

Decline or Growth?

European Towns and Rural Economies, 1300–1600

Research on European urbanisation progressed rapidly in the 1980s, in particular thanks to the works of Paul Bairoch and Jan De Vries, who presented two broad reconstructions relating to late medieval and early modern Europe.¹ However, in spite of the contributions by these two scholars, the period we are dealing with in this article is the least known in the long-term reconstruction of urban Europe. We know, in fact, that urbanisation progressed in the high Middle Ages, and that between 1600 and 1800 it stabilised or stagnated. We know much less about what happened between 1300 and 1600. Jan De Vries' work begins, in fact, from 1500 and pays only marginal attention to the previous age, whilst Paul Bairoch, although encompassing the late medieval age as well, is less convincing for the particular epoch we are dealing with, at least as far as urbanisation trends are concerned.

In the present paper, I seek to address three main questions: What was the trend of European urbanisation between 1300 and 1600? What were the immediate causes of this trend? How do we explain this reconstructed trend? I start by re-examining the data, continue with an analysis of some statistical relationships between variables, and propose, at the end, a model in order to explain the changes in European urbanisation. The material I will deal with is mainly, on the one hand, revised data on European population and urban inhabitants, and, on the other hand, series of urban and rural wages. Data concerning population and urbanisation are presented in the Appendix.

Late medieval-early modern urbanisation

Two reconstructions

I think that most economic historians would agree on the definition of a city as a stable settlement of population mainly devoted to secondary and tertiary activities. What distinguishes, in fact, a city from a village is that in a city most of the population is employed in industry, trades and services. While there is normally a certain proportion of peasant households in pre-modern towns, it becomes relatively modest as soon as the size of the settlements begins to rise. The number of inhabitants that must be exceeded in order for a settlement to be defined as a city varies from region to region. In Northern and Central Europe, once a settlement reaches around 2,000 inhabitants, a majority of the population is employed in secondary and tertiary occupations, and then we can regard it as a city. However, in some Mediterranean regions a settlement of 2,000 inhabitants would be considered rural, owing to the presence of a majority of peasants, sometimes even in relatively big agglomerations. Consequently, the threshold of population for defining a settlement as a town is higher. Some scholars, for reasons of convenience, have chosen a threshold of 5,000 inhabitants to identify a city.

Based on this threshold, Table 1 summarises what we know about urbanisation in Europe between 1300 and 1600.

Table 1: European urbanisation according to Bairoch and De Vries 1300-1600 (percentages of total population in centres with 5,000 inhabitants or more)

	Bairoch	De Vries
1300	9.5	
1400	12.5	
1500	10.3	9.6
1600	11.7	10.8

Sources: Paul Bairoch et al., *La population des villes européennes de 800 à 1850*, Genève 1988; Jan De Vries, *European urbanization 1500-1800*, London 1984. Note: While Bairoch et al. refer to Europe as a whole (excluding European Turkey), De Vries excludes the Balkans and Russia.

Although we lack direct urban population data for the period before 1300, indirect information suggests a modest rise in the rate of urbanisation from the 10th century onwards.² As for the 300 years between 1300 and 1600, urbanisation rose after the Black Death by three percentage points (that is by 32 percent between 1300 and 1400), according to the reconstruction presented by Bairoch; a remarkable rise indeed. It declined later, between 1400 and 1500, only to recover during the 16th century.³ However, if we compare 1600 with 1400, the rate of European urbanisation declined. De Vries' data more or less tallies with that of Bairoch for the period 1500 to 1600, although his study does not cover the whole continent.

Towns: Number and population

In order to verify these results, it is helpful to break the process of urban development down into its two components – a rise in the urban population within already existing towns and a rise in the number of towns.⁴ The distinction is useful since ordinarily either the first or the second component prevails. In some periods the towns themselves grow, while their number remains almost unchanged, whilst, in others, the population of the existing towns remains stable but their number increases.

Table 2 shows both kinds of change over the period which concerns us. The first column gives the number of cities across Europe with a population exceeding 10,000, and the second considers 92 cities with a population in excess of 10,000 throughout that period.

Table 2: Number of European centres with 10,000 inhabitants or more and urban percentage of a sample of 92 cities always exceeding the threshold of 10,000 inhabitants over the period 1300-1600

	Number	Urban percentage (92 cities)
1300	210	3.3
1400	118	3.5
1500	210	3.5
1600	291	4.2

Sources: see Appendix.

We could summarise the results of this table as follows: over the 300 years that concern us, urbanisation increased, and this rise depended more on changes in the number of towns than on the growth of the existing centres. During the 16th century, the increase is documented by both series in Table 2. As for the previous two centuries, the series provide a mixed answer. The number of towns drastically declined in the 14th century and then recovered, while the urban percentage of our sample of 92 towns with a population continually in excess of 10,000 over those three centuries, was more or less stable.

The conclusions advanced by Bairoch, both in the series discussed above and in his other contributions on the subject, are not borne out by the data. In his series, the level of urbanisation was relatively high by 1400, and was not surpassed again until the 19th century. In 1400, 12.5 out of every 100 people lived in centres with more than 5,000 inhabitants, while in 1800 it was 11.9 out of every 100. In Table 2, by contrast, the percentage of the total European population inhabiting our sample of 92 towns remains stable between 1300 and 1500, while the number of towns has declined strongly by 1400. This can only be because urbanisation declined in the aftermath of the Black Death, but subsequently recovered.

The trend

In Table 3, I present the results of a revision of the urban data sets proposed by Bairoch and De Vries and of the population of Europe per country, on the basis of more recent literature. Although we are concerned here with the late medieval and early modern periods, if we look at urbanisation in Europe over a longer period, from 1300 until 1800, we can get a better perspective. It is useful to distinguish between two series: Europe *including* England and Europe *without* England. This is because England showed a dynamism not shared by other regions (with the exception of The Netherlands in the 16th to 17th centuries).

Table 3: European urbanisation 1300-1800 (cities with 10,000 inhabitants and more, index 1500 = 1)

	Europe	Index Europe	Europe (without England)	Index Europe (without England)
1300	5.3	0.95	5.4	0.95
1400	4.3	0.77	4.4	0.77
1500	5.6	1.00	5.7	1.00
1600	7.4	1.32	7.5	1.32
1700	7.7	1.38	7.4	1.30
1800	9.0	1.61	8.3	1.46

Source: see Appendix.

We can summarise the results by saying that European urbanisation overall declined between 1300 and 1400, recovered between 1400 and 1500, and rose considerably during the 16th century. Since the highest urbanisation rates in this period were in the South, especially in Italy and Spain, the urban decline in these areas between 1300 and 1400 determined the overall drop in urbanisation.⁵ The densely populated big towns of Southern Europe were hit hard by epidemics. From 1600 on progress was very slow. We could speak of a stabilisation rather than a rise during the long period from 1600 to 1800, especially if we exclude England. In any case, after a fall in urbanisation due to the Black Death, the 15th and 16th centuries witnessed a remarkable growth. The difference with the only existing series of data on late medieval urbanisation – that presented by Bairoch – is evident.

The geography of urbanisation

In 1300 the most urbanised area of Europe ran from Flanders to Central-Northern Italy. However, Spain had a high level of urbanisation (12.1 percent) while France was more backward at 5.2 percent (see Map 1). North and East of these regions, urbanisation percentages were lower. Only in the Balkans was the rate of 5 percent exceeded.

By 1600, European urbanisation still largely maintained the late medieval pattern, although with some noteworthy changes (see Map 2). The higher rates of urbanisation were still located in the area extending from Flanders to Italy, but now included England in the North and especially the Netherlands, which were growing rapidly. Moving westward towards France, Spain and Portugal, urbanisation levels dropped, although Spain still held a remarkable position. In central and eastern regions urbanisation was lower, with the partial exception of the Balkans.



Map 1: Urbanisation in 1300



Map 2: Urbanisation in 1600

[See print version for illustrations]

Looking at urbanisation rates in different areas, we discover that the most dynamic regions of the continent, from the urban viewpoint, were in the North, while the Centre and the South were more stable (Table 4). In the East, urbanisation was proceeding more rapidly during the 16th century than in the North, although the overall level of urbanisation in the East was half that of the North, owing to its modest rise during the 15th century.⁶ The jump in eastern

urbanisation in the 16th century was partly the consequence of a rise in the population of Constantinople from 150,000 inhabitants in 1500 to 460,000 in 1600. At this time it was Europe's largest city: more than twice the size of Paris (220,000) and London (200,000), and far more populous than the second largest city in Europe, Naples, which had 280,000 inhabitants. It was not until around 1750 that Constantinople-Istanbul was overtaken by London. The urban population in the Balkans changed little in the 15th century. In the 16th century Balkan towns on the whole recovered rapidly. As we can see, in 1600 the biggest European cities were still located in the South. In 1300 there had been only 5 European cities with more than 100,000 inhabitants: Paris, Milan and Granada, with 150,000 inhabitants each, and Venice and Florence with 110,000. In 1600 there were 8. These were, in order of importance: Constantinople (460,000), Naples (280,000), Paris (220,000), London (200,000), Venice (140,000), Palermo (105,000), and Amsterdam and Lisbon (with 100,000 each).

Table 4: European urbanisation rate in 1300-1600 per area (cities with 10,000 inhabitants and more)

	1300	1400	1500	1600
North	3.9	4.0	6.6	8.9
Centre	4.3	4.4	4.6	5.4
South	13.2	8.8	12.9	15.3
East	2.2	2.1	2.7	4.4
Europe	5.3	4.3	5.7	7.4

Note: North: Scandinavia, England and Wales, Scotland, Ireland, The Netherlands, Belgium; Centre: Germany, France, Switzerland; South: Italy, Spain, Portugal; East: Austria, Bohemia, Hungary, Poland, Balkans, Russia.
Source: see Appendix.

Although the level of urbanisation remained far higher in the South than in the North, the balance moved towards the North between 1300 and 1600, as can be seen by the proportion of Europe's total urban population in each of our four areas (Table 5). More than half the urban population of Europe was in the South in 1300 and this proportion was still 42 percent in 1600. By 1800 it was less than 30 percent and by 1870 less than 20 percent.

Table 5: Percentage of the European urban population per area in 1300-1600 (living in cities with 10,000 inhabitants and more)

	1300	1400	1500	1600
North	9,0	9,9	12,4	13,1
Centre	25,8	30,7	26,2	24,2
South	50,9	40,6	41,8	41,5
East	14,3	18,8	19,6	21,3

Note: The four areas are the same as in Table 4.
Source: see Appendix.

In the late Middle Ages, the southern part of Mediterranean Europe was considerably more advanced (Table 6). This was a legacy of late antiquity, when large towns existed in the South, while the North was backward and scarcely urbanised at all. In 1300 it was still so. Beyond the Alps and Pyrenees towns were modest and few. There was a noticeable unevenness in urban development within Europe. It was not until the early Modern Age that some convergence began to take place, and the previous sharp contrasts faded gradually with the rise of urbanisation in the North.

Table 6: Disparities in urbanisation in Europe per region and per area 1300-1600 (cities with more than 10,000 inhabitants)

	17 regions	4 areas
1300	0.95	0.77
1400	0.90	0.56
1500	0.86	0.66
1600	0.80	0.57

Note: see Appendix on the method used to compute disparities in urbanisation. The four areas are the same as those of Table 4. The 17 regions are those referred to in the tables of the Appendix. Source: see Appendix.

The main changes

Although we must approach data on urban populations for periods as far back as the late Middle Ages and the 16th century with caution, certain results can be assumed to be sufficiently reliable. I summarise here some conclusions to be considered when discussing late medieval-early modern European towns: there was a decline in 1348 to 1400 (due to the decline in the South); there was an expansion everywhere in the 15th and 16th centuries; the North and the East, during the Golden Age of the Ottoman Empire, were the most dynamic areas in the period that interests us. The Centre and South were more stable than their northern and eastern peripheries.

Urban and rural economies

The forces behind urbanisation

A large number of causes have been often invoked in order to explain the historical patterns of urbanisation: demographic (population growth), economic (agricultural progress and development of industry and trades), social (the attraction of urban life to non urban populations), political (the settlement of political power and urban freedom), etc.⁷ If we look, however, at the immediate factors determining urban growth, we could hypothesise that the existence of a differential in wage levels between urban and rural jobs played an important role as an agglomerating force. Urbanisation is a special case of migration, and

migration is immediately determined by a pursuit of higher incomes and better living conditions. Many other elements may also be involved, but without a differential in labour incomes any tendency to migrate to the town can only be short term.

A good example of urbanisation led by a dynamic differential in urban-rural wages is the process which took place in many countries after World War II. Increasing wages in industry and trade attracted peasant families, who left the countryside in order to find better-paid jobs in the towns. Urbanisation exploded both in advanced and backward countries.⁸ This development continued a trend which had been underway since the beginning of European industrialisation in the 19th century. Urban factories attracted more and more workers from the countryside. Around the base industries, producing for far-away markets, non-base or local jobs developed that were able to pull people from distant regions. If we plot the intensity of migratory flows towards the cities over the last two centuries on a graph, we get an inverted U curve: from the relatively low rates of the pre-modern world, to the fast pace of migration during industrialisation, and finally to a new decline when the urbanisation level exceeds 60 to 70 percent and urbanisation becomes a pervasive feature of the society as a whole. We can simplify this by means of the following function:

$$u = f\left(\frac{w_u}{w_r}\right) \quad (1)$$

where u is the urbanisation rate, w_u is the urban wage in a particular line of work and w_r is the rural wage.⁹ The formula merely expresses the urbanisation rate as a direct function of the urban-rural wage ratio: whenever the ratio increases, so does urbanisation and vice versa. Since wages represent marginal labour productivity, the differential in wage rates corresponds to the differential in city-country productivity. Variations in urban-rural productivity redistribute population between the cities and the countryside. We could also define the differential as a skill premium in favour of the cities and this skill premium widens whenever urban activities develop more rapidly than rural demand for labour.

It is well known that ordinarily death rates are higher in the towns than in the countryside. The consequence is a continuous flow of migrants towards the towns to replace the dead. The urbanisation rate rises whenever this flow increases and this increase is likely to be connected to wage differentials or a skill premium for the urban jobs.

Urbanisation and urban-rural productivity

It seems, however, plausible to hypothesise that a differential between rural and urban productivity is not the only factor that favours immigration into the towns. This differential, in fact, could be rapidly cancelled by these migration flows, which would cause labour productivity to fall in the towns and rise in the countryside. Instead, the increase in urbanisation is fed by urban productivity growing faster or declining more slowly than agricultural productivity over a long period of time, leading to a rising differential in wages. Urbanisation will therefore increase whenever we find that:

$$\frac{W_{u(t)}}{W_{r(t)}} < \frac{W_{u(t+1)}}{W_{r(t+1)}} < \frac{W_{u(t+2)}}{W_{r(t+2)}} \dots < \frac{W_{u(t+n)}}{W_{r(t+n)}} \quad (2)$$

where the subscript t is the first year of our series of wage differentials and $(t+1)$ is the following year and so on. The previous equation 1 could be then expressed as:

$$\frac{\Delta u_{(t+n)}/u_{(t)}}{u_{(t)}} = f \left(\frac{\Delta W_{u(t+n)}}{W_{u(t)}} - \frac{\Delta W_{r(t+n)}}{W_{r(t)}} \right) \quad (3)$$

where $\Delta u_{(t+n)}/u_{(t)}$ is the rate of increase in urbanisation during the period between $t+n$ and t and the independent variables represent the increases in urban and rural wages. Whenever data on productivity are available the previous function becomes:

$$\frac{\Delta u_{(t+n)}/u_{(t)}}{u_{(t)}} = f \left(\frac{\Delta \pi_{u(t+n)}}{\pi_{u(t)}} - \frac{\Delta \pi_{r(t+n)}}{\pi_{r(t)}} \right) \quad (4)$$

where π_u is urban average productivity and π_r rural productivity.

Urbanisation and the demand for labour

Usually some exogenous shock – an industrial innovation, the settlement of the royal court in a city, an increase in exports etc. – is the main cause of an increase in capital formation and in demand for labour in a town. Wages reflect the rise in urban labour productivity and the differential between urban and rural wages widens. Through the employment multiplier, the effect of growth in one or several urban activities spreads, and involves new urban sectors (building, services, administration etc.). As a result of this new, internal dynamism of the urban economy and the demand for labour, rural workers are attracted in from beyond the city walls. Total employment grows. The effect of the exogenous shock on the town's economy on the whole can be represented as:

$$\Delta T = \frac{T}{B} \cdot \Delta B \quad (5)$$

where ΔT is the change in total employment; ΔB is the change of employment in the innovating sector and T/B is the employment multiplier.¹⁰

Innovation, however, is not always urban. Sometimes, although less frequently, innovations were introduced in the countryside. Proto-industrial activities were probably already developing during the late Middle Ages, and they certainly advanced from the 17th century onwards. The productivity of agrarian households rose, which was a reason why migration from the countryside to the towns slowed down during the 17th and 18th centuries. It is less certain whether similar changes were taking place in the late Middle Ages. Was the decline in urbanisation in the century between 1350 and 1450 perhaps partly the result of a growth in industries outside the towns? It seems impossible to give a definite answer at this stage of the research, although some medievalists would be ready to reply positively.

Wages and urbanisation

Urbanisation can also increase even when urban productivity declines, so long as its decline is less than that of rural productivity. We will see later that from the late Middle Ages onwards wage rates, and therefore productivity, diminished in Europe. In some regions, however, wage differentials in favour of the towns persisted, and supported flows of migrants towards them together with a rise in urbanisation.

In the literature on the subject, the persistence of wage differentials in a particular economy has often been seen as evidence of market imperfections, or as an example of market failure. In fact, a dynamic productivity differential between town and country was a characteristic feature of dualistic pre-modern economies and their unbalanced technological progress (which was common within the towns and much less so in the countryside). Since capital formation followed technological progress, productivity rose in the towns and attracted labour from agriculture. The wage differential may well indicate market imperfections, but these imperfections were a customary feature of any pre-modern economy.

However for more distant epochs, it is hard to find reliable information on urban and especially rural wages in order to test the function set out in equation 3. Often we have nothing more than short series of wages, which are difficult to correlate with the movement of urbanisation. On the other hand, data on urbanisation are usually available for the beginning of any century and sometimes for the middle. With the exception of a few towns we rarely have data for each decade. Urbanisation is, furthermore, a phenomenon that shows little flexibility. The existence of wage differentials does not mean an immediate flow of workers from the countryside. Usually, if the urban-rural wage ratio shrinks, families do not abandon the towns to return to the countryside. We often find migration into the towns, but rarely migration from the towns to the countryside. A town grows because of immigration, but if it declines, this is usually due to the interruption of migratory flows, and to death rates being higher within the city walls than outside. It is noteworthy that in periods where urbanisation is proceeding more slowly, the data on wages and urban population may fail to reveal the correlation between migratory flows and wage differentials.

I am focusing here on the immediate causes of a rise in urbanisation. We know, however, that many other variables are involved in the same process. We could call them remote causes. These causes include population movement, changes in crop yields, transport costs, the import of food and the level of industrialisation. The scarcity of data on urbanisation (available only on a century-by-century basis) and on the other variables means that we cannot assess the influence of the remote determinants of the urban-rural differential; at least during the period in which we are interested. For the 19th century, however (when the reliability and availability of data are still far from satisfactory), agricultural productivity and industrialisation turned out to be the main variables.¹¹ For Italy between 1861 and 1971 a regression analysis of variations in urbanisation, and changes in industrial and agricultural average labour productivity shows a strong correlation.¹²

Two case-studies

Although information on rural and urban wages is generally scanty and fragmentary, two European regions are better documented than the rest of the continent: England and Central-Northern Italy.¹³ Both regions also provide examples of different urbanisation paths: the English one, from a low level of urbanisation to the highest in the continent, and the Italian path, from the highest level towards a comparatively low one. Around 1700, both countries shared the same level (Table 6).

Table 7: English and Italian urbanisation 1300-1870 (cities with 10,000 inhabitants and more)

	England	Central North Italy
1300	4.0	18.0
1400	2.5	12.4
1500	2.3	16.4
1600	6.0	14.4
1700	13.2	13.0
1750	16.4	13.6
1800	22.3	14.2
1870	43.0	13.4

Source: see Appendix.

If we consider, first of all, the indices of the long-term movement of real wage rates of urban masons and rural labourers in England¹⁴ and Italy,¹⁵ we discover some similarities over the period from 1280 to 1800 (Figures 1 and 2).

[See print version for illustration]



Figure 1: Urban and rural wage rates in England 1280-1800 (1480-90 = 1, decadal figures)



Figure 2: Urban and rural wage rates in Italy 1280-1800 (1480-90 = 1, decadal figures)

The trend of wages in construction represents the broader picture of urban wages, and, as a consequence, the movement of urban marginal labour productivity overall. The downward trend clearly demonstrates the diminishing capital per worker when demographic increase outstrips capital formation (including arable land in capital).

We see the well-known profile of European wage levels both in the cities and the countryside: a sudden rise after the Black Death until about 1450; a subsequent drop until 1600; and a recovery during the 17th century, which was stronger in England than in Italy. We also find similar urban and rural wages both in England and Italy.

The presence of the urban-rural differential is not so clearly visible in these indices. It is partly obscured by the fact that the decade 1480 to 1490 was chosen as the baseline. In order to discover the existence of this differential and to correlate it with urbanisation, it might be helpful to calculate the ratio of the nominal urban wage to the nominal rural wage (Figures 3 and 4).



Figure 3: Ratio Urban-Rural Wages England 1300-1800



Figure 4: Ratio Urban-Rural Wages Italy 1300-1800

It would certainly be preferable if we could deflate real wages for unskilled workers in the towns and countryside with different price indices in order to take into account different price levels. In the case of modern economies (both developed and developing), it has been noticed that the real differential is about 30 percent.¹⁶ For the period we are dealing with, it is hard to measure the real differential. However, since our interest is more in the dynamics of wage differentials than in their level, this does not hinder the following analysis.

We see that both in England and Italy, a mason's wage was, on average, twice as high as a rural labourer's wage. Another similarity is that the differential suddenly narrowed after the Black Death. We should remember that, although the builder's wage is taken to represent urban wages as a whole, we are, after all, dealing with masons. In the depopulated European cities of the second half of the 14th century, the demand for building workers must have been particularly low. Empty buildings were numerous and house rents were falling everywhere. In England, however, a slow increase in the differential had already occurred by the end of the century, while in Italy the downward trend continued until the mid 15th century.

In Italy, the upward movement intensified from 1480 onwards. In 1500 the urbanisation rate was almost the same as in 1300. A rapid surge had occurred. The high urban-rural differential in the mid 16th century can be interpreted as the effect of inelasticity in the labour supply from the countryside, owing to stagnant or declining agricultural productivity. It has been shown that in the case of Florence, this inelasticity resulted in high urban wages, relatively low profits and high prices for industrial goods. These prices were not very competitive against foreign imports.¹⁷ A large differential persisted until the last decades of the century. Around the year 1600 it began to shrink and determine the decline in the urbanisation rate compared with that of 1500. An outbreak of plague hit some northern towns in 1575 to 1580; there were famines in 1590, 1591 and 1596, and there were plague epidemics again in 1629 to 1630, which struck all of central and Northern Italy. All these factors contributed to the fall. From then on, until about 1861 to 1871, when average labour productivity computed on the basis of direct information was the same in agriculture and industry, the downward trend continued without interruption. Productivity declined

both in agriculture and industry, and in industry it declined more quickly.¹⁸ In 1861, the urbanisation rate was almost five percentage points below that of 1300; which means that it declined by 25 percent in about five centuries.

In England the movement was different. In this country we observe a gentle increase, with an interruption, however, in the second half of the 16th century. From 1600 onwards the rising trend resumed. Productivity was growing and this growth was stronger in the towns than in the countryside. Urban demand was stimulating agricultural productivity and the growth of the latter was supporting increasingly larger towns, as Anthony Wrigley claimed several times in his essays on the subject. Agricultural progress helped ensure that the supply of labour from the countryside remained elastic and in step with the urban demand for workers.

England, Italy and Europe

Both graphs show a correlation with the European trend in urbanisation: the sudden fall around 1400 (following, and as a result of, the epidemics), and the recovery in the 15th and 16th centuries, led by growing differentials in wages. However, we should note that, while in the 15th century this rising trend was connected to high labour productivity, in the following century the gap in wages persisted until about 1550, even though productivity was declining, as the trend of wages shows and research on average labour productivity confirms.¹⁹ As we saw, in Italy this decline ran in parallel to the decline in urbanisation. In England the available information is insufficient to allow us to say whether urbanisation slowed down for some decades after 1570.

In the longer term, England and Italy represent two extreme tendencies of European urbanisation while other regions are intermediate examples. The Netherlands were similar to England in the 16th and 17th centuries, but were similar to Italy in the 18th century, when their urbanisation rate declined. Spain and Portugal shared the Italian trend, but grew more rapidly in the 16th century, their Golden Age. Urbanisation in the Balkans increased through the rapid growth of Istanbul as the centre of the court, attracting a population to work in services and the jobs that depend on them. The same was in part true of Southern Italy and Spain, although in these cases the existence of many agro-towns, which developed from the 16th century on, makes the data unreliable and hard to compare with those from other countries.

A Two-sector model

Two sectors

As mentioned above, urbanisation is a special case of migration. It can thus be explained by the two-sector models that are used in economics to describe the mobility of labour and capital between different countries. However, the model needs to be adapted if it is to be used to analyse city-countryside relationships in a pre-modern economy.

I assume two sectors, the agricultural-rural and the industrial-urban, producing two different types of goods: grain in agriculture and textiles in industry. Their production

functions are different. In agriculture, goods are produced using labour (L_a) and natural resources (R), while in industry they are produced by means of labour (L_i) and capital (K). The only mobile factor is L , while resources are immobile and capital is a specific factor, connected to a particular usage, and cannot be converted to a different kind of production. The two different production functions are:

$$Y_a = f(L_a, R) \quad (6)$$

$$Y_i = f(L_i, K) \quad (7)$$

where Y is the product and (a) and (i) refer to agriculture and industry. The price of cereals is simply $P_a = Y_i/Y_a$, and the price of textiles is $P_i = Y_a/Y_i$.

The wage in agriculture is given by:

$$w_a = MPL_a \cdot P_a \quad (8)$$

where w_a is wage in agriculture, MPL_a is the physical marginal labour productivity and P_a the price of the good produced in agriculture.

In industry the wage is:

$$w_i = MPL_i \cdot P_i \quad (9)$$

where the only difference with equation 8 is the subscript i referring to industry.

Finally:

$$L = L_a + L_i \quad (10)$$

where total labour (L), equal to 100, is the result of the sum of agricultural labour (L_a) and industrial labour (L_i).²⁰

For the following development of the model, we should note that demand for textiles is highly income elastic, whereas that for cereals is inelastic.

City and countryside

Figure 5 represents marginal labour productivity in both sectors (on the vertical axis) as a function of the percentage of labour employed (on the horizontal axis). On the right hand, we find on the vertical axis the agricultural sector, while industry is represented on the left. Both curves decline as soon as the input of labour increases (as the consequence of the diminishing returns to labour). In other words, labour productivity is inversely related to the labour force employed in the sector.

At point E the equations 6, 7 and 8 are satisfied and equilibrium exists. The level of wages is the same in both sectors ($w_i = w_a$) since the mobility of labour equalises productivity and

wages. Ordinarily, however, a city-countryside wage differential exists which attracts the peasant population to the urban centre. In the figure, the differential is represented by the base of the triangle with its vertex at point E , and then by the difference between w_{i1} and w_{a1} . The area of the triangle increases when the city-country productivity differential widens.

[See print version for illustration]



Figure 5: A two-sectors economy – growth

Let us distinguish now three different developments in our two-sector model in order to explain the progress and decline of urbanisation and, finally, urbanisation in a dualistic economy.

Growth

Before modern structural changes, a much higher percentage of workers was employed in agriculture (as we see on the horizontal axis: the abscissa l_1 in Figure 5). The percentage of labour in agriculture corresponds to the part of the horizontal axis between the intersection with the vertical one on the right and l_1 . Labour employed in industry is the remaining segment of the horizontal axis on the left.

In the case of an exogenous shock (e.g. an innovation in textile technology) and a consequent productivity growth in industry, the line $MPL_i P_i$ moves to the right. The percentage of workers employed in industry increases from l_1 to l_2 (as can be seen on the horizontal axis); while in agriculture it decreases. Unproductive agricultural workers and those whose productivity is low find occupation in industry.²¹ The gap between urban and rural wages widens. It is represented by the difference in the ordinates of w_{i2} and w_{a2} ,

which is bigger than the previously existing difference between w_{il} and w_{al} . The widening gap is caused by the greater rise in industrial productivity and by the inelastic demand for agricultural goods as soon as per capita product increases.

If productivity in industry continues to rise and the line of marginal product moves further to the right, while the differential in urban-rural productivity widens or simply remains stable, the number of workers in industry rises and wages increase. The centre of gravity of the economy gradually shifts from the agricultural to the industrial sector. In this case the urban-rural differential in wages constitutes a dynamic disequilibrium supported by a difference in productivity.

Here I assume that the innovative sector, industry, is localised in urban centres. Although this assumption holds true for 19th to 20th century Europe, in previous centuries productive proto-industrial activities also developed in the countryside. In this case the industrial-agricultural differential in productivity does not correspond to the urban-rural divide. The interplay becomes more complex. For the period I am dealing with here, the presence of industrial activities in the countryside, although sometimes important, was not decisive.

Whenever the supply of labour in agriculture is elastic, owing to the presence of workers who are either unproductive or have low productivity, or owing to a rise in productivity which releases labour, since fewer workers can now produce what many more produced previously, the straight line $MPL_i P_i$ moves further to the right. If, in contrast, there is no progress in agricultural productivity, the inelasticity of the labour supply from the countryside becomes an obstacle to further growth. The industrial revolution must be accompanied by an agricultural revolution. If, in fact, labour supply becomes inelastic, the straight line of the marginal productivity in agriculture moves to the left, where wages are higher and more labour than before is employed in agriculture. The static nature of agriculture can compromise the possibilities of growth and turn the terms of trade against the advanced sector. Expansion in the urban sectors may be stopped because the price of subsistence goods rises and profits fall.

The movement towards the right represents what actually happened in many economies over the last two centuries. Innovations in industry were accompanied by a flow of workers from agriculture to the towns in search of employment in the new expanding sectors of industry and services. Productivity also rose in agriculture, increasing the elasticity of the labour supply to the industrial sector. Urbanisation, industrialisation and structural change were developing at the same time, transforming the way the economy and society were organised.

However, this sort of development took place in pre-modern economies as well. The remarkable growth of London and other English towns between 1650 and 1750 can be considered as a case of urbanisation led by deep changes in urban and rural productivity.²² English urbanisation on the whole closely followed this movement from the late Middle Ages onwards. In the Netherlands we find the same pattern in the 16th and 17th centuries. In Italy a similar trend must have taken place before 1300, in a period for which we lack direct information both on wages and urbanisation.

Because demand for primary goods is inelastic relative to changes in the level of income, rising productivity results in a structural change. In our two-sector model, this is represented by the displacement of the economic equilibrium further towards the right and then towards industry. The weight of the agricultural sector is shrinking, both in terms of employment within the sector, and its contribution to the national product.

Decline

What happens if, in contrast, labour productivity declines? The answer is that normally the opposite will occur (Figure 6).

[See print version for illustration]



Figure 6: A two-sectors model – decline

Let us assume that a decline of capital, resources or both per worker causes a decline in productivity and then a displacement of the $MPL_a P_a$ line to the right. The consequences would be: first, an overall fall in per capita output, since agriculture is by far the most important sector of the economy; second, the curve of industry $MPL_i P_i$ would move to the left because the demand for secondary goods is elastic relative to changes in income, and the decline in per capita gross domestic product (GDP) causes a decline in demand for manufactured goods. The new intersection is now at point 2; third, employment in the towns would diminish (from the abscissa l_1 to l_2), resulting in a structural change (the ruralisation of the economy as a whole); fourth, the urban-rural gap in wages would diminish because of the fall in demand for secondary goods, as we see in the difference between w_{i2} and w_{a2} , which is less than that between w_{i1} and w_{a1} .

This trend applies particularly well to Italian long-term deurbanisation and to other cases of deurbanisation in Early Modern Europe. Both curves intersect now more on the left. This is the reason why, in a period of declining wages and productivity such as the second half of the 16th century, urbanisation declined in Italy. Data on other European regions, available only on a century-by-century basis, do not enable us to observe any slackening in the flow of the rural population towards the towns. In any case, the urbanisation rate is rising when we compare aggregate data for the continent as a whole.

Urbanisation in a dualistic economy

Many scholars assume that an increase in urbanisation always depends on rising productivity both in the towns and the countryside. Increasing urbanisation indicates that urban sectors are progressing and can attract workers, while relatively fewer agricultural workers are able to support a higher percentage of people not employed in the primary sector (i.e. they are more productive). This, however, is not necessarily so.

We have seen that in periods of growth, productivity rises along with urbanisation. In periods of decline, productivity declines, as does urbanisation. In the 16th century the movement of wage rates shows falling productivity compared to the previous century, but, at the same time, a rise in urbanisation. The explanation is, that in the period we are examining, labour productivity declined both in agriculture and in urban sectors, but in the urban sectors the decline was less pronounced, and the gap in wages continued to attract workers from the countryside towards the towns. In this case the previously mentioned differential w_u/w_r widened because of the greater drop in the denominator of the ratio and urbanisation, therefore, continued to rise. In the modern world we can see many cases of huge urban growth alongside very low levels of labour productivity in agriculture. People move to the towns simply because there is no opportunity of employment in the countryside.

If there were full employment both in the towns and the countryside, this development would be impossible. In this case, in fact, a displacement of workers from agriculture towards industry would lead to a rise in agricultural prices, since urban demand would increase (more consumers and fewer producers of agricultural goods), whilst labour productivity in the countryside would also increase (fewer workers resulting in more capital per worker). All this would provoke a movement towards the right of the curve of marginal product of agricultural labour. Workers would be attracted back to agricultural employment. We know, however, that when agricultural productivity declines, disguised unemployment in the countryside increases, because capital and land are unable to support more employed workers. As low or non-productive workers from the countryside migrate to the towns in search of some form of occupation or to live on charity, urbanisation is likely to increase. In this case, the migration of unemployed workers from the countryside results neither in an increase in agricultural productivity, nor in an increase of agricultural prices, as we would expect if there was full employment. The curve relating to agriculture displaces itself towards the right, where productivity and wages are lower. Migration flows towards the towns lead to a reduction in productivity in urban sectors as well. Real wages drop both in agriculture and the towns, but in the dualistic pre-modern economy, secondary and tertiary occupations are, however, relatively more dynamic and wage differentials widen.

In Figure 7, while marginal product curves move both to the right (in the case of agriculture) and to the left (in the case of urban sectors), the new intersection in point 2 implies a wide differential in wages, and more labour employed in non-agricultural activities (from l_1 to l_2), resulting in greater urbanisation. As we see, a drop in agricultural and non-agricultural productivity can lead to an increase in urbanisation. This is why urbanisation rose while productivity was declining in the dualistic economy of 16th-century Europe.



Figure 7: A two-sector economy

The difference between Figure 6 and Figure 7 consists in the relative width of the displacement of demand for labour in the towns and in agriculture, and in the differential in wages.

Growth implies the movement of both demand curves to the right, and then increasing productivity, structural change in favour of industry and urbanisation. Decline means, on the contrary, the displacement of both demand curves to the left of our graph, a decline in productivity, structural change in favour of agriculture, and often but not always, deurbanisation. In the first case, the centre of gravity of the economy moves towards industry, whereas in the second case, it moves towards agriculture. However, as we have just seen, low labour productivity in agriculture can lead to increased urbanisation.

As we have noted, during the 15th and 16th century, English and Dutch economies followed the first of these two paths, while, from the second half of the 16th century, Italy followed the second. As Figure 5 shows, the increase in output per worker during the 15th century led to a rise in urbanisation throughout Europe. This upward trend in urbanisation continued even during the 16th century, even though productivity was declining, as the trend of wages shows. In most European regions, the economy was shifting towards the point 2 of our Figure 7. The unemployed were moving from the countryside to the towns in order to find employment or to live on charity. Several social historians have often stressed the increase in urban poverty from the 16th century onwards. However, the process of urbanisation was beginning to stagnate, and stagnation characterised the European urban system until the onset of modern growth in the 19th century.²³

Conclusion

I have tried, in the preceding pages, first of all to re-examine some developments in late medieval and early modern urbanisation; then to focus on the relationships among the

variables involved; and finally to explain these relationships. The results of this analysis are: first, the European trend of urbanisation was not declining between 1400 and 1600, but rising. Second, there is a relationship between urbanisation and the interplay of urban and rural productivity, which we have explored by examining wage differentials in England and Italy. Third, although this relationship cannot be tested statistically, it can be tested theoretically and fits well into a classical and neoclassical framework.

The preceding reconstruction, however, rests on various assumptions which a micro-economic historical approach could clarify, especially from a short-run perspective. Some of these assumptions are: First, labour from the countryside is free to move, although we know that institutions can interfere with, and hinder, this movement. On the other hand, institutions play an important role in the towns themselves and can favour or hinder contending economic forces. Second, for different occupations requiring the same skill, forces of demand and supply tend to equalise wages, both within the towns and between town and country. Very little research has been devoted to the subject and it would be interesting to know the dynamics of wages in different urban jobs. Third, prices have been considered to indicate the economic forces at play, but we know that, at least on the short run, this is not so, and market imperfections play a major role. Fourth, over the long period which interests us, transaction costs change, and this change may influence the working of town-countryside relationships. Fifth, a decline in local demand for industrial products can result in de-urbanisation, but foreign demand can replace the decline in domestic demand and then support a rising urbanisation. We have to analyse in depth the composition of urban demand and its flexibility. Sixth, proto-industry has often been seen as playing a role from the 17th century onwards. We still know very little about its importance and development between 1300 and 1600, although its influence on the economy has been stressed.²⁴

The effect of political authorities and social forces on the economy, well entrenched in micro and institutional research, has to be integrated into the macro approach. While the macro perspective allows us to single out significant changes, the micro approach can help us spell out in greater detail the dissimilarities among different economic systems and their special features.

Appendix: European population, number of cities, urban inhabitants and urbanisation rates (1300-1600) (centres with more than 10,000 inhabitants)

The following series are based on a revision of data both on urban inhabitants and the population of Europe per country. The series refer to all of Europe. The starting basis for the urban populations has been a revision and merging of the urban databases by Paul Bairoch / Jean Batou / Pierre Chèvre, *La population des villes européennes*, Genève 1988; Jan De Vries, *European urbanization 1500-1800*, Cambridge/Massachusetts 1984; Josiah C. Russell, *Medieval regions and their cities*, Newton Abbot 1972, for 1300. The new database has then been checked through the more recent literature on the subject, part of which has been quoted in this article.

European population (in 1000s) per country or area and their extent in square kilometres

		Square- kilometres	1300	1400	1500	1600
1	Scandinavia	1,198	2,500	1,400	1,500	2,400
2	England and Wales	151	4,500	2,700	3,500	4,450
3	Scotland	79	1,000	700	800	1,000
4	Ireland	84	1,400	700	800	1,000
5	Netherlands	33	800	600	950	1,500
6	Belgium	30	1,400	1,200	1,300	1,300
7	France	544	16,000	12,000	15,000	18,500
8	Italy	301	12,500	8,000	9,000	13,300
9	Spain	505	5,500	4,500	5,000	6,800
10	Portugal	92	1,300	1,050	1,200	1,300
11	Switzerland	41	800	500	800	1,000
12	Austria (Hungary)	626	10,000	9,000	11,500	12,800
13	Germany	543	13,000	8,000	11,000	16,200
14	Poland	240	2,000	1,500	2,000	2,500
15	Balkans	516	6,000	5,000	5,500	7,000
16	Russia (European)	5,400	15,000	11,000	15,000	16,000
	Europe	10,383	93,700	67,850	84,850	107,050
	Europe (without Russia)	4,983	78,700	56,850	69,850	91,050

Note: Data in the table refer to European populations within the political borders of 1870. The size of each country or area is recorded in the first column. Poland is in its 15th century borders. Austria includes: Hungary, Bohemia, Croatia, Slovenia, Transylvania. Balkans include: Greece, Serbia, Montenegro, Bosnia-Herzegovina, Romania, Bulgaria, Crete, the European part of Turkey. Iceland, Malta and some minor islands are excluded.

Sources: Among the following works, only Uralis provides data on a country-by-country basis for all our period and for any country: Marcel Reinhard / André Armengaud / Jacques Dupâquier, *Histoire générale de la population mondiale*, Paris 1968 (all countries); Boris T. Uralis, *Rost naselenie v Evrope*, Moscow 1941, 414; Roger Mols, *The European population in the 16th and 17th century*, in: Carlo M. Cipolla (ed.), *The Fontana economic history of Europe*, vol. 2: *The 16th and 17th centuries*, London 1974, 15-82 (early Modern, several countries); Charles Wilson / Geoffrey Parker (eds.), *An Introduction to the Sources of European Economic History 1500-1800*, vol. 1: *Western Europe*, London 1977 (some countries, early Modern); Jan De Vries, *European urbanization*, 36-7 (Western Europe); Josiah C. Russell, *Late ancient and medieval population*, Philadelphia 1958 and idem, *European population 500-1500*, in: Carlo M. Cipolla (ed.), *The Fontana economic history of Europe*, Glasgow-London, vol. 1: *The Middle Ages*, 1973; Antony E. Wrigley / Roger S. Schofield, *The population history of England 1541-1871*, London 1981 (England from 1541); Julius Beloch, *Bevölkerungsgeschichte Italiens*, vols. 1-3, Berlin 1937-61 (Italy 1300-1800); Jean-Pierre Bardet / Jacques Dupâquier (eds.), *Histoire des populations de l'Europe*, vols. 1-3, Paris 1997 (several countries); Angus Maddison, *The World economy. A millennial perspective*, Paris 2001; idem, *The world economy. Historical statistics*, Paris 2003 (several countries); Jan De Vries / Ad Van der Woude, *The first modern economy. Success, failure, and perseverance of the Dutch economy, 1500-1815*, Cambridge 1997 (The Netherlands);

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Number of cities with 10,000 inhabitants and more

		1300	1400	1500	1600
1	Scandinavia	0	0	2	2
2	England (Wales)	9	4	5	7
3	Scotland	0	0	1	1
4	Ireland	1	1	1	1
5	Netherlands	0	0	14	21
6	Belgium	11	9	10	9
7	France	32	24	31	42
8a	Italy CN	53	21	31	37
8b	Italy SI	26	5	20	38
9	Spain	19	12	28	43
10	Portugal	2	2	3	5
11	Switzerland	2	1	2	2
12	Austria (Hungary)	3	2	5	10
13	Germany	26	18	28	38
14	Poland	1	2	5	5
15	Balkans	13	8	13	17
16	Russia (European)	12	9	11	13
	Europe	210	118	210	291
	average size	23,867	24,864	22,429	27,199

Urban inhabitants (in 1000s) for cities with 10,000 inhabitants and more

		1300	1400	1500	1600
1	Scandinavia	0	0	17	50
2	England (Wales)	179	67	80	266
3	Scotland	0	0	18	15
4	Ireland	11	15	8	10

5	Netherlands	0	0	180	452
6	Belgium	263	209	282	242
7	France	831	566	760	1,173
8a	Italy CN	1,394	583	871	1,130
8b	Italy SI	446	109	468	1,018
9	Spain	665	457	572	985
10	Portugal	47	43	57	148
11	Switzerland	24	10	22	27
12	Austria (Hungary)	60	43	91	210
13	Germany	436	324	451	717
14	Poland	20	20	108	165
15	Balkans	314	231	422	929
16	Russia (European)	322	257	303	378
Europe		5,012	2,934	4,710	7,915

Urbanisation rates (in percent) for cities with 10,000 inhabitants and more

		1300	1400	1500	1600
1	Scandinavia	0.0	0.0	1.1	2.1
2	England (Wales)	4.0	2.5	2.3	6.0
3	Scotland	0.0	0.0	2.3	1.5
4	Ireland	0.8	2.1	1.0	1.0
5	Netherlands	0.0	0.0	18.9	30.1
6	Belgium	18.8	17.4	21.7	18.6
7	France	5.2	4.7	5.1	6.3
8a	Italy CN	18.0	12.4	16.4	14.4
8b	Italy SI	9.4	3.3	12.7	18.6
9	Spain	12.1	10.2	11.4	14.5
10	Portugal	3.6	4.1	4.8	11.4
11	Switzerland	3.0	2.0	2.8	2.7
12	Austria (Hungary)	0.6	0.5	0.8	1.6
13	Germany	3.4	4.1	4.1	4.4
14	Poland	1.0	1.3	5.4	6.6
15	Balkans	5.2	4.6	7.7	13.3
16	Russia (European)	2.1	2.3	2.0	2.4
Europe		5.3	4.3	5.7	7.4

Disparities in urbanisation (Table 6) have been calculated according to the following equation:

$$D = \sqrt{\sum_{i=1}^n \left(\frac{U_i}{U_a} - 1 \right)^2 \cdot \frac{p_i}{p_w}}$$

where:

D : differential in urbanisation

U_i : urbanisation in a specific region or area

U_a : average European urbanisation

p_i : population of the region or area

p_w : total European population

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- 2 On urbanisation in the 10th to 14th centuries see Bairoch, *Cities*, see ref. 1, 118, and Josiah C. Russell, *Medieval regions and their cities*, Newton Abbot 1972.
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- 4 Data on urbanisation and population per country are given in the Appendix.
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- 6 See especially the data in Nikolai Todorov, *The Balkan city, 1400-1900*, Seattle 1983, 61 ff.
- 7 On the institutional differences between town and country and their influence on city-country relationships see Michael Mitterauer, *Städte als Zentren im mittelalterlichen Europa*, in: Peter Feldbauer/Michael Mitterauer/Wolfgang Schwentker (eds.), *Die vormoderne Stadt. Asien und Europa im Vergleich*, Wien 2002, 60-78.
- 8 Even though in the backward countries the hope of finding higher wages will often not correspond to the actual possibility of finding an occupation.
- 9 We can assume that even though w_u and w_r refer to particular occupations, the movements of different rural and urban wages are similar both in the countryside and the towns.
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- 12 A regression analysis of changes in urbanisation rates (Δu) in 1861-1971 Italy on changes in industrial (Δi) and agricultural (Δa) labour productivity (1911 prices) yields the following result:
 $\Delta u = 0,18 + 0,0026 \Delta i - 0,0022 \Delta a$
(0,0048) (0,047)

$R^2 = 0,35$; P-value in brackets; F-value 1,01E-10. The result confirms equation 4. The series have been differentiated by decade to avoid the problem of the unit root. Data on urban and rural productivity in Italy are from Malanima, Urbanisation, see ref. 5, 117.

- 13 Urbanisation in the South and Islands has not been considered here, given the particular nature of agro-towns of most South Italian cities, as recalled in Malanima, Urbanisation, see ref. 5.
- 14 Building wages for England are from Gregory Clark, The conditions of the working-class in England 1209-2003, in: *Journal of Political Economy* 113 (2005), 1307-1340, and rural wages from idem, The long march of history: farm wages, population, and economic growth, England 1209-1869, in: *Economic History Review* 60 (2007), 97-136.
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- 16 Jeffrey G. Williamson, *Inequality, poverty and history*, Cambridge/Massachusetts 1991.
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