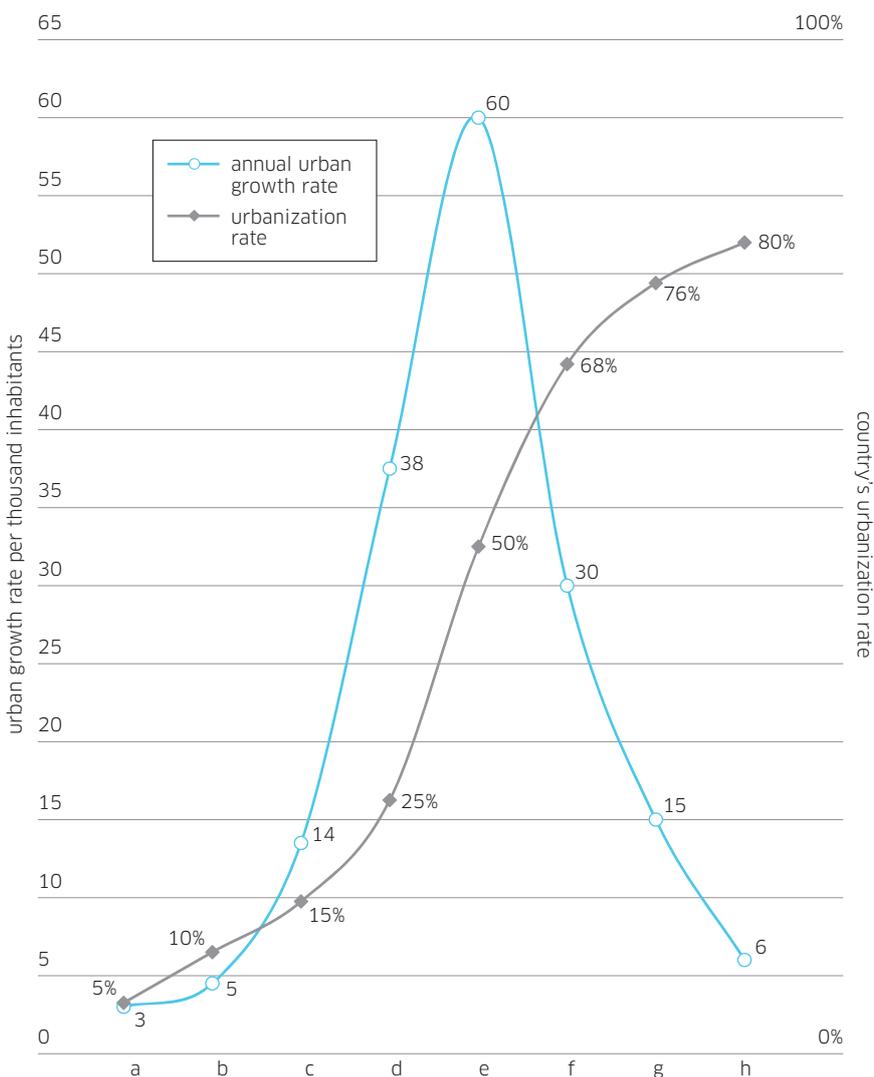


FIGURE 3
Stages of the urban demographic transition

Explanations: b – the beginning of transition; b–e – the first stage of the transition; e–h – the second stage of the transition; e – the beginning of deceleration of urban growth; b–h – total duration of the transition.

Source: author based on UN: The 2014 revision of the WUP

The second stage of the urban demographic transition

When the reasons behind urban growth started to recede, a number of big cities recorded a deceleration of their demographic development. This is called the second stage of the urban demographic transition. The increased rate of growth of the urban population declines (Fig. 4). The increase of the urbanisation rate, which used to be continuous, slows down. On the one hand, the natural increase in cities diminishes as the demographic transition accelerates. Moreover, the decline in fecundity is often observed earlier and is more intense in urban areas than in the countryside, both in the countries of the global 'North' and the 'South' (Garenne 2017a: 34; 2017b). On the other hand, the pace of rural-urban migration is declining.

The growth of cities resulting from urban-rural migration definitely has its limits. It reduces, in relative terms, as urban areas lose their significance in relation to the countryside, due to the simple fact that there is a decrease in rural population susceptible to migrate to the city. For the majority of rural areas, net emigration to the cities is usually equivalent of the net immigration that the urban areas receive. While the latter areas gain a relative weight, for the same rate of emigration from the rural world, the number of migrants contributing to urban growth decreases. This observation is essential and when ignored, may lead to a situation similar to the case of Mexico. In the 1970s and 1980s, projections were prepared which assumed 30 million inhabitants for Mexico City – which

was therefore to become the most populous city in the world. Contrary to these projections, its real growth has proven to be much weaker (Chalard & Dumont 2008).

By passing through the two above-mentioned stages, the urban demographic transition transforms mostly-rural populations into mostly-urban ones. Countries that have undergone this process then enter the post-transition period of the urban demographic transition.

Starting from the end of the urban demographic transition, the rate of increase of the urban population steadily declines. As a consequence, the gap between the rate of increase of urban populations and the total population declines.

According to the data provided by the United Nations (2015: 252–262), the beginning of the second stage of the urban demographic transition may be dated to the mid-1980s, as this is when, on the global average, the rate of increase of the urban population started to decline. For sure, the UN registered an ephemeral growth in this respect between 2000 and 2005; however, this can be explained by the Chinese policy on urbanisation (Dumont & Yiliminuer 2014) and the effects of metropolisation specified in the following chapters. In conclusion, we can assume that – at a global level – the second stage of the urban demographic transition ended in 2008 with the urbanisation rate exceeding 50%.

However, progress in the urban demographic transition varies considerably between countries.



FIGURE 4
The rate of increase of the world's urban population (annual average)
Source: author based on UN: WUP The 2014 Revision

Considerable diversity of time sequencing and intensity

The time sequence is the first element of variation in the urban demographic transition between countries. On one hand, the beginning varies from the end of the 17th century (the United Kingdom), through e.g. the 1920s in the case of India, up to the 1950s for numerous African countries. These differences can also be illustrated by taking one separate year as an example, for instance 1950 (United Nations 2015: 204–214), when the urban demographic transition is almost completed in countries with an urbanisation rate exceeding 70% such as Belgium, the United Kingdom or Australia. At the same time, the whole process is only starting, with around a 10% level, in Nigeria, Angola, Ethiopia, Yemen, Laos or Afghanistan and is in progress in South Korea or China, where it is going to end in 1975 and 2010, respectively.

The differences in evolution of the urbanisation rates during the urban demographic transition can mainly be explained by the influence of international migrations as well as political and geopolitical factors.

Thus, international migratory flows can modify the demographic situation, depending on their destination and preferential choices for large cities. In Europe or North America, these flows have concentrated in urban centres. For instance, in France almost 40% of foreign immigrants settle in the region of  le-de-France and as a consequence immigrants constitute 17% of this region's population, compared to the average of 8.1% for the whole country (Dumont 2008).

The world's urbanisation also depends on factors such as military conflicts, which often stimulate the growth of big cities. We can refer to numerous examples of such influence, for instance:

- Paris during WWI, receiving people and activities from Eastern France, which resulted in a demographic growth contrasting with the overall rate of decrease for France
- Athens right after WW2, facing an inflow of refugees escaping from the Greek countryside perturbed by the civil war
- Calcutta, receiving hundreds of thousands of refugees after the Partition of Bengal between West Bengal and East Pakistan in 1947
- Taipei, which built its demographic weight on the inflow of emigrants from the Chinese mainland who opposed communist expansion and then rejected the regime instituted in 1949
- Seoul, welcoming refugees from North Korea after the Korean war
- Lima, being a refuge for many Peruvians leaving endangered areas during the civil war of the Shining Path

- Cali, where whole districts emerged based on refugees who escaped from areas subjected to the terror of the armed revolutionary forces in Columbia
- Istanbul, with its large Kurdish population, who moved away from the east of the country, an area where the Turkish army had been operating.

We should add to this list also other kinds of political factor. The development of political regimes based on national countries often gives priority to capital cities, which is usually encouraged by governments and observed even in the case of countries whose constitutions provide for federal systems, such as Argentina or Mexico. The concentration of political power usually enhances the concentration of economic power by encouraging big private companies to establish their headquarters close to political decision-makers, who constantly influence the evolution of markets through legislative decisions and regulations.

Thus, even if the process of urban demographic transition is (or used to be) common worldwide, the value of the urbanisation rate can never be explained by one universal factor. The geography of urbanisation and its evolution depend equally on the history of migration, as well as geopolitics and national policies.

However, once the process of urban demographic transition is completed, what happens afterwards? In order to answer this question, we need to examine the urbanisation situation and its prospects in the post-transitional period.

The situation and prospects of urbanisation in the post-transitional period

Those countries that were first to complete their urban demographic transition have experienced a continuous increase in their urbanisation rate, mainly due to persistent rural-urban migration and the employment opportunities in the tertiary sector provided by big cities. Next, in the 1990s in particular, this increase could be stimulated by a new process: metropolisation. However, this does not mean that the urban world is going to gradually absorb a growing part of the rural world, as indicated by the UN's average projection where an urban population rate of 66% was predicted in 2050 against 50% in 2008 (United Nations 2015: 204–214). In fact, urbanisation can equally meet its limits due to various factors.

Metropolisation: a new driving force behind urbanisation?

Starting in the 1990s, a new context of globalisation and internationalisation (Dumont 2001) has strengthened a new urbanisation factor, called metropolisation. This phenomenon, known worldwide, is a characteristic

feature of developed, industrial and emerging countries. It is closely linked with recent public policies concerning openness to international trade, as well as innovations in transport and communication, and finally the actions of economic stakeholders.

Metropolisation can be defined as a ‘result of the action of centripetal forces leading to the [further] concentration of economic activities, especially higher tertiary functions, and people in the most populous urban spaces’ (Dumont 1994). As a result, metropolises can absorb activities that produce wealth as well as gain some economic power. According to their institutional status (national/regional capital, headquarters of international public institutions), they also have political power at their disposal, as well as the capacity for good governance provided by their leaders. Metropolisation can also be explained by tertiarisation of the economy, with an over-representation of tertiary job opportunities within metropolises, especially if we bear in mind that non-material activities dominate over material production when we consider the production of wealth. The fact that international companies largely tend to establish their foreign offices in big cities constitutes one more factor in metropolisation.

Urbanisation is therefore enhanced by the process of metropolisation, which is strongly related to various political, geographical and managerial factors of globalisation (Dumont 2015a). In brief, urbanisation is a spatial consequence of globalisation, characterised by a strong selection of locations for economic activities.

Limits of urbanisation

However, in numerous countries of the so-called global North, we can also observe the depopulation of cities (Michniewicz 2005, Chalard 2007, Fol 2010), sometimes – but not always – partly compensated for by the growth of other cities. Is it possible that we are going to face the end of urbanisation, even though the process will probably still continue in countries that have not yet completed their urban demographic transition? This question is justified for at least two reasons. Firstly, the effects of metropolisation vary considerably between territories. Secondly, there are many examples showing that innovations are not exclusively connected with metropolises (Dumont 2013, 2017).

The answer to the abovementioned question depends on numerous political, economic and social circumstances. Urbanisation can be limited by various factors, e.g.:

- public policies focused more on the development of rural areas, not metropolises;
- the rapid development of distance working facilitated by a worldwide popularisation of digital devices;
- the creation of added value in the countryside as well

as towns, either through innovation or the revival of traditional products, with their commercialisation or the reintroduction of their usage (Dumont 2016);

- better governance and promotion policies in rural areas;
- the search for amenities that encourage people to remain in the countryside or to move there.

To clarify the question of the possibility of a ‘ceiling’ or an end to urbanisation, we can take one country – France – as an example. The urban demographic transition, that is, the period of urban population gaining domination over a rural population, was completed – according to the official data provided by the French statistical office (Insee) – in the 1930s.

As a result, France at the beginning of the 21st century, as described by these numbers, appears to be a very urbanised country with more than ¾ of its inhabitants living in cities and towns. Nevertheless, the latest data reveal stagnation in urbanisation and undoubtedly hide regression. In addition to this, other analyses suggest that the urbanisation of France is overestimated.

In France, starting from the beginning of the industrial revolution of the early 19th century, the urbanisation rate (that is, the ratio between the number of people living in cities and towns and the rest of the total population) has considerably increased because of numerous reasons relating to the logic of urban demographic transition:

- activities in the industrial sector have initially been concentrated in the vicinity of energy resources, engendering urban growth in areas that could provide these;
- rural emigration has been widespread in areas that could not offer jobs in industry or in services, which would compensate for diminishing employment in agriculture due to its increase in productivity;
- the development of the tertiary sector, including both its commercial (enterprises) and non-commercial (state administration, local authorities and hospitals) dimension, mainly occurs in cities (for instance, the number of public administration workers is clearly correlated with the number of inhabitants of an area);
- some companies choose an urban location due to the cities’ potential to absorb more consumers or their geographical advantages linked to transport networks.

As a result, the urbanisation rate of metropolitan France – as registered by the Insee – grew from less than 10% at the beginning of the 19th century to 77.5% in 2007. The latest data reveal, however, stagnation in this respect starting from the beginning of the 2010s. It seems that with a value of 77.5%, the urbanisation rate has reached its limits, as the rate of demographic increase in rural areas has become higher (in net values) than in cities and

towns, which is mostly due to the attractiveness of the countryside. This situation can be very well illustrated on the basis of the examples of several departments, which, after a 150-year experience of outflow of their inhabitants to cities, nowadays register a positive net migration rate (Dumont & Yiliminuer 2015). The departments of Creuse, Aveyron and Cantal have become areas of immigration since 1975, 1990 and 1999, respectively.

By contrast, the urban unit of Paris has been unattractive since 1975. Its migration system is paradoxical: apart from a great number of – especially international – immigrants, we observe that more and more people move away from the French capital and that this trend is reinforced every year. That is why every year it registers a negative net migration rate of ca. 50,000 persons. These people leave for abroad, other French urban municipalities, but also for the countryside.

Nevertheless, we could ask if the above-mentioned stagnation of the urbanisation rate is not indeed depopulation. In fact, what Insee did in 2010 in order to measure the extent of the urban area was a further extension of the ‘principle of 200 metres’ (distance between buildings), based on which a piece of land is considered as a built-up area. At the moment, some particular public spaces (cemeteries, stadiums, airports, parking lots etc.), industrial or commercial areas (factories, industrial estates, shopping centres) are considered as built-up areas, which means that they may link inhabited zones based on the 200 metres principle, while previously they were simply not included in the calculation of the open space distances. This change in the calculation method caused a growth in the surface area of certain urban units, even though no structural change had in fact taken place there¹².

However, some recent publications of Insee consider a possible overestimation of the urban population (Insee 2015a; 2015b: 14; Dumont 2015b). A calculation method developed in Europe (Eurostat 2015) also based on morphological characteristics, indicates an urbanisation rate of 66.2% for metropolitan France – that is, more than 10 percentage points lower than Insee. The respective number drops further to 41.7% (so 35.8 points below the official French statistics!) if we consider as non-urban areas of an intermediate population density.

Moreover, the European typology confirms that the rate of increase is higher in the case of rural areas than cities. In addition to this, the demographic growth of communes with a low population density is 60% higher

than of those with an intermediate density. And there again, only 21% of the area of the latter is urbanised.

Certainly, the demographic evolution of French cities is full of contrasts and so is e.g. the job market (Poupard 2015), however, their average population increase is lower than the respective numbers for the country as a whole. The general contemporary image could be summarised as follows: the urban sphere has become generally repellent, while the rural – generally attractive (Guiysse & Rebour 2012, Pistre 2013). Bearing this in mind, we have to point out a paradox that all recent French laws concerning spatial management (Dumont 2015c) – adopted either by right- or the left-wing parties – are based on the idea of an overwhelming urbanisation, while in fact the latter seems to lose its importance nowadays.

Thus, after the urban demographic transition, which includes, in every case, an easily distinguished period during which a largely rural society becomes predominantly urban, the process of urbanisation may evolve in various directions. We can refer here to two examples: conurbations such as London, which registered a decrease in population in the 1960s, and New York, where the same was observed in the 1970s. Next, starting from the 1990s, the process of metropolisation stimulated the return of the trend to an increase in the case of countries including one or more metropolises with a strong attractiveness in the political, economic or migratory dimension. Nevertheless, the dynamics of metropolises vary worldwide and so is their impact on urbanisation rates. The future of urbanisation is therefore not clear, as its geography results from a combination of factors, including a city’s capacity to meet the objectives of sustainable development.

Conclusion

When we look at the process of urbanisation within a framework of general logic, highlighted by the pattern of urban demographic transition, the urbanisation rates of particular countries have followed or follow very differing rhythms. These differences depend on the pace of economic or social transformations as well as the political, geographical and cultural characteristics of a country, with their various impacts on spatial development. Thus, the time sequence and intensity of urban demographic transition have varied or vary to a great extent between countries and regions of the world.

At the beginning of the 21st century, due to the increase in urbanisation, the world has never before seen so many big cities, or the size of the largest of them. The urban phenomenon illustrates considerable change induced by the evolution of the economy, sanitary progress, as well as the political choices of the past two

¹² For instance, these statistical principles of Insee led to a fusion (within the new delimitation of 2010) of the urban municipalities of Lyon and Villefranche-sur-Sa ne, which had been separated – based on the old delimitations – by rural areas which can be easily observed e.g. when travelling along the A6 highway

centuries. The Earth's human population, still predominantly rural in the 18th century and with a low life expectancy at birth, leaves room, in the 21st century, for societies living in concentrated settlements where the average longevity has considerably increased. Moreover, worldwide population growth is in any case reached through differences in density between territories rather than by means of an even population density. This is

a reason for a paradoxical evolution of our contemporary history: the human population has never been this large before and, at the same time, it has never been as concentrated to the same extent in urban areas that constitute a marginal percentage of the planet's surface. The future of urbanisation suggests two possible scenarios: either a further intensification of this paradox or – on the contrary – its regression.

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