Summary
The textile industry was the largest economic sector in pre-industrial society (apart from food). Early-modern textile industry has accordingly received much attention from economic and social historians. Matters are different regarding Antiquity. Prevalent models in Ancient History caused the textile industry to be underestimated, but ancient historians have now begun to realize the importance of industries in a world of increased urbanization and economic growth. Urbanization increased the demand for cheap products. The increasing prosperity benefitted also the growing ‘middle groups’, neither poor nor rich, whose total consumption was of crucial importance for the development of the economy. Textiles were a vital element of these consumption patterns. Yet we still know very little about the organizational structures of textile production and distribution. Did landowners dominate the textile industry, or did they leave it largely to the many small-scale artisans and merchants?
To what extent was textile manufacture and trade a horizontally and/or vertically integrated sector? Was it a case of integration of production of raw materials, their processing and the distribution of the end products, or did these rather remain separate segments? These questions are central to this research project, dealing with textile industry in Roman Egypt, which is the best documented province of the empire.

Project outline
The demand for textiles in pre-industrial societies was large and socially differentiated. The development (or not) of textile markets and their organization is therefore a good indicator for the modernity or backwardness of pre-industrial economies.

How was the Roman textile market organized and how important was it? Did it reach comparable levels as in Late Medieval and Early Modern Europe (cf. Van Minnen) or should we envisage a predominantly small-scale local production for local markets (cf. Jongman)? Was production predominantly market oriented or was the bulk of production intended for household use? Was there a significant civilian market, or did commercial production rise to the demand of the public and military market?

There is no all-embracing study of the social and economic aspects of the ancient textile industry and of their internal coherence. One important reason for this is undoubtedly the complexity of the topic: the textile industry encompasses many production processes, and one needs to take into account chronological and regional aspects and developments. Therefore, the research proposal is limited to Roman Egypt, which – because of its countless number of papyri –
offers the most promising and fertile ground for research into the textile industry, although this
does not rule out comparison with the textile industry beyond its boundaries.

Motivation
Our regional approach is in line with current views on the ancient economy. The political
unification of the Roman Empire did not lead to a ‘global’ economy, but rather to a
conglomeration of regional economies. The current tendency is to emphasize regional studies.
Horden & Purcell (2000) depicted the Mediterranean during the classical Antiquity and the
Middle Ages as consisting of many micro-regions that determined and influenced each other in
many different ways. However, their thesis has provoked much criticism, in particular their
emphasis on ‘connectivity’ as a crucial characteristic of the relationship between the diverse
micro-regions. Concerning the grain market, Erdkamp (2005) emphasized isolation besides
connectivity, and he argues that there was no integrated market of grain. In his study of market
relationships in general, Bang (2009) underscores this position: in particular the lack of
information and the resulting high risks hampered market integration in the Roman Empire.
Textile industries have an important role to play in this debate: to what degree could one speak of
an integrated market for textiles (to be distinguished between luxury and mass products)? To what
extent were not only the networks concerning textile distribution, but also the production
processes (labor and skills) determined by connectivity vs. isolation?

Textile consumption and manufacture plays a crucial role in recent explanations of the
economic, commercial and technical development of early-modern Europe. De Vries’ concept of
‘the industrious revolution’ explores the evolution of the consumer demand into textile and other
goods in the context of household economy as a crucial element in the emergence of modern
economic structures in Europe (De Vries 2008). The Roman world does have a role to play in this
debate. Did classical antiquity ‘fail’ to develop into modernity despite the presence of a large,
integrated textile market, or did the absence of a significant textile sector rather explain the
different course ancient economic development took?

The research that is proposed concerns the study of a province of the empire that is
undoubtedly among the best documented of them all. Egypt – according to ancient writers
Rome’s main grain supplier – was connected to the Mediterranean world in an economic and
political sense through the Nile and the Mediterranean Sea. To what extent was the trade in
textiles between the regions within Egypt and between Egypt and the outside world characterized
by integration?

The research can take as starting point recent regional studies of the textile industries in
Antiquity. Research into the textile production in classical Greece shows that this activity was
mainly executed within the household (Foxhall en Stears, 2000). Wilson’s analysis of the
production in North Africa during the imperial period points to a completely different situation, in
which numerous small workshops and well-organized textile markets determine the picture
(Wilson, 2001). The epigraphic evidence for the Greek East in the Roman period points to the
presence of textile centers that supplied external markets, such as Laodicea, Hierapolis and
Aphrodisias (Pleket, 1988). Moeller (1976) depicted the economy of Pompeii as largely
depending on the textile industry, which was proven wrong by Jongman (1988), who showed that
the textile sector was relatively unimportant, certainly in comparison to the production of wine and olive oil. Drinkwater (2001) accepted that some people who were involved in the production of and trade in textiles in northern Gaul occupied a social position of local eminence, but he denies that textile industries had much influence on economy and society at large. Liu (2009) offers a prosopographical analysis of the members of the collegia centonariorum, identified as merchants involved in the production and trade of low-to-medium quality woolen textiles. Technical aspects of the textile production in the north-western province of the empire are treated by Wild (2009). One important theory was formulated by Van Minnen, based on a unique papyrus. If we accept his interpretation, the export of textiles from Oxyrhynchus in Roman Egypt would have been of the same magnitude as that of, for instance, fifteenth-century Leyden (Van Minnen, 1986). Finally, Wild & Wild (2004) analyze imports of textiles from the region of the Indian Ocean into Egypt and Egypt’s role as transit channel in this trade.

**Which questions are to be answered?**

The research will be aimed at three main aspects of the textile industry:

1. The nature and volume of the domestic and professional production. What role was played by the production within the (rural) households? To what extent was the production process characterized by integration, in other words, which part of the production process was in which hands? On what scale did the workshops of the professional producers work? Was the labor provided by independent artisans, wage earners (for instance, on piece wages), or slaves? Which role did seasonal workers and day-laborers play?

2. The nature and scale of distribution. Which internal and external markets were supplied (distinguishing between mass and luxury products)? What demand was there for different kinds of textiles among different kinds of consumers? What role did the state play as buyer of textiles (in particular on behalf of the army)? What was the relationship between producers and traders? Which differences are there concerning the distribution of cheap mass-products and luxurious products?

3. The social context of the production and distribution of textiles. What was the social position of the artisans, merchants and traders involved? What role was played by the collegia in the organization of the labor in the production process and of the labor involved in the distribution of end products? To what extent and in which roles were the (large)landowners involved in the production process and in the distribution of end products?

Answering these questions does of course require one to take into account developments over time. Taken together, they will lead to a better understanding of the meaning of the textile industries in Roman Egypt, and thereby to a better understanding of the economy of the Roman Empire at large.

**Methodology**

The topic shall be investigated not only on the basis of available documents from the Roman contexts, but also on the basis of insights provided by comparative research. The comparative method has now been accepted by economic historians of Antiquity as the only means to overcome the quantitative shortcomings (at least in relation to early-modern times) of the ancient
evidence (Bowman and Wilson 2009). Although there is a wealth of data concerning the textile industry in Roman Egypt, our understanding will profit from the application of models and concepts developed in the study of later societies, which provide more quantifiable data. The comparative element will not only address other regions from the Roman world, but also textile industries in the later European and Asian world. The much more detailed sources that are available to the researchers of later periods allow them to formulate much more complex models and concepts than is possible on the basis of the ancient evidence. The models that are created for later periods clarify how social and economic variables in a certain society interrelate and thereby help to determine which questions to ask of the ancient sources.

Ancient historians should by no means only look at early-modern Europe for comparison, although, owing to the wealth of source-material and the long traditions of scholarship in this part of the world, the comparative method might be easiest to apply in this field. However, for a better understanding of the full spectrum of economic and social phenomena a widening towards comparisons with non-European societies is necessary. Comparison between Europe, China, and India has recently widened the debate concerning the causes of economic development and the emergence of the industrial era in Europe around 1800 (Jones 2003; Pomeranz 2000; Landes 2003). Recent examples concerning textile manufacture and trade may be provided by Barnes (2004), which offers studies of the textile trade between Egypt and India from Antiquity onwards. Research topics include on the one hand the role of textiles as marker of status, wealth and (religious, ethnic, and gender) identity, on the other hand long-term developments in the nature and volume of the textile trade in this region. Crill (2006) analyzes the export of different kinds of textiles from India to European and Asian markets during the past centuries, differentiating between mass and luxury products. The models and concepts stemming from such research can provide the basis for an improved understanding of the coherence between economic, social and cultural aspects of the textile industry in Roman Egypt.

The promoter of this project has gained much experience with the comparative method. Starting point of his The grain market in the Roman Empire (2005) was Amartya Sen’s ‘entitlement’ concept, together with recent studies of the factors determining the degree of market integration in pre-industrial societies. He has employed concepts and models derived from the study of later times in various publications on the ancient economy. His earlier study of food supply in times of war (Erdkamp 1998) successfully employed the results of similar analyses of military and civilian food supply in wars as different as the Eighty Years War or the Crimean War. Comparative historical research of ancient trade organizations is also conducted in the framework of the Roman Society Research Centre (see below) by dr. Wim Broekaert and Prof. Arjan Zuiderhoek at the Ghent University History Department.

Sources
Comparison should not lead to the projection of ‘alien’ data into one’s research subject. While the questions may stem from comparative research, answers must be provided by the study of an extensive corpus of documentary, mainly papyrological, sources.

Fundamental, but by now outdated, is Ewa Wipszycka’s study (Wipszycka, 1965) of economic and organizational aspects of textile production in Roman Egypt. A considerable
number of papyri have been published since then. It will be necessary to supplement Wipszycka’s corpus by creating a database of relevant papyri by fully utilizing the databases and other instruments that have become available since 1965. Papyrology is by now the best equipped research field in terms of online databases. All published papyri are available on line, mostly with images, critical apparatus and translations. The technical and heuristic difficulties which used to complicate the use of papyrological sources until just a few years ago, are now definitely gone. Hence, this database can be completed after the first year.

Moreover, archaeological excavations during the last two decennia on Roman sites in the Egyptian Eastern Desert: (Mons Claudianus, Mons Porphyrites, the Red Sea port Myos Hormos, as well as the various praesidia on the road Koptos-Myos Hormos) have yielded new important data. A recent analysis of the thousands of textile scraps, originating from just two small praesidia (Cardon, 2003) is already giving an idea of the enormous volume, the ever increasing diversity and the high level of technical skill of the textile production in Roman Egypt. This region is more and more emerging as a “melting pot where various technical traditions are meeting and influencing each other, giving rise to inventions that are milestones on the long road mankind has been traversing towards industrialization” (Cardon, 2003, p. 640, transl.). The textiles from Mons Claudianus are being studied by Jørgensen (1999; 2000; 2001). It is clear already that archaeology has provided some breaking new insights that may shed refreshingly new light on certain technological and chronological aspects of textile production in Roman Egypt.

The above mentioned database also enables to collect data about the social status of weavers, fullers, dyers, etc. Of interest are, for instance, contracts (in particular those regarding apprenticeships, didaskalikai), which have hitherto mostly been studied from a juridical viewpoint. As an example of a sociological study using a (in this case epigraphical) database, Liu’s study of collegia of textile workers in the western half of the Roman Empire (2009) can be mentioned. Roman Egypt offers the advantage that here (in contrast to the western provinces) documents can be analyzed in a broader sociological context, owing to the existence of family archives (e.g. the archive of the weaver Tryphon, from Oxyrhynchus, the archive of the strategos Apollonios, from Hermopolis; in both cases textile production plays an important role).

Works mentioned


