QUANTIFYING THE GRECO-ROMAN ECONOMY AND BEYOND

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LONG-TERM QUANTIFICATION IN ANCIENT HISTORY: A HISTORICAL PERSPECTIVE

Ancient history is a very vibrant academic topic whose recent evolution we may tentatively resume as follows: in the aftermath of WWII, economic and social issues were at the centre of the agenda throughout all historical studies. The type of studies popularized by the *Ecole des Annales* spread widely. It has been noticed that, in France notoriously, this methodological turn first concerned Middle Ages and Modern Times which offers a good conjunction between 'le trop et le pas assez'; indeed, the Middle Ages provided enough to quantify but fortunately not to the point of being buried by numbers and prevented from developing models. Books entitled 'Economy and society' flourished everywhere. They dominated research during the 1970s and most of the 1980s.

Then came the so-called 'cultural turn' of the late 1980s and the 1990s.[1] Book titles changed and there was a proliferation of studies questioning cultural identities, among which the much explored relations between centre and periphery, now became emblematic if not caricatural, of research undertaken in the 1990s. This change, whose roots were largely Anglo-Saxon, benefited from the academic proximity of ancient historians to anthropology and other social sciences.[2] It is worth noticing that many of the so-called postprocessual archaeologists proved to be strong supporters of cultural history as a reaction against the mathematical world processualists tried to impose. As a result, cultural history not only played down the role of economics but also and more generally the use of numbers, as far as we may oppose them to models.[3] Qualitative information was looked for before quantitative information (Potter 1996). So,

[1] See 'Introduction', in Bang, Ikeguchi & Ziche 2006, 8-9.

[2] On cultural history in general, see *e.g.* Melching and Velema 1994, Poster 1997, Burke 2004, Poirier 2004 and 2008; on applications to the Greek world, see *e.g.* Morris 1999 (through archaeology) and Kurke 1999 (through philology).

[3] On models *versus* numbers, see *e.g.* Ziche 2000.

reinserted in a larger context, the flurry of conferences on ancient economies appears as something out of the main stream.

It is not exactly clear what will be the next turn, although we may be sure that environmental preoccupations will rise dramatically, as they have already started to do. The quest for a sustainable world is likely to affect some paradigms and it will be interesting to see how, in particular, interest in economic growth will evolve, very probably redefined as an interest in well-being. 'Sustainable happiness', admittedly an oxymoron, is not on the agenda. Still the history of happiness is an attractive field with a growing number of practitioners[4] while quantified happiness even has a centre in Rotterdam under the leading force of Ruut Veenhoven, the director of the *World Database of Happiness* and the editor of the *Journal of Happiness Studies*.

1. *Long-term*

Long-term studies are expected to increase in numbers and scope, largely as a result of the immense progress made in ancient history. In addition, in a globalized world rapidly losing its local peculiarities, and with the negative reactions this situation creates, historians are asked to seriously investigate behind the motto "all different, all the same". This very much promotes comparative studies, both synchronic and diachronic. Two specific journals have been created in recent times: the *Journal of World History* in 1990 and the *Journal of Global History* in 2006 (with no specific article so far dealing with European classical antiquity). Cross-culturality and long-term are key themes for many universities and museums, and sympathetic words to be used in order to get public funding. Again, enlarging the scope this quest for universality has inscribed itself in a natural tension and a swing of the pendulum, with the opposite position, whatever the name describing it, relativism, nominalism or even minimalism, favored by cultural history. It very much appears as a succession of disenchantments where the fall of some ambitious theories prompts a withdrawal to case-studies as the place where real knowledge is best to be expected, only to generate, sooner or later, a need for a more comprehensive understanding. Archaeology is another example. The archaeological pendulum, it has been argued, oscillates between rationalism (ambitious processualist reasoning on an universal level) and romanticism (postprocessualist reasoning on a local or national level), with a not recent disenchantment for the local level.[5] Economists themselves move in a not very different world. Mainstream economics are still dominated by neoclassical

[4] See MacMahon 2006.

[5] See Kristiansen & Rowlands 1998 and the comments by Bardu-Candan 2008.

microeconomics combined with Keynesian macroeconomics. The tension here is between individual freedom and state regulations. It is likely that the global crisis and the 'only one planet' feeling will generate a significant comeback for macroeconomic studies, after two decades of rather triumphant microeconomics. Viewed with some distance, these last decades running through the late 1980s and the 1990s may perhaps be coherently characterized as dominated by a priority given to individual constructions (covering here cultural history, postprocessual archaeology and neoclassical microeconomics) rather than to structural constraints. The context we are experiencing now is different and very much favours both long-term historical and cross-cultural studies. The recent and sudden interest in a comparison between the two world empires which lasted the longest, imperial Rome and the Han dynasty in China, is typical of this powerful trend,[6] as well as ambitious comparisons of wages from antiquity to the twentieth century.[7]

2. *Quantification*

Quantification too has every chance of being more and more used in ancient history and that for four main reasons: 1) it is comparatively new; it is supported both 2) by a massive production of new data coming from the archaeological world and 3) a spectacular development of scientific tools; 4) last but not least, quantification is no longer taken as only a modern technique to investigate (or to lie); it has been recognized as a topic of investigation itself with a key role in the development of the global Western culture we are living in.

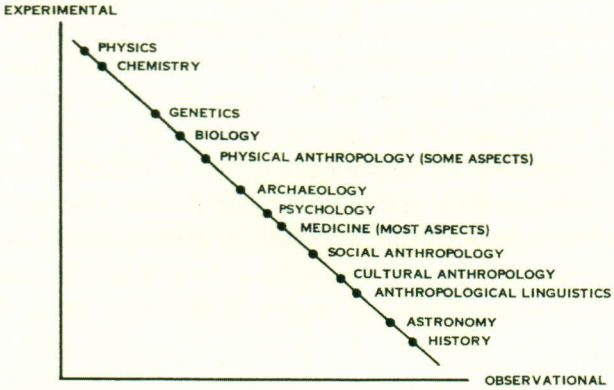
1) The humanities were slow to adopt quantification, slower than the social sciences which were themselves slower than the natural sciences despite some brave pioneers here and there (writing in Brussels, how not to evoke the gigantic figure of Adolphe Quételet [1786-1874], who founded modern statistics in the middle of the 19th c.?).[8] And, within the humanities, history was not first, coming

[6] Mutschler & Mittag 2008 and Scheidel 2009.

[7] Lucassen 2007.

[8] Among the vast bibliography of Adolphe Quételet, it is enough to quote: *Recherches sur la population, les naissances, les décès, les prisons, les dépôts de mendicité etc. dans le royaume des Pays-Bas*, 1827 ; *Instructions populaires sur le calcul des probabilités*, 1828 (translated into English in 1839) ; *Recherches statistiques sur le royaume des Pays-Bas*, 1829 ; *Sur la possibilité de mesurer l'influence des causes qui modifient les élémens sociaux. Lettre à M. Villermé de l'Institut de France*, 1832 ; *Sur l'homme et le développement de ses facultés. Essai de physique sociale*, 1836 (translated into English in 1842) ; *De l'influence des saisons sur la mortalité aux différens âges dans la Belgique*, 1838 ; *De l'influence du libre arbitre de l'homme sur les faits sociaux, et particulièrement sur le nombre des mariages*, s.d. (1847) ; *Sur la statistique morale et les principes qui doivent en former*

well after linguistics for example. This is hardly surprising since history is clearly an observational science to oppose to experimental, as illustrated in a graph published a quarter of century ago by two American archaeologists (Graph 1):



Graph 1. The continuum of the sciences, from experimental to observation. Source: Clark & Stafford 1982, 99, fig. 1.

We certainly may argue about the details of such a classification (an eloquent graph of why scientists may have developed the so-called 'envy for physics'), which conveniently attributes to archaeology a central place, but we would not really argue about its main framework.

It is no accident that, in the book edited by Harry Woolf in 1961 *Quantification: A History of the Meaning of Measurement in the Natural and Social Sciences*, there is no chapter devoted to history or to any other disciplines of the humanities. Books about quantification in history started to appear in the 1970s[9] and their impact remained limited in comparison with quantification in linguistics or archaeology.[10] An unquantified statement in economics or sociology raises eyebrows; the opposite was long true in ancient history where quantified statements were greeted with suspicion,[11] even if no longer with the hostility that quantification prompted in the

la base, 1848 ; *Physique sociale ou essai sur le développement des facultés de l'homme*, 1869 ; *Anthropométrie ou Mesure des différentes facultés de l'homme*, Brussels, 1871.

[9] See Swierenga 1970, Bouvier 1972, Floud 1973, Kurgan & Moureaux 1973, Jarausch 1976, Clubb & Bogue 1977, Lee 1983 – see also Aydelotte 1966 [an article] and the recent manuals by Hudson 2000 and Feinstein & Thomas 2002.

[10] For quantification in archaeology, see Clark & Stafford 1982, Aldenderfer 1987 and 1998, Shennan 1988 and Jones & Leonard 1989.

[11] The gap is filling but is still important. In a recent book about the economy of ancient Athens, Takeshi Anemiya, professor of economics at Stanford University, is not embarrassed to disqualify Finley's ideas about the ancient economy as mere cultural relativism (Anemiya 2007, 58-61) while, conversely, it would be tempting for professional classical historians to consider that the ignorance of the author on the topic is too great to accord him a serious reading.

1960s and the 1970s.[12] Founded in 1986, the periodical *Histoire & Mesure* (Paris, École des Hautes Etudes en Sciences Sociales) illustrates the change of mentalities.

On the facade of the University of Chicago's Social Science Research Building, whose community of academics is classified first in the world ranking for social sciences, one finds the often repeated 1883 motto of Lord Kelvin, a physicist (William Thompson, 1824-1907), chiseled in stone: "When you cannot measure, your knowledge is meager and unsatisfactory".[13] We know the no less famous rebuttal of Frank Knight, an economist, applied to the social sciences "If you cannot measure, measure anyhow".[14] Suspicion that numbers are of no use to real social understanding was a dominant belief among the community of historians trained to work with texts. They argued and still argue that, to quote a highly debatable statement of Moses Finley: "it is impossible to infer social arrangements or institutions, attitudes or beliefs from material objects alone".[15] He then continues: "None of this is an argument against more and better quantification of evidence. But it is an argument against the view, sometimes expressed explicitly, that what cannot be quantified cannot be dealt with at all, that only quantification produces 'scientific' (as distinct from 'subjective' or 'ideological') analysis and results" (*ibid.*). At that time, he was reacting against David Clarke and the Young Turks of the so-called New Archaeology.

2) This suspicion derives from what was, still thirty years ago, nearly an article of faith in Greco-Roman history: numbers are lacking.[16] The authority of Moses Finley was here decisive and endorsed by many: 'One of the major gaps in the study of Greek economic history is the lack of reliable statistical data, and the consequent impossibility of any detailed statistical approach to the subject' wrote Michael Austin and Pierre Vidal-Naquet.[17] One could admittedly argue this in the 1970s, although primitivists already forced the point in order better to impose the prominence of models over numbers, but it is no longer sustainable today. Classical history was, 'par excellence' and for long the stronghold of philologists. Nowhere was the supremacy of texts over artifacts so strongly asserted. The 'quarrel of antiquarians' which emerged at the end the 17th c. and flourished during the 18th c. (but with roots and clear statements well before that date), has not gone away. We

[12] On this dated hostility, see Ritter 1986, 351-354 (*s.v.* 'Quantification, quantitative history') and more specifically Barzun 1974, Bogue 1983 or Fitch 1986.

[13] Merton, Sills & Stigler 1984.

[14] Quoted in Kuhn 1961, 177-178 and 183.

[15] Finley 1986, 93.

[16] Finley 1985, 24-6 and 35.

[17] Austin & Vidal-Naquet 1977, 28. See Bresson 2007, 21 : « La tradition de Weber et Finley … s'est caractérisée naturellement par le refus de décrire l'économie antique comme un système intégré et, accessoirement, par la minimisation des quantités ou le refus systématique de quantifier, même dans les trop rares occasions où la documentation antique l'autorise ».

may all agree that good historians are those who don't neglect any kind of ancient evidence relevant to their topics, nor modern technical tools likely to improve our knowledge. It turns out that to write history nowadays, even Mediterranean classical history, requires a spectrum of skills which goes far beyond philological skills. Furthermore, improvements of our general knowledge about past societies during the last decades didn't come mainly or foremost from philology. Here is a major shift: although it was still supposed during most of the 20th c. that the best historians were firstly trained philologists who could be at ease with other disciplines, this model looks seriously in doubt since the level of difficulty seems to have been reversed. When well financed and conducted, modern excavations are used to combine the expertise of dozens of specialists as exemplified by the worldwide team of the Flemish excavations of Sagalassos in Turkey. After centuries of translations and commentaries, ancient texts offer easier access to non-philologists than recently excavated and published *realia* do to philologists. Or, to rely on the personal experience of one of our speakers who has been trained both as an historian (meaning a good philologist) and as an archaeologist: there is no fundamental change in the way he is teaching history now to compare with the way he learned it some twenty-five years ago while, teaching archaeology, nearly nothing subsists of what he was told at the beginning of the 1980s and the challenge to keep up with modern practice every year is not small.

There is no question that archaeology with its many facets is playing an ever greater role in the global reconstruction of the classical past. Emblematic is the fact that, in terms of impact on Roman history, the *Journal of Roman Archaeology*, created in 1988, may now claim to have superseded the *Journal of Roman Studies*, created in 1911. At the same time, we should express some concern about a predictable lack of philological expertise tomorrow. The number of classical philologists has dropped severely and a substantial proportion of them has been attracted by linguistics. This is very embarrassing since there is no question either that a correct understanding of written sources, when they exist, remains of primary importance for writing history.

3) It is not only the amount of data which increased dramatically during the last decades. The tools at our disposal to question these data have also been enhanced and refined in a range which would have astonished the preceding generation. Moses Finley wrote in an age where there was no question of Greenland ice cores or DNA, to take just two fine examples. Atmospheric pollution trapped in Greenland ice (and elsewhere) is no longer a novelty for the ancient historian even if there is much more to do with it.[18] Ancient DNA (aDNA) is even more promising. It revolutionized paleoanthropology and it is massively coming in the classical

[18] See Callataÿ 2005 and Wilson 2009.

field. It has enhanced our understanding of social habits (such as infanticide)[19] and collective diseases (such as malaria, or plague).[20] It is not only about human bones and anthropometrics;[21] it also concerns animals and their trade (where do they come from?)[22] as well as organic remains found in amphorae.[23] Molecular archaeology is truly reshaping our way to write history and we may think, with Michael McCormick, that we are just at the beginning of the process. Signs that scientific archaeology is become of paramount importance are many. Several periodicals succeeded in establishing themselves as standard references (such as *Archaeometry* [founded in 1958], *Revue d'Archéométrie* [1976], *Geoarchaeology* [1986] or *Archaeological Prospection* [1995]) and the *Journal of Archaeological Science*, created in 1973, now claims to be the leading archaeological journal overall in term of impact.[24]

More than by a pendulum between theoretical trends affecting ways of thinking, between numbers and models, between macro and micro or the like, it is to think that practice of Greco-Roman history has been more modified in a linear way by the simple conjunction of the amazing increase in our factual evidence combined with the no less amazing improvement of our techniques for investigating this evidence.[25]

4) A fourth and last reason why we should see the development of quantification among historians is that it has been – but only recently – recognized itself as an important topic for historical research. Progress in counting and measuring matter hugely in the way societies developed, as illustrated by several seminal studies published in the 1990s: books have been devoted to the quantification spirit of the 18th c.[26] or quantification as a key element of Western development.[27] Recently, Angus Maddison found it appropriate to devote two chapters of his book about the world economy from the Romans up to now to the "Advances in Macro-Measurement since 1665",[28] recalling at length the great British names[29] of what

[19] See Faerman 1998, Mays & Faerman 2001.

[20] See Sallares 2002 for Malaria and Little 2008 for plague.

[21] For ancient Greece, see Schepartz, Fox & Bourbou 2009.

[22] See Arndt 2003.

[23] Hansson & Foley 2008.

[24] On an historical view of its content, see Edwards 1983 and Butzer 2009.

[25] And that holds true for any kind of history, including cultural historians: Miller 2007, 4: "What changed in the twentieth century and especially in its second half, to raise the prominence of cultural history was the increasing number of sophisticated tools the scholar had at his or her disposal for plumbing the depths of past. … scholars now have at their disposal the elaborate methodologies, and secondary literature, of art history, archaeology, anthropology, economic history, sociology, and history of religion, as well as quantitative approaches once barely conceivable".

[26] Daston 1988 and Frängsmyr, Heilbron & Rider 1990.

[27] Crosby 1997.

[28] Maddison 2007, 247-332.

[29] For a less British-oriented view, see Horvàth 1978.

were long called "political arithmetic' (William Petty, John Graunt, Gregory King and Charles Davenant among others). One should notice that this literature has been criticized as a Western-centred vision promoted to legitimate some historical European superiority.[30] The French periodical *Histoire & Mesure* has often investigated the basic fact that measurement is rarely neutral, all the more when those who count feel differently from the ones who are counted.[31]

Moreover, besides history, the history of quantification has now been explored in many fields.[32] The history of statistics and probabilities themselves is emerging as a new (sub)field of knowledge with an online periodical founded in 2005 (*Electronic Journ@l for History of Probability and Statistics - Journ@l électronique d'Histoire des Probabilités et des Statistiques*) and a revered founder, Ian Hacking.[33]

3. *Long-term quantification in ancient economics*

The introduction to the recent *Cambridge Economic History of the Greco-Roman World* ends with the following sentences: "This emerging account of the Greco-Roman economy, we believe, is an advance over twentieth-century interpretations. It improves on substantivist approaches by providing crude statistics on economic performance, but it also goes beyond both sides in the old primitivist-modernist debate by developing general theoretical models of ancient economic behavior and putting them in a global, comparative context. It recognizes that classical antiquity saw one of the strongest economic efflorescences in premodern history, but keeps this in perspective, refusing to confuse the ancient economy with the modern. In short, it takes seriously Douglas North's injunction to explain the structure and performance of economies through time".[34]

This is exactly where we are supposed to be: a) at last, the debate between primitivists and modernists is over;[35] b) even if our statistics are rough in the extreme for a modern economist, they are robust enough to say something valid,

[30] Hart 2000.

[31] See especially *Histoire & Mesure*, 13 (1-2), 1998 (*Compter l'autre*). The list of the special issues of *Histoire & Mesure* is interesting to observe. It starts with climate (3 [3], 1988), archaeology (4 [1-2], 1990), economic thinking (7 [1-2], 1992) and demography (8 [1-2], 1993) while recent issues have been devoted to *Mesurer le texte* (18 [3-4], 2003) and *Art et mesure* (23 [2], 2008). See also Desrosières 2008.

[32] For economics, see Rima 1995 and Porter 2001; for psychology, see Michell 1999; for sociology, see Lazarsfeld 1961)

[33] See Hacking 1975, 1981 and 1991. On the works of Hacking, see Desrosières 2006.

[34] Morris, Saller & Scheidel 2007, 11-12.

[35] See also Bresson 2007, 36.

namely that the millennium 800 BCE-200 CE was characterized by a modest but effective and aggregate growth even if this growth cannot be compared with our world; c) new models have been implemented and the reference to Douglas North is an explicit allusion to New Institutionalism.

This prompts some comments. First, it is right that substantivists, starting with Finley, disliked numbers, even when they existed.[36] But this rejection grew up during the second part of the 20th c., possibly as a dyke against the accumulated evidence of archaeology. The original primitivists liked numbers very much. Karl Bücher (1847-1930), the alleged father of primitivism, started his academic career in 1882 holding the chair of Ethnography, Geography and Statistics at the university of Dorpat (now Tartu), where he focused mainly on statistics. He quickly accepted a position at the university of Basel where he occupied the chair of Economics and Statistics and eventually became president of the Swiss Society for National Economy and Statistics (*Schweizerische Gesellschaft für Volkswirtschaft und Statistik*).[37] Gustav Schmoller himself (1838-1917), the leading figure of the German historical school of national economy, made a pioneering work in historical statistics. He is even considered as a precursor of cliometric studies.

A second comment would be about the New Institutionalism which has massively emerged in studies of the ancient economy since the eve of the 21st century (see *e.g.* Manning 2003). It is not the only 'general theoretical model' which was imported in the field. Game theory is another one, best exemplified for Greek history by the recent and major books of Alain Bresson, *L'économie de la Grèce et des cités* and Josiah Ober *Democracy and Knowledge*: *Innovation and Learning in Classical Athens*.[38] But the actual success of New Institutionalism (and related themes like transaction costs) is such that it dominates the current literature. This is not surprising since it seems to offer a form of reconciliation between those who think that economy leads the world (let us say the modernists) and those who argue that society prevails on economy (let us say the primitivists).

Now, New Institutionalism is not exactly neutral: it is an inside critic of neoclassical mainstream economic thought while the institutionalism of Veblen or Commons (somewhat rediscovered now but long taken as on the fringes) is a

[36] See *e.g.* Bresson, 2007, 21 (« La tradition de Weber et Finley se distingue certes du primitivisme à la Bücher. Mais, pour des raisons de méthode évoquées, elle a inévitablement été conduite à des prises de position semblables à celles des primitivistes. Elle s'est caractérisée naturellement par le refus de décrire l'économie antique comme un système intégré et, accessoirement, par la minimisation des quantités ou le refus systématique de quantifier, même dans les trop rares occasions où la documentation antique l'autorise ») and Tran 2007, 14-15.

[37] The society was founded in 1864 by Bruno Hildebrand (1812-1878), the well know economist whose work is a severe critic of classical economy and especially of Ricardo.

[38] Bresson 2007-2008 and Ober 2008.

radical critic from outside. Central for new institutionalism are the concepts of maximization and of natural equilibrium (the so-called 'invisible hand'), the same that we find at the very center of neoclassical economics oriented towards the market and the formation of prices, but rejected by the institutionalists old and recent (*e.g.* Amartya Sen or Warren Samuels). In other words, the actual success of new institutionalism in studies of the ancient economy looks like the acceptable form of compromising victory which the now more numerous modernists impose on the orphaned post-substanvitists. However, room is open for a reaction, which means another compromising model but with stronger anthropological and sociological accents. All the more as we may wonder if the gentle critique that New Institutionalism is making on mainstream orthodoxy (tolerated because gentle) will not prove to be inadequate in a world seriously shaken by the present global crisis. The 'old debate' is not totally dead…

In addition, New Institutionalism is a general model which tries to explain structures favoring thus static analyses. Clearly every situation is the result of an equilibrium but we may either seek to explain the equilibrium or to examine why this equilibrium was sooner or later replaced. In this respect, it is worth reporting some recent studies on the sociology of quantification itself. Numbers may be orchestrated to describe the past or to forecast the future. And, describing the future, they can be used either offensively or defensively. It has been recently and convincingly argues that the perspectives of European statistics (and we may enlarge to the Westernized world) have changed.[39] Yet thirty years ago, it was above all a question of redistributing the fruits of economic growth, favouring henceforth projective statistics. Statistics have now become more static: they are mainly conceived to compare established results in order to determine priorities. Good governance, benchmarking and rankings of all types are aimed less to project ourselves in the future than to defend our gains. New Institutionalism, the sociology of quantification and, again, the quest for a sustainable world: it may well be the case that we have entered a less dynamic world, not the real one which is constantly accelerating but the one described by statistics, and it is better to be aware of it. Yet at the end of the 18th c., the German historian August Ludwig von Schlösser described history as statistics in motion and statistics as static history ('eine stillstehende Geschichte').

A third and last comment is about long-term comparative studies. The simple act of comparison involves an implicit recognition that the things compared are of an equivalent nature (hence the historical susbstantivist fear of numbers). But this is not always the result looked for. Numbers may be also intended to inspire otherness, as the reports of the United Nations Development Programme (*UNDP*)

[39] Ssee Desrosières 2008 and Espeland & Stevens 2008.

used to do in order to illustrate the gap between extreme richness and extreme poverty. We may calculate that the cost to produce air-conditioning for the city of Houston alone – thus, cold for the rich– is about equal to the combined GDP of the 30 poorest countries in the world.[40] Similarly, we are reminded in the introduction to the *Cambridge Economic History of the Greco-Roman World* that, converted to wheat equivalent (a very weak converter), the full budget of the Roman Empire at its peak was inferior to the one of a leading American university today.[41] In other words, the gap between Roman Imperial economy and our world would be such that the quantitative difference looks definitely like a qualitative one.[42] Where substantivists are finally saved by numbers…

What we really need, however, are not two points only for a comparison we may endorse or reject. What we really need are either true diachronic comparisons (all the points on the line) or synchronic (enough points at a certain moment to qualify a system). The 'enough points' strategy is the one developed by Alan Bowman and Andrew Wilson for the Oxford Roman Economy Project with four identified fields for which they hope to increase our knowledge of existing quantified information: demography (including settlement patterns and urbanization), agriculture, trade and mining (including coinage).[43] Bones (especially the length of the long ones), atmospheric pollution (especially copper and lead pollution), dated pieces of wood and shipwrecks may be used as well, although with caution to be sure, as demonstrated by Willem Jongman for the crisis of the 3rd c. AD.[44]

Diachronic comparisons are difficult by nature: they need first to agree about the best common marker, whatever it could be: a weight expressed in grams of silver or in wheat rations, the time needed to acquire basic food, etc. It is yet not easy to determine how prices have evolved through centuries for the same commodities but it is even more difficult to perceive the fluctuating role of these commodities in the daily life.

But despite conceptual and practical difficulties, research is progressing rapidly, framing our hypotheses in a much more limited scope of possibilities.

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[40] Morgan 1996, 136.
[41] Morris, Saller & Scheidel 2007, 10.
[42] See Saller 2002.
[43] Bowman & Wilson 2009, 53-68.
[44] Jongman 2007.

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