



Panel

## 4.7. The evolution of productivity in agriculture, 16th to 19th century: the case of Germany

**Panel organiser: Pfister, Ulrich, University of Münster, Germany**

The session presents novel research on the evolution of agricultural productivity in regions poorly covered by earlier work. In addition it aims at different approaches at measuring productivity in agricultural history relative to the type of information they yield, their precision and their potential to cover long periods of time. Beyond conventional input-output ratios this includes measures for labor productivity, land productivity and, if possible, total factor productivity. New data series produced by the contributions render it possible to analyze the impact of variables that affected productivity growth in the long run, such as the man-land ratio, institutional shocks and market development associated with changes in demand. In particular, contributions address the following major issues: (1) To what extent did the land reforms of the early nineteenth century affect productivity in agriculture? (2) Were there changes in productivity levels before the early nineteenth century and what were their determinants?

**Chair: Svensson, Patrick, Lund University, Sweden**

Tuesday, 20 August 2013 // 1030 – 1200 // Session 4 – Room A 019

### 4.7.1. Land rental values in north-western German in a European context, c. 1600–1920

Paper

**Bracht, Johannes, University of Münster, Germany**

The paper presents the first long term series of land rental values for Germany. Following an indirect approach deflated leasehold prices from different regions in Westphalia (north-western Germany) are interpreted as an indicator for land productivity. The first part of the paper is devoted to a discussion of methodological aspects of the index construction and deflation. The second part places the institutional setting of leasehold ownership in the specific context of the north-western Germany. The third part discusses the long-term trajectory of the real land rent with respect to influences of changes in the man-land-ratio, of urbanization and of climatic factors. The final analysis draws a comparison between this index and indexes for France and England provided by R. Allen, G. Clark and P. Hoffman and to define north-western Germany's position relative to agricultural development in a wider context until c. 1920.

### 4.7.2. Agricultural development in a low-wage industrial setting: Saxony, c. 1790–1830

Paper

**Kopsidis, Michael, Leibniz-Institute of Agricultural Development in Central and Eastern Europe (IAMO), Halle (Saale), Germany**

**Pfister, Ulrich, University of Münster, Germany**

The characteristics of regional paths of industrialization had a deep impact on agricultural development during early industrialization in Germany. From 1840 rising incomes in the course of a "high wage – low energy cost" industrialization based on coal and steel and a rapid urbanization triggered a demand driven agricultural revolution in Northwest Germany. In contrast, Saxony, whose early industrialization c. 1800-1860 followed a "low wage – high energy cost strategy" based on textile production and slow urbanization. The low level and slow growth of income meant that up to 1830 the adaptation of agricultural innovations neither followed demand impulses transmitted through markets, and neither did they facilitate inter-regional specialization according to comparative advantage. Rather, regional agriculture accommodated to population growth by expanding the cultivation of subsistence crops, mainly potatoes and oats, probably at the detriment of animal husbandry. Whereas the increase of sown area indicates an intensification of land use, yield ratios remained at best stable between the early 1790s and the late 1820s. Hence, local supply could barely cope with population growth, and since grain market integration did not evolve over time imports did not compensate for the shortcomings of domestic production. Our evidence of a deteriorating food standard goes a long way toward explaining the decline of the biological standard of living during early industrialization.

### 4.7.3. Labour productivity in agriculture: Germany, 1500–1850

Paper

**Pfister, Ulrich, University of Münster, Germany**

The study uses novel datasets on real wages, prices, urbanization and population size to carry out an indirect estimate of agricultural output for key years between 1500 and 1850 by way of a consumption function (Allen 2000). Average labour productivity in agriculture is derived by dividing output through rural population. Major findings are as follows: (1) Up to 1650 average labour productivity fluctuated inversely with population. This corresponds to a Malthusian economy with no technological progress. (2) During the first half of the eighteenth century labour productivity began to grow, and after probable stagnation during the second half of the eighteenth century growth accelerated during the first half of the nineteenth century. As industrialization began in Germany only around 1840 this finding implies that sustained agricultural growth set in well before the end of the pre-industrial era and also before the implementation of agrarian reform. Other work shows that the early eighteenth century was characterized by an integration of grain markets and a steepening of urban hierarchy. Thus, Smithian growth appears to lie beneath the onset of productivity growth after 1700.

#### Participants

##### Bracht, Johannes

PhD in history, University of Münster 2009. Current position: Research Fellow, University of Münster. Principal research interests: Credit and saving in nineteenth-century rural society, agriculture and agricultural productivity 1600-1900, proto-industry.

##### Kopsidis, Michael

Michael Kopsidis obtained his PhD in economics at the University of Münster in 1994. He is Senior Researcher at the Leibniz-Institute of Agricultural Development in Central and Eastern Europe (IAMO), Halle (Saale), Germany. He works on agricultural growth and peasants in market integration processes in 19th and 20th centuries central, eastern and south-eastern Europe.

##### Pfister, Ulrich

PhD in history, University of Zürich 1984. Current position: Full professor in economic and social history, University of Münster (since 1996). Principal research interests: Aggregate development of the German economy, c. 1500-1871.

##### Svensson, Patrick

PhD in Economic History, Lund University 2001. Current position: Tenured Associate Professor, Dept. Economic History, University of Lund (since 2010). Principal research interests: The first agricultural revolution in Sweden, 18th and 19th c., and its social and economic consequences.