

Decline or Growth? European Cities and Rural Economies 1300-1600

Paolo Malanima

1. *Late Medieval-Early Modern Urbanisation*
 2. *Urban and Rural Economies*
 3. *A Two-Sectors Model*
 4. *Conclusion*
- Appendix*

Paolo Malanima

Institute of Studies on Mediterranean Societies (ISSM)
National Research Council (CNR)
Naples
malanima@issm.cnr.it

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

University of Vienna 7th- 9th June 2007

The paper discusses the three following subjects:

- a. *the trend of European urbanisation from 1300 until 1600 (with the revision of the past literature on the topic);*
- b. *the immediate causes of such trend (on the basis of the city-country differential in labour productivity and wages);*
- c. *a model explaining the reconstructed trend on the basis of rural-urban interaction.*

In the Conclusion the advantages and disadvantages of the macro and micro approaches to the history of the cities in the late medieval - early modern centuries, are addressed.

Decline or Growth? European Cities and Rural Economies 1300-1600

Paolo Malanima

Research on European urbanisation quickly progressed in the 1980s especially thanks to the works of Paul Bairoch and Jan De Vries, who presented two wide 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 clear in the long-term reconstruction of urban Europe. We know, in fact, that urbanisation progressed in the high Middle Ages and that, from 1600 until 1800, it stabilized or stagnated. We know much less about what happened between 1300 and 1600. Jan De Vries' work begins, in fact, from 1500 and devotes 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'll try to address three main questions:

1. what is the trend of European urbanisation from 1300 until 1600?
2. what are the immediate causes of this trend?
3. what is the explanation of the reconstructed trend?

I will start with a re-examination of *data*; continue with the analysis of some *statistical relationships* among variables and I will propose, at the end, a *model* in order to explain the changes in European urbanisation.

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

¹ P. Bairoch, *Cities and economic development from the dawn of history to the present*, Chicago 1988 (1985 French edition); J. 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 the city as a *stable settlement of population mainly devoted to secondary and tertiary activities*. What distinguishes, in fact, a city from a village is the presence of a majority of population employed in industry, trades and services. While a proportion of peasant households is ordinarily present in pre-modern towns, it is, however, relatively modest as soon as the size of the settlements rises. As to the threshold of inhabitants that must be exceeded in order to define a city, it varies in different regions. While in Northern-Central Europe a majority of population is employed in secondary and tertiary occupations (and then we can speak of cities) already in centres of about 2,000 inhabitants, in some Mediterranean regions this is not so. Here a centre of 2,000 inhabitants is considered rural and the threshold defining a city is higher due to the presence of a majority of peasants, sometimes even in relatively big agglomerations.

Some scholars choose the threshold of 5,000 inhabitants to identify a city for reasons of convenience. Table 1 summarizes what we know on urbanisation in Europe between 1300 and 1600, respecting this threshold.

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: Bairoch, *Batou, Chèvre, La population des villes européennes de 800 à 1850*, Genève 1988; De Vries, *European urbanization*.

Note: while Bairoch, *Batou, Chèvre* refer to Europe on the whole (except the European Turkey), De Vries excludes the Balkans and Russia.

Although on the pre-1300 centuries we lack direct data on urban populations, indirect information suggests a modest rise of the urbanisation rate from the 10th century onwards.² As regards 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, from 1400 to 1500, only to recover during the

² On the 10th-14th centuries urbanisation see Bairoch, *Cities*, 118, and J. C. Russell, *Medieval regions and their markets*, Newton Abbot 1972.

16th century.³ Comparing, however, 1600 with 1400, European urbanisation declined. De Vries' data more or less tallies with those of Bairoch, for the period 1500-1600 (although his investigation does not refer to the continent on the whole).

1.2. *Cities: number and population*

In order to verify these results, it is convenient to decompose the process of urban development into its two components –the rise in the urban population within the already existing cities and the rise in the number of cities–, urbanisation depending on the increase in the size and/or the number of urban centres.⁴ The distinction is useful since ordinarily the first or the second component prevails. In some periods cities become increasingly larger, while the numbers of these remains almost the same, whilst in others, the population of the existing cities is stable whereas their number rises.

In Table 2 both changes are reported for the period we are dealing with on the basis of a threshold of 10,000 inhabitants and for all of Europe.

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 in the period 1300-1600.

| | Number | Urban percentage (92 cities) |
|-------------|---------------|---|
| 1300 | 210 | 3.3 |
| 1400 | 117 | 3.5 |
| 1500 | 206 | 3.5 |
| 1600 | 289 | 4.2 |

Sources: see the Appendix.

We could summarize the results of the table by saying that, in the 300 years we are dealing with, urbanisation rose and that the rise depended rather on the variations in the number of cities than on the growth of the existing centres. During the 16th century, the increase is documented by both series in Table 2. As regards the previous two centuries, the series provide a mixed answer. The number of cities drastically declined in the 14th century and then recovered, while the urban percentage of the sample of 92 cities, whose population always exceeds 10,000 during the three centuries, was more or less stable.

As regards the conclusions put forward by Bairoch, both in the previously presented series and in others among his contributions on

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

⁴ Data on urbanisation and population per country are reported in the Appendix.

the subject, these are not confirmed by the previous data. In his series, 1400 urbanisation is relatively high, being surpassed only in the 19th century: 12.5 inhabitants on 100 live in 1400 in centres with more than 5,000 inhabitants, while in 1800 they are 11.9. In Table 2, by contrast, the percentage of the urban population in the sample of 92 cities out of the total European population is stable between 1300 and 1500, while the number of the cities strongly diminishes in 1400. The result can only be the decline in urbanisation in the aftermath of the Black Death followed by a recovery.

1.3. *The trend*

In Table 3, I present the results of a revision of both the urban databases proposed by Bairoch and De Vries and the population of Europe per country, on the basis of the more recent literature. Although we are dealing here with the late medieval and early modern periods, an observation of urbanisation in Europe over a longer period from 1300 until 1800 can also provide a better perspective for urbanisation from 1300 to 1600. It is useful to distinguish Europe including England from Europe without England, England's case being an example of a dynamism not shared by other regions (with the exception of the Netherlands in the 16th-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 | <i>0.93</i> | 5.4 | <i>0.93</i> |
| 1400 | 4.3 | <i>0.75</i> | 4.4 | <i>0.76</i> |
| 1500 | 5.7 | <i>1.00</i> | 5.8 | <i>1.00</i> |
| 1600 | 7.4 | <i>1.30</i> | 7.5 | <i>1.29</i> |
| 1700 | 8.2 | <i>1.44</i> | 7.9 | <i>1.36</i> |
| 1800 | 9.0 | <i>1.58</i> | 8.3 | <i>1.43</i> |

Source: see the Appendix.

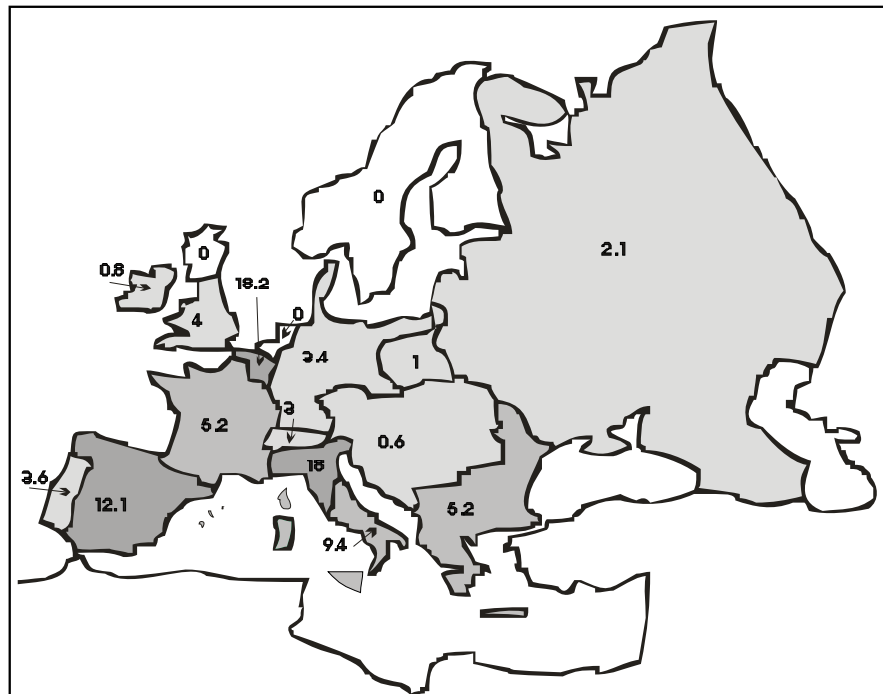
We can summarise the results by saying that European urbanisation on the whole reveals a decline from 1300 to 1400, a recovery from 1400 to 1500, and a considerable rise during the 16th century. Since the highest urbanisation rates in this period are in the South and especially in Italy and Spain, the urban decline in these areas from 1300 to 1400 determines the overall drop in urbanisation.⁵ Epi-

⁵ I discussed the late medieval chronology of the Italian urbanisation in P. Malanima, *Urbanisation and the Italian economy during the last millennium*, in: *European Review of Economic History*, 9, (2005).

demics hit especially the densely populated big cities of Southern Europe. From 1600 on the progress is slow indeed. We could speak of stabilization rather than rise during the long period 1600-1800, especially if England is excluded. In any case, after a fall in urbanisation due to the Black Death, the 15th-16th centuries witness a remarkable growth. The difference with the only existing series of late medieval urbanisation –that presented by Bairoch- is evident.

1.3. *The geography of urbanisation*

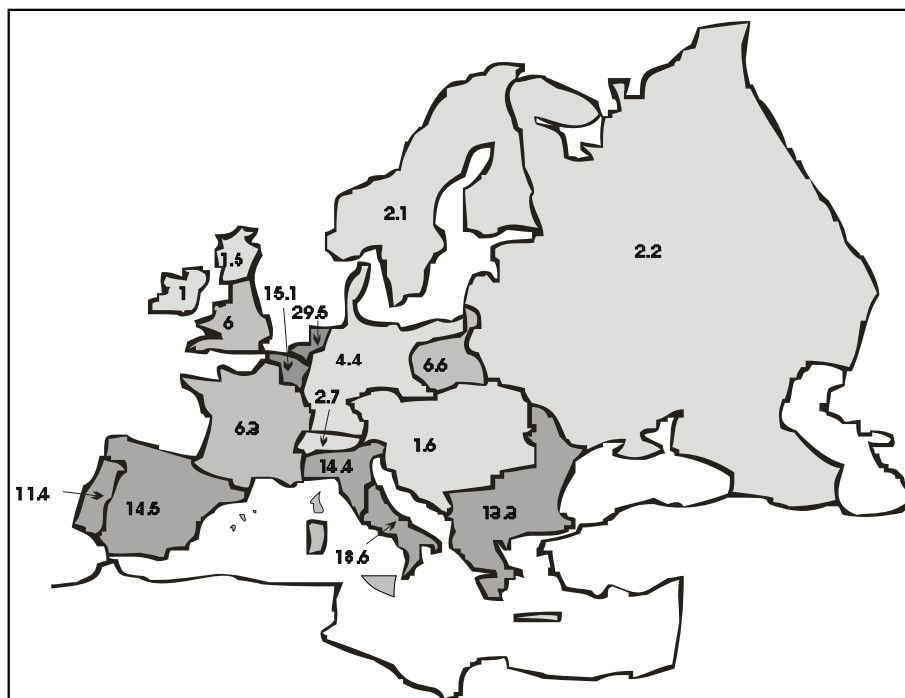
In 1300 the most urbanised area of Europe run from Flanders to Central-Northern Italy. Spain held, however, a high level of urbanisation -12.1 percent- while France was more backward –with 5.2- (Map 1). North and East of these regions urban percentages were lower. Only in the Balkans was the rate of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



Map 1. Urbanisation in 1300.

In 1600 the core of European urbanisation still maintained the late medieval pattern, although with some noteworthy changes (Map 2). The higher rates were still located in the area extending from Flanders to Italy, with the addition of England in the North and especially of the rapidly growing Netherlands. Moving westward towards France, Spain and Portugal, urbanisation level dropped, with Spain, however, still holding a remarkable position. In Central and Eastern regions urbanisation was lower, with the partial exception of the Balkans.

Looking at the urbanisation rate per area, we discover that the most dynamic regions of the continent, from the urban viewpoint, are in the North, while the Centre and the South are more stable (Table 4). In the East, the rate of growth during the 16th century is higher than in the North, although the level of urbanisation is half, due to the modest 15th century rise.⁶ The jump in Eastern urbanisation in the 16th century is partly determined by the rise in population of Constantinople from 150,000 inhabitants in 1500 to 460,000 in 1600, when it was the main European 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 numbered 280,000 inhabitants. In Europe only around 1750 will Constantinople-Istanbul be overtaken by London. After long stability in the 15th century due to the Ottoman conquest the Balkan cities on the whole witness a fast recovery in the 16th century. As we see, in 1600 the biggest European cities were still located in the South. In 1300 there were only 5 European cities exceeding 100,000 inhabitants: Paris, Milan and Granada, with 150,000 inhabitants each, and Venice and Florence with 110,000. In 1600 there were 8. 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.

⁶ See especially the data in N. Todorov, *The Balkan City, 1400-1900*, Seattle and London 1983 (1st Bulgarian edition 1972), 61 ff.

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 | 5.0 | 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.

Although the level of urbanization is always far higher in the South than in the North, between 1300 and 1600, the balance moves towards the North, as is clearly revealed by the size of urban population in any of our four areas with regard to the European total number of urban inhabitants (Table 5). More than half the urban population of Europe is in the South in 1300 and 42 percent in 1600. In 1800 it will be less than 30 percent and in 1870 less than 20.

Table 5. Percentage of the European urban population per area in 1300-1600 (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 4 areas are the same of Table 4.

In the late Middle Ages, in the Euro-Mediterranean world, the Southern part was considerably more advanced (Table 6). This was the legacy of the late antiquity, when, that is, big cities existed in the South, while the North was backward and scarcely urbanized. In 1300 it was still so. Beyond the Alps and Pirenees cities were modest and few. The inequality in urban development within the continent was noticeable. In the early Modern Age some convergence began to take place. Previous sharp contrasts faded gradually with the rise of urbanisation in the North of the continent.

Table 6. Inequality 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 the Appendix on the method used to compute inequality 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.

1.4. *The main changes*

Although we must be cautious with data on urban populations for epochs so far away from us as the late Middle Ages and the 16th century, some results can be assumed as sufficiently reliable. I summarize here some conclusions to be considered when discussing late medieval-early modern European cities:

1. a decline in 1348-1400 (due to the decline in the South);
2. an expansion everywhere in the 15th and 16th century;
3. the most dynamic areas, in the period we are interested in, are the North and the East, in the Golden Age of the Ottoman empire. The Centre and South are more stable in relation to 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 (attraction of the urban life on 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 hypothesize that the existence of a differential in the level of wages 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 the hope for higher incomes and better living conditions. Many other elements cooperate with this, but without a differential in labour incomes any tendency to migrate to the city can only be short term.

As an important example of urbanisation led by the dynamic differential in urban-rural wages, we can remember what happened in many countries after World War 2. Increasing wages in industry and

⁷ On the institutional differences between town and country and their influence on city-country relationships see M. Mitterauer, "Städte als Zentren in Mittelalterlichen Europa", in: P. Feldbauer, M. Mitterauer, W. Schwentker, *Die vormoderne Stadt. Asien und Europa im Vergleich*, Wien 2002, 60-78.

trade attracted peasant families, who left the countryside in order to find better paid jobs in the cities. Urbanisation exploded both in advanced and backward countries.⁸ This development continued a trend already taking place since the beginning of the European industrialization 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. The intensity of migratory flows towards the cities during the last two centuries describes an inverted U curve: from the relatively low rates of the pre-modern world, to the fast pace of migration during industrialization, and finally to the new decline when urbanisation rates exceed the level of 60-70 percent and urbanisation becomes a pervasive feature of the society on the whole.

We could then simplify 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 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 vv. Since wage represents marginal labour productivity, the differential in wages corresponds to the differential in city-country productivity. Variations in urban-rural productivity redistribute population between 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 cities than in the countryside. The consequence is a continuous flow of migrants towards the cities to replace the dead. Urbanisation rise takes place whenever this flow increases and this increase is likely to be connected to wage differentials or skill premium for the urban jobs.

2.2. *Urbanisation and urban-rural productivity*

It seems, however, plausible to hypothesize that it is not the mere existence of a differential between rural and urban productivity that favours the immigration into the cities. This differential, in fact, could be rapidly cancelled by the migration flows, which would cause a diminution of labour productivity in the cities and its growth in the countryside. Urbanisation rise is alimanted, on the contrary, by the faster growth or slower decline in urban productivity than in agricultural productivity over a long period of time and hence the rising dif-

⁸ Even though, in the latter ones, often the hope of finding higher wages does 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, both within the countryside and within the cities a similarity exists in the movement of wages of different rural and urban wages.

ferential in wages. Urbanisation is therefore on the 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 specified:

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

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 π_u is urban average productivity and π_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 of the exports etc....- is the main cause of the increasing capital formation and demand for labour in a city. Wages record the rise in urban labour productivity and the differential with 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.). The attraction of rural workers from outside the city walls is the consequence of the inner, new dynamism of the urban economy and the demand for labour. Total employment grows. The effect of the exogenous shock on the city's economy on the whole can be represented as:

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

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 also introduced in the countryside. Proto-industrial activities probably developed as well during the late Middle Ages. Certainly they advanced from the 17th century on. Productivity of the agrarian families rose. And this was a reason why migration from the countryside to the cities slowed down during the 17th and 18th centuries. It is much more uncertain to say if similar changes took place in the late Middle Ages. Is the decline in urbanisation in the

¹⁰ See the useful analysis by A. O'Sullivan, *Urban economics*, Irwin 2003, 119 ff.

century spanning 1350-1450 likely to have been in part determined by a growth in industries outside the cities? To this problem 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 rise can also take place when the decline in urban productivity is lower than that of rural productivity. We will see later that from the late Middle Ages onwards wage rates, and subsequently productivity, diminished in Europe. In some regions, however, wage differentials in favour of the cities 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 considered as the effect of market imperfections or an example of market failure. In fact a dynamic city-country productivity differential represents a characteristic feature of the dualistic pre-modern economies and their unbalanced technological progress (which is frequent within the cities and much less so in the countryside). Since capital formation follows technological progress, productivity rises in the cities and attracts labour force from agriculture. If the wage differential indicates market imperfections, these imperfections are a customary feature of any pre-modern economy.

However for more distant epochs, the possibility of finding reliable information on urban and especially rural wages in order to test the previous function (2.3) is far from easy. Often we have nothing more than short series of wages whose link to the movement of urbanisation is difficult to establish. 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 cities we rarely have data for each decade. Urbanisation is, furthermore, a phenomenon that shows little flexibility. The existence of wage differentials does not determine the immediate flows of workers from the countryside. Usually, if the urban-rural wage ratio shrinks, families do not abandon their urban residence to return to the countryside. We often find migration towards the cities, but rarely migration from the cities towards the countryside. A city grows because of immigration, but decline is usually due to the interruption of migratory flows and to death rates being higher within the city walls than outside. It is above all to be noted that during an epoch such as that in question when urbanisation is not so fast, the data on wages and urban population can prove unable to reveal the correlation between migratory flows and wage differentials.

I'm focusing here on the immediate causes of the rise in urbanisation. We know, however, that many other variables are involved in the same process. We could call them remote causes. Among these causes we can mention population movement, changes in crop yields,

transport costs, the import of food and the level of industrialization. The scarcity of data on urbanisation, available only on a century basis, and the other variables prevents us from checking 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 satisfying), agricultural productivity and industrialization turned out to be the main variables.¹¹ For Italy between 1861 and 1971 a regression of variations in urbanisation on changes in industrial and agricultural average labour productivity exhibits a high explanatory value.¹²

2.5. Two cases-study

Although, on the whole, information on rural and urban wages is scanty and fragmentary, two European regions are better documented than the rest of the continent: England and Central-Northern Italy.¹³ Both regions are also 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 | Italy CN |
|-------------|---------|----------|
| 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 |

¹¹ See P. Bairoch, G. Goertz, Factors of urbanization in the Nineteenth century developed countries: a descriptive and econometric analysis, in *Urban Studies*, 23, 1986; and P. Bairoch, "The impact of crop yields, agricultural productivity, and transport costs on urban growth between 1800 and 1910", in: A. Van der Woude, A. Hayami, J. de Vries (eds.), *Urbanization in history. A process of dynamic interactions*, Oxford 1990.

¹² A regression of changes in urbanization 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)

R² = 0.35; P-value in brackets; F-value 1.01E-10. The result confirms equation (2.4). The series have been differentiated for decade to avoid the problem of the unit root. Data on urban and rural productivity in Italy are from Malanima, *Urbanisation*, 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*.

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 England¹⁴ and Italy,¹⁵ we discover some similarities during the centuries from 1280 until 1800 (Figures 1 and 2).

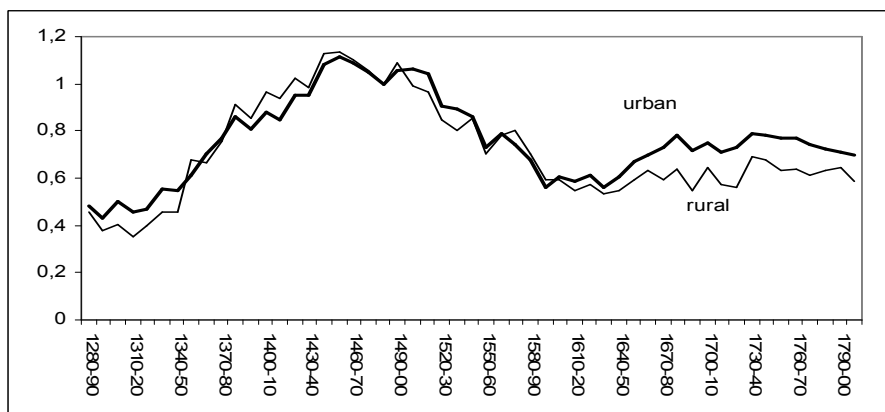


Figure 1. Urban and rural wage rates in England 1280-1800 (1480-90=1).

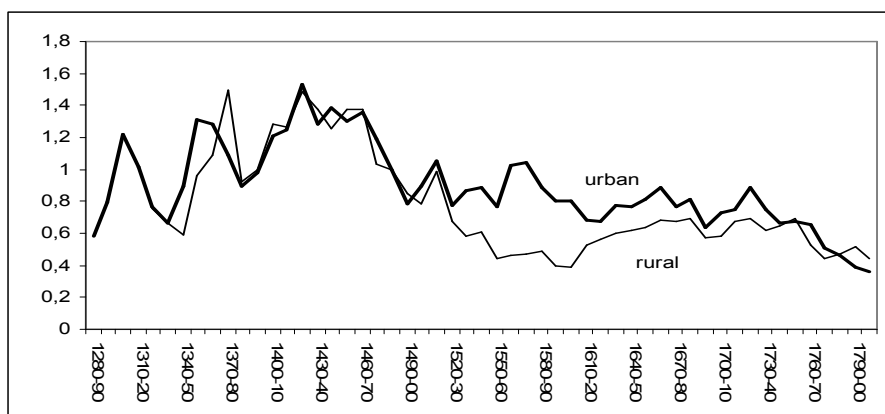


Figure 2. Urban and rural wage rates in Italy 1280-1800 (1480-90=1).

Since the trend of building wages is representative of the wider picture of urban wages, we can assume it to be similar to that of the movement of the urban marginal labour productivity on the whole. The downward trend is a clear witness of the diminishing capital per

¹⁴ Building wages for England are from G. Clark, *The conditions of the working-class in England 1209-2003*, in: *Journal of Political Economy*, 113, (2005) and rural wages from G. Clark, *The long march of history: farm wages, population, and economic growth, England 1209-1869*, in: *Economic History Review*, II s., 60, (2007).

¹⁵ Urban and rural wages for Italy are from Malanima *L'economia italiana. Dalla crescita medievale alla crescita contemporanea*, Bologna 2002; G. Federico, P. Malanima *Progress, decline, growth: product and productivity in Italian agriculture, 1000-2000*, in: *Economic History Review*, II. s., (2004) and Malanima, *Wages, productivity and working time in Italy (1270-1913)*, in: *Journal of European Economic History* (2007).

worker when demographic increase is higher than capital formation (including arable land in capital).

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

The presence of the urban-rural differential is not so clearly visible in these indices, being partly hidden by the basis in 1480-90. In order to discover the existence of this differential and to correlate it to urbanisation, a likely procedure is to calculate the ratio of the nominal urban wage to the nominal rural wage (Figures 3 and 4).

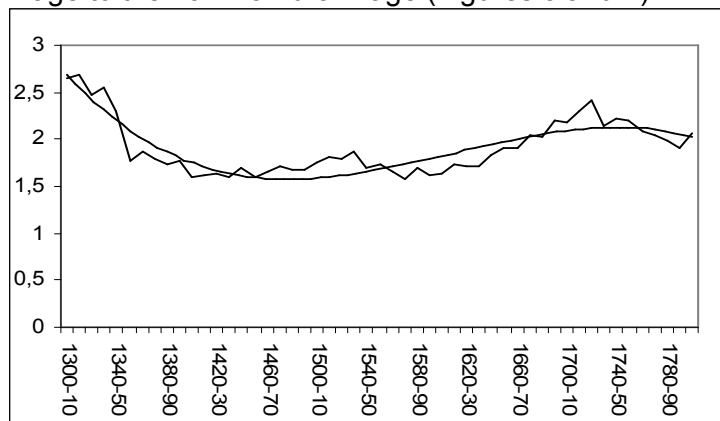


Figure 3. Ratio Urban-Rural Wages England 1300-1800.

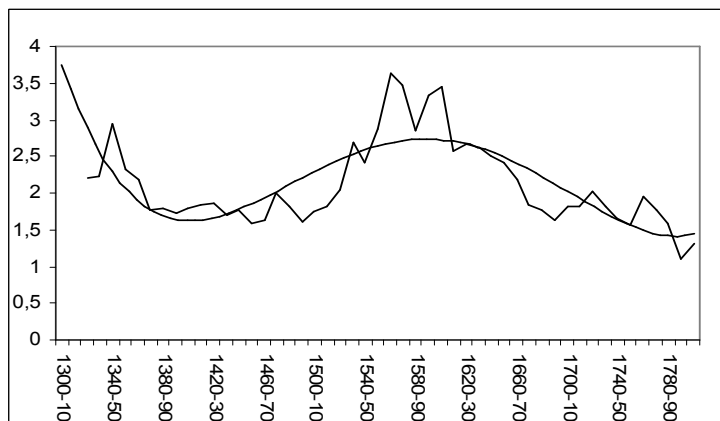


Figure 4. Ratio Urban-Rural Wages Italy 1300-1800.

It would certainly be preferable to deflate real wages for unskilled workers in the cities 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. Since our interest is more in the dynamics of wage differentials than in their level, the lack of this opportunity does not hinder the following analysis.

We see that, both in England and Italy, a mason's wage is, on average, twice as high as a rural labourer's wage. Another similarity is the sudden narrowing of the differential after the Black Death. Let's remember that, although the builder's wage is representative of urban wages on the 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 low indeed. 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 bent trend continued until the mid 15th 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 16th century can be interpreted as the effect of the inelasticity of the labour supply from the countryside due to stagnant or declining agricultural productivity. In the case of Florence, it has been noticed, that this inelasticity resulted in high urban wages, relatively low profits and high prices of the industrial goods. These prices proved hardly competitive with foreign imports.¹⁷ A large differential persisted until the last decades of the century, when, around the year 1600, this began to shrink and determine the decline in the urbanisation rate compared to that in 1500. An outbreak of plague which in 1575-80 hit some Northern cities, famines in 1590-91 and 1596, and again plague epidemics in 1629-30, which struck all of the Central and Northern Italy, 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.¹⁸ In 1861, the urbanisation rate was almost 5 percent points less than in 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 16th century. From 1600 onwards the rising trend resumed. Productivity was growing and this growth was stronger in cities than in

¹⁶ J. G. Williamson, *Inequality, poverty and history*, Cambridge (Mass.), 1991, Chap. 2.

¹⁷ See the still important book by G. Parenti, *Prime ricerche sulla rivoluzione dei prezzi a Firenze*, Firenze 1939 (new edition in Id., *Studi di storia dei prezzi*, Paris, Maison des Sciences de l'Homme, 1981).

¹⁸ 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*.

the countryside. Urban demand was stimulating agricultural productivity and the growth of the latter was supporting increasingly larger cities, as A. Wrigley claimed several times in his essays on the subject. Agricultural progress contributed to keeping the supply of labour from the countryside elastic in stride with the urban demand for workers.

2.6. England, Italy and Europe

Both graphs witness the existence of a correlation with the European trend in urbanisation: the sudden 1400 fall (after the epidemics and due to them); the 15th and 16th centuries' recovery led by growing differentials in wages. We have, however, to notice that, while in the 15th century this rising trend was connected to a 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 witnesses and research on average labour productivity confirms.¹⁹ As we saw, in Italy this decline was parallel to the decline in urbanisation. In England the available information does not allow to notice if urbanisation slowed down for some decades after 1570.

In the long term, England and Italy represent two extreme tendencies of urbanisation in the continent, the other European regions finding their place as intermediary examples. The Netherlands are similar to England in the 16th and 17th centuries (but similar to Italy in the 18th century, when their urbanisation rate declines); Spain and Portugal share the Italian trend, but grow more rapidly in the 16th century, which is their Golden Age; the Balkans' increase by the quick growth of Istanbul as a centre of the court that attracts population which finds employment in services and the depending jobs; the same is in part true of Southern Italy and Spain, where, in any case, the existence of many agro-towns, growing just from the 16th century on, makes the data unreliable and hard to compare to those from other countries...

3. A Two-Sectors Model

3.1. Two sectors

As mentioned before, urbanisation is a special case of migration. It can thus be explained by those two-sectors models that are used in economics to describe the mobility of labour and capital between different countries. An adaptation of the model is, however, necessary when it is to be used to analyse city-countryside relationships in a pre-modern economy.

¹⁹ R. 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 as it is to a particular usage, it can not 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).²⁰

For the following development of the model, it is important to point out that the demand for textiles is highly income elastic, whereas that for cereals is inelastic.

3.2. City-countryside

Figure 5 represents marginal labour productivity in both sectors (on the axis of the ordinates) as a function of the percentage of labour employed (on the axis of the abscissae). 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.

In E the equations (3.3), (3.4) and (3.5) are satisfied and the equilibrium exists. The level of wages is the same in both sectors ($w_i = w_a$) since the mobility of labour equalizes productivity and

²⁰ Equalizing total labour 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 city-countryside wage differential exists and it constitutes the force of attraction of the peasant population to the urban centre. In the figure, the differential is represented by the base of the triangle with its vertex in E , and then by the difference between w_{i1} and w_{a1} . The area of the triangle increases when city-country productivity differential widens.

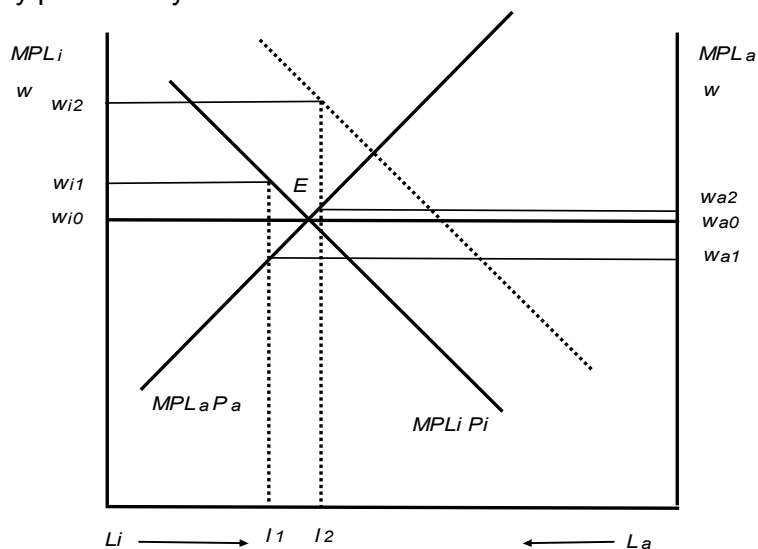


Figure 5. A two-sectors economy: growth.

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

3.3. Growth

Before the modern structural change, a much higher percentage of workers were 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 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.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

²¹ W. A. Lewis, Economic development with unlimited supply of labour, in A.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 higher rise in industrial productivity and by the inelastic demand of 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 localized in urban centres. Although this assumption corresponds to the reality in 19th-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 separation. The interplay becomes more complex. For the period I am dealing with here, the presence of industrial activities in the countryside, although sometimes important, did not play a decisive role.

Whenever the supply of labour in agriculture is elastic due to the presence of low productive or unproductive workers or to the rise in productivity which frees the labour force, since fewer workers are now able to produce what many more produced previously, the straight line MPL_i/P_i moves further to the right. If, by 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 the 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 stationary nature of agriculture can compromise the possibilities of growth and turn the terms of trade against the advanced sector. The expansion of 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 during the last two centuries: innovations in industry were accompanied by a flow of workers from agriculture to the cities in search of employment in the new expanding sectors of industry and services. Productivity also rose in agriculture, this resulting in an increasing elasticity of the labour supply to the industrial sector. Urbanisation, industrialization and structural change were developing at the same time and transforming the organization of the economy and society.

However, such a development played a role in pre-modern economies as well. The remarkable growth of London and other English cities between 1650 and 1750 can be considered as a case of ur-

banisation led by deep changes in urban and rural productivity.²² English urbanisation on the whole closely follows 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, that is, for which we lack direct information both on wages and urbanisation.

Because the demand for primary goods is anelastic to changes in the level of income, the 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 in respect to both sectorial employment and its contribution to the national product.

3.4. Decline

What does it happen if, by contrast, labour productivity declines? The answer is that commonly the opposite will occur (Figure 6).

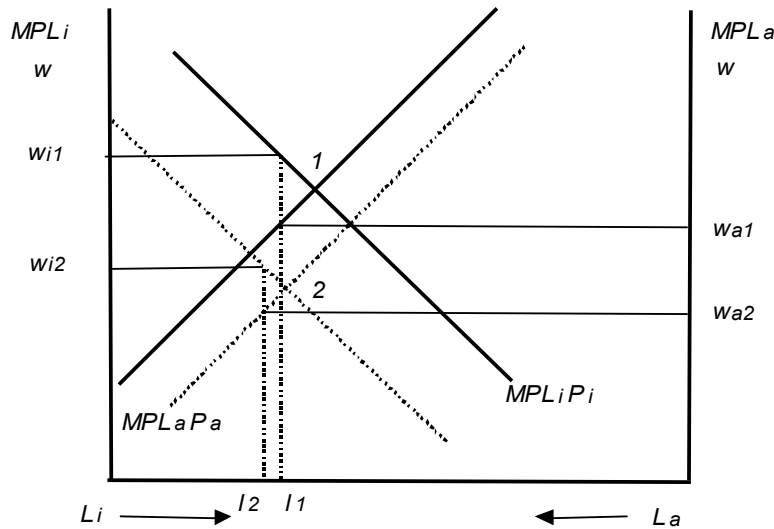


Figure 6. A two- sectors model: decline.

Let us assume a decline of capital or resources or both per any worker as the cause of the decline in productivity and then a displacement of the MPL_aP_a line to the right. The consequences are:

1. a fall in per capita output on the whole, since agriculture is by far the most important sector of the economy;
2. the curve of industry MPL_iP_i moves to the left because the demand of secondary goods is elastic to changes in income and the decline in per capita GDP causes a de-

²² I refer to the important article by A. Wrigley, A simple model of London's importance in changing English society and economy 1650-1750, in: Past and Present, 37, 1967.

- cline in demand for manufactured goods. The new intersection is now in point 2;
3. employment in the cities diminishes (from the abscissa l_1 to l_2). The result is a structural change, that is the ruralisation of the economy on the whole;
 4. the urban-rural gap in wages diminishes because of the fall in the demand of secondary goods, as we see in the difference between w_{i2} and w_{a2} , inferior to 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 secular basis, do not enable us to notice a slackening in the flow of the rural population towards the cities. 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 growth in productivity both in the cities and countryside. According to this opinion, increasing urbanisation indicates that urban sectors attract workers and are progressing, and that relatively fewer agricultural workers are able to support a higher percentage of people not employed in the primary sector (they are then more productive). This, however, is not necessarily so.

We have seen in the case of growth that productivity rises and urbanisation rises contemporaneously. In the case of decline, productivity declines, as does urbanisation. In the 16th century the movement of wage rates witnesses a decline in productivity as regards to the previous century, but, at the same time, a rise in urbanisation. The explanation is that, in the period we are examining, the decline in labour productivity occurred both in agriculture and urban sectors, but in urban sectors the decline was lower, and the gap in wages continued to attract workers from the countryside towards the cities. In this case the previously mentioned differential w_u/w_r widened because of the higher drop in the denominator of the ratio and urbanisation, therefore, continued to rise. Our modern world witnesses many cases of huge urban growth in presence of very low levels of labour productivity in agriculture. People move to the cities simply because there is no opportunity of employment in the countryside.

In the event of full employment both in the cities and countryside, this development would be impossible. In this case, in fact, a displacement of workers from agriculture towards industry would imply a rise in agricultural prices, since the demand in the cities would increase (more consumers and fewer producers of agricultural goods),

as would increase labour productivity in the countryside (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 again by the 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. A rise in urbanisation is likely to occur as a consequence of the migration to the cities of low or non-productive workers from the countryside looking for some form of occupation or living on charity. In this case, the migration of unemployed workers from the countryside results neither in an increase of agricultural productivity, nor in an increase of agricultural prices, as we would be expected in the case of full employment. The curve relating to agriculture displaces itself towards the right, where productivity and wages are lower. Migration flows towards the cities also result in a diminution of productivity in the urban sectors as well. Real wages drop both in agriculture and the cities, but in the dualistic pre-modern economy secondary and tertiary occupations are, however, relatively more dynamic and wages differential widens.

In Figure 7, while both curves of marginal product 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 higher urbanisation. As we see, a drop in agricultural and non-agricultural productivity can result in a rising urbanisation. This is the reason why in the European 16th century dualistic economy urbanisation rose while productivity was declining.

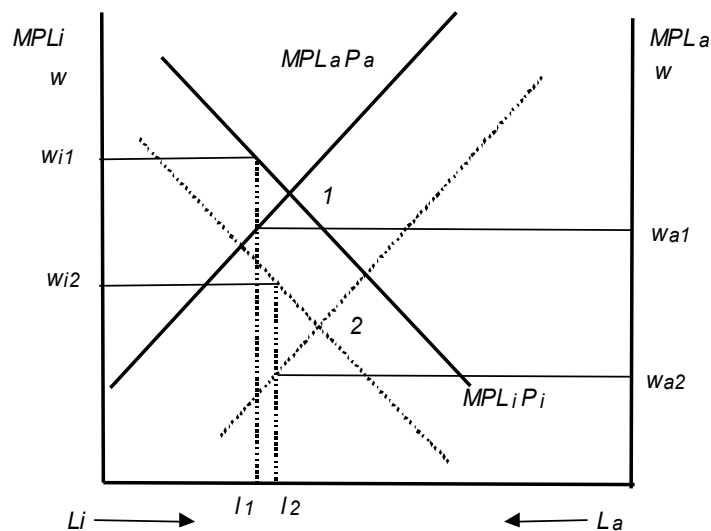


Figure 7. A two-sectors economy.

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

Growth implies the movement of both curves of demand towards the right, and then increasing productivity, structural change in favour of industry and urbanisation. Decline means, on the contrary, the displacement of both curves of demand towards the left of our graph, 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. Low labour productivity in agriculture can, however, imply, as we have just seen, a rise in urbanisation.

As already said, the 15th and 16th century English and Dutch economies follow the first of these two paths, while, from the second half of the 16th century, Italy follows the second. As may be observed in Figure 5, the increase in output per worker during the 15th century resulted everywhere in Europe in a rise in urbanisation throughout Europe. The upward trend in urbanisation continued even in the 16th century, although, as the trend of wages reveals, productivity was diminishing. In most European regions, the economy was displacing itself towards the point 2 of our Figure 7. The unemployed were moving from the countryside towards the cities in order to find employment or to live on charity. Several social historians have often stressed the rising presence of poverty within the cities from the 16th century onwards. The process of urbanisation was, in any case, beginning to stagnate and stagnation characterized the European urban system until the onset of modern growth in the 19th century.²³

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 some relationships among the variables involved; and finally to explain these relationships. The results of this analysis are:

1. the European trend of urbanisation is not declining from 1400 until 1600, but rising;
2. a relationship exists between urbanisation and the interplay of urban and rural productivity, investigated through the wage differential in England and Italy;
3. although this relationship can not be tested statistically, it can be tested theoretically and fits well into a classical and neoclassical framework.

²³ As noticed by A. Wrigley, "The great commerce of every civilized society": urban growth in early modern Europe, in: Id., *Poverty, progress, and population*, Cambridge 2004.

The previous reconstruction, however, rests on various assumptions which a microeconomic historical approach could clarify, especially from a short-run perspective. I merely mention some of these assumptions:

1. labour from the countryside is free to move, but we know that institutions can interfere and hinder this movement. On the other hand, institutions play an important role in the cities themselves and then favour or hinder contending economic forces;
2. for different occupations requiring the same skill, forces of demand and supply tend to equalize wages, both within the cities and between towns and countries . 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 as recording immediately the economic forces at play, but we know that, at least in the short run, it is not so and market imperfections play a major role;
4. transaction costs change, over the long period which interests us, and this change may influence the working of city-countryside relationships;
5. decline in local industrial demand 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 considered to play 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 powers and social forces on the economy, dear to micro and institutional research, has to be integrated into the macro approach. While the macro perspective permits the singling out significant changes, the micro approach can contribute to more detailed specification of the dissimilarities among different economic systems and their special features.

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

Appendix

The following series are based on a revision of both data 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 the 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 markets, 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 cities, 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 (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 | 9,000 | 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 | 82,850 | 107,050 |
| EUROPE (without Russia) | 4,983 | 78,700 | 56,850 | 67,850 | 91,050 |

Note: data in the Table refer to the European population within the 1870 political borders. The extent of any country or area is recorded in the first column. Poland is in 15th century borders. Austria includes: Hungary, Boemia, Croazia, Slavonia, Transilvania. Balkans include: Greece, Serbia, Montenegro, Bosnia-Erzegovina, Rumania, Bulgaria, Crete, the European part of Turkey. Iceland, Malta and some minor islands are excluded.

Sources: among the following works, only Uralanis provides data on a country basis for all our period and for any country: M. Reinhard, A. Armengaud, J. Dupâquier, Histoire générale de la population mondiale, Paris 1968 (all countries); B. T. Uralanis, Rost Naselenie v Europe, Moscow 1941, 414; R. Mols, The European population in the 16th and 17th century, in: C. M. Cipolla (ed.), The Fontana economic history of Europe, II, The 16th and 17th centu-

ries, Glasgow-London 1974, 15-82 (early Modern; several countries); Wilson, Parker (eds.), *An Introduction to the Sources of European Economic History 1500-1800*, 1, Western Europe, London 1977 (some countries; early Modern); De Vries, *European urbanization*, 36-7 (Western Europe); J. C. Russell, *Late ancient and medieval population*, Philadelphia 1958 and Id., *European population 500-1500*, in: C. M. Cipolla (ed.), *The Fontana economic history of Europe*, Glasgow-London, I, 1973; A. Wrigley, R. S. Schofield, *The population history of England 1541-1871*, London 1981 (England from 1541); J. Beloch, *Bevölkerungsgeschichte Italiens*, Berlin-Leipzig 1937-61 (Italy 1300-1800), J. Bardet, J. Dupâquier (eds.) *Histoire des populations de l'Europe*, Paris 1997 (several countries); A. Maddison, *The World economy. A millennial perspective*, Paris 2001; Id., *The world economy. Historical statistics*, Paris 2003 (several countries); J. De Vries, A. Van der Woude, *The first modern economy. Success, failure, and perseverance of the Dutch economy, 1500-1815*, Cambridge 1997 (first Dutch ed. 1995)(the Netherlands); C. Alvarez Nogal, L. Prados de La Escosura, *La decadencia spagnola nell'Età Moderna*, in: *Rivista di Storia Economica*, n.s., XXII (2006), 59-89 (Spain); N. Valerio, *Portuguese historical statistics*, Lisboa 2001 (Portugal); C. Mc Evedy, R. Jones, *Atlas of world population history*, New York 1978 (several countries); D. V. Glass, E. Grebenik, *The world population 1800-1950*, in H. J. Habakkuk, M. Postan (eds.), *Cambridge Economic History of Europe*, VI, Cambridge 1965 (several countries); R. Woods, *Population growth and economic change in the Eighteenth and Nineteenth centuries*, in: P. Mathias, J.A. Davis (eds.), *The First Industrial Revolutions*, Oxford 1989 (early Modern United Kingdom); B. M. S. Campbell, *Benchmarking medieval economic development: England, Wales, Scotland, and Ireland*, in: *Economic History Review*, II s. (forthcoming)(England 1300).

**Number of cities
(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 (000)
(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 |

Urbanization rates (%)
(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 | 5.0 | 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 |

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.