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Economic Growth in Southeastern Europe and Eastern Mediterranean, 1820-1914

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Summary:

This article brings together and analyzes data and other evidence from a variety of sources to provide an overview of the growth record of southeastern Europe and the Middle East from 1820 until the First World War. Average incomes in these two regions increased at long term rates between a half and one percent per year during the nineteenth century. Institutional changes and development of export oriented agriculture are seen as the main reasons for the increases in per capita incomes. However, the income gap between these two regions and the industrializing countries of western Europe and the United States steadily widened until 1914.

Key words: Growth, Southeastern Europe, Eastern Mediterranean

JEL Classification: N 13, N15

I. Introduction

In recent decades, economic historians of the Ottoman Empire and more generally of southeastern Europe and the Middle East have been concerned with studying the far-reaching structural changes that occurred in the aftermath of the Industrial Revolution. This research has focused on the expansion of international trade, the commercialization of agriculture, the decline of handicrafts, capital inflows and direct foreign investment as well as other themes. In contrast, the issue of economic growth and changes in the standards of living has been dealt with only sporadically. The shortcomings of the available data have been one important reason for this deficiency. It is now time, however, to deal with economic growth more systematically as economists and economic historians examine this question more closely.

During the last two decades, economic historians have paid a good deal of attention to the estimation of the per capita real product of different countries and the analysis of what happened to the gap between the leaders and followers since the Industrial Revolution. In fact, data-collecting efforts and studies by economic historians anticipated the concerns of the recent growth and convergence literature by a number of years. While economic historians have been focusing on the period before 1950, recent empirical work associated with growth-theory literature has focused on the period after 1950. This latter body of literature was in part a response to the challenges of a new growth theory in need of empirical testing. It was also supported by the availability of a new set of international comparative data for the period after 1950 constructed as an outcome of the International Comparison Project (ICP). The central questions for both groups have been whether low-income countries or regions tend to grow faster than high-income countries

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or regions and whether there are automatic forces that lead to convergence over time in the levels of per capita product and income. Some generally accepted trends are emerging from the recent literature:[1]

- the gap between the leaders and the rest widened in the era of the Industrial Revolution, until 1850 or 1870. Not only early industrialization, which was limited to a few countries on the continent, but also the resource discoveries in the New World were responsible for this trend.

- The earliest data set suggested that the late nineteenth century from 1870 until the First World War witnessed both sustained increases and a convergence in living standards. It soon became apparent, however, that the data set included only or mostly those economies that had successfully industrialized. This had inevitably created a sample selection bias.[2] Later evidence for other countries showed that convergence was limited to the OECD countries spanning both sides of the Atlantic. Scandinavian countries joined this 'club' but Southern Europe, Eastern Europe and most of the Third World lagged behind during this period. In other words, the convergence club from 1870 to 1913 was limited to high-income countries.[3]

- When the two centuries since the Industrial Revolution are taken as a whole, the evidence, though not precise, is overwhelming that

divergence in relative productivity levels and living standards between today's advanced countries and less-developed countries has been the dominant feature of modern economic history.[4]

The emergence of these trends has contributed to the development of a 'convergence club' literature which has emphasized that a country's growth performance is not determined solely by the level of per capita income already attained at the beginning of the period and that joining the convergence process is by no means automatic. Membership in convergence clubs would depend on countries exceeding or not the minimum threshold value for certain conditional factors such as human capital, technological diffusion, financial development and political institutions.[5]

In the meantime, economic historians have been insisting that the focus of the convergence debate should not be limited to the last 50 years but should span the last 150 years if not the entire period since the Industrial Revolution. With the exception perhaps of a small number of countries, however, estimates for per capita GDP for the period before 1870 are difficult to construct and not sufficiently reliable. Moreover, it has not been possible to construct detailed estimates for most of the developing countries for the period before 1913 or even 1950.

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[1] Angus Maddison "A Comparison of Levels of GDP Per Capita in Developed and Developing Countries, 1700-1980," The Journal of Economic History 43, nº 1 (1983): 27-41; Moses Abramovitz, "Catching Up, Forging Ahead, and Falling Behind," The Journal of Economic History 46, nº 2 (1986): 385-406; William J. Baumol, "Productivity Growth, Convergence, and Welfare: What the Long-Run Data Show," The American Economic Review 76, nº 5 (1986):1072-1085; Robert Summers and Alan Heston, "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950-1988," Quarterly Journal of Economics 106 (1991): 327-68, Angus Maddison, Monitoring the World Economy, 1820-1992 (Paris 1995); Id., The World Economy, A Millennial Perspective (Paris 2001); Id., The World Economy: Historical Statistics (Paris, 2003).

[2] J. Bradford De Long "Productivity Growth, Convergence, and Welfare: Comment," The American Economic Review 78, nº 5 (1988): 1138-1154.

[3] Alan M. Taylor, "Sources of Convergence in the Late Nineteenth Century," European Economic Review 43, nº 9 (1999): 1621-1645; Kevin H. O'Rourke, Alan M. Taylor and Jeffrey G. Williamson, "Factor Price Convergence in the Late Nineteenth Century," International Economic Review 37, nº 3 (1996): 499-530.

[4] Maddison, The World Economy: Historical Statistics; L. Prichett, "Divergence, Big Time," Journal of Economic Perspectives 11 (1997): 3–17.

[5] Robert J. Barro, Determinants of Economic Growth: A Cross-Country Empirical Study (Cambridge Mass./London, 1997).

An alternative approach for studying the gap in levels of per capita income or the standards of living has been to compare real wages of specific occupations, most often of skilled and unskilled construction workers in urban areas. Real wage data are of far better quality than per capita GDP estimates especially for the period before the First World War for all of the developing countries and available for a wider sample. At the same time, however, real wage series are open to valid objections. Even if we accept the representative wage as an adequate proxy for the annual per capita earnings of labor, this does not mean that it should be a good proxy for per capita income. That depends on the further assumption that factor shares across countries are similar. In many parts of Europe and Asia during the early modern era and until the First World War, incomes of households were often determined by changes in employment levels, participation ratios of men, women and children, and above all, by non-market incomes.

The aim of the present article is to focus on two regions where the study of whose modern economic growth performance has been conspicuously lagging behind. I bring together and analyze data and other evidence from a variety of sources to provide, for the first time, an overview of the growth record of southeastern Europe and the Middle East from 1820 until the First World War and then insert these estimates into the comparative framework outlined above.

I recently completed a study of economic growth for the Middle East since 1820. As I will elaborate below, this study indicates that there was economic growth, and GDP per capita in the region increased at an annual rate between a half and one percent during the century until the First World War. As a result, I have argued, the per capita GDP or income gap between the eastern Mediterranean and western Europe increased significantly during this period. The existing literature on economic growth in southeastern Europe during the nineteenth century on the other hand, is rather mixed. There are conflicting hypotheses, and to some extent conflicting evidence, about the basic pattern of economic growth in nineteenth-century southeastern Europe in both absolute and comparative terms.

1. Good and Ma have recently argued on the basis of indirect evidence that long-term rates of increase in per capita GDP or income in the region (Bulgaria, Serbia) was above one percent per annum and was roughly comparable to those prevailing in Western Europe during the decades before the First World War.[6] According to this argument, the income gap between southeastern Europe and the core regions of Europe did not change significantly during this period.

2. In contrast, Palairet has argued that per capita incomes in Bulgaria and Serbia were not increasing but decreasing in the post-independence decades because of the rural orientation and declining commercialization of agriculture following the distribution of land to smallholders.[7]

3. A third position would lie somewhere in between these two. Recent studies on the national income of Greece and on Bulgaria suggest that per capita incomes were rising late in the nineteenth century and in the decades before the First World War, but rising more slowly than those in western Europe, at long-term annual rates below one percent. As a result, the gap between southeastern Europe and the core regions of Europe must have continued to

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[6] David F. Good and Tongshu Ma, "The Economic Growth of Central and Eastern Europe in Comparative Perspective, 1870-1989", European Review of Economic History 3 (1999): 103-137.

[7] Michael Palairet, The Balkan Economies, c. 1800-1914, Evolution without Development (Cambridge, 1997).

widen until the First World War.[8] This pattern is consistent with the results of an earlier study by Foreman-Peck and Lains.[9] In other words, there was economic growth, but it was not sufficient for convergence. This pattern suggests that the late nineteenth-century economic growth experience of southeastern Europe was not very different from southern Europe.

My recent study of long-term trends in per capita GDP and income around the eastern Mediterranean and more generally in the Middle East including separate estimates for Turkey reached a conclusion similar to this third position. Average incomes in the Middle East increased at long term rates between a half and one percent per year during the nineteenth century. However, the income gap between the Middle East and the high-income countries of western Europe and the United States steadily widened during the century until the First World War. I will summarize below my study on the Ottoman Empire and the Middle East for the period until the First World War and link it to the recent studies and estimates on southeastern Europe.

II. Estimating Economic Growth in the Middle East before the First World War

National accounting or the estimation of GDP per capita is not an exact science. Even current series are being continually revised and remain controversial. The margin of error is inevitably greater for the historical series which have to be estimated from incomplete and often inaccurate original sources.[10]

In principle, a country's per capita is estimated by adopting a Kuznetsian approach and constructing sector-by-sector accounts from the available data. GDP per capita thus obtained in individual currencies are then converted into a common denominator. The ICP project and Maddison have shown, however, that there are serious problems in converting per capita GDPs by utilizing the current exchange rates. Instead, per capita GDPs in purchasing power parity terms are calculated for benchmark years by deflating GDP per capita in dollar terms by the price levels of respective countries. Interpolations are then made on the basis of the annual changes in the per capita real product of individual countries.[11]

The construction of Kuznetsian national income accounts is not always possible for the earlier periods, however, due to the limitations of data. For many countries, especially developing countries, it will never be possible to bring together evidence from the production and/or income side to construct GDP series or GDP estimates even for some of the benchmark years for the period before 1950 and especially for the period before 1914. One possibility has been to use urban wages which are widely available as a proxy for GDP per capita for this 'statistical dark age'. Evidence from a large range of countries now suggests that this is not always a reliable procedure, however. In the same vein, Crafts adopted, for countries with inadequate data, a structural equation approach and attempted to express per capita incomes as a function of a few proxy variables. Once the equation

[8] G. Kostelenos, S. D. Petmezas, D. Vasiliou, E. Kounaris and M. Sfakianakis, Ακαθάριστο Εγχώριο Προϊόν 1830-1939 (Athens, 2007); M. Ivanov and A. Tooze, "Convergence or Decline on Europe's Southeastern Periphery? Agriculture, Population, and GNP in Bulgaria, 1892-1945," The Journal of Economic History 67, nº 3 (2007): 672-703.

[9] James Foreman-Peck and Pedro Lains, "European Economic Development; the Core and the Southern Periphery, 1870-1910," in S. Pamuk and J. G. Williamson, eds., The Mediterranean Response to Globalization (London, 2000), 76-106.

[10] Giovanni Federico "The World Economy 0–2000 AD: A Review Article," European Review of Economic History 6 (2002): 112.

[11] Summers and Heston, "The Penn World Table (Mark 5),"; Alan Heston, Robert Summers and Bettina Aten, "Penn World Tables Version 6.1, Center for International Comparisons at the University of Pennsylvania," (2002) (http://pwt.econ.upenn.edu, consulted 31 August 2008); Maddison, The World Economy: Historical Statistics.

is calibrated by applying to countries for which per capita real product estimates are already available, then it is applied to countries for which GDP estimates are not available but the same proxy variables can be obtained.[12] The same approach has been used by in recent years to obtain per capita GDP estimates for Central and Eastern Europe before 1914. Unfortunately, to extend the same analysis to other contexts may require the identification and estimation of different sets of proxies as the underlying structure may be very different. Most of the proxy variables used for estimating GDP per capita for various European countries for the period before 1914[13] are not available or carry very different values in the Middle East before the First World War.

Maddison begins his recent studies with GDP per capita estimates for the most recent period expressed in 1990 Geary-Khamis purchasing power parity (PPP) dollars. He then works backwards for each country and region by utilizing the per capita GDP growth rates obtained from a variety of sources, presenting estimates for the benchmark years 1950, 1913, 1870 and 1820. In cases where country specialists disagree and provide alternative estimates, Maddison provides a rationale for choosing one over the other. Where no estimates are available for the national income of a given country or a set of countries in a given region, he explicitly states that he has assumed that a country for which national income estimates are not available has the same long-term change in per capita GDP as other countries in the region for which estimates are available, or even more strikingly, long-term rates were assumed to be same as those in another, neighboring region in the same continent. Interpolations are then made on the basis of the annual changes in the per capita real product of individual countries.

III. Deriving the Estimates

No country in the Middle East (Turkey, Syria, Lebanon, Jordan, Palestine/Israel, Egypt, Saudi Arabia, the Gulf States, Iraq and Iran) had an official income accounting system in place before the First World War. Agricultural production series begin for Egypt in the 1880s and for the Ottoman Empire in 1897. Output series for other sectors are not available until after the First World War. For the period before agricultural output series, only tax assessment and collection series and foreign trade statistics are available. National income accounting systems were established either during the interwar period or mostly after 1950. For some countries such as Turkey, Egypt, Palestine-Israel, researchers have pieced together evidence from a variety of sources to construct national income accounts for the years before the First World War and/or some years of the interwar period. In some other cases, there are estimates by scholars of the rate of change in per capita national income for different time intervals. Still others have attempted to compare the per capita income of two or more of the countries in these regions at different points in time. Moreover, since most of this region was part of the Ottoman Empire until 1918, fiscal, production and trade data from Ottoman sources, including per capita GDP estimates for the years immediately before the First World War, can be gainfully employed to shed light not only on the period before the First World War, but also to make cross sectional and inter-temporal comparisons.

I will critically make use of the available evidence to arrive at GDP per capita estimates for individual countries in the

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[12] N. F. R. Crafts, "Gross National Product in Europe, 1870-1910: Some New Estimates," Explorations in Economic History 20 (1983): 387-401.

[13] Good and Ma, "The Economic Growth".

region for the benchmark years of 1913, 1870 and 1820. For the period after 1950, I have accepted the purchasing power parity adjusted GDP per capita series for most but not all of the individual countries presented by Maddison in his 2003 volume.[14] Maddison presents his estimates in 1990 international dollars. I have accepted the constant price units and the benchmark years he uses in order to facilitate comparisons of my results with other studies and estimates.

I begin with the Maddison per capita GDP estimates for the individual countries of the Middle East, except those for Egypt and Syria, for the benchmark year 1950. These estimates have been obtained by working backwards from the most recent estimates of per capita GDP.[15] I then continue backwards step by step towards the earlier benchmark years for each of the countries in the region. I proceed in three stages.

In the first stage of the reconstruction procedure, I work backwards to 1913 using the available evidence on rates of change in per capita GDP as well as other estimates on per capita GDP levels for those countries of the region for which estimates or income series are available, most importantly Turkey and Egypt. The first stage enables me to carry the GDP per capita estimates expressed in 1990 international dollars back to 1913, at least for parts of the region.

For Turkey, national income accounts now go back to 1923. We have linked these series to the Ottoman period making use of a detailed study of this issue with comparisons of agricultural output, manufacturing and foreign trade on a per capita basis for those areas of the Ottoman Empire that were included in Turkey after 1923. That study reached the conclusion that per capita GDP in Turkey declined by as much as 50 percent or more during the First World War and returned to its 1913 levels only in 1929.[16] We are thus able to express GDP per capita for the period before the First World War in 1990 international dollars for one of the largest countries of the region. This benchmark estimate for 1913 has proved highly useful not only for extrapolating per capita estimates for Turkey towards 1870 and the earlier period but also for comparing and checking our estimates of per capita GDP in 1913 for other countries of the region.

In the absence of national income accounts for Egypt, the most important piece of evidence we have regarding changes in per capita production and income levels in the period before 1950 are the two related studies by Bent Hansen and Michael Wattleworth on per capita agricultural output and consumption of foodstuffs based on production and trade statistics. Most importantly for our present purposes, these studies indicate that per capita income levels in 1950 were about the same as those in 1913. A more recent study by Tarik Yousef that makes use of changes in monetary variables to derive estimates of per capita income reaches the same

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[14] Maddison, The World Economy: Historical Statistics.

[15] The Maddison GDP per capita series for Syria for 1950 to 2000 provides rates of growth which are consistent with the ICP series but their level is unacceptably high throughout the period, cf. Maddison, The World Economy: Historical Statistics. I have adjusted them downwards by 45 percent to bring them in line with the ICP series, World Bank estimates and other evidence considered in this study. For the ICP series for Syria, see Heston et al., "Penn World Tables Version 6.1" and for evidence on the Syrian economy during the interwar years, see Said Himadeh, Economic Organization of Syria and Lebanon (Beirut, 1936). Similarly, for Egypt, the Maddison rates of growth for 1950 to 2000 are consistent with the ICP series, but its level was rather low. As explained in footnote 16 below, the estimate for 1950 was adjusted upwards by 15 percent.

[16] Isik Ozel, The Economy of Turkey in the Late Ottoman and Republican Periods: A Quantitative Analysis, unpublished MA thesis, Ataturk Institute for Modern Turkish History, Boğaziçi University (Istanbul, 1997); Id. and Sevket Pamuk "Osmanlidan Cumhuriyete Kisi basina Uretim ve Milli Gelir," in Mustafa Sonmez, ed., Yetmis Bes Yilda Paranin Seruveni (Istanbul, 1998), 83-90; for the GDP series for Turkey for 1923 to 1948, cf. Tuncer Bulutay, Nuri Yildirim and Yahya S. Tezel. Turkiye Milli Geliri, 1923-1948 (Ankara, 1974).

conclusion that per capita income in Egypt was at the same level in 1950 as it was in 1913.[17] Another source of evidence linking per capita incomes for 1950 to those in 1913 comes from Palestine, where the arrival of large numbers of Jewish immigrants and substantial inflows of capital supported high rates of increases in per capita GDP during the interwar period as examined in detail by Jacob Metzer.[18]

In the second stage, I make use of detailed data to develop per capita GDP estimates for different parts of the region in 1913. Vedat Eldem had constructed per capita GDP estimates for the Ottoman Empire for the years before the First World War, utilizing fiscal data and a series of censuses on population, agriculture and industry as well as statistics on foreign trade. These estimates, given in current Ottoman gold liras, included a regional breakdown for the European and Asian provinces of the empire.[19] The years before the First World War are thus of critical importance in my reconstruction as I use a large body of evidence to check my estimates both longitudinally and cross-sectionally. I then compare the existing sector-based estimates for different parts of the Middle East with available estimates on per capita GDP in the Balkan countries which gives us another channel for checking these estimates. Even though I treat the estimates for each country separately, these cross-sectional comparisons not only around the benchmark year 1913 but also at each of the other benchmark years are very important for checking the reliability and robustness of the estimates.

There were considerable regional differences in per capita income levels within the Ottoman Empire and, in all likelihood, these differences were growing in the decades before the First World War. In terms of the later nation-state boundaries, the area of the Ottoman Empire with highest per capita incomes on the eve of the First World War was Lebanon followed by Syria and Palestine. While the Istanbul region and European areas of the Ottoman Empire had per capita incomes higher than those of Syria and Lebanon, the area comprising modern Turkey had per capita income levels 10 to 15 percent below those of Lebanon and Syria. The per capita GDP estimates for the Balkan countries, Greece, Romania and Bulgaria in 1913 presented in Table 1, with levels higher than those for Turkey and Syria but close to those for Lebanon, are thus consistent with the regional distribution of per capita income inside the Ottoman Empire as reflected in the Ottoman fiscal and production data. At the other end of the spectrum in terms of per capita income in 1913, were regions of the Middle East located around the Gulf. Iraq, Iran, the Arabian peninsula and the Gulf economies lagged considerably behind regions around the eastern Mediterranean. Both Ottoman data and existing estimates leave no doubt about this divide on the eve of the First World War.

One important question in this reconstruction procedure is to determine how per capita income levels in Egypt, one of the largest countries in the region during the twentieth century, compared with those of the other countries or areas in 1913. Available evidence leads me

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[17] Bent Hansen and Michael Wattleworth, "Agricultural Output and Consumption of Basic Foods in Egypt, 1886/7-1967/8," International Journal of Middle East Studies 9 (1978): 449-69; Bent Hansen, "Income and Consumption in Egypt, 1886/1887 to 1937," International Journal of Middle East Studies 10 (1979): 27-47; Tarik Yousef, "Egypt's Growth Performance under Economic Liberalism: A Reassessment with New GDP Estimates, 1886-1945," Review of Income and Wealth 48 (2002): 561-79.
[18] Jacob Metzer, The Divided Economy of Palestine (Cambridge, 1998). The Metzer series are for 1922-1947, for Arabs and Jews separately. After correpondence with the author, I have assumed that there was a slight decline in GDP per capita from 1913 to 1922 and a larger decline from 1947 to 1950.
[19] Vedat Eldem, Osmanli Imparatorlugunun Iktisadi Sartlari Hakkinda Bir Tetkik (Istanbul, 1970), 277-309.

Table 1. Economic Growth around the Eastern Mediterranean, 1820-1913

GDP per capita (in 1990 PPP Dollars)				Annual Change in GDP per Capita (in %)	
	1820	1870	1913	1820-70	1870-13
Turkey	680	880	1,200	0.5	0.7
Syria	680	880	1,300	0.5	0.9
Lebanon	680	950	1,450	0.7	1.0
Jordan	550	700	1,000	0.5	0.8
Palestine	650	850	1,200	0.5	0.8
Egypt	600	750	1,050	0.4	0.8
Eastern Mediterranean	655	838	1,153	0.5	0.7
Greece		1,000	1,400-1,500		0.9
Bulgaria			1,300-1,400		
Serbia			1,100-1,200		
Western Europe	1,245	2,086	3,688	1.0	1.3
GDP per capita as percent of Western Europe				Population in millions		
	1820	1870	1913	1820	1870	1913
Turkey	54.6	42.2	32.5	9.4	11.5	16.6
Syria	54.6	42.2	35.2	1.3	1.5	2.0
Lebanon	54.6	45.5	39.3	0.3	0.4	0.7
Jordan	44.2	33.6	27.1	0.2	0.3	0.4
Palestine	52.2	40.7	32.5	0.3	0.4	0.7
Egypt	48.2	36.0	28.5	4.5	6.4	12.1
Eastern Mediterranean	52.6	40.2	31.3	16	21	33
Greece			39.3	0.7	1.5	4.8
Bulgaria			36.6	2.2	2.6	4.7
Serbia			31.2	0.4	1.3	3.0

Notes for Table 1.: Western Europe includes 12 countries: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Sweden, Switzerland, UK. The Eastern Mediterranean includes the countries above. For estimates including other parts of the Ottoman Empire, see S. Pamuk, "Estimating Economic Growth in the Middle East since 1820," The Journal of Economic History 66, n° 3 (2006): 815-816 (Table 1).

Sources: For GDP estimates, see the text and Table 2. The growth rates for Greece are for 1870-1912. the population figures are based on Charles Issawi, An Economic History of the Middle East and North Africa (New York, 1982); Colin McEvedy and Richard Jones, Atlas of World Population History (Hatchfordshire, 1978); Maddison, The World Economy, Historical Statistics; Cem Behar, The Population of the Ottoman Empire and Turkey, 1500-1927 (Ankara, 1996) and the text. The Greek population refers to the years 1833, 1870 and 1913.

to conclude that, on the eve of the First World War, per capita income levels in Egypt were distinctly lower than those of Syria and Lebanon and also below those of Turkey but above those of Iraq, Iran and Arabia. We know that on the eve of the First World War, many of the wealthiest individuals in the Middle East, including many Europeans, lived in Egypt. At the same time, however, there is strong evidence that incomes in Egypt were more unequally distributed than other parts

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Table 2. Estimates of GDP Per Capita for 1913-14 based on Sectoral Studies (in current prices converted to British pounds at current rates of exchange)

Country	In UK pounds	Sources
Ottoman Empire	10	Eldem, *Osmanli*
Turkey	10	*Ibid.*
Syria	11	*Ibid.*
Lebanon	12	*Ibid.*
Iraq	7	*Ibid.*
Egypt	8.5	Hansen, "Income"; Yousef, "Egypt's Growth"
Greece	11	Kostelenos, Petmezas et.al. *Ακαθάριστο Εγχώριο Προϊόν*
Bulgaria	10.6	Palairet, *The Balkan Economies*
Serbia	8	*Ibid.*

Note: The estimates for Bulgaria and Serbia are for the year 1910. The estimate for Greece represents the average for 1910-14. Per capita GDP in the Balkan countries declined after 1912 due to the Balkan Wars.

of the Middle East due primarily to the unequal distribution of landownership.[20]

Table 2 presents the existing estimates of per capita GDP for different countries of the Middle East and southeastern Europe in 1913 based on sectoral studies including those by Eldem. These estimates were all originally expressed in the current monetary unit of the country they belonged to, and I have converted them to British pounds sterling at the prevailing rates of exchange. Since the countries represented in Table 2 had per capita GDP levels close to each other, we should expect their aggregate price levels to be close as well. As a result, we should expect the purchasing power parity-adjusted per capita GDP levels of these countries to be ranked in the same order as their per capita GDP expressed in current domestic prices.

The ordering of the countries in the region in terms of per capita GDP given in Table 2 and those given in Table 1 are very similar, if not identical. This comparison should increase our confidence in the purchasing power parity adjusted estimates provided in Table 1 for the year 1913.

In the third and last stage, I utilize the Ottoman evidence from fiscal sources and all other evidence on tax revenues, output and trade to derive long-term rates of change in per capita GDP for the periods 1870-1913 and 1820-1870. However, while Eldem and later Osman Okyar accepted increases in per capita tax collections of the central government as a proxy for increases in per capita income, I am reluctant to do so.[21] Increases in tax revenues tend to overstate the underlying expansion of the Ottoman

[20] In earlier volumes Maddison had projected much lower per capita income levels for Egypt for 1950, and by implication for 1913. He has since raised the 1913 per capita GDP estimates for 1950 from 500 constant 1990 purchasing power parity dollars in the 1995 edition to 700 dollars in the 2001 volume and most recently to 900 dollars. Compare Maddison, Monitoring the World Economy, 206; Id., The World Economy, A Millennial Perspective, 323; Id., The World Economy: Historical Statistics 219. The earlier estimates would have made Egypt the poorest country in the region in 1913, which is not tenable. Maddison's recent revisions point towards more realistic estimates, and they fit much better the comparative picture I have outlined above for the region on the eve of the First World War. In view of the per capita GDP estimates by Hansen, Yousef and others given in constant 1913 Egyptian pounds for the years 1913 and 1950, I find it more realistic to raise the estimates for per capita GDP for Egypt in 1950 and 1913 even further to 1,050 dollars. This evidence is summarized in Table 2. Also see United Nations, Economic Developments in the Middle East, 1945 to 1954 (New York, 1955).

[21] Eldem, Osmanli, 308; Osman Okyar, "A New Look at the Problem of Economic Growth in the Ottoman Empire, 1800-1914," The Journal of European Economic History 16 (1987): 7-49.

economy during the nineteenth century since part of the increases in tax revenues were due to the increased tax collection capability of the central government. Evidence summarized in Table 3 indicates that the tax revenues of the central government increased much faster than the underlying economy during the nineteenth century. The ratio of tax revenues to total GDP was rising fastest during the mid-nineteenth century. This was a result of the centralization drive that began in the 1820s and continued with the *Tanzimat* (reordering) reforms proclaimed in 1839. The Ottoman government did not raise tax rates during this period, but it was able to reduce progressively the share of revenues held by the private tax-farmers in the countryside. With increasing centralization, the tax collectors and the government were also able to reach a higher percent of the agricultural producers. This

conclusion of slow but positive growth for the Ottoman economy during the decades before the First World War are supported by the evidence provided in the Ottoman agricultural censuses and output data that are available for 1897, 1909, 1913 and 1914. These statistics contain a number of problems, but they point to increases in both the yields and total production in the leading crops during this period in both Anatolia and the European provinces.[22] Evidence from foreign trade and other scattered evidence on output suggest that the ratio of tax revenues to total GDP continued to rise after 1880, albeit more slowly. This lower rate of growth for the Ottoman economy is also consistent with recent regional studies on the Ottoman economy.[23]

A variety of evidence including production, foreign trade and urban wages points to slightly higher rates of growth for Syria,

Table 3. Total GDP and Total Tax Revenues of the Ottoman Central Government, 1840-1913

	1840-42	1880-82	1913-4
Population of the empire (in millions)	26	20	22
Total tax revenues of the central government (in millions of current Ottoman liras)	5.6	16	31
Tax revenues per capita (in current Ottoman liras)	0.22	0.8	1.41
Tax revenues per capita (in 1913 Ottoman liras)	0.38	0.96	1.41
(Approx.) GDP per capita (in current Ottoman liras)	5	8	12
Total GDP (in millions of current Ottoman liras)	130	160	260
Tax Revenues/Total GDP (in percentages)	4.3	10.0	11.7

Notes: 1. The Ottoman Empire as defined here excludes Romania, Egypt and the Arabian peninsula but includes areas in the Balkans as well as Anatolia, Syria and Iraq. The decline of the total population is due to the loss of territory in the Balkans.

2. 1.10 Ottoman liras equalled one British pound sterling throughout this period.

3. Revenues falling under the jurisdiction of the Ottoman Public Debt Administration after 1881 are not included in the tax revenues for the last two periods.

Sources: For the population figures, Behar, The Population; for the Ottoman budgets, Tevfik Guran, ed., Ottoman Financial Statistics, Budgets, 1841-1918 (Ankara, 2003), also Stanford J. Shaw, "The Nineteenth Century Ottoman Tax Reforms and Revenue System," International Journal of Middle East Studies 6 (1975): 421-59; for the aggregate price level, Sevket Pamuk, 500 Years of Prices and Wages in Istanbul and Other Cities (Ankara, 2000).

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[22] Tevfik Guran, ed., Agricultural Statistics of Turkey during the Ottoman Period (Ankara, 1997); Id., ed., The First Statistical Yearbook of the Ottoman Empire, 1897 (Ankara, 1997).

[23] For example, Ahmet Akarli, "Agriculture in Ottoman Macedonia, 1870-1910," in S. Pamuk and J. Williamson, eds., Mediterranean Responses to Globalization before 1950 (London/New York, 2000), 109-133.

Lebanon and Palestine from 1880 until the First World War. These rates are comparable to those experienced by Greece for this period, the only Balkan country for which sector-based GDP series are available for the period before 1913. In comparison, rates of growth were distinctly lower in Iraq, the Arabian peninsula and Iran (Table 1).[24]

For Egypt, supported by inflows of capital and rapid expansion of cotton cultivation and exports, the decades before the First World War were also a period of economic growth. The recent study by Yousef reaches the conclusion that per capita GDP increased by a total of more than 80 percent between 1886-87 and 1913, implying an average annual rate of about two percent. This is a rather high estimate not supported by the Hansen and Wattleworth per capita output, consumption and income indices. The latter point to a total increase of 40 percent in per capita food consumption and income for the same period. Moreover, higher rates of growth for the decades before the First World War imply unusually low per capita GDP levels for the 1880s and earlier. I prefer to follow the Hansen and Wattleworth estimates for income growth in Egypt during the decades before the First World War.[25]

The 1870s was an unusually difficult decade with political, fiscal and economic crises for most of the Middle East and the Balkans. There was a severe famine in central Anatolia during 1873-74. The Ottoman Empire and Russia were engaged in a war from 1877 to 1878 which involved the Balkans. After the spread of the financial crisis of 1873 in the European financial markets, the Ottoman and Egyptian governments were forced to declare a moratorium on their outstanding debt in 1875-76. Incomes were rising in the early part of the decade and there was recovery at the end. For the decade as a whole, I estimate that per capita GDP declined by four percent for Turkey and Egypt. In other parts of the region, the impact of these events was more limited, and we estimate that by the end of the decade income levels had recovered their earlier levels.

As the last step of the reconstruction attempt, I extrapolate the benchmark year estimates backwards from 1820 towards 1870, employing different rates of growth of per capita GDP for different parts of the region with the help of the insights offered by the available fiscal data, foreign trade data and studies by various scholars, most notably those by Issawi.[26] Due to larger gaps in available evidence, the estimates for this early period carry a greater degree of uncertainty.

An alternative approach for studying levels of per capita income or the standards of living where reliable estimates of per capita GDP are lacking has been to compare real wages of specific occupations, most often of skilled and unskilled construction workers in urban areas. Real wage data are of far better quality than per capita GDP

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[24] The most recent study on per capita GDP for Greece since 1830 reaches the conclusion that there were significant increases in per capita growth in the country during the nineteenth century, but that the gap between Greece and the high-income countries continued to widen. This study estimates that per capita GDP in Greece increased at close to 0.5 percent per annum before 1870, and at rates below one percent per annum during 1870-1913, G. Kostelenos, S. D. Petmezas et al., Ακαθάριστο Εγχώριο Προϊόν. In a recent study Lains reaches a similar conclusion for the Balkans during 1870-1913, cf. Pedro Lains, "Southern European Economic Backwardness Revisited: The Role of Open Economy Forces in Portugal and the Balkans, 1870-1913," Scandinavian Economic History Review 50 (2002): 24-43. In contrast, Michael Palairet, The Balkan Economies, has argued that the period of early independence in the Balkans was characterized not by sustained increases in per capita income but by economic stagnation due to urban decline and increasing self sufficiency of agriculture in the aftermath of land reforms.

[25] Hansen and Wattleworth, "Agricultural Output,"; Hansen, "Income"; Yousef, "Egypt's Growth".

[26] Issawi, An Economic History, 103-107; Id., "Egypt, Iran and Turkey, 1800-1970," in Paul Bairoch and Maurice Levy Leboyer, eds., Disparities in Economic Development since the Industrial Revolution (New York, 1981), 65-77.

estimates especially for the period before the First World War for all of the developing countries. At the same time, however, real

earnings of labor, this does not mean that it should be a good proxy for per capita income.

Table 4. Daily Wages of Construction Workers in Cities of the Middle East and Southeastern Europe, 1860-1913 (in British pounds sterling converted at the prevailing exchange rate)

	Unskilled workers		Skilled workers	
	1860-69	1900-09	1860-69	1900-09
Istanbul, Turkey	0.07	0.075	0.155	0.195
Damascus and Aleppo	0.05	0.10	0.10	0.22
Beirut, Lebanon	0.05	NA	0.11	NA
Cairo, Egypt	0.05	0.06	0.14	0.17
Iran	0.02	0.03	0.08	0.10
Mosul, Iraq	0.04	NA	0.09	NA
Bulgaria	0.05	0.08	NA	0.12
Romania	0.06	0.09	0.09	0.11
Greece	0.08	0.12	0.12	0.16
Southern England	0.14	0.23	0.23	0.33

Sources: Pamuk, 500 Years; Suleyman Ozmucur and Sevket Pamuk. "Real Wages and Standards of Living in the Ottoman Empire, 1469-1914," The Journal of Economic History 62, nº 2 (2002): 293-321; Korkut Boratav, Gündüz A. Ökçün and Sevket Pamuk, "Ottoman Wages and the World Economy, 1839-1913," Review 9 (1985): 379-406; Charles Issawi, Economic History of Iran, 1800-1914 (Chicago, 1971); Id., The Fertile Crescent, 1800-1914: A Documentary Economic History (Oxford, 1988); Egypt, Ministère des Finances, Annuaire Statistique de L'Égypte, 1914 (Cairo, 1915); Ljuben Berov, "Wages in the Balkan Lands during the Period of Manufacturing Capitalism and the Industrial Revolution," Bulgarian Historical Review nº 1 (1979): 91--115; Id., "Le salaire des ouvriers qualifies dans les Pays Balkaniques au cours de la période du Capitalisme manufacturier et de la Révolution industrielle," Études Balkaniques nº 1 (1976): 30-54; Id., "Trends in the Level and Structure of the Incomes of the Working People in the Balkan Countries in the Eighteenth and Nineteenth Centuries up to 1912," Bulgarian Historical Review 15 (1987): 65-83; Henry Phelps Brown and Sheila V. Hopkins, "Seven Centuries of Building Wages," in E. M. Carus-Wilson, ed., Essays in Economic History (London, 1962), 168-178. The author would like to thank John Chalcraft for the wage data for mid-nineteenth century Cairo.
For evidence on consumer prices in urban areas during this period, see, in addition to the above, Charles Issawi, ed., The Economic History of the Middle East, 1800-1914 (Chicago, 1966), 449-51 for Egypt; Id., Economic History of Iran, 339-342 for Iran.

wage series are open to valid objections. In most of the Middle East urban wages was a small category during the nineteenth century. The linkage between urban wages and agricultural productivity was not always strong. Even if we accept wages as an adequate proxy for the annual per capita

With these qualifications, I present in Table 4 evidence compiled from many sources on nominal daily wage rates for urban construction workers in the Middle East and the Balkan countries during the half century before the First World War. While price levels may vary to some extent

between countries, it is clear there is a close correlation between my per capita estimates for 1913 and the nominal wage rates in different parts of the region on the eve of the First World War. There is a close correlation between nominal daily wages and the available per capita income estimates for the three Balkan countries as well. When the evidence for nominal wage rates is examined together with evidence on prices, one can conclude that urban wages rose faster than prices around the Middle East during the half century before the First World War. On the whole, the urban wage evidence supports the per capita GDP pattern within the Middle East region as outlined in Table 1 for 1913. This evidence for total increases in the nominal and real wages for the half century until the First World War is also consistent with rates of increase in per capita incomes for different parts of the region as presented in Table 1. I believe that changes in the wages of unskilled workers should be considered a better measure of changes in per capita GDP since the numbers of urban skilled construction workers was a very small category during this period.

IV. Checking the Estimates

A number of economic historians have used input and output prices to measure long-term changes in productivity. It has been shown that this dual approach to growth accounting is equivalent to the one using quantities. Peter Temin employed this approach and used trade data to assess the rate and breadth of productivity increases during the British industrial revolution. More recently, Pol Antràs and Hans-Joachim Voth have used changes in factor prices to develop an alternative measure of British total factor productivity growth for the same

period.[27] Unfortunately, while wage data may be employed for this purpose, data on prices of capital and land rents are not adequate for undertaking a similar study for the Middle East for the period before 1950. On the other hand, trade price data may be of some use for our purposes. The Middle East exported almost entirely agricultural goods and imported mostly manufactured goods and to some extent foodstuffs during the century before the First World War. Ottoman exports to Britain, for example, consisted almost entirely of agricultural goods and Ottoman imports from Britain consisted almost entirely of manufactures, with cotton manufactures accounting for the largest share. The only study on the subject shows that Ottoman net barter terms of trade in trade with the United Kingdom improved by about 30 percent from 1854 to 1913. Improvements in the same Ottoman terms of trade were much greater in the first half of the nineteenth century. Even after taking into account declines in transportation costs, and under the assumption of some inelasticity of demand for Ottoman exports, this pattern suggests that productivity increases in export oriented Ottoman agriculture lagged behind productivity increases in export-oriented British manufacturing during the nineteenth century.[28]

Another method for assessing my results would be to conduct simple sensitivity tests for the growth rate estimates. Since it is possible to go back to GDP per capita levels for 1913 mostly on the basis of existing series and since my estimates for GDP per capita for different countries of the region are consistent with a large body of other evidence, I will focus here on the period before 1913. I will consider growth rates below and above the rates I have estimated

[27] Peter Temin, "Two Views of the Industrial Revolution," The Journal of Economic History 57, nº 1 (1997): 63-82; Pol Antras and Hans-Joachim Voth, "Factor Prices and Productivity Growth during the British Industrial Revolution," Explorations in Economic History 40 (2003): 52-77.

[28] Sevket Pamuk, The Ottoman Empire and European Capitalism, 1820-1913 (Cambridge, 1987), 172-75.

for the region for the period 1820-1913. I will then calculate what these alternative growth rates imply for levels of GDP per capita in 1820. This exercise should help assess the fragility of my estimates and establish a range within which growth rates need to fall.

I have estimated the long-term rate of increase of per capita GDP for 1820-1913 for the region as a whole at 0.56 percent per annum (Table 1). If we adopt a significantly higher rate of increase, such as one percent per year for this period, we arrive at a GDP per capita level of 405 dollars for 1820. This level is simply too low since 400 dollars (1990 and PPP adjusted) represents the subsistence minimum in the Maddison framework. Conversely, if we adopt an average rate of increase of zero percent for 1820-1913, we arrive at a GDP per capita level of 1,023 dollars for the region in 1820. This level appears too high, as it is equal or above the existing estimates for GDP per capita levels for southern Europe as a whole and well above those for eastern Europe at this date.

This simple exercise has established that the rate of growth of per capita GDP for the Middle East was between zero and one percent per annum during century before the First World War. It can easily be extended to the individual countries to show that the growth rate of most, if not all, countries of the region for this period need to should fall in the same range especially since intercountry differences within the region were limited until 1913.

V. Economic Growth in Southeastern Europe during the Nineteenth Century

In a recent study, Good and Ma attempted to study the economic growth record of Central and Eastern Europe in a European comparative perspective by constructing annual GDP per capita series for each of the countries since 1870.[30] In the absence of sector-based estimates of GDP per capita for southeastern European as well as some of the other countries of Central and Eastern Europe for the period before 1913, they made use of several proxy variables, as discussed earlier, to arrive at their own estimates of GDP per capita. With this methodology, Good and Ma arrived at rates of increase of GDP per capita above one percent per annum for the period 1870-1910 for all countries of Central and Eastern Europe. These countries include Bulgaria, Romania and all states that were once part of Yugoslavia, including Serbia. As a result, they suggest, the per capita GDP gap between the countries of these two regions and Western Europe did not change significantly during the decades before the First World War. In light of the findings of more recent studies on GDP per capita for some of these countries and what we know regarding patterns of economic growth in other parts of European periphery during these decades, I think their conclusions are too optimistic.

In contrast, Michael Palairet has argued in his recent study that per capita incomes in Bulgaria and Serbia were not increasing but actually decreasing in the post-independence decades because of the rural orientation and declining commercialization of agriculture following the distribution of land to smallholders.[31] The clear implication of his estimates is that the GDP per capita gap between southeastern Europe and western Europe was increasing sharply during these decades.

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[29] Estimates for other regions are based on Maddison, The World Economy: Historical Statistics.
[30] Good and Ma, "The Economic Growth".
[31] Palairet, *The Balkan Economies.*

My estimates for the eastern Mediterranean countries as well as more recent sector- based estimates of GDP for Greece and Bulgaria suggest that what actually happened in the decades before, and more generally during the century until, the First World War was somewhere between these two extremes. GDP per capita was rising in the countries of southeastern Europe as well as the eastern Mediterranean during the decades before the war, but more slowly than the estimates provided by Good and Ma. The rates of increase of GDP per capita during both of these periods, however, were well below those of western Europe. The recent estimates for Bulgaria, in fact, suggest very little increase in GDP per capita in the two decades before the war. As a result, the GDP or per capita income gap between the countries of southeastern Europe and that of western Europe as a whole increased during both the decades before, and more generally during the century before, the First World War. This pattern also holds for most of the European periphery during the nineteenth century as suggested by the recent estimates published by Maddison as well as other studies.[32]

Table 1 attempts to summarize long-term trends in GDP per capita in southeastern Europe compared with Turkey and other countries around the eastern Mediterranean during the nineteenth century, on the basis of the recent studies of national income and GDP per capita series by Kostelenos, Petmezas *et al*. for Greece and by Ivanov and Tooze for Bulgaria. In order to facilitate international comparisons, I converted all estimates for GDP per capita given in various currencies in the national studies into 1990 constant international dollars as employed by Maddison in his recent studies.

VI. Explaining Economic Growth before the First World War

Both Southeastern Europe and the eastern Mediterranean began to participate in the global process of modern economic growth and experience increases in per capita income during the nineteenth century. In both regions, long-term rates of per capita income growth varied between zero and one percent per annum from 1870 to 1913.

Despite the arrival of modern economic growth, however, these rates of growth experienced in both regions remained below those being experienced in industrializing western Europe and the United States until the First World War. Differences in per capita incomes between southeastern Europe and the eastern Mediterranean, on the one hand, and these high income regions, on the other, widened during both 1820-1870 and 1870-1913 (Table 1). Viewed in a European context, this pattern was not very different from the experience of southern Europe as a whole during the same period.

Measuring economic growth performance is difficult enough. Explaining it is far more difficult. Such a discussion should provide some useful clues regarding the criteria for joining the convergence club: diffusion of technology, human capital, political and economic institutions and others.

Was industrialization a source of economic growth in southeastern Europe and the eastern Mediterranean before the First World War? I would argue that industrialization was very limited in both of these regions in the period before the war.

I offer two general explanations for the increases in per capita incomes in both southeastern Europe and the eastern Mediterranean.

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[32] Maddison, The World Economy: Historical Statistics.

VI.1. Institutional Changes

For decades it was believed that economic growth results in part from the accumulation of factors of production and improvements in their quality through investment in machines and skill formation, and in part from increases in productivity derived from advances in technology and organizational efficiency. In recent years, however, a useful distinction has been made between the proximate and the ultimate sources of economic growth. The former relates to the contributions made by the increases in factor inputs and productivity as cited above. The latter refers to aspects of the social and economic environment that influence the rate at which inputs and productivity grow. A growing body of literature emphasizes the importance of institutions or written and unwritten rules of a society and policies such as property rights and their enforcement, norms of behavior, political and macroeconomic stability that affect the incentives to invest and innovate. In this new perspective, the basic function of institutions is to provide certainty in economic activity. More complex economic structures will not emerge unless institutions can reduce uncertainties associated with such structures. Recent research has also revealed very large differences in total productivity levels between countries. It appears more than half of the differences in levels of per capita production are due to the productivity obtained from the same amount of resources rather than the accumulation of more machines or skills per person. The quality of institutions is increasingly seen in this context as the key to the explanation of economic growth and long-term differences in per capita GDP. Economic institutions also determine the distribution of income and wealth. In other words, they determine not only the size of the aggregate pie but also how it is divided amongst different groups in society.

In the Ottoman Empire, and to some extent in Egypt, there were significant institutional changes during this period in law, property rights as well as trade policy. These institutional changes are usually called the *Tanzimat* reforms.[33]

VI.2. Agriculture, especially export oriented agriculture as a major source of economic growth

There was a good deal of growth in foreign trade and exports of agricultural commodities in both regions. The ratio of exports to GDP rose steadily from less than five percent for both regions in the early part of the nineteenth century to more than ten percent and even higher for some countries on the eve of the First World War.

Our estimates also indicate that during the nineteenth century there also emerged within the Middle East an important divergence between those parts of the region that were linked to world trade through ports around the eastern Mediterranean and those linked to trade through the Gulf and Red Sea. Those parts of the Middle East which were connected to world trade through the eastern Mediterranean enjoyed faster growth in trade and attracted more foreign direct investment. The institutional changes called the *Tanzimat* reforms in the Ottoman Empire combined with the expansion of trade and direct foreign investment to lead to considerable differences in per capita income levels between the two parts of the region by 1913.

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[33] Cf. Okyar, "A New Look".