

# **Decline or Growth? European Towns and Rural Economies 1300-1600**

**Paolo Malanima**

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*Economic Town-Country Relations in Europe in the later Middle Ages  
and at the Beginning of the Early Modern Period*

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*The paper discusses the three following subjects:*

- a. *the trend of European urbanisation from 1300 until 1600 (reassessing the existing literature on the topic);*
- b. *the immediate causes of this trend (on the basis of town-country differentials in labour productivity and wages);*
- c. *a model explaining this reconstructed trend on the basis of rural-urban interaction.*

*The conclusion addresses the advantages and disadvantages of the macro and micro approaches to the history of towns in the late medieval - early modern periods.*

# Decline or Growth? European Towns and Rural Economies 1300-1600

Paolo Malanima

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.<sup>1</sup> However, in spite of the contributions by these two scholars, the period we are dealing with in this article is the least well-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:

1. what was the trend of European urbanisation between 1300 and 1600?
2. what were the immediate causes of this trend?
3. 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 I propose, at the end, a *model* in order to explain the changes in European urbanisation.

The materials I will deal with are mainly, on the one hand, revised data on European population and urban inhabitants and, on the other, series of urban and rural wages. Data concerning population and urbanisation are presented in the appendix.

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<sup>1</sup> Paul Bairoch, *Cities and economic development from the dawn of history to the present*, Chicago 1988; Jan De Vries, *European urbanization 1500-1800*, London 1984.

## 1. Late Medieval-Early Modern Urbanisation

### 1.1. Two reconstructions

I think that most economic historians would agree on the definition of a town as a *stable settlement of population mainly devoted to secondary and tertiary activities*. What distinguishes, in fact, a town from a village is that in a town 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 town 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 town. 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 town. Based on this threshold, Table 1 summarises what we know about urbanisation in Europe between 1300 and 1600.

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**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*, *wie Anm. 1*.

*Note:* while Bairoch et al. refer to Europe as a whole (excluding European Turkey), De Vries excludes the Balkans and Russia.

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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 10<sup>th</sup> century onwards.<sup>2</sup> As for the 300 years between 1300-1600, urbanisation rose after the Black Death by 3 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 dur-

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<sup>2</sup> On urbanisation in the 10<sup>th</sup>-14<sup>th</sup> centuries see Bairoch, *Cities*, *wie Anm. 1*, 118, and Josiah C. Russell, *Medieval regions and their cities*, Newton Abbot 1972.

ing the 16<sup>th</sup> century.<sup>3</sup> 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 1500-1600 (although his study does not cover the whole continent).

### 1.2. 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.<sup>4</sup> 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 towns across Europe with a population exceeding 10,000, and the second considers 92 towns with a population in excess of 10,000 throughout that period.

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

|             | Number | Urban percentage<br>(92 cities) |
|-------------|--------|---------------------------------|
| <b>1300</b> | 210    | 3.3                             |
| <b>1400</b> | 118    | 3.5                             |
| <b>1500</b> | 210    | 3.5                             |
| <b>1600</b> | 291    | 4.2                             |

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Sources: see the 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 16<sup>th</sup> 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 14<sup>th</sup> 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

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<sup>3</sup> See also Bairoch, *Cities, wie Anm. 1 and Id., Storia delle città. Dalla proto-urbanizzazione all'esplosione urbana del terzo mondo*, Milano 1992. In Bairoch, *Cities, wie Anm. 1*, where no data are given for 1400 (139, 173-74 and 179), the perspective on urbanisation after the Black Death is more pessimistic.

<sup>4</sup> Data on urbanisation and population per country are given in the Appendix.

borne out by the data. In his series, the level of urbanisation was relatively high by 1400, and was not surpassed again until the 19<sup>th</sup> 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.

### 1.3. *The trend*

In Table 3, I present the results of a revision both 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 16<sup>th</sup>-17<sup>th</sup> centuries).

**Table 3.** European urbanisation 1300-1800 (towns with 10,000 inhabitants and more; index 1500=1).

|             | Europe     | Index<br>Europe | Europe<br>(without<br>England) | Index<br>Europe<br>(without<br>England) |
|-------------|------------|-----------------|--------------------------------|---|
| <b>1300</b> | <b>5.3</b> | <i>0.95</i>     | 5.4                            | <i>0.95</i>                             |
| <b>1400</b> | <b>4.3</b> | <i>0.77</i>     | 4.4                            | <i>0.77</i>                             |
| <b>1500</b> | <b>5.6</b> | <i>1.00</i>     | 5.7                            | <i>1.00</i>                             |
| <b>1600</b> | <b>7.4</b> | <i>1.32</i>     | 7.5                            | <i>1.32</i>                             |
| <b>1700</b> | <b>7.7</b> | <i>1.38</i>     | 7.4                            | <i>1.30</i>                             |
| <b>1800</b> | <b>9.0</b> | <i>1.61</i>     | 8.3                            | <i>1.46</i>                             |

*Source:* see the Appendix.

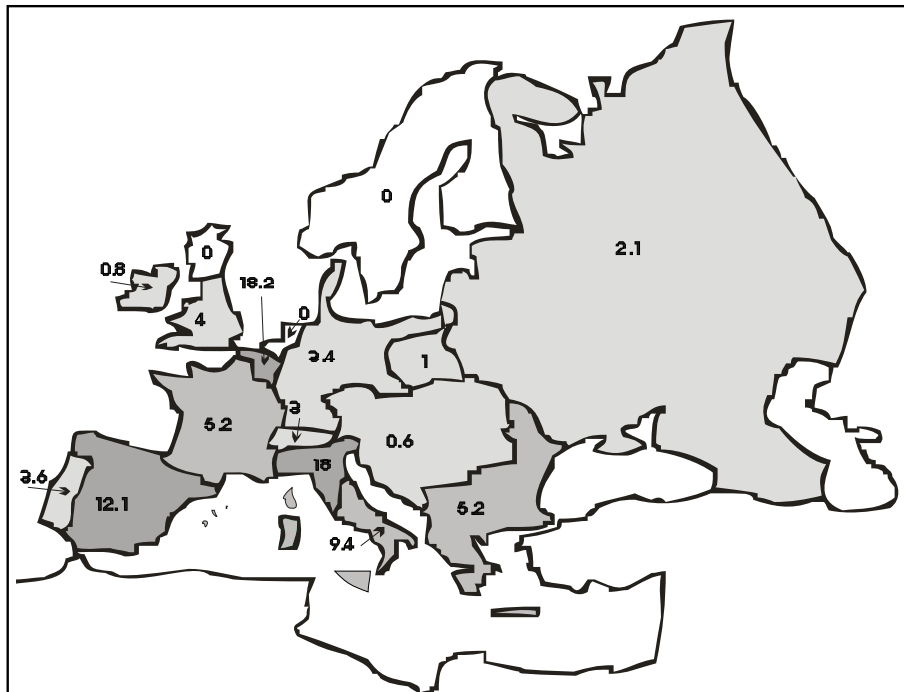
We can summarise the results by saying that European urbanisation overall declined between 1300 and 1400, recovered between 1400 and 1500, and rose considerably during the 16<sup>th</sup> century. Since the highest urbanisation rates in this period were in the south, especially in Italy and Spain, the urban decline in these areas between 1300 and 1400 determined the overall drop in urbanisation.<sup>5</sup> The

<sup>5</sup> I discussed the late medieval chronology of Italian urbanisation in Paolo Malanima, *Urbanisation and the Italian economy during the last millennium*, in: *European Review of Economic History*, 9 (2005), 97-122.

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 1600-1800, especially if we exclude England. In any case, after a fall in urbanisation due to the Black Death, the 15<sup>th</sup>-16<sup>th</sup> centuries witnessed a remarkable growth. The difference with the only existing series of data on late medieval urbanisation – that presented by Bairoch - is evident.

### 1.3. *The geography of urbanisation*

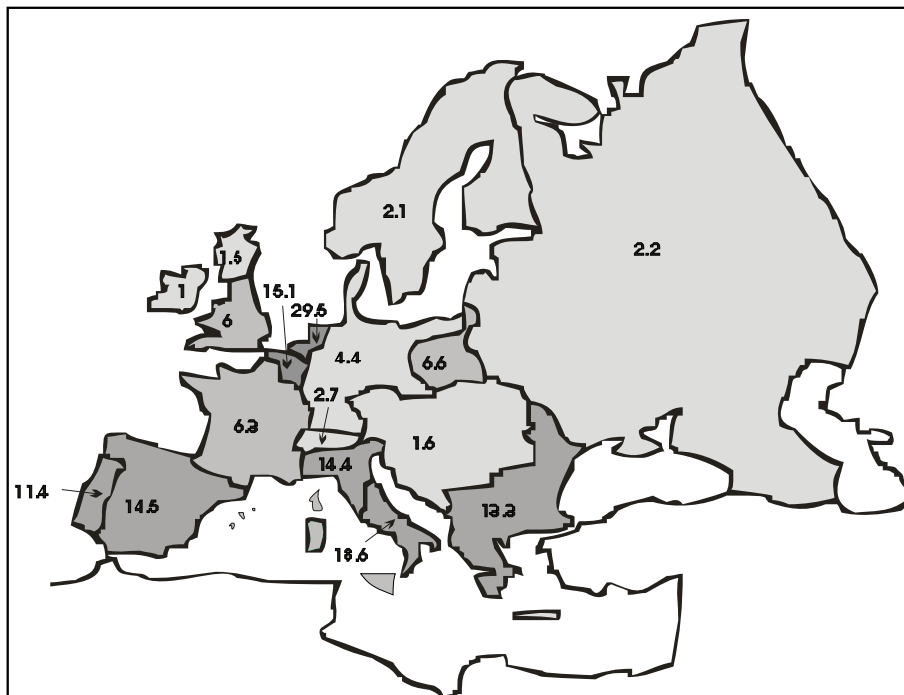
In 1300 the most urbanised area of Europe ran from Flanders to Central-Northern Italy. However, Spain had a high level of urbanisation (12.1 percent) while France was more backward at 5.2 percent. (Map 1) North and East of these regions urbanisation percentages were lower. Only in the Balkans was the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



**Map 1.** Urbanisation in 1300.

By 1600 European urbanisation still largely maintained the late medieval pattern, although with some noteworthy changes (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 was 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.

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 16<sup>th</sup> 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 15<sup>th</sup> century.<sup>6</sup> The jump in Eastern urbanisation in the 16<sup>th</sup> 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 15<sup>th</sup> century. In the 16<sup>th</sup> 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).



Map 2. Urbanisation in 1600.

<sup>6</sup> See especially the data in Nikolai Todorov, *The Balkan City, 1400-1900*, Seattle and London 1983 (Bulgarian edition 1972), 61 ff.

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

|               | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> |
|---------------|-------------|-------------|-------------|-------------|
| <b>North</b>  | 3.9         | 4.0         | 6.6         | 8.9         |
| <b>Centre</b> | 4.3         | 4.4         | 4.6         | 5.4         |
| <b>South</b>  | 13.2        | 8.8         | 12.9        | 15.3        |
| <b>East</b>   | 2.2         | 2.1         | 2.7         | 4.4         |
| <b>EUROPE</b> | <b>5.3</b>  | <b>4.3</b>  | <b>5.7</b>  | <b>7.4</b>  |

**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.

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 towns with 10,000 inhabitants and more).

|               | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> |
|---------------|-------------|-------------|-------------|-------------|
| <b>North</b>  | 9.0         | 9.9         | 12.4        | 13.1        |
| <b>Centre</b> | 25.8        | 30.7        | 26.2        | 24.2        |
| <b>South</b>  | 50.9        | 40.6        | 41.8        | 41.5        |
| <b>East</b>   | 14.3        | 18.8        | 19.6        | 21.3        |

**Note:** the 4 areas are the same as in Table 4.

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).

|             | <b>17<br/>regions</b> | <b>4<br/>areas</b> |
|-------------|-----------------------|--------------------|
| <b>1300</b> | 0.95                  | 0.77               |



|             |      |      |
|-------------|------|------|
| <b>1400</b> | 0.90 | 0.56 |
| <b>1500</b> | 0.86 | 0.66 |
| <b>1600</b> | 0.80 | 0.57 |

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

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#### 1.4. *The main changes*

Although we must approach data on urban populations for periods as far back as the late Middle Ages and the 16<sup>th</sup> 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:

1. there was a decline in 1348-1400 (due to the decline in the South);
2. there was an expansion everywhere in the 15<sup>th</sup> and 16<sup>th</sup> centuries;
3. 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.

## 2. *Urban and Rural Economies*

### 2.1. *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...<sup>7</sup> 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.

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<sup>7</sup> On the institutional differences between town and country and their influence on city-country relationships see Michael Mitterauer, *Städte als Zentren in Mittelalterlichen Europa*, in: Peter Feldbauer-Michael Mitterauer-Wolfgang Schwentker (eds.), *Die vormoderne Stadt. Asien und Europa im Vergleich*, Wien 2002, 60-78.

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 2. 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.<sup>8</sup> This development continued a trend which had been underway since the beginning of European industrialisation in the 19<sup>th</sup> 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 towns 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 60-70 percent and urbanisation becomes a pervasive feature of the society as a whole.

We can simplify this by means of the following function:

$$u = f\left(\frac{w_u}{w_r}\right) \quad (2.1)$$

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.<sup>9</sup> 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 town-country productivity. Variations in urban-rural productivity redistribute population between the towns and the countryside. We could also define the differential as a skill premium in favour of the towns 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.

## 2.2. *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 produc-

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<sup>8</sup> Even though, in the backward countries, the hope of finding higher wages will often not correspond to the actual possibility of finding an occupation.

<sup>9</sup> 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.

tivity 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:

$$\frac{W_{u(t)}}{W_{r(t)}} < \frac{W_{u(t+1)}}{W_{r(t+1)}} < \frac{W_{u(t+2)}}{W_{r(t+2)}} \dots < \frac{W_{u(t+n)}}{W_{r(t+n)}} \quad (2.2)$$

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 function (2.1) could be then expressed as:

$$\frac{\Delta u_{(t+n)}/u_{(t)}}{u_{(t)}} = f \left( \frac{\Delta W_{u(t+n)}}{W_{u(t)}} - \frac{\Delta W_{r(t+n)}}{W_{r(t)}} \right) \quad (2.3)$$

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:

$$\frac{\Delta u_{(t+n)}/u_{(t)}}{u_{(t)}} = f \left( \frac{\Delta \pi_{u(t+n)}}{\pi_{u(t)}} - \frac{\Delta \pi_{r(t+n)}}{\pi_{r(t)}} \right) \quad (2.4)$$

where  $\pi_u$  is urban average productivity and  $\pi_r$  rural productivity.

### 2.3. 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:

$$\Delta T = \frac{T}{B} \cdot \Delta B \quad (2.5)$$

where  $\Delta T$  is the change in total employment;  $\Delta B$  is the change of employment in the innovating sector and  $T/B$  is the employment multiplier.<sup>10</sup>

Innovation, however, is not always urban. Sometimes, although less frequently, innovations have been introduced in the countryside. Proto-industrial activities were probably already developing during the late Middle Ages, and they certainly advanced from the 17<sup>th</sup> century onwards. The productivity of agrarian households rose, which was

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<sup>10</sup> See the useful analysis by Arthur O'Sullivan, *Urban economics*, Irwin 2003, 119 ff.

one reason why migration from the countryside to the towns slowed down during the 17<sup>th</sup> and 18<sup>th</sup> 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.

#### *2.4. 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 force 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 2.3. 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 19<sup>th</sup> 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.<sup>11</sup> 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.<sup>12</sup>

## 2.5. 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.<sup>13</sup> 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 (towns with 10,000 inhabitants and more).

|             | England | Italy CN |
|-------------|---------|----------|
| <b>1300</b> | 4.0     | 18.0     |
| <b>1400</b> | 2.5     | 12.4     |
| <b>1500</b> | 2.3     | 16.4     |

<sup>11</sup> See Paul Bairoch-Gary Goertz, Factors of urbanization in the Nineteenth century developed countries: a descriptive and econometric analysis, in: *Urban Studies*, 23 (1986), 285-305; and Paul Bairoch, The impact of crop yields, agricultural productivity, and transport costs on urban growth between 1800 and 1910, in: Ad van der Woude-Akira Hayami-Jan de Vries (eds.), *Urbanization in history. A process of dynamic interactions*, Oxford 1990, 134-51.

<sup>12</sup> A regression analysis of changes in urbanisation rates ( $\Delta u$ ) in 1861-1971 Italy on changes in industrial ( $\Delta i$ ) and agricultural ( $\Delta a$ ) labour productivity (1911 prices) yields the following result:

$$\Delta u = 0.18 + 0.0026 \Delta i - 0.0022 \Delta a$$

(0.0048)                      (0.047)

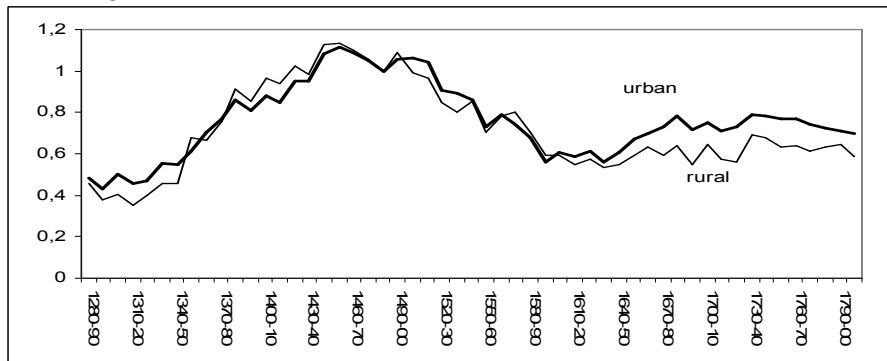
R<sup>2</sup> = 0.35; P-value in brackets; F-value 1.01E-10. The result confirms equation (2.4). The series have been differentiated by decade to avoid the problem of the unit root. Data on urban and rural productivity in Italy are from Malanima, *Urbanisation*, *wie Anm. 5*, 117.

<sup>13</sup> 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*.

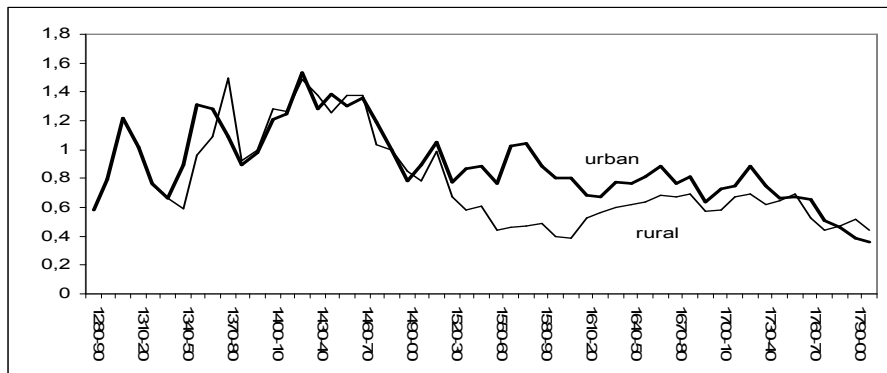
|             |      |      |
|-------------|------|------|
| <b>1600</b> | 6.0  | 14.4 |
| <b>1700</b> | 13.2 | 13.0 |
| <b>1750</b> | 16.4 | 13.6 |
| <b>1800</b> | 22.3 | 14.2 |
| <b>1870</b> | 43.0 | 13.4 |

Source: see the 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 England<sup>14</sup> and Italy,<sup>15</sup> we discover some similarities over the period from 1280 to 1800 (Figures 1 and 2).



**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).

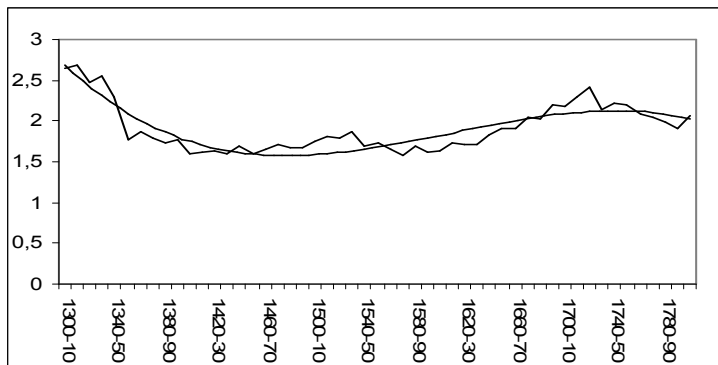
<sup>14</sup> Building wages for England are from Gregory Clark, The conditions of the working-class in England 1209-2003, in: *Journal of Political Economy*, 113 (2005), 1307-1340 and rural wages from Gregory Clark, The long march of history: farm wages, population, and economic growth, England 1209-1869, in: *Economic History Review* 60 (2007), 97-136.

<sup>15</sup> Urban and rural wages for Italy are from Paolo Malanima, L'economia italiana. Dalla crescita medievale alla crescita contemporanea, Bologna 2002; Giovanni Federico-Paolo Malanima Progress, decline, growth: product and productivity in Italian agriculture, 1000-2000, in: *Economic History Review* 57 (2004), 437-467 and Paolo Malanima, Wages, productivity and working time in Italy (1270-1913), in: *Journal of European Economic History*, 36, (2007), 127-71.

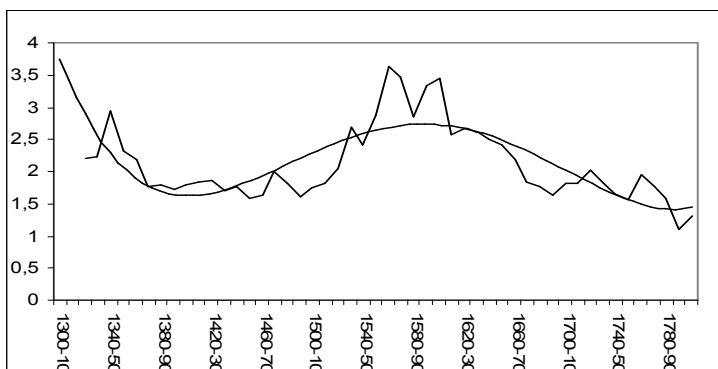
The trend of wages in construction represents the broader picture of urban wages, and, as a consequence, the movement of urban marginal labour productivity overall. The downward trend clearly demonstrates the diminishing capital per worker when demographic increase outstrips capital formation (including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

We see the well-known profile of European wage levels both in the towns and the countryside: a sudden rise after the Black Death until about 1450; a subsequent drop until 1600; and a recovery during the 17<sup>th</sup> 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 1480-90 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 no-

ticed that the real differential is about 30 percent.<sup>16</sup> 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 14<sup>th</sup> 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 15<sup>th</sup> century.

In Italy the upward movement intensified from 1480 on. 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 16<sup>th</sup> 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.<sup>17</sup> A large differential persisted until the last decades of the century. Around the year 1600 this 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 1575-80; there were famines in 1590-91 and 1596, and there were plague epidemics again in 1629-30, which struck all of Central and Northern Italy. All these factors contributed to the fall. From then on until about 1861-71, 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.<sup>18</sup> In 1861, the urbanisation rate was almost 5 percentage points below that of 1300; which means that it declined by 25 percent in about 5 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 16<sup>th</sup> 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

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<sup>16</sup> Jeffrey G. Williamson, *Inequality, poverty and history*, Cambridge (Mass.), 1991.

<sup>17</sup> See the still important book by Giuseppe Parenti, *Prime ricerche sulla rivoluzione dei prezzi a Firenze*, Firenze 1939 (new edition: *Id., Studi di storia dei prezzi*, Paris 1981).

<sup>18</sup> I'll try to explain this stronger decline in industry in the following part of this paper. On the trend of the Italian labour productivity see Federico-Malanima, *Progress, decline, growth*, *wie Anm. 15*.



productivity and the growth of the latter was supporting increasingly larger towns, as A. 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.

## *2.6. 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 15<sup>th</sup> and 16<sup>th</sup> centuries, led by growing differentials in wages. However, we should note that, while in the 15<sup>th</sup> 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.<sup>19</sup> 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 16<sup>th</sup> and 17<sup>th</sup> centuries (but were similar to Italy in the 18<sup>th</sup> century, when their urbanisation rate declined). Spain and Portugal shared the Italian trend, but grew more rapidly in the 16<sup>th</sup> 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 16<sup>th</sup> century on, makes the data unreliable and hard to compare with those from other countries.

## **3. A Two-Sector Model**

### *3.1. 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 town-countryside relationships in a pre-modern economy.

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<sup>19</sup> Robert C. Allen, *Economic Structure and Agricultural Productivity in Europe, 1300-1800*, in: *European Review of Economic History* 4 (2000), 1-26.

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:

$$Y_a = f(L_a, R) \quad (3.1)$$

$$Y_i = f(L_i, K) \quad (3.2)$$

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:

$$w_a = MPL_a \cdot P_a \quad (3.3)$$

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:

$$w_i = MPL_i \cdot P_i \quad (3.4)$$

where the only difference with equation (3.3) is the subscript  $i$  referring to industry.

Finally:

$$L = L_a + L_i \quad (3.5)$$

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

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

### 3.2. Town-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 (3.3), (3.4) and (3.5) 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

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<sup>20</sup> If total labour is equal to 100, the distribution of total employment between agriculture and industry is an endogenous variable, while population movement becomes exogenous and then engenders a displacement of the straight line of productivity instead of a movement along the straight line.

wages. Ordinarily, however, a town-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 town-country productivity differential widens.

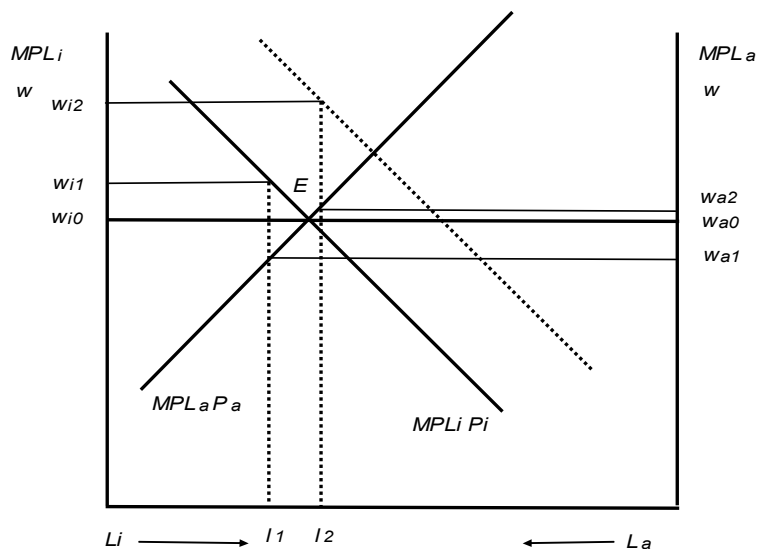


Figure 5. A two-sectors economy: growth.

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.

### 3.3. 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 this decreases. Unproductive agricultural workers and those whose productivity is low find occupation in industry.<sup>21</sup> 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

<sup>21</sup> W. Arthur Lewis, *Economic development with unlimited supply of labour*, in: Amar N. Agarwala-S.P. Singh (eds.), *The economics of underdevelopment*, Oxford 1954, is still important on the matter.

previously existing difference between  $w_{i1}$  and  $w_{a1}$ . 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 19<sup>th</sup>-20<sup>th</sup> 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.<sup>22</sup> 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 16<sup>th</sup> and 17<sup>th</sup> centuries. In Italy a similar trend must have taken place before 1300, in a period, that is, 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 shrinks, both in terms of employment within the sector and its contribution to the national product.

### 3.4. Decline

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

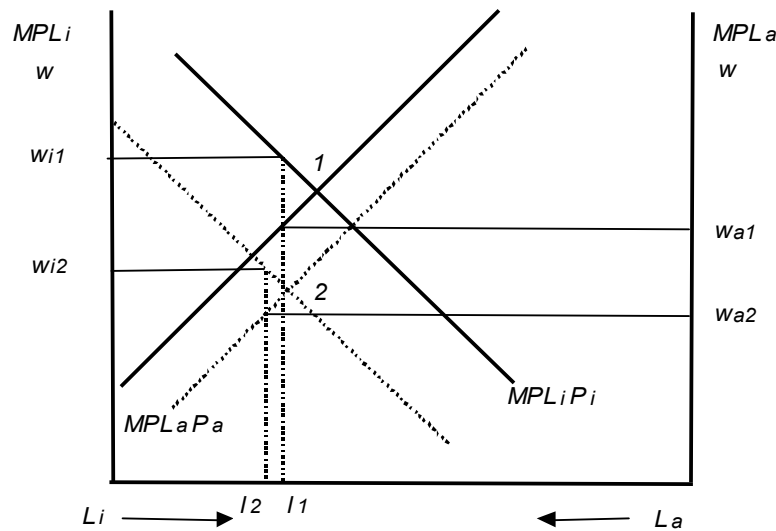


Figure 6. A two-sectors model: decline.

Let us assume that a decline of capital, resources or both per worker causes a decline in productivity and then a displacement of the  $MPL_aP_a$  line to the right. The consequences would be:

1. an overall fall in per capita output, since agriculture is by far the most important sector of the economy;
2. the curve of industry  $MPL_iP_i$  would move to the left because the demand for secondary goods is elastic relative to changes in income and the decline in per capita

<sup>22</sup> I refer to the important article by E. Antony Wrigley, A simple model of London's importance in changing English society and economy 1650-1750, in: Past and Present, 37 (1967), 44-70.

- GDP causes a decline in demand for manufactured goods. The new intersection is now at point 2;
3. 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);
  4. 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 16<sup>th</sup> 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.

### 3.5. *Urbanisation in a dualistic economy*

Many scholars assume that an increase in urbanisation always depends on rising productivity both in the towns and 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 16<sup>th</sup> 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 were full employment. The curve relating to agriculture displaces itself towards the right, where productivity and wages are lower. Migration flows towards the towns also 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 both marginal product curves move, 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 16<sup>th</sup>-century Europe.

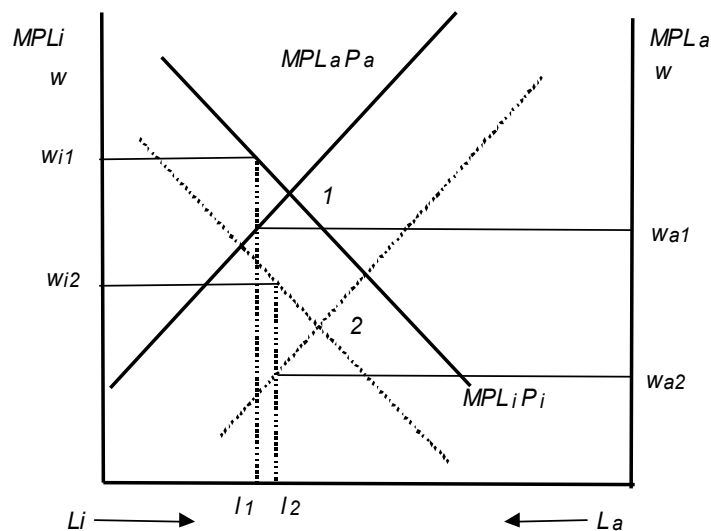


Figure 7. A two-sector economy.

The difference between Figure 6 and Figure 7 consists in the relative width of the displacement of demand for labour in the towns and 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, the 15<sup>th</sup> and 16<sup>th</sup> century English and Dutch economies followed the first of these two paths, while, from the second half of the 16<sup>th</sup> century, Italy followed the second. As Figure 5 shows, the increase in output per worker during the 15<sup>th</sup> century led to a rise in urbanisation throughout Europe. This upward trend in urbanisation continued even during the 16<sup>th</sup> 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 16<sup>th</sup> 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 19<sup>th</sup> century.<sup>23</sup>

#### **4. Conclusion**

I have tried, in the preceding pages, first of all to reexamine 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:

1. the European trend of urbanisation was not declining between 1400 and 1600, but rising;
2. 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;
3. 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 microeconomic historical approach could clarify,

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<sup>23</sup> As noticed by E. Antony Wrigley, *The great commerce of every civilized society: urban growth in early modern Europe*, in: Id., *Poverty, progress, and population*, Cambridge 2004, 268-89.



especially from a short-run perspective. Some of these assumptions are:

1. 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;
2. 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;
3. prices have been considered able to record soon the economic forces at play, but we know that, at least in the short run, this is not so and market imperfections play a major role;
4. over the long period which interests us transaction costs change, and this change may influence the working of town-countryside relationships;
5. 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;
6. proto-industry has often been seen as playing a role from the 17<sup>th</sup> 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.<sup>24</sup>

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.

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<sup>24</sup> For the late Middle Ages, see especially, Stephan R. Epstein, *Freedom and growth. The rise of states and markets in Europe, 1300-1750*, London-New York 2000.

## Appendix

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 Bairoch, Batou, Chèvre, La population des villes européennes; De Vries, European urbanization (and J. 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 quoted in this article.

**European population, number of towns, urban inhabitants and urbanisation rates (1300-1600) (centres with more than 10,000 inhabitants).**

### European Population (000) per country or area and their extent in sq km

|                                | Sqkm          | 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         |
| <b>EUROPE</b>                  | <b>10,383</b> | <b>93,700</b> | <b>67,850</b> | <b>84,850</b> | <b>107,050</b> |
| <b>EUROPE (without Russia)</b> | <b>4,983</b>  | <b>78,700</b> | <b>56,850</b> | <b>69,850</b> | <b>91,050</b>  |

*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 15<sup>th</sup> 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); B. T. Uralis, Rost naselenie v Evrope, Moscow 1941, 414; Roger Mols, The European population in the 16<sup>th</sup> and 17<sup>th</sup> century, in: Carlo M. Cipolla (ed.), The Fontana economic his-

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**Number of towns  
(10,000 inhabitants and more)**

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

**Urban inhabitants (000)  
(10,000 inhabitants and more)**

|                             | <b>1300</b>  | <b>1400</b>  | <b>1500</b>  | <b>1600</b>  |
|-----------------------------|--------------|--------------|--------------|--------------|
| <b>1 Scandinavia</b>        | 0            | 0            | 17           | 50           |
| <b>2 England (Wales)</b>    | 179          | 67           | 80           | 266          |
| <b>3 Scotland</b>           | 0            | 0            | 18           | 15           |
| <b>4 Ireland</b>            | 11           | 15           | 8            | 10           |
| <b>5 Netherlands</b>        | 0            | 0            | 180          | 452          |
| <b>6 Belgium</b>            | 263          | 209          | 282          | 242          |
| <b>7 France</b>             | 831          | 566          | 760          | 1,173        |
| <b>8a Italy CN</b>          | 1,394        | 583          | 871          | 1,130        |
| <b>8b Italy SI</b>          | 446          | 109          | 468          | 1,018        |
| <b>9 Spain</b>              | 665          | 457          | 572          | 985          |
| <b>10 Portugal</b>          | 47           | 43           | 57           | 148          |
| <b>11 Switzerland</b>       | 24           | 10           | 22           | 27           |
| <b>12 Austria (Hungary)</b> | 60           | 43           | 91           | 210          |
| <b>13 Germany</b>           | 436          | 324          | 451          | 717          |
| <b>14 Poland</b>            | 20           | 20           | 108          | 165          |
| <b>15 Balkans</b>           | 314          | 231          | 422          | 929          |
| <b>16 Russia (European)</b> | 322          | 257          | 303          | 378          |
| <b>EUROPE</b>               | <b>5,012</b> | <b>2,934</b> | <b>4,710</b> | <b>7,915</b> |

**Urbanisation rates (%)  
(10,000 inhabitants and more)**

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

### Urban Inequality

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.