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Tall and shrinking Muslims, short and growing Europeans: The long-run welfare development of the Middle East, 1850–1980

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ABSTRACT

In this study we examine anthropometric data for eight countries in the Middle East for the period 1850–1910, and we follow those countries until the 1980s. The Middle East had a relatively good position during the mid-19th century, if human stature or real wages are considered, but much less so in terms of GDP per capita. Initially low population densities allowed better anthropometric outcomes. The height advantage was due, among other factors, to easier access to animal products. All indicators suggest that the Middle East lost ground after the 1870s relative to the industrializing Countries.

1. Introduction

Anthropometric history is a well-established method to measure biological aspects of the standard of living. Human stature is determined by the quality of nutrition, minus claims for disease environment and workload during childhood, and those were the major determinants of health and life expectancy in the poor economies of the past. Countries in many continents have been studied with anthropometric methods, including, for example, India, China, Argentina, the United States and certainly many European countries (see also Komlos, 1985; Steckel, 1995; Steckel and Floud, 1997). However, one world region not studied by modern anthropometric historians is the Middle East. A key reason might be that heights were typically not measured by the Ottoman army or in prisons. However, a number of anthropologists measured heights in the Middle East after the late-19th century, and although those sources of anthropometric information provide a number of methodological challenges, we use them in the following to reconstruct human stature levels in the Middle East 1850–1910. With those height records, we can study the countries of Turkey, Iraq, Iran, Egypt, Syria, Lebanon, Palestine/Israel, and Yemen.[1]

Was the nutritional situation different in the Middle East, compared to, say, Europe? Would we expect a different level or other developments than in Europe? One difference was certainly the much lower population density in the eight Middle Eastern countries (Table 1).[2] Previous anthropometric research found that populations in sparsely populated countries often enjoyed "advantages of proximity" to animal husbandry, as a substantial proportion lived in regions specialized in this agricultural activity. Those people were taller than other populations in a situation in which some protein-rich, but less highly valued

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[1] We will refer to these countries when we write "Middle East" in the following (please note that the Arabian Peninsula is not covered, except for Yemen).

[2] In the Table, population per arable land refers to the number of people relative to land which can be used for agriculture, i.e. excluding deserts, mountains, and other wasteland.

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Table 1
Population densities in selected European and Middle Eastern countries.

	Population density			Population per arable land		
	1820	1870	2003	1820	1870	2003
Germany	70	110	231	199	314	681
Italy	67	93	192	153	212	698
United Kingdom	87	129	247	295	436	981
Czechoslovakia	97	129	199	236	314	496
Iraq	2	4	56	24	34	448
Yemen	5	5	37	205	225	1344
Middle East (8 countries)	8	10	99	79	110	996

Note: "Middle East (8 countries)" is weighted with population size. "Arable land" refers to 1961 for 1820 and 1870, and to 2003 for 2003. *Source:* Maddison (2001), World Bank (1995,2008).

products of animal farming (offal and milk, for example) could not be shipped at sufficiently low cost (Komlos, 1996; Baten and Murray, 2000). Based on those previous results, we would expect initially taller heights in the Middle Eastern countries, compared to Europe, because those Europeans who lived in industrial cities sometimes had higher purchasing power of tradable goods, but did not have these proximity advantages. Moreover, the Western urban populations still suffered from "urban penalties" of bad disease environment and hygiene in this period (see, for example, Szreter and Mooney, 1998). In the Middle East in contrast, substantial parts of the population lived as Bedouins, who might have initially benefited from those proximity advantages. Low population densities also allowed a benign disease environment in the Middle East of the mid-19th century.

The increase in heights in Europe from the late-19th century was so impressive as to suggest a possible reversal of the earlier Middle Eastern height advantage. European urban industrial populations could increasingly buy cheap proteins and benefited from improving disease environments during the 20th century. Based on this comparison, the present study also increases our understanding of European welfare development. We will assess in the following when the Western industrializing countries started to overtake the Middle Eastern populations, which were lacking sufficient growth and development (Pamuk, 2006; Issawi, 1995). In particular, we will test the hypothesis that some Middle Eastern populations were taller than Europeans in the mid-19th century, using British, German, Czech, and Italian samples for comparison, and whether this difference disappeared after the late-19th century.

In the final part of this study, we contrast heights and purchasing power oriented welfare measures. How do our height estimates differ conceptually from estimates of real wages and GDP? The strength of GDP per capita is, of course, its comprehensive account of purchasing power and its comparability over time if given in standardized monetary units (such as the 1990 Geary–Khamis dollars). One of the disadvantages of GDP as a welfare measure is its bias against subsistence farming and production within the household. In general, non-traded goods and goods produced and consumed within households are often underreported. Moreover, other forms of informal markets, such as black markets, can often not be captured. Finally, the data requirements for GDP estimates are very large. In contrast, real wages have a better reputation in terms of data quality for long-run studies, as nominal wages and prices were recorded by contemporaries (whereas GDP relies on estimates produced by later generations). From studying real wages, however, we cannot learn about the return to land, capital, or perhaps the return to the exploitative activities of the rulers. Moreover, typical pre-modern subsistence goods or less standardized goods such as housing are again difficult to include in the consumer basket, as those who created the written sources of the past did generally not provide sufficiently detailed information. Finally, both GDP and real wages concentrate on purchasing power and do not include other "biological" living standard components such as health, longevity, and the quality of nutrition, which is the strength of anthropometric techniques (Margo and Steckel, 1983). Height studies have the additional advantage of covering many groups of society.

In the next section, we will discuss the main data sources. In Section 3, we report regional differences of height in countries on which we have sufficient information, and present a map for Turkey (Fig. 1). Section 4 gives an overview of height levels in the Middle East and the economic background, while Section 5 discusses differences between the Middle East and the industrializing countries between 1850s and 1910s. Subsequently, we compare GDP per capita, real wages, and height estimates in Section 5. Section 6 concludes the paper.

2. Data and representativeness

Samples from military and prison samples have allowed scholars to study the anthropometric history of numerous countries in the world. Unfortunately, for the Middle East, military records are not available. Our research in the Ottoman Archive in Istanbul showed that anthropometric measurements in the Ottoman army were only reported as "tall", "middle", and "short", without clear definition of those categories. Another frequently used source of height records are prison measurements, but those were only exceptionally recorded for the Middle East by Western anthropologists. If available, we included those in our sample. But overall, most of our height information on the Middle East stems from anthropological studies. During the late-19th and early-20th century many European and American anthropologists went to the Middle East in order to study the physical characteristics of the local population. We could find some of the resulting measurements of height as