The Role of the Demographic Transition in the Process of Urbanization

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The next observation is, that …there are far more burials than christenings. This is plain … From this single observation it will follow that London should have decreased in its people, the contrary whereof we see by its daily increase … It is therefore certain that London is supplied with people from out of the country, whereby not only to repair the over-plus difference of burials above-mentioned, but likewise to increase its inhabitants—John Graunt, Natural and Political Observations made upon the Bills of Mortality (1662/1964: 35)

Abstract

Beyond the field of economic and demographic history, the issue of how urbanization comes about has received relatively little attention. It is often thought that the process results chiefly from structural economic change—especially the movement of people out of agriculture that accompanies economic growth. Relatedly, there is a tendency to focus on the proximate cause of urbanization that is rural to urban migration. However, explanations of urbanization framed in terms of structural economic change have problems—not least the fact that in sub-Saharan Africa urbanization has been quite rapid, and urban growth has been very rapid. The fact that demographic processes play a major role in causing urbanization (and urban growth) is hardly new. Indeed, much of the case addressed here can be found in Graunt’s observations of 1662 (see above). However, the most direct explanation of how urbanization results from the demographic transition is that provided by de Vries—who advances a stylized sector-specific model of the transition in this context. Against this background, the present paper forwards and discusses empirical sector-specific illustrations of the transition for Sweden and Sri Lanka. Both illustrations use national data, rather than data for major towns (e.g. London, Amsterdam, Mumbai). The paper maintains that understanding and policy relating to the process of urbanization in contemporary developing countries have been compromised by the fact that the demographic basis of the process is largely unknown. Finally, the paper questions whether the speed of current urbanization is unexceptional by historical standards—as is often asserted. More recent demographic transitions have tended to occur over somewhat shorter time periods than applied historically. And evidence is provided here that contemporary urbanization is also occurring at a somewhat faster rate.

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As the title suggests, this paper examines the relationship between the demographic transition on the one hand, and urbanization with its attendant urban growth on the other. The piece is written from the standpoint that, to their cost, demographers have made rather little out of the demographic transition. After all, this is a hugely important phenomenon that is affecting all of humanity. It has been described, with justification, indeed perhaps with understatement, as ‘one of the best-documented generalizations in the social sciences’ (Kirk 1996: 361). Yet the demographic transition is something that demographers seldom study as a whole. There is little research that specifically tries to link the phenomenon with its multifarious consequences. Demographers seem uneasy about wandering too far from their familiar terrain. And one symptom of this that the urban sector usually enters accounts of the transition only as a determinant of mortality and fertility.2

Turning to urbanization, again there are major problems with how it is usually approached by social scientists. Once more, no one can doubt the great importance of the subject. For example, almost every country in the world is currently urbanizing, and many countries are experiencing unprecedentedly rapid rates of urban growth. However, these facts are usually taken as the starting point for analysis. Inasmuch as research addresses anything further back in the causal chain, then it tends to give most attention to the role of (net) rural to urban migration. Indeed, migration probably receives undue weight in this respect. As others have observed, the causes of urbanization have received relatively little attention from demographers. The matter has not ranked highly on the intellectual agenda (Preston 1979; Woods 2003a).

Demographers and other social scientists often place too much weight on the rationalization of early experience in their attempts at explanation. This inclination can be especially strong if the early experience relates to their own particular culture and history. Relatedly, there is a tendency to frame explanations in terms of features which turn out eventually to be relatively superficial. Such problems have affected research on both the demographic transition and urbanization. Thus the fact that in European societies in the nineteenth and early twentieth centuries industrialization and modern economic growth accompanied the demographic transition and urbanization has encouraged the idea that the former sorts of economic processes were the causes of the latter. However, such interpretations have been challenged in recent decades because processes like fertility decline and urbanization have been happening in settings in which sustained economic growth and industrialization are largely absent.

With this as background, the aim of this paper is provide an integrated explanation of urbanization (and urban growth) within the context of the demographic transition. To put the matter differently: any account of the transition that fails to include urbanization as one of its major components is seriously incomplete. It is taken for granted here that the process of urbanization has massive implications for societal development in general (e.g. see Dyson 2001). And it is important to state at the outset that the present account of urbanization is far from being original. Indeed, as

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2 To elaborate some of these points: in contrast to demographers and the transition, economists have made a great deal out of modern economic growth; demographic research, like research more generally, tends to be overly compartmentalized; there appears to be no book written in English that has the demographic transition as its title (but see Dyson, forthcoming) although, of course, in French there is the major work by Jean-Claude Chesnais (1992).
the quotation at the head of the paper shows, most of the pieces of the explanation are contained in Graunt’s statistical analysis of 1662. That said, the account remains unknown to many social scientists and policy makers today—something that has unfortunate implications.

The paper has six sections. The first introduces some basic concepts. The second criticizes mainstream economic explanations of both the demographic transition and urbanization. The third introduces the stylized sector-specific model of the transition that has been forwarded by Jan de Vries in order to help explain the process of urbanization (de Vries 1990). The fourth presents empirical examples of how the transition has actually unfolded in the urban and rural sectors of Sweden and Sri Lanka. These examples support and extend the sector-specific demographic account of urbanization. The fifth section considers a corollary of this demographic explanation—namely that because more recent demographic transitions have tended to occur over shorter time periods than those that applied in developed countries historically, the contemporary experience of urbanization should also be faster. This hypothesis appears to be upheld. Finally, the paper summarises the conclusions and discusses some of their implications.

**Preliminary considerations**

The term ‘urbanization’ is used here to refer to an increase in the proportion of a population living in areas that are defined as urban. Although different countries use different criteria to classify areas as ‘urban’ the full process of urbanization typically involves the movement of a society from being 10 percent urban or less, to being 70 percent urban or more. The term ‘urban growth’ is used here to refer to growth in the number of people who live in urban areas (i.e. the towns). While it is possible for urban growth to happen without urbanization, in the modern world the two processes usually occur together. However, it is rare for the urban rate of natural increase in a country to exceed the rural rate of natural increase. Indeed, usually the urban rate of natural increase is similar to, or slightly less than, the urban rate of natural increase. Of course, this means that for urbanization to be happening it must be because of rural to urban migration. This migration reduces the rural rate of population growth and raises the urban rate of growth. Thus it produces faster population growth in the urban sector than in the rural sector—i.e. urbanization. Accordingly, it is reasonable to say that rural to urban migration has been and remains the immediate cause of urbanization in almost all situations.

Clearly, the fact that different criteria are employed to define areas as ‘urban’ can complicate matters of comparison—both between different populations and sometimes within the same population over time. For the most part, however, this does not constitute a major problem in what follows. Another preliminary point to make is that—even using a fixed set of criteria—in all countries rural areas are reclassified as urban areas from time to time. This reclassification occurs mainly to reflect changes brought about by urban natural increase and rural to urban migration—factors which can effectively be regarded as the ‘real’ causes of urban growth. Notice, however, that because such reclassification is a periodic administrative process, by its very nature it tends to be lagged on changes brought about by natural increase and migration.
Conventional economic accounts

Some comments are required regarding conventional explanations of both the demographic transition and urbanization.

The demographic transition

Until fairly recently, explanations of mortality decline and fertility decline within the transition were heavily influenced by the presumed experience of European countries (and their offshoot populations) during the nineteenth and early twentieth centuries. In particular, classical demographic transition theory, as it was formulated by Notestein (1945, 1953), explained the fertility transition mainly in terms of the emergence of urban-industrial society. This account tended to emphasize the role of economic factors, like rising incomes and the growth of factory employment in fertility decline. It did not concern itself much with why these societies were becoming increasingly urban in the first place—this was seen as being largely due to industrialization. Moreover, classical demographic transition theory addressed the urban sector mainly insofar as that sector tended to be associated with rather lower levels of fertility and generally experienced fertility decline a little ahead of rural areas.

Of course, in recent decades this classical body of transition theory has had to confront the fact that mortality and fertility declines have been occurring in settings that are neither very urban nor very industrial. Perhaps the most important consequence of this has been the growing recognition—perhaps now a consensus among demographers—that mortality decline is the remote cause of fertility decline. This means that the cause one major demographic process—i.e. fertility decline—ultimately lies in another major demographic process—i.e. mortality decline. All other considerations that may condition fertility declines in different populations are essentially secondary to this.

Urbanization

It is widely held that urbanization results mainly from changes in the structure of employment that occur as a result of economic growth. For example, addressing the specific question of what causes urbanization, it has been stated that ‘[t]he underlying explanation for urbanization involves changing employment opportunities as structural change takes place in the economy’ (Jones 2003: 952). This account stresses the movement of the labour force out of agriculture into industry and (later) the service sector that accompanies economic development. In short: economic growth takes off and is sustained in the towns; urban factories offers higher wages

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3 The term ‘offshoot’ here is as used by Maddison (2007), the main offshoots being, of course, the United States, Canada and Australia.

4 The position has a long history, of course (e.g. see Davis 1963). But for recent work consistent with this view see, for example, Chesnais (1992); Hirschman (1994); Kirk (1996); Mason (1997); Galloway et al. (1998); Wilson and Airey (1999); Cleland (2001); Dyson (2001); Livi-Bacci (2001); Casterline (2003); Reher (2004); Ní Bhrolcháin and Dyson (2007).
than rural farms; this attracts people from rural areas; and technological changes resulting from economic growth reduce work opportunities in agriculture.

Again, this classical explanation of urbanization has been heavily influenced by what happened in Europe and its offshoots in the nineteenth and twentieth centuries (e.g. see Easterlin 1996; Williamson 1988). These countries experienced industrialisation and urbanization at about the same time. Their economies changed from being mainly agricultural and rural, to being mainly industrial and urban. There is no doubt that economic growth in urban areas increased out-migration from rural areas. And a similar combination of processes has occurred in many developing countries—notably in East Asia—in recent decades. Accordingly, there has been a tendency to assume that what is being observed is cause (i.e. economic development) and effect (i.e. urbanization).

However, there are problems with this explanation. The most important one is that urbanization has been happening in places where there is little or no economic growth—in particular, sub-Saharan Africa. Thus ‘rapid urbanization has preceded industrialization; indeed, the African experience seems to imply that it is completely independent of it’ (Oucho and Gould 1993: 275). In sub-Saharan Africa the process of urbanization has continued even during times of economic decline—as if carried forward by its own momentum (Fay and Opal 1999). There has been some shift out of employment in agriculture, but often this has happened because people have physically moved out of rural areas. Instead of taking them into a growing industrial sector, migration has often led them to urban underemployment and outright unemployment. Moreover, urbanization is underway in places like Yemen and Afghanistan. And the idea that the process is often divorced from economic growth also has echoes in earlier research—e.g. on Latin America during the 1920s and 1930s (e.g. see Davis and Casis 1946; also Hoselitz 1957).

**A stylized model of urbanization and the demographic transition**

Ultimately, a population can only experience the process of urbanization as a result of demographic processes. That is, the composition of a population can only move from being predominantly rural to being predominantly urban through the operation of mortality, fertility, and migration. However, with rare exceptions, migration and the economic conditions that influence it tend to get most of the attention. This is particularly true in relation to research on urbanization (and urban growth) in the contemporary developing world. Thus, as Preston (1979) for example has noted, there is a widespread tendency to see migration as the main cause of urban growth, to the neglect of the contribution made by urban natural increase. There is also a tendency to see rapid urban growth in isolation from the occurrence of rapid population growth more generally.

The stylized sector-specific model of urbanization provided by de Vries (1990) was proposed in relation to the experience of Europe. It was also prompted by the failure of theory on the ‘mobility transition’ to take due account of the demographic
transition. Key features of the model are found elsewhere—for example, in the work of Bairoch (1988) and Wrigley (1987). But de Vries seems to be the first person to have drawn things together within the framework of the transition. Although he notes that fertility tends to be lower in urban areas than in rural areas, most of the explanation is made in relation to mortality—which probably plays a more important role and about which more is known. The stylized model is reproduced as Figure 1. There now follows a sketch of the causal chain that it represents.

In pre-transitional circumstances the crude death rate (CDR) in urban areas is very high (see Figure 1). Infectious diseases dominate the cause of death profile. And these diseases tend to thrive in towns—where people live in close proximity and interact at high rates. However, the urban death rate is not only very high, it is also higher than the urban crude birth rate (CBR). Therefore, the urban sector is a demographic ‘sink’—i.e. in the long run it would not exist without rural to urban migration. In these circumstances urban growth is limited and, as Graunt recognized, to the extent that it occurs it is because of migration ‘out of the country’. However, the high urban death rate means that there is effectively a restriction (i.e. a ceiling) on how ‘urban’ any population can become. For example, the population of the Netherlands was about 30 percent urban in 1800. This was a high figure—which cannot have been too far from the ceiling that then applied in the countries of north-western Europe (e.g. see de Vries 1974; Keyfitz 1980; Wrigley 1987).

To a large degree, the process of mortality decline within the transition happens because of the reduction of deaths from infectious diseases. Therefore the urban death rate falls more rapidly than the rural death rate. A crucial stage occurs when the urban death rate falls below the urban birth rate. Thus at point 1 in Figure 1 urban natural increase becomes positive for the first time i.e. the urban population begins to grow partly as a result of its own natural increase. The ‘ceiling’ on urbanization is removed. In the resulting period of sustained urban growth, rural to urban migration is initially the main contributor to this growth. However, as the overall level of urbanization in the population rises, so urban natural increase may become the main contributor to urban growth. It appears that urban natural increase is likely to become the main driver of urban growth well before the total population is half urban (Keyfitz 1980: 149-156). Notice that at point 2 in Figure 1 the urban death rate falls below the rural death rate. This raises the possibility of what de Vries terms ‘autonomous urbanization’—in which the rate of natural increase is greater in urban than in rural areas. Of course, should this situation arise then urbanization would occur without migration.

However, in reality net rural to urban migration happens throughout the demographic transition. Initially, it is required for the urban sector to exist. Then, in the early stages of the transition—when the urban sector is still small—it is the main source of urban growth. And it may also be the main source of urban growth towards the end of the transition—when the urban rate of natural increase is very low (or negative). Of course, mortality decline in rural areas will almost certainly act to greatly increase the number of people who migrate out of rural areas to live in the towns. Moreover, there

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5 Zelinsky’s (1971) proposal of a ‘mobility transition’ saw this transition as paralleling the demographic transition. However, both transitions were attributed to ‘modernization’. There was little attempt to integrate them—for example, as regards how the composition of internal migration changes from being mainly rural/rural to being mainly urban/urban.
are reasons to believe that the net rural out-migration rate may also rise as the demographic transition proceeds (Preston 1979).

Naturally, the causal chain sketched above provides only the bare bones of what may actually happen. There is plenty of scope for variation around this basic theme. Note too that the work of others has been referred to in order to elaborate the basic account provided by de Vries. Nevertheless, Figure 1 conveys the gist of the explanation of urbanization. The role of the urban death rate in initially impeding the process, and then causing the urban natural increase that contributes so greatly to urban growth, is especially crucial.

Although the data tend to be fragmentary and scattered, there are many signs from research in economic and demographic history that are consistent with this basic demographic account of urbanization. The largest body of evidence relates to Europe, where there are strong reasons to believe that the urban sector was indeed a major ‘sink’ in pre-transitional conditions. For example, research on cities like Amsterdam and London indicates that the prevailing death rates were incredibly high—and very much higher than the birth rates. Moreover, the conclusion that the urban sector was once a major demographic sink is not altered much by complications introduced by migration (e.g. see de Vries 1984; Wrigley 1987).

Scattered evidence for populations elsewhere in the world is also consistent with the foregoing account—again, especially in relation to the urban areas having very high death rates and being sinks in the past (e.g. see Bairoch 1988; Woods 2003b). A particularly impressive body of data exists for Bombay (now Mumbai) in the decades around 1900. The city’s infant mortality rate was roughly 50 percent (Dyson 1997). The population of about 900 thousand only existed because of migration. Census data for 1911 show that 80 percent of the city’s residents were born in rural districts (Bairoch 1988: 449).

**Sector-specific illustrations of the transition**

Of course, Figure 1 is a stylized model. In this context it is important to appreciate that it is almost impossible to find a full set of published vital rates for the whole of the demographic transition for any country outside of north-western Europe. Moreover, even among the countries of north-western Europe there appears to be only one—Sweden—where for most (though not all) of the transition death rates and birth rates were published separately for the urban and rural areas from an early time. Beyond Europe, there is probably no data-set that even begins to approach that of Sweden. However, in 1907 P. Arunáchal, the then Registrar General of Ceylon (now Sri Lanka), stated with considerable justification that the country’s vital registration system was ‘unique in the East, and has few parallels in the West’ (p. O21). Fortunately, the published vital registration data for Sri Lanka also throw important light on the validity of the basic stylized model.

**Sweden**

For Sweden, Table 1 gives average urban (Städer) and rural (Landsbygd) vital rates relating to the period 1750-1960. The figures come from two sources. The first is the
Swedish Statistical Yearbook (Sweden, various years). The editions of this yearbook contain ten-year averages of death and birth rates based on annual vital rates for urban and rural areas for the period 1821-1960. The annual figures themselves end in the 1960s—mainly due to changes in the definition of urban and rural areas (made necessary, in part, by the growth of suburbs). Therefore the most recent figures in Table 1 pertain to the 1951-60 decade. The second source of the average vital rates is a reconstruction undertaken by Freidlander (1969). This provides the averages for 1750-1820. It is unclear whether these figures are based on registered vital rates for the urban and rural sectors, or whether they result from some form of backward extrapolation. Nevertheless it should be noted that in reconstructing these rates Freidlander was chiefly concerned with explaining the country’s fertility transition, not its process of urbanization. Furthermore Bairoch presents average rates of natural increase for both the rural areas of Sweden and Stockholm for the period 1751-1840 which are consistent with Freidlander’s reconstructed rates (Bairoch 1988: 240-42). Much more importantly, however, it should be emphasized that the basic story of the figures in Table 1 remains unchanged even if the figures for 1750-1820 are not used.

With this as background, Figure 2 plots the Swedish rates. It shows that until about 1850 the urban death rate was higher than the urban birth rate (see the shaded area indicated by the letter ‘A’). Therefore the urban rate of natural increase was negative (see letter B). Indeed, before the 1850s the urban birth rate was lower than the urban death rate by about 6 per thousand—i.e. there was appreciable natural decrease. But the rural rate of natural increase remained positive throughout (see C). So it was rural natural increase which, through migration, maintained the urban population and provided the basis for what limited urban growth there was. Note too that before about 1850 the urban birth rate was consistently lower than the rural birth rate. Therefore lower urban fertility also helped to explain why the urban sector was a sink. The urban death rate behaved as would be expected. It began to fall from about 1800, and it fell much faster than the rural death rate. Indeed, it was not until around 1900 that the urban death rate fell below the rural death rate (see D). Note that after about the 1890s the urban and rural rates of natural increase were approximately equal, and they fluctuated in similar manner (see E).

According to official figures, Sweden’s level of urbanization remained constant at about 10 percent in the decades before 1850. However, as we have seen, positive natural increase was established in the country’s urban sector from about that time. And rural to urban migration meant that the level of urbanization rose steadily throughout the second half of the nineteenth century—reaching 21 percent in 1900 and 49 percent by 1960 (Central Bureau of Statistics 1955).

So the Swedish data reveal a picture that is in close agreement with the stylized model. It is worth noting that before 1950 the urban population had a low sex ratio (m/f) that was usually in the vicinity of 0.86. It seems reasonable to suggest that this may have contributed to the relatively low level of the urban birth rate—inasmuch as adult women may have had difficulty in finding marriage partners (Thomas 1941).

**Sri Lanka**

The case of Sri Lanka is more complicated. The annual *Reports of the Registrar General of Ceylon on Vital Statistics* contained in Ceylon (various years) provide
most of the data used here. The *Reports* for 1891-1907 are the first to provide vital rates for each of the country’s towns. Therefore, for those years, weighted-averages of these rates form the basis of the urban rates here. Then, starting in 1908, annual vital rates were published for the island’s ‘urban’ areas—a series that extends up to the mid-1960s. However, rates for the rural areas were not provided. Therefore for 1908 and later years it was necessary to derive the rural rates from those given for the country as a whole (using the corresponding proportion of the total population that was urban). The rates obtained in this way suggest that the urban areas were a ‘sink’ until about 1920. Thus the average urban death and birth rates for 1891-1920 were 35.5 and 29.5 per thousand respectively—implying a rate of natural increase of -0.6 percent per year. There is frequent discussion of this matter in the early *Reports*.

However, due to a major malaria epidemic in 1935, the vital rates published for the urban areas become biased from about the mid-1930s onwards. The death rate had been falling in the 1920s and the early 1930s. But the epidemic caused it to rise sharply from about 22 to 37 deaths per thousand. This shook the colonial administration. Accordingly efforts were made to increase the hospitalization of births (Langford 1996). As a result, the ‘urban’ birth rate rose from about 39 per thousand in 1930-34, to reach 60 per thousand in the years around 1945, and about 70 per thousand by 1955. It is clear that the urban birth rate was rising to these extremely high levels simply because rural women were increasingly having their births in hospitals and health centres that were located in the towns.

Fortunately, as early as the 1890s the *Reports* show a remarkably sophisticated appreciation of the factors that can influence mortality and fertility, potential errors in the registration data, and the steps required to improve these data. One aspect of this was the concern expressed regarding the degree to which the urban death rate was being influenced by the presence of certain institutions in towns—especially hospitals, but also prisons. So from 1908 onwards the urban deaths of urban residents were distinguished in the published data. As a result, it is possible to calculate the urban death rate of urban residents. This provides a basis—albeit an imperfect one—on which to adjust the total urban death rates for earlier years (i.e. 1891-1907) so that they can be compared with the urban death rates of urban residents from 1908 on. Urban births to urban residents were distinguished from 1927 onwards, and similarly this provides the basis for adjusting the urban birth rate for earlier years. Notice, however, that the resulting adjusted vital rates for urban residents does *not* involve an upward adjustment for the deaths and births occurring to urban residents in rural areas—since vital events in rural areas were not differentiated by place of residence. Accordingly, the adjusted urban vital rates summarized in Table 2 are underestimates to some degree, while the rural rates are slight overestimates.

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6 In the first decade in which the urban death rate of urban residents can be differentiated (i.e. 1908-17) it averaged 80 percent of the total urban death rate. In the first decade in which the urban birth rate of urban residents can be differentiated (i.e. 1927-36) it averaged 83 percent of the total urban birth rate. Therefore, these figures were used to adjust the total urban vital rates for earlier years—the assumption being, of course, that these percentages had remained constant. Other smaller adjustments were made to the early registration data, but are of little consequence for present purposes.

7 Even in 1925 only about 13 percent of the population lived in urban areas. So the transfer back of events occurring to urban residents in rural areas would have a disproportionately large upward effect on the urban rates, and a much smaller downward effect on the rural rates. Discussing circumstances in Colombo in the *Report* for 1891 P. Arunachalam stated that (p.F14) “It must also be remembered that the density of population in the town, and the presence of hospitals, lunatic asylums, and prisons, tend...
With this as background, Figure 3 plots the adjusted sector-specific vital rates for Sri Lanka. Essentially, it reveals a different version of the same basic story. Thus the adjusted rates suggest that until about 1925 the urban death rate was higher than the urban birth rate (see A). Therefore the urban rate of natural increase was negative (see B). The adjusted urban death and birth rates for 1891-1920 average 27.9 and 24.0 per thousand respectively—implying a rate of natural increase of about -0.4 percent per year. So, once more, it was rural natural increase that maintained the urban sector and provided the basis for what limited urban growth there was.\(^8\) Again, the rural rate of natural increase was positive throughout (see C). Notice that the urban birth rate was much lower than the rural birth rate. The Report for 1916 attributed this to ‘a far smaller proportion of females in the towns’ (p. L7). And the sex ratio (m/f) of the urban population across the censuses from 1891 to 1946 was indeed high—it averaged 1.29 (Ceylon 1946). The adjusted rates suggest that the urban death rate was only slightly higher than the rural death rate during 1896-1905 (see D). However, it is important to recall that these urban rates do not reflect the deaths of urban residents that took place in rural areas (deaths which are necessarily included in the rural rates here, biasing them upwards). Therefore there are strong reasons to think that in these early years the urban death rate exceeded the rural death rate by appreciably more than is shown in Figure 3.\(^9\) Finally, note that from the late 1940s the urban and rural rates of natural increase fluctuate in a similar way—rising initially and then starting to fall. However, the urban rate of natural increase remained lower than the rural rate—because the birth rate was lower in the urban areas (see E).

Turning to the statistics on urbanization, the Reports indicate that in 1891 the country’s eighteen towns contained about 11 percent of the island’s population. By 1925 the figure had risen slightly to 13 percent. However, the 1963 census put the level of urbanization at 19 percent (Ceylon 1963). So the changed demographic conditions in urban areas from about the mid-1920s onwards appear to have facilitated a distinct rise in the level of urbanization. The 2001 census, however, put Sri Lanka’s level of urbanization at just 15 percent. Of course, this decline reflects a change in definition. In this context it is noteworthy that when in 1898 the number of towns on the island was increased to twenty-seven, the Report noted (p. F24) that several of the new towns were ‘little more than villages’. There can be little doubt that if the same criteria were applied in 2001 as applied in the period before the mid-1960s then the level of urbanization would be much higher than 19 percent.

So the Sri Lankan data imply a variant of the stylized model. In particular, although the urban death rate was higher than the urban birth rate, it was not exceptionally high in itself. That said, it should be recalled that the adjusted urban death rates here are probably underestimates. And it may well be that if better data were available for the 1890s and before then they would reveal significantly higher urban death rates. Again, however, there are signs that a sex ratio imbalance in the urban population may have

\(^8\) However, immigrant labour brought in from southern India to work on the tea estates also made a contribution.

\(^9\) In this context, for the period 1891-1905 inclusive the unadjusted urban and rural death rates are 34.6 and 26.5 respectively—a difference that probably overstates the true urban/rural differential because of the inclusion in the urban rate of deaths occurring to rural residents in urban hospitals.
contributed to the lower birth rate in urban areas. And the urban rate of natural increase—which may well lie between the two figures of -0.4 and -0.6 given above—is again suggestive of appreciable natural decrease in the towns.

**The speed of urbanization—past and present**

So urbanization is both an integral component and outcome of the demographic transition. One reflection of this is contained in the assertion that the speed of urban growth in contemporary developing countries is unprecedented by historical standards. Thus rapid urban growth in recent decades must be seen in the context of the rapid population growth that has been a characteristic of more recent examples of the transition. Of course, both of the main proximate causes of urban growth in a country—i.e. natural increase and rural to urban migration—are usually strongly related to the overall rate of population growth.

However, a more difficult assertion that is sometimes made is that the *speed of urbanization* in contemporary developing countries (i.e. the rate of change in the proportion urban) is not exceptional by historical standards (e.g. see Preston 1979; United Nations 1980; Brockerhoff and Brennan 1998; Cohen et al 2004). This claim is usually made on the basis of estimates of historical and contemporary change in the level of urbanization produced within the United Nations system—in particular, the historical estimates provided by Grauman (1977) and the contemporary estimates produced biennially by the United Nations (e.g. see United Nations 2008). An early example of this assertion, using these sources, is that of Preston who states:

[U]rbanization in developing countries did not proceed with unusual speed in the quarter-century from 1950 to 1975. In this period the percentage urban grew from 16.7 to 28.0 in developing countries. While this is a rapid increase, it is very similar to the one that occurred in more developed countries during the last quarter of the nineteenth century. Between 1875 and 1900, the percentage urban of countries now more developed grew from 17.2 to 26.1 (Preston 1979: 196).

More recently, Brockerhoff and Brennan have used these same estimates to state that between 1950 and 2000 the level of urbanization in developing countries rose from 17.3 to 40.7 percent; whereas between 1875 and 1925 the level of urbanization in developed countries increased from 17.2 to 39.9 percent (Brockerhoff and Brennan 1998: 78).

Of course, the claim that the speed of contemporary urbanization is very similar to that experienced by developed countries historically is complicated by differences of definition. Nevertheless, that difficulty aside, those who make the assertion do not support it with an argument as to why such a similarity might exist. Moreover, if urbanization results from the demographic transition then one might expect that the speed of urbanization today would be somewhat faster than applied in the past. This is because more recent transitions appear to be occurring over somewhat shorter time-

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10 It should be noted that Cohen et al (2004: 92-93) also make use of historical data for seven high income countries and seventeen low and middle-income countries.
scales than generally applied historically.\textsuperscript{11} Also the pace of mortality decline in contemporary transitions is generally faster than applied in the past.

In fact, the claim that the speed of urbanization experienced by developing countries is similar to that experienced by developed countries historically depends rather a lot upon the particular comparison that is made. Thus the estimates of Grauman (1977) and the United Nations (2008) can also be used to support the following statement: between 1920 and 2010 the level of urbanization in developing countries increased from about 8.7 to 45.3 percent; while between 1830 and 1920 the level of urbanization in now-developed countries increased from 8.8 to 37.1 percent. This contrast, relating to a period of ninety years, suggests a speedier pace of contemporary urbanization.

Figure 4 supports a similar conclusion. Using the same sources, the bold line shows how the level of urbanization in developed countries is estimated to have risen since 1800. The UN estimates of urbanization in each of the world’s main developing regions during 1950-2010 are then compared with this—in each case starting the comparison at the same \textit{level} of urbanization. In the world’s most populous developing region, South-central Asia, the pace of urbanization seems to be appreciably slower than applied in developed countries in the past. In the case of the Middle East (i.e. North Africa and West Asia) the increase in urbanization during 1950-2010 is comparable to that experienced by developed countries between 1900 and 1960. However, in each of the remaining regions the speed of urbanization seems to have been significantly quicker than applied in developed countries historically. This is true for sub-Saharan Africa at the lower end of the scale, and it is true for Latin America at the upper end. In the centre, both East Asia and South-east Asia experienced an almost identical increase in urbanization during 1950-2010 from around 16 to 48 percent—an increase that was significantly faster than the historical trend (Figure 4).

\section*{Discussion}

In conclusion, this paper has argued that urbanization and urban growth are best comprehended as resulting from the demographic transition. Of course, the expansion of towns also requires increased supplies of food and—especially in cold climates—energy from rural areas. However, the most important requirement is neither food nor energy, but people.

There are good reasons to suppose that urban populations play a major role in stimulating increased agricultural production in rural areas as the related processes of urban growth and urbanization get underway. Relatedly, while many see the process of urbanization as resulting from sustained economic growth, there is probably greater reason to see sustained economic growth as resulting from urbanization. It is, of course, impossible to neatly disentangle the independent influence of each factor. But there are good reasons to consider that in trying to account for urbanization social scientists have often gotten the basic direction of causation wrong. Thus, as was intimated above, shifts in the structure of employment may better be seen as resulting

\textsuperscript{11} Whether this statement will be supported by future events in sub-Saharan Africa remains to be seen.
from demographic processes (i.e. rural population growth) rather than urbanization be seen as resulting from alterations in the structure of employment. In short, mainstream accounts of both the transition and urbanization have often wrongly considered effects to be causes.

It was stated above that there is now growing agreement that mortality decline is the remote cause of fertility decline. Of course, mortality decline also brings about population growth. And fertility decline causes population aging. With the exception of the initial process that is mortality decline, the cause of each of these other demographic processes essentially lies in another demographic process. And the point of this paper has been to argue that this also applies in relation to the process of urbanization. In each case, economic and other considerations are essentially secondary influences.

This approach also carries implications for policy. Preston, for example, made the very important point that governments concerned with slowing rapid urban growth should consider the provision of family planning services as the most palatable means of slowing such growth (Preston 1979: 210-11). Urbanization is a somewhat different matter, however. The present argument has been that it is an inevitable outcome of the transition. Moreover, it is largely a good thing.
Table 1 Average crude vital rates and crude rates of natural increase for the urban and rural sectors of Sweden, 1750-1960

<table>
<thead>
<tr>
<th>Year/period</th>
<th>CDR (U)</th>
<th>CBR (U)</th>
<th>CDR (R)</th>
<th>CBR (R)</th>
<th>CRNI (U)</th>
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Notes: CRNI stands for the crude rate of natural increase i.e. the birth rate minus the death rate. The rates shown for 1826 onwards are ten-year averages of figures published in various editions of the Swedish Statistical Yearbook. The rates for 1826 pertain to years 1821-30 inclusive, and thus the rates for 1956 pertain to 1951-60. The birth and death rates shown for 1750-1820 come from a reconstruction undertaken by Freidlander (1969). Their precise derivation is unclear, but for present purposes they are consistent with the figures shown for 1826 and 1836 in showing urban natural decrease. While Friedlander’s figures provide greater time-depth, they are not required for the statements made in the text.
Table 2 Average crude vital rates and crude rates of natural increase for the urban and rural sectors of Sri Lanka, 1891-1964

<table>
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<th>Year/period</th>
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Notes: The average rates for 1961-64 relates to four years. The full time series are available from the author upon request. The original source underlying these figures is Ceylon (various years).
References


Ceylon (various years) *Administration Reports*, Government Printer, Colombo.


Ceylon (1963)


Sweden (various years) Swedish Statistical Yearbook, Stockholm.


Figure 1  *Stylized, sector-specific model of the demographic transition.* Source: de Vries (1990)

Figure 2  *Crude death and birth rates for urban and rural areas of Sweden, 1750-1969.* Sources: Friedlander (1969), *Swedish Statistical Yearbook* (various years)
Figure 3  Crude death and birth rates for urban and rural areas of Sri Lanka, 1891-1964. Source: Ceylon Administration Reports (various years)

Figure 4  Changes in percent urban, more developed regions 1800-2010, less developed regions 1950-2010.

Notes: The central bold line relates to urbanization in the more developed regions. Here it acts as a reference standard. Thus although the trends for the developing regions all relate to the period 1950-2010, they are plotted at the same starting level of urbanization as applied in the more developed regions so that the speed of urbanization can be compared. Sources: Grauman (1977), United Nations (2008)