African Economic Growth In A European Mirror: A Historical Perspective

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DEPARTMENT OF ECONOMIC HISTORY

WORKING PAPERS

NO. 202- APRIL 2014

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Abstract*:* New research on historical national accounting has provided a more comprehensive picture of European economic performance from the medieval period through industrialization and the transition to modern economic growth. These data confirm anecdotal arguments that pre-industrial economies were not stagnant but rather experienced periods of growth followed by reversals which erased gains in living standards. They also provide a framework for comparing the absolute level of economic development in different times and places, using a common unit of account. These data are used here to re-assess the economic performance of African economies during the twentieth century. While African economies have been growing rapidly in recent decades, levels of per capita income remain low and this growth has not always been accompanied by the institutional and structural change witnessed in Europe during the transition to modern economic growth. As a result, growth reversals continue to pose a serious threat to African prosperity, and measures of structural change and institutional quality should be given more weight in assessing the extent to which individual countries have moved closer to achieving sustained economic growth.

1. INTRODUCTION

Efforts to measure the performance of pre-industrial economies have often been hindered by the limited availability of quantitative data. This lack of information has often led to assumptions that, prior to the industrial revolution, economic growth was limited. Such assumptions have influenced the study of regions as diverse as Europe, Asia and Africa. In his landmark study of the economies of West Africa, Hopkins (1973: 9) noted that studies of African economic history often assumed that the pre-colonial economy was 'a subsistence economy which was uniform, unchanging, and therefore uninteresting'. Similarly, economic historians of the medieval period have often stressed the limited extent of economic growth (Hatcher and Bailey 2001: 122). Epstein (2000: 1) noted that in much of the historiography of pre-modern Europe, the idea of 'pre-modern economic growth was a contradiction in terms'.

Recent work in historical national accounting has allowed economic performance before the industrial revolution to be measured on an annual basis (Broadberry et al., 2011; van Zanden and van Leeuwen, 2012; Malanima, 2011; Álvarez-Nogel and Prados de la Escosura, 2013). This work has shifted understandings of pre-industrial European economies in two fundamental ways. First, it has shown that levels of per capita income in medieval Europe were already significantly above subsistence. Second, it has illustrated that for centuries prior to the transition to sustained economic growth during the Industrial Revolution, European economies experienced periods of positive per capita income growth, but followed by periods of negative per capita income growth, or "growth reversals". Sometimes these periods of positive growth lasted several decades

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before the gains were eroded by reversals. These new data confirm anecdotal accounts which challenge assumptions of stagnation in pre-industrial European economies, arguing that growth was possible but often not sustained owing to the impact of political, demographic or climatic shocks (Epstein, 2000: 2; Jones, 1993).

In addition to revising standard assumptions about economic performance in pre-industrial Europe, this research can also provide insights into more recent economic trends by placing 'boom' periods in the twentieth century in a longer historical context. A growing literature has attempted to distinguish growth accelerations likely to be followed by reversals from those which may mark a transition to sustained growth (Johnson, Ostry and Subramanian 2010; Berg, Ostry aand Zettelmeyer, 2008; Jones and Olken, 2005; Rodrik, 1999). A key aim of this literature has been to assess whether the rapid growth of African economies since the mid-1990s means that Africa has turned the corner to follow in Asia's footsteps. Viewing Africa's economic performance since the early twenty-first century from a longer historical perspective serves as a reminder that a period of growth lasting several decades does not necessarily signal the transition to sustained growth.

Historical national accounting provides a framework for comparing the absolute level of development in different times and places, using 1990 international dollars as a common unit of account (Maddison, 1995; 2001; 2010). Similar comparisons have also been used to identify patterns of economic development and assess the growth prospects of developing economies (Chenery and Syrquin, 1975; Crafts, 1984). The extension of national accounting data into earlier historical periods allows this method to be applied to

pre-industrial economies. This is important because it avoids trying to assess the prospects of countries that remain poor today from the experience of currently developed countries only *after* they became rich. According to Johnson, Ostry and Subramanian (2010:125), comparisons with wealthy countries after industrialization are problematic because 'developing countries today may be different from European and other countries that either had good institutions already by 1850 or were well on their way to developing such institutions'. Many African economies in the twenty-first century have levels of GDP per capita (measured in 1990 international dollars) which are similar to those of medieval European economies. Even while achieving levels of per capita income well above bare bones subsistence, medieval economies failed to make the transition to sustained economic growth for several centuries. Only a small number of African economies have per capita incomes above $2,000 in 1990 international prices, which is the level of Britain at the start of modern economic growth in the early nineteenth century.

Existing explanations for the European transition to modern economic growth suggest that two related ingredients are necessary: economic diversification and institutional change. In Europe, an important part of the transition to modern economic growth was the growth of industrial and service sectors (van Zanden and van Leeuwen, 2012; Broadberry et al., 2011). Structural change was facilitated by stable institutions which provided producers with incentives to specialize. In contrast, most African economies are dominated by primary commodities, including both minerals and agricultural exports which are subject to alternating growth booms and growth reversals.

The precise nature of the institutional reforms necessary to support structural change remains the subject of debate. One line of argument suggests that the key institutional change is the imposition of constraints on the executive, so that rulers cannot intervene arbitrarily in business matters (North and Weingast, 1989; Acemoglu, Johnson and Robinson, 2005). Others have argued that what really mattered was the expansion of state capacity (Epstein, 2000; O'Brien, 2011). According to this theory, market integration was hindered by the "freedoms" granted by relatively weak rulers to interests such as towns and guilds. What was needed for sustained growth was centralization of state power. In his study of the development of European fiscal systems since the early modern period, Dincecco (2011) argues that the two sides are complementary, and that both the restriction of executive authority and the expansion of state capacity are necessary components in the creation of effective fiscal states.

This paper uses Europe's development experience to assess the growth prospects of African economies. Section 2 provides a quantitative framework for comparing twentieth-century Africa with pre-modern Europe, based on levels of GDP per capita in 1990 international dollars. Section 3 then examines the patterns of growth in pre-industrial economies, in both Europe and Africa, highlighting the tendency for growth booms to be followed by growth reversals and drawing out the implications of Europe's experience for the sustainability of growth booms in Africa. Section 4 then examines the transition of a number of European economies to sustained modern economic growth during the nineteenth century, highlighting the process of economic diversification and

institutional change at different levels of income, and using the results to shed further light on the sustainability of growth booms in African economies. Section 5 concludes.

2. MEASURING LEVELS OF INCOME IN PRE-INDUSTRIAL ECONOMIES

Historical national accounting produces estimates of the level of per capita income in pre-industrial economies in units which allow comparisons across space and time. In this section, recent estimates will be brought together to compare levels of income in Europe and sub-Saharan Africa. Levels of per capita income in European countries in the pre-industrial period will be shown to have been already substantially above subsistence, and comparable to levels of per capita income in African countries in the post-war period. This will provide the foundation for the following sections on patterns of growth and reversal over time and the transition to sustained economic growth.

2.1 Sources and methods

For both Europe and Africa, GDP per capita figures are reported in 1990 international dollars, which is convenient for making comparisons across space and time. For each country, GDP is measured in local currency, but converted to constant price terms by correcting for price changes over time with a 1990 base year. The conversion to a common currency involves comparison of local prices in 1990 with dollar prices in the same year, and a weighting scheme based on international rather than just US patterns of consumption. In 1990, the World Bank poverty level for an individual was a dollar a day, or $365 a year, so that the minimum or "bare bones subsistence" level of GDP per capita

in 1990 international dollars is usually taken as $400, since even the poorest economies have a small elite with much higher levels of income.

Annual data on GDP per capita are now available for Spain, Italy, Britain and Holland reaching back to around 1300, presented in Figures 1 and 2. These estimates are based on hard data recovered from records produced at the time, processed within a modern national accounting framework. They represent a considerable advance on the "guesstimates" provided by Maddison (2001; 2003; 2010) for the pre-1820 period, where many observations were set at $400 in 1990 international prices based on the assumption that pre-industrial economies stagnated at subsistence level, rather than with reference to data from that period. The quality of the underlying data varies between countries. For some European countries, including Britain and the Netherlands, abundant quantitative data have survived, so that historical national accounts can be rebuilt in great detail (Broadberry, Campbell, Klein, Overton and van Leeuwen, 2011; 2014; van Zanden and van Leeuwen, 2012). For other countries, including Italy and Spain, Malanima (2011), Álvarez-Nogal and Prados de la Escosura (2013) have developed a short-cut method for reconstructing GDP from more limited information. For agriculture, the demand for food is derived from estimates of population, real wages and the relative price of food, with adjustments for foreign trade. For non-agriculture, it uses data on the urbanization rate, again with adjustments for specific factors such as agro-towns and rural proto-industry.

For African countries, the most widely used source of national accounting data is the series provided by the World Bank, starting in 1960 (Jerven, 2013: 16-17). This late

start date has often shaped perceptions of African economic performance. In an influential 1989 report, the Bank stated that 'economic growth has a relatively brief history in Sub-Saharan Africa' (World Bank, 1989: 11). However, renewed interest in African economic performance before that date (see Hopkins, 2009) has prompted efforts to estimate GDP per capita for earlier periods. Chronologically, the longest series is for the Cape Colony of South Africa, from 1701-1910 (Fourie and van Zanden, 2013). For other African countries, speculative series begin only in the late nineteenth century. Maddison estimates a figure of $439 for Ghana in 1870, barely above subsistence, reflecting the same assumptions as the European 'guesstimates' discussed above. More recently, Prados de la Escosura (2012) has produced estimates based on projecting an econometric relationship between the income terms of trade and GDP per capita in the post-1950 period back into the pre-1950 period, where data on the income terms of trade are available. For purposes of comparability, his paper will rely primarily on Maddison's figures from 1950 onwards, which capture a larger number of countries than the longer series discussed above. Though doubts have been cast about the quality of African national accounts (prominently if not for the first time in Jerven, 2013), the general pattern of growth is similar across the competing series. Figure 4 charts real GDP per capita in 1990 international dollars for Africa as a whole for the period 1950-2010.

2.2 Levels of per capita income in Europe and Africa

In this section, we identify critical levels of GDP per capita during Europe's development process and map contemporary African economies into these levels. The estimates in Table 1 suggest that western Europe was already well above bare bones subsistence

($400) by the late Middle Ages, with average per capita GDP in England and Holland around $750 on the eve of the Black Death in 1348, and substantially higher than this in Italy and Spain. The first income category will therefore be less than $750. This can be seen as applying to whole of Europe during the early medieval period. The second income category is $750 to $1,500. This level of income encapsulates the range of European income levels after the 'commercial revolution' of the twelfth and thirteenth centuries. England and Holland were at the lower end of this spectrum in the mid-fourteenth century, while Italy was at the upper end. Holland and England reached the upper end of this range only in the sixteenth and seventeenth centuries, respectively. The third category is $1,500 to $2,000. The upper end of this range corresponds to Britain in 1800, by which time the Industrial Revolution and the transition to modern economic growth were in full swing, and urbanization was proceeding rapidly. Holland had reached this level by 1570, the start of its Golden Age. The fourth income category is over $2,000, a level reached in Holland after 1600 and Britain after 1800. It was from this level of income that both countries made the transition to modern economic growth.

Table 2 maps the mainland countries of sub-Saharan Africa into the above four income categories. The majority of sub-Saharan countries in 2008 have per capita incomes in the first two categories. Only a handful of countries – several of which, like Equatorial Guinea, are oil exporters with comparatively small populations – have per capita incomes higher than Britain at the start of the nineteenth century. This finding has implications for debates about whether African countries have made the transition to modern economic growth, as European economies that had similar income levels in the

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fourteenth century continued to stagnate for another five hundred years or more. Subsequent sections will refer to four case study countries (Sierra Leone, Kenya, Nigeria and South Africa), selected because they each fit into one of the four income categories. Sierra Leone fits into the first category, with per capita income of less than $750 1990 international dollars both in 1950 and in 2008. Kenya's per capita income in 2008, at $1,098, puts it comfortably into the second category ($750-$1,500). The number of countries in the third and fourth categories shrinks considerably. Nigeria fits into the third category, while South Africa's per capita income in 2008 ($5,048) is comparable to that of Britain in the early twentieth century.

3. PATTERNS OF GROWTH IN PRE-INDUSTRIAL ECONOMIES

Studies of pre-industrial economies need to reconcile strong evidence of economic growth and incomes above subsistence with limited improvement in living standards over time. These two facts can be explained by a pattern of growth which includes periods of positive growth, followed by reversals that erased gains in living standards. Jones (1993: 1) labeled this phenomenon 'growth recurring', writing that 'the underlying tendency for growth has been hidden by the apparent economic stagnation of most of history, but it was nevertheless there'. Periods of growth were reversed owing to shocks of various types, including environmental change and institutional failures. This section uses available data for both Europe and Africa to demonstrate the prevalence of alternating growth booms and growth reversals. Data from four European countries from 1270-1870 are presented first, and show that this pattern can persist across centuries. This provides a context for the interpretation of the shorter series of data for African countries.

3.1 Growth and reversals in Europe, 1270-1870

The new estimates of national income per head in four European countries between the thirteenth century and the mid-nineteenth century, presented in Figures 1 and 2, suggest a pattern of periods of economic growth followed by growth reversals. This underlines the point that low standards of living in pre-industrial economies are not due to persistent failure, but rather to inconsistency, so that the fruits of short run success are quickly lost. A key driver of both positive and negative growth was shifting fortunes of export commodities such as wool and long-distance trade in luxury items such as silk and spices (Álvarez-Nogal and Prados de la Escosura, 2013; Power, 1941; Findlay and O'Rourke, 2007). All four economies also suffered from shorter cycles of growth and reversal, driven by changes in agricultural output linked to climatic changes from year to year.

The general pattern of long run stagnation with alternating periods of growth and growth reversals is well illustrated by the cases of Italy and Spain in Figure 1. Italy had an unusually high level of per capita income in the medieval period, reaching $1,482 as early as 1300, as compared with $755 in England and $957 in Spain. Italy's relative affluence during this period is attributed to the role of city states such as Florence, Venice and Genoa in facilitating long distance trade between Europe and Asia. (Luzzatto, 1961; Lane, 1966; Kindleberger, 1996; Maddison, 2001). Domination of Mediterranean trade routes created the formula for impressive growth which made Italy arguably Europe's 'most advanced' economy during the medieval period (Russell, 1972: 39). However, changing external conditions undermined the basis for this growth. The first was

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restrictions on trade with Syria and Egypt imposed by the Ottoman Empire, and second, competition from Portuguese shipments between Europe and Asia on new trade routes around Africa (van der Wee, 1990). Through the fifteenth and sixteenth centuries GDP per capita in Italy declined to a low of $1,244 in 1600.

A similar pattern can be observed for pre-industrial Spain. Álvarez-Nogal and Prados de la Escosura (2013) argue that Spain's economic history before the nineteenth century can be divided into two epochs, each of which was characterized by periods of both positive and negative growth, driven largely by fluctuations in the wool trade. In the first epoch, from the 1270s to the 1590s, sustained progress was interrupted by the Black Death and then resumed from the 1390s. The plague had a negative effect on Spanish incomes, in contrast to much of the rest of Europe, where it reduced demographic pressure. By destroying commercial networks and increasing isolation amongst an already scarce population, the Black Death reduced Spain's ability to maintain per capita income, which had declined to $885 by 1400. As a result of renewed commercial expansion on the basis of wool exports from the 1390s and Spain's key role in Europe's encounter with the Americas from the 1490s, per capita GDP was again close to its pre-Black Death level by the end of the sixteenth century (MacKay, 1977). The second epoch, running from the 1600s to the 1800s, began with a sustained fall in per capita income between the late sixteenth and mid-seventeenth century, as wool exports declined and the Spanish economy became more inward-oriented (Flynn, 1982; Drelichman, 2005). Economic recovery only took place in the eighteenth century, and when per capita

incomes again reached the level of the 1590s at the beginning of the nineteenth century, Spain no longer dominated economic links between Europe and the New World.

Figure 2 presents data on Britain and Holland over the same period. Like Italy and Spain, both countries experienced periods of growth and reversal which limited long-run gains in per capita income during the medieval period. However, unlike Italy and Spain, they were able to make the transition to modern economic growth before the late nineteenth century (Broadberry, Campbell, Klein, Overton and van Leeuwen, 2014). This resulted in a reversal of fortunes between the North Sea Area and Mediterranean Europe, known as the "Little Divergence". Whereas Italy and Spain had higher levels of per capita income than Britain and Holland in the early fourteenth century, Britain and Holland were clearly ahead of Italy and Spain by the nineteenth century. The first growth spurt in Britain and Holland occurred following the Black Death and subsequent outbreaks of plague from the mid-fourteenth century (Bridbury, 1962; Herlihy, 1997). As in many other countries, the short-run effects of the Black Death on GDP were catastrophic. Real GDP in England declined by over thirty per cent in the three years after 1348, and it was not until the sixteenth century that it recovered to 1348 levels (Broadberry, Campbell, Klein, Overton and van Leeuwen, 2011). It was only the heavy population losses during the epidemic that increased the level of GDP per capita. In contrast to Italy, however, per capita incomes remained at this higher level rather than returning to their pre-1348 level.

A second wave of growth followed, led by Holland during its Golden Age, 1570-1650, and then by Britain from the mid-seventeenth century. In both cases, this growth was punctuated by periods of reversal during Europe's so-called 'crisis of the seventeenth century', variously attributed to population pressure, war, inflation, and institutional failures (de Vries, 1994: 21-5). Even on the cusp of the transition to modern economic growth, both economies suffered reversals which lasted several decades. This second wave of growth, which cemented the 'Little Divergence", has been linked to control of long-distance trade, following the opening up of new trade routes to Asia around the southern tip of Africa, and to the New World following Europe's encounter with the Americas (van der Wee, 1990; Kindleberger, 1996; Maddison, 2001). Spain and Portugal, which had Atlantic and Mediterranean coasts and were the pioneers of these new trades, achieved early gains but did not make the transition to sustained economic growth. The key to breaking out of the cycle of growth booms and reversals was a set of structural and institutional changes which will be considered in detail in section 4.

3.2 Economic growth in Africa, 1700-2010

Estimates of GDP per capita for African countries dating back to the eighteenth century show a pattern of growth similar to that of medieval and early modern Europe. Figure 3, which gives GDP per capita for the Cape Colony and South Africa, shows firstly that per capita incomes in the Cape Colony were already high in the early eighteenth century (Fourie and van Zanden, 2013). Boshoff and Fourie (2010) link much of this growth to the impact of international trade. Much like in medieval Europe, these estimates revise earlier perceptions of the Cape Colony as largely stagnant, at close to subsistence level,

until the discovery of minerals in the nineteenth century. However, the Cape economy was subject to reversals, particularly in the 1710s, the 1780s, and through the early nineteenth century. These crises were linked to external factors interfering with international trade, such as warfare in the 1710s and 1780s, and also to internal factors such as a smallpox epidemic in the 1710s (Fourie and van Zanden, 2013).

For other African countries, we do not have any estimates covering such a long period. Anecdotal evidence suggests that it is likely that international trade stimulated periods of growth in particular regions dating far into the past. The rise of the trans-Saharan trade in gold, slaves and ivory from the early medieval period led to the emergence of large urban centres and elaborate commercial institutions in West Africa and along the edge of the desert (Lydon 2009). Much like in Venice and Genoa, cities like Timbuktu, centre of the once-mighty Kingdom of Mali, prospered through the facilitation of international trade. Similarly, the expansion of trade between Europe and West Africa (including the Atlantic slave trade) led to increasing commercialization, albeit with long-term costs associated with demographic losses (Jerven, 2010). Anecdotal evidence suggests periods of reversal following such booms.

From the late nineteenth century, however, estimates are available which show that through the twentieth century, African countries experienced a series of booms and busts, largely linked to international trade. Prados de la Escosura (2012) gives estimates for eight African countries (Sierra Leone, Ghana, Nigeria, the Gambia, Kenya, Uganda, Tanzania, and Mauritius) from c. 1880-1960. With the exception of Mauritius and the

Gambia, his estimates show strong growth through the late nineteenth and early twentieth century, a period when the production of cash crops for export was expanding rapidly under favourable terms of trade (Havinden and Meredith, 1996; Hopkins, 1973). Many countries then experienced a sharp reversal during the Great Depression of the 1930s, when export prices declined. In Tanzania, this reversal was sufficiently severe that the level of per capita income achieved in 1925 was not reached again until after World War II. In the Gambia and Mauritius, the decline started much earlier, after early cash crop booms (in groundnuts and sugar, respectively) had begun to fade.

The longer-term picture of African growth patterns that emerges from these estimates provides a new perspective on the more familiar national accounting data for post-war Africa. Averaged across sub-Saharan Africa, data from both the Maddison dataset and the World Bank show a period of growth in the 1950s and 1960s which ended with the oil crises of the 1970s. This was followed by two decades of stagnation or decline until the mid-1990s. The severity of the reversal following the 1970s crisis meant that by the 1990s, levels of per capita income in many African countries were at or even below the levels of the 1960s. Data from the Maddison dataset are shown in Figure 4. Average figures across the sub-Saharan region mask considerable diversity between countries in terms of both the level of per capita income and the pattern of economic growth. Figures 5 and 6 plot GDP per capita for the four African countries identified in section 2 from 1950 to 2008. They illustrate substantial differences not only in 2008 but also in their earlier experiences. Though the pattern of periods of growth followed by

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reversals applies to all of them, different resource endowments and political histories have resulted in different growth paths.

The richest of the four countries, in both 1950 and 2008, was South Africa, which as shown in Figure 5 experienced a long period of fairly consistent economic growth following the mineral discoveries of the nineteenth century (Feinstein, 2005). Its per capita GDP in 1950 was $2,591, substantially higher than the other three countries. It did, however, suffer a significant reversal linked to both increasing political instability in the last years of the apartheid government, a falling gold price, and increasing trade sanctions (Fedderke and Simkins, 2012). The scale of the reversal was such that the peak of GDP per capita achieved in the late 1970s ($4,480) was only regained in 2006.

The second-richest of the four countries in 2008 was Nigeria, with a per capita income of around $1,600 in 2008. This represented a considerable increase since 1950, when Nigeria was a largely agricultural economy with per capita income of a little less than $800. Nigeria's post-war growth boom was interrupted early by a short but sharp reversal in the late 1960s linked to the Biafran War (1967-70), during which GDP per capita fell below its 1950 level (Iyoha and Orioaki, 2008). The oil booms of the 1970s led once again to positive growth but these gains were vulnerable to external changes and internal mismanagement, and GDP per capita declined through the 1980s and remained stagnant through the 1990s. In 2000, a new period of growth began, underpinned by oil production and expansions in agriculture and services (Organisation for Economic Cooperation and Development, 2012).

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The third country, Kenya, has experienced less volatile economic performance, but still shares many features with the other cases. As in Nigeria, conflict interrupted the post-war boom – in this case the Emergency of the 1950s. Growth resumed through the late 1950s but stagnated in the early 1960s, before resuming later in the decade. The coffee boom of the 1970s mitigated the effects of the oil crisis in the short run, but economic performance was poor during much of the 1980s (Mwega and Nudung'u, 2008). A brief recovery during the late 1980s was ended by outbreaks of ethnic violence following elections in 1992 and 1997 (Elischer, 2010). This was compounded by droughts and high oil prices due to the Gulf War (Mwega and Ndung'u, 2008).

The poorest of the four countries in 2008, by far, was Sierra Leone, which had a per capita income of less than $750, not dramatically different from its per capita income in 1950. Economic growth kept pace with the other three countries until the early 1970s. However, increasing political tension under a repressive one-party system led to stagnation from the early 1970s and then, finally, a major reversal coinciding with the outbreak civil war in 1991 (Reno, 1998). By the end of the conflict, Sierra Leone's per capita income was at subsistence level. Although there has been recovery following the official end of the war in 2002, overall growth since 1950 has been negligible.

As these cases illustrate, economic and political circumstances shaped the precise pattern of growth in both medieval Europe and twentieth-century Africa. Nevertheless, a number of general conclusions can be drawn. First, all of the countries profiled here

experienced long periods of stagnation owing to the boom-and-bust cycle of pre-industrial economic growth. In both Europe and Africa, estimates of per capita income suggest that assumptions the pre-industrial economies were stuck at subsistence level are misleading. However, long-term improvements in per capita income are possible only if growth booms are accompanied by structural and institutional change that make the economy more robust to negative shocks. The remainder of this section focuses on growth reversals, while section 4 will explore the possibilities of breaking out of the pattern of long run stagnation and making the transition to sustained economic growth.

3.3 Comparing growth reversals in Europe and Africa

To what extent are the growth booms and reversals experienced by African countries comparable to those occurring in medieval Europe? A key question is to what extent the accelerations and reversals identified above were similar across time and space. Because the European GDP per capita data in Figures 1 and 2 cover a much longer period than the African data in Figures 5 and 6, the former may at first sight appear less volatile than the latter. However, the scale of the reversals is actually quite similar, measured by the standard deviation of annual growth rates. The annual growth rate in the four African countries (South Africa, Nigeria, Kenya and Sierra Leone) was highly variable. The maximum annual growth rate recorded across the four countries was 27.0 per cent in Nigeria in 1970 during the recovery from the Biafran War, which followed the sharpest negative growth rate of -17.96 per cent in 1967. The standard deviation was 6 to 7 percentage points in Nigeria and Sierra Leone, and 3 to 4 percentage points in the less volatile Kenya and South Africa. Turning to the European data, the standard deviation

was 6 to 8 percentage points for Britain and Holland, which was similar to the 6 to 7 percentage points for Nigeria and Sierra Leone, while the lower rate of 5 percentage points for Italy was closer to the experience of Kenya and South Africa.[1]

The study of this pattern of boom and bust has recently gained greater prominence in the literature on economic growth. Easterly, Kremer, Pritchett and Summers (1993) point out that the volatility of economic growth in most countries contrasts with the stability of characteristics generally thought to play an important role in determining growth performance. Pritchett (2000) notes that variation in growth rates is particularly marked in developing countries. In response to these observations, a growing literature has attempted to understand the factors most likely to influence the beginning (or end) of growth episodes. The economic histories of both Africa and Europe suggest that many factors can initiate growth accelerations. In their study of growth accelerations across 110 countries in the post-war period, Hausmann, Pritchett and Rodrik (2005: 328) find that 'growth accelerations are a fairly frequent occurrence', suggesting that 'achieving rapid growth over the medium term is not something that is tremendously difficult'. The longer series of data presented here confirms that this is true not only of recent history, but also has been the case for many centuries. This long-run picture also shows that sustaining such growth accelerations is tremendously difficult, such that only a few countries have managed it. The next section will draw on the economic histories of both Europe and Africa to link structural change and institutional reform to the ending of growth reversals.

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[1] The much lower standard deviation of 0.7 percentage points for Spain suggests that the latter data series may not be fully capturing the extent of annual fluctuations.

4. INSTITUTIONAL FOUNDATIONS OF SUSTAINED ECONOMIC GROWTH

In the examples given above, growth reversals were often linked to changing conditions for external trade, whether due to war or declining demand for raw materials. A key factor in the transition to sustained growth, first in Britain and then in the rest of northwest Europe, was economic diversification, particularly the expansion of the manufacturing and service sectors. Structural change meant that the economies of Holland and Britain were, by the nineteenth century, less vulnerable to changes in the terms of trade or diminishing demand for particular exports.

In both cases, structural change required institutional reforms. Insights from the new institutional economic history suggest that the crucial reforms were linked to creating the right balance between state capacity and ensuring sufficient constraints on arbitrary behavior by the executive. It was the creation of these institutions which allowed the profits from New World trade to be used productively to promote structural in the cases of Britain and Holland, in contrast to Spain and Portugal. We show that the share of the labour force in agriculture in Africa today has a high variance amongst economies at similar levels of per capita income.

4.1 Structural change in Europe and Africa

Table 3 gives the share of agriculture in the labour force of selected European countries since the medieval period. Rising per capita incomes were strongly associated with declining shares of labour in agriculture. The growth of specialized industrial and service sectors can be seen to have proceeded faster in Holland and Britain than in the rest of

Europe in Table 3. By 1600, the release of labour from agriculture had proceeded further in the Netherlands than in the rest of Europe, as the Dutch economy relied increasingly on imports of basic agricultural products such as grain and paid for them with exports of higher value added products (de Vries and van der Woude, 1997). By 1700, the share of the labour force engaged in agriculture was even smaller in England, where a highly commercialized agriculture produced enough grain to feed the population without recourse to substantial imports until well into the nineteenth century (Deane and Cole, 1967; Crafts, 1985). The share of the labour force in agriculture remained substantially higher in the rest of Europe.

The high degree of specialization implicit in these numbers required individual producers to be confident that they could maintain access to reliable supplies of food through the market as they left the land, and to retain the profits from their investments and innovations in non-agricultural activities. This confidence came in part from institutional change, requiring a state with the capacity to enforce property rights, create a unified market and intervene during times of crisis. The formalised system of poor relief from the Elizabethan period, which encouraged English workers to remain in specialized non-agricultural occupations, had its origins in earlier developments at the local level, reaching back to the late-medieval period (Dyer, 2012) as well as the early Tudor period (Slack, 1988; Hindle, 2004, McIntosh, 2012). Solar (1995: 2-3) argues that from the seventeenth century the 'uniformity and comprehensiveness' of the English poor laws played an 'integral, and to a degree autonomous, part in England's economic

development'. Such state institutions also required strong parliamentary control to prevent arbitrary interference in business.

Data on the agricultural share of the labour force in African countries are shown in Table 4. As in Europe, there is a general negative relationship between the level of per capita income and the share of the labour force in agriculture, although it seems to be looser than in Europe. Thus the countries in the poorest category of income, Malawi and Tanzania, clearly have higher shares of labour in agriculture than the countries in the richest category, South Africa and Botswana. However, in the intermediate categories, the relationship is not monotonic. Thus, for example, Kenya has a lower agricultural share than Nigeria, despite being poorer.

Zambia, with a share of 72.8 per cent in 2010, is the only country listed in this table where the agricultural share of the labour force actually increased from the 1960s to 2010. The case of Zambia raises the complicating issue of mineral resources in African structural change. Zambia's economic growth has since the late 1920s depended on its large reserves of copper (Du Plessis and Du Plessis 2006: 352). The rising share of the labour force in agriculture reflects two major shifts in the Zambian economy since independence in 1964. The first is the relative decline in the copper mining industry. Production declined in terms of both volume and value between the 1960s and the 1990s (Ferguson 1999: 7). The second was changing policies towards food production and marketing under pressure from the IMF during the structural adjustment reforms of the

1980s. Over the course of the 1980s food production increased, and the rural share of the population increased briefly in the 1980s and 1990s (Loxley 1990; World Bank 2013).

The influence of mineral exports can be also be seen in Nigeria. Figure 7 shows the share of the labour force since the 1960s in Nigeria and Kenya. The greater degree of structural change in Kenya can be explained by the dominance of oil exports in Nigeria. At independence, per capita incomes in both countries were similar, and in both countries agriculture's share of the labour force was around 80%. This percentage dropped in both, to a low of 48% in Kenya and 58% in Nigeria in 2010, although Kenya's GDP per capita did not increase as quickly. In this case, the contribution of oil to Nigerian GDP per capita means that it does not necessarily reflect the degree of structural change. One implication of this finding is that looking beyond GDP per capita to measure the degree of structural change may be helpful in assessing the prospects for growth reversals in African countries. It will also be helpful in the next section to examine the institutional changes underpinning those structural changes.

4.2 Institutions and growth reversals

Drawing on the extensive literatures on both early modern Europe and twentieth-century Africa, this section will stress two aspects of institutional change, namely constraints on the executive and an increase in state capacity. Each has been emphasized in the literature on Europe, where debates have emerged about the relative importance of each factor. In Britain, the first country to achieve modern economic growth, the heart of the debate is the significance of the Glorious Revolution in 1688. On the one hand, by giving

legitimacy to the tax raising powers of Parliament, it permitted the growth of state capacity and a unified domestic market (Epstein, 2000 and O'Brien, 2011). The emphasis of these two authors is on the centralization of state power and the rise of the "fiscal state". On the other hand, by confirming the supremacy of Parliament, the Glorious Revolution placed effective constraints on the executive powers of the Crown, a feature emphasized by North and Weingast (1989) and Acemoglu, Johnson and Robinson (2005). The Glorious Revolution was just one stage in a process of institutional development, and that its effects were not felt overnight (Stasavage, 2002). Although trust and the security of property rights can be destroyed overnight, building them up takes time.

The extensive literature on African institutions has also stressed the need for both executive constraint and state capacity. Baskaran and Bigsten (2013: 92) argue that the challenge 'that every society faces is to provide the state with the means to fulfill its legitimate duties, while at the same time preventing it from misusing these means to suppress dissent and expropriate private wealth'. Acemoglu and Robinson (2010: 23) similarly claim that 'to generate sustained economic development requires not just the formation of centralized polities, but also the removal of the absolutist and patrimonial tendencies of such polities', though they particularly emphasize the importance of the latter. The same debate has emerged in the study of colonial states. Crawford Young (1994) borrows a Congolese term, *bula matari* or crusher of rocks, to describe the colonial state and its legacy of absolutism. In contrast, Herbst (2000) argues that colonial states were subject to the same hindrances which limited state centralization during the pre-colonial period, namely low population density and a small fiscal base.

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Quantitative measures of institutional quality have often proved elusive. This paper will rely on widely-accepted proxies for institutional performance in both Europe and Africa to assess the extent to which countries at different levels of income have undergone institutional change. The first, as a measure of state capacity, is fiscal revenue. Early modern Britain and Holland pulled away from Spain and Portugal in terms of both the ability of the state to raise taxes that allowed for an expansion of state capacity and the control exercized by mercantile interests over the state through parliament. Table 5 gives revenue per capita in grams of silver for selected European countries from the sixteenth to the eighteenth century. It shows a pattern of divergence between northwest Europe and the rest of the continent, with England and the Dutch republic forging ahead.

Table 6 gives the average of three major indicators of fiscal performance across African countries from each income group for which data on all three indicators are available.[2] The first indicator is revenue as a share of GDP. Critics of this measure note that it does not distinguish between earned and unearned revenue. The second measure, the tax effort index, was designed in part to address this problem. The index measures a country's tax collection performance relative to what it could be expected to collect given the current state of its economy, measured by per capita GDP, the ratio of trade to GDP and the share of agriculture in national income. Tax collections are expected to increase with GDP and foreign trade, and decrease as the share of agriculture increases (African Economic Outlook 2010: 94-5). The third indicator is revenue per capita in US dollars.

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[2] Excluded are Burundi, Niger, Togo, Djibouti, Eritrea, Somalia and Zimbabwe.

In Table 6, there is a strongly positive relationship between the level of per capita income and fiscal revenue per capita, just as in the European case. However, the relationship is less clear-cut when fiscal performance is measured in terms of revenue as a share of GDP or tax effort. At the lowest income level, countries have an average tax effort below one, meaning revenue is below expectations. At higher levels of income, however, the picture is complicated by the mixture of 'earned' and 'unearned' income (Moore 2001: 389). Earned revenue has 'historically played a major role in institutionalizing representative legislatures and, less directly, democracy and civil liberties', while unearned revenue may relieve the state of the need to accommodate the demands of its citizens. Excluding oil producers in Table 6B has quite a dramatic effect on the tax effort of relatively rich countries without oil.

Whether differences in the fiscal performance of African states are the result of current policies or historical institutional legacies remains the subject of debate. The importance of historical institutions in shaping the tax capacity of African states has been stressed by recent research on the legacies of colonial rule (Gardner 2012; Mkandawire 2005; Olsson 2009). On the other hand, other work has stressed the greater importance of post-independence political imperatives (Block 2002; Kasara 2007). Looking at the fiscal performance over time of the four case study countries discussed in section 3 suggests that the relative positions of African countries are of long standing. Table 7 gives measures of revenue for the four case study countries outlined in section 3 since the early twentieth century. As expected, South Africa leads in terms of both revenue as a share of GDP since the 1990s. The success of tax reforms since 1995 has been one of the key

features of the move away from the apartheid regime (Ajam and Aron, 2007). However, Table 7 also shows that South Africa already raised considerably more revenue per capita in the first half of the twentieth century. Nigeria, on the other hand, underperforms relative to expectations both during the colonial period and since 1960, while Kenya does substantially better, even during the colonial period. Mkandawire (2010) argues that settler states developed more effective tax systems less dependent on trade taxes owing to the need for coercive strength. At the other end of the per capita income scale, Sierra Leone's revenue collections dipped very low particularly during the civil war. In the earlier period, however, Sierra Leone raised considerably more revenue per capita than Nigeria, illustrating the ways in which conflict can undermine fiscal capacity.

In European history, increasing revenue collections are often linked to concessions by the ruler of political voice and authority, as can be seen in a comparison of Tables 5 and 8, showing fiscal revenue per head and an index of parliamentary activity, respectively. The index of parliamentary activity constructed by van Zanden, Buringhe and Bosker (2012) is based on the calendar years per century in which parliament met. During the first half of the second millennium, parliamentary activity was higher in Spain and Portugal than in the North Sea Area. However, activity then peaked in the fifteenth or sixteenth century in Spain and Portugal before going into decline. In the North Sea Area, by contrast, although parliamentary activity was slow to get going, it continued to increase after 1500, reaching very high levels during the seventeenth and eighteenth centuries, just as fiscal revenue in England and Holland also increased.

For Africa, different measures of constraints on the executive must be used. Table 9 presents polity scores for the four case study countries, taken from the Polity IV database (Marshall, Gurr and Jaggers, 2013). The polity index score is obtained as the democracy index score minus the autocracy index score, which can vary between -10 (no democracy and complete autocracy) to +10 (full democracy and no autocracy). Again, South Africa stands out as having an early high polity score. Kenya, Nigeria, and Sierra Leone on the other hand all exhibit substantial reversals. These parallel growth reversals and are similar to the retrenchments in parliamentary activity illustrated by Mediterranean countries in the early modern period.

The experience of the four case study countries can provide some insights into the links between institutions and growth reversals. All four, with the possible exception of South Africa since 1994, could be described under the North, Wallis, and Weingast (2009) framework as 'limited access' social orders. In limited access social orders, institutions are therefore vulnerable to crises linked to economic or political change which alter relations between members of the governing coalition. In all four countries, such crises have been linked to severe growth reversals which have limited overall gains in per capita income. This included the anti-apartheid protests in South Africa, the Biafran War in Nigeria, Kenya's post-elections crises and, most dramatically, Sierra Leone's civil war. This instability makes specialization and therefore structural change a less certain proposition than in open access social orders where the institutions that protect property rights are open to all citizens.

5. CONCLUSIONS

The rapid growth experienced by many African countries since the mid-1990s has prompted questions about how to distinguish temporary growth booms from sustained economic growth. One challenge in making such assessments has been that the literature on sustained growth is based on the experience of currently wealthy countries in the period *after* they made the transition to modern economic growth (Johnson, Ostry and Subramanian, 2010:125). One way to resolve this is to compare Africa with other parts of the developing world. Another is to look beyond 1850 to the economic performance of European countries well before they had made the transition to sustained economic growth.

This paper adopts the latter strategy, and uses new data on per capita incomes in European countries dating back to the thirteenth century to examine the patterns of growth in pre-industrial economies over the long run. These data illustrate that levels of per capita income in pre-industrial Europe were not, as has long been assumed, near subsistence levels. This is also true of certain areas of sub-Saharan Africa for which data are available, notably the Cape Colony in Southern Africa. They also show that the pattern of economic growth experienced by African countries during the post-war period, characterized by growth accelerations followed by reversals, can persist over the very long run – in the European case, for half a millennium.

Literature on Africa's recent economic performance has focused on measuring the scale and duration of growth accelerations, attempting to identify thresholds which

distinguish sustained growth from temporary growth booms. The European experience suggests that the more important criteria are indicators of institutional quality and structural change. The European 'Little Divergence' occurred when the North Sea Area economies of Britain and Holland achieved institutional changes necessary to support increased specialization and structural change. Indicators of both structural change and institutional quality in Africa suggest that mineral producers with higher levels of per capita income and higher growth rates may in fact perform less well on these indicators than poorer countries with no mineral reserves.

FIGURE 1: Real GDP per capita in Italy and Spain 1270-1850 (1990 international dollars, log scale)
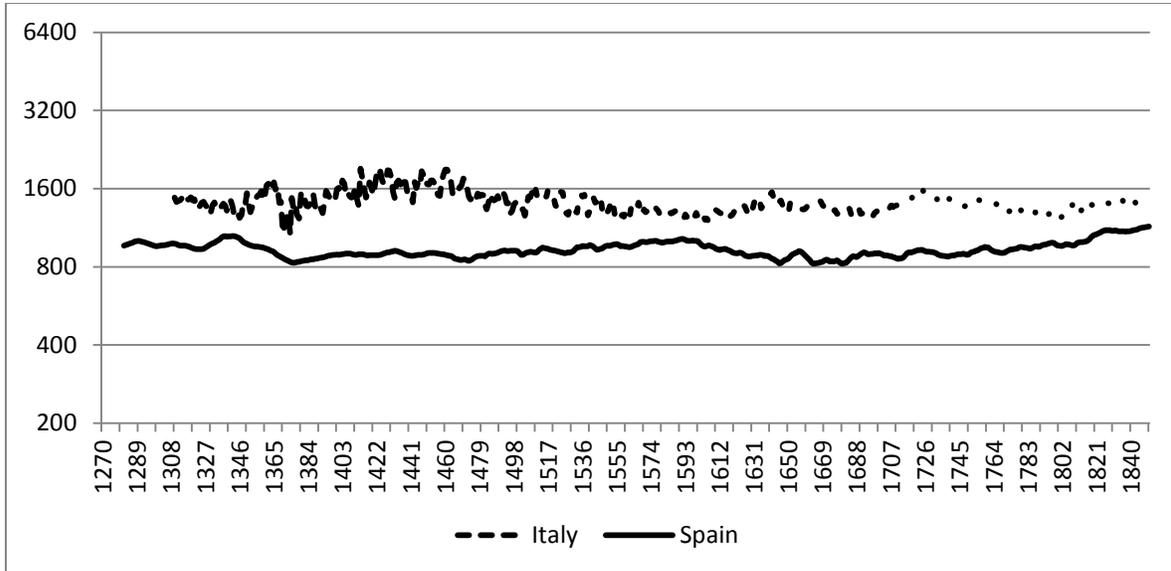
Source: Malanima (2011); Álvarez-Nogal and Prados de la Escosura (2013).

FIGURE 2: Real GDP per capita in Britain and Holland, 1270-1870 (1990 international dollars, log scale)
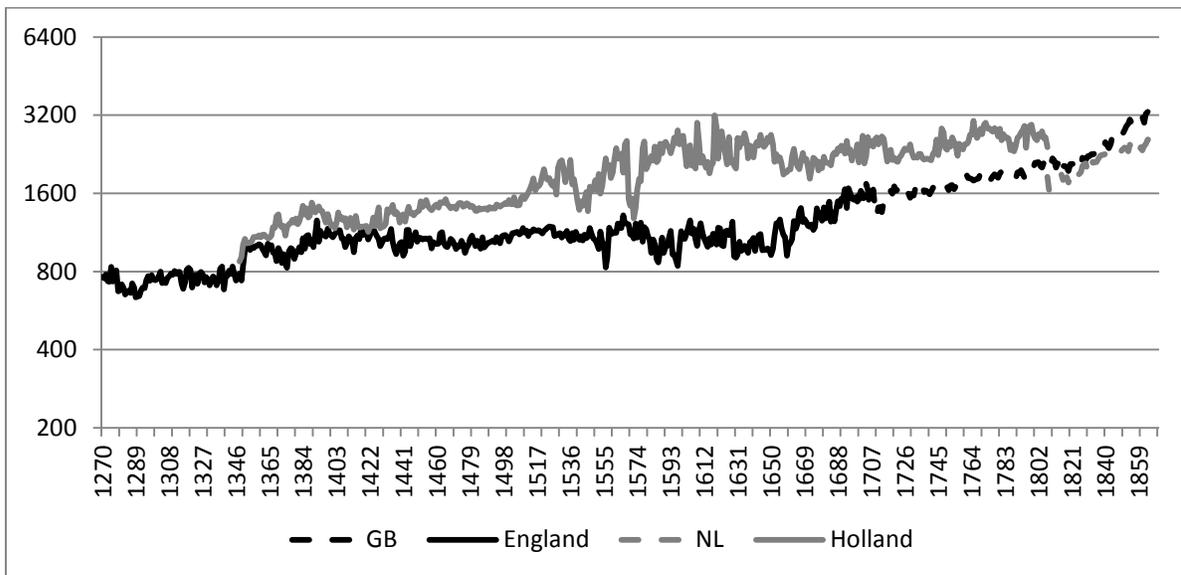
Source: Broadberry, Campbell, Klein, Overton and van Leeuwen (2011); van Leeuwen and van Zanden (2012).

FIGURE 3: Real GDP per capita in the Cape Colony and South Africa, 1701-1910 (1990 international dollars)
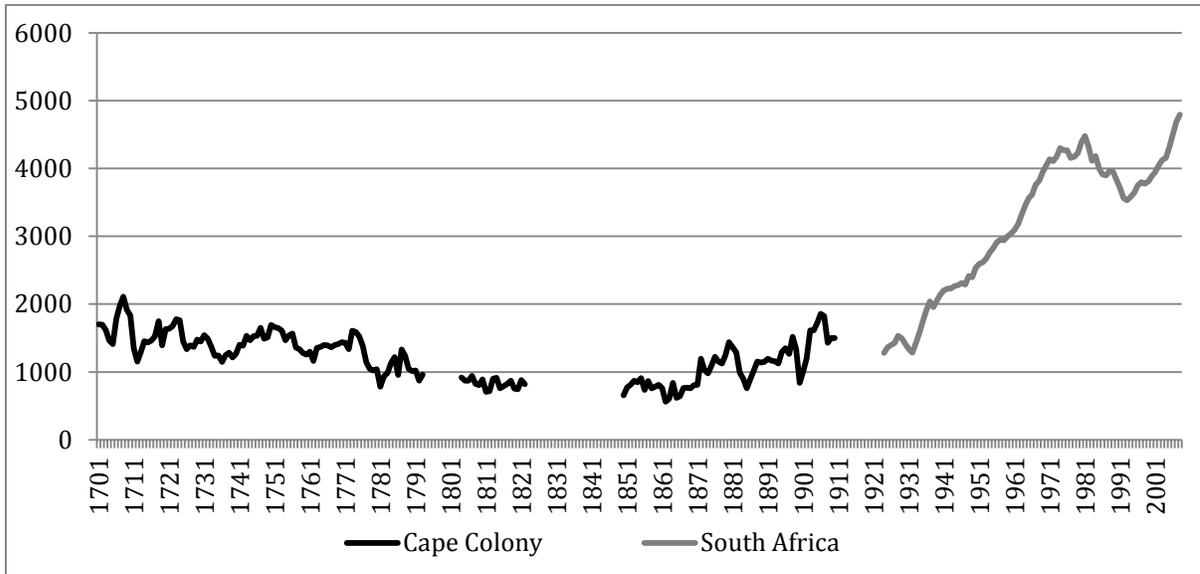
Source: Fourie and van Zanden (2013)

FIGURE 4: Real GDP per capita, all African countries, 1950-2010 (1990 international dollars)
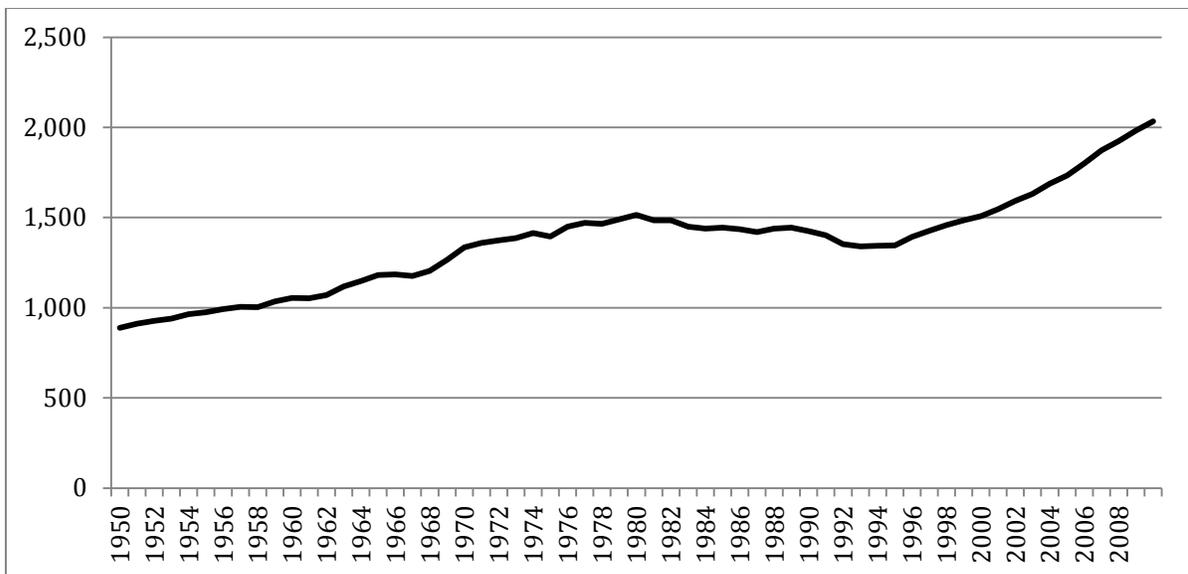
Source: Derived from Maddison (2010)

TABLE 1: GDP per capita levels in Europe (1990 international dollars)

	England/ GB	Holland/ NL	Italy	Spain
1086	754	--	--	--
1270	759	--	--	957
1300	755	--	1,482	957
1348	777	876	1,376	1,030
1400	1,090	1,245	1,601	885
1450	1,055	1,432	1,668	889
1500	1,114	1,483	1,403	889
1570	1,143	1,783	1,337	990
1600	1,123	2,372	1,244	944
1650	1,100	2,171	1,271	820
1700	1,630 1,563	2,403	1,350	880
1750	1,710	2,440	1,403	910
1800	2,080	2,617 1,752	1,244	962
1820	2,133	1,953	1,376	1,087
1850	2,997	2,397	1,350	1,144

Sources and notes: England/Great Britain: Broadberry, Campbell, Klein, Overton and van Leeuwen (2011); Broadberry and van Leeuwen (2011); Holland/Netherlands: van Zanden and van Leuwen (2012); Italy: Malanima (2011); Spain: Álvarez-Nogal and Prados de la Escosura (2013). Figures are for 10-year averages starting in the stated year (i.e. 1270-79, 1300-09,…) apart from 1348, which refers to the pre-Black Death years 1339-48, and 1086, the year of the Domesday survey.

TABLE 2: 2008 GDP per capita Levels in Africa (1990 international dollars)

< $750	$750 - $1,500	$1,500 - $2,000	> $2,000
Burundi	Benin	Angola	Botswana
Central African Republic	Burkina Faso	Ghana	Congo-Brazzaville
Chad	Cameroon	Lesotho	Equatorial Guinea
Dem. Republic of the Congo	Côte d'Ivoire	Nigeria	Gabon
Guinea	Djibouti	Sudan	Namibia
Guinea Bissau	Eritrea		South Africa
Malawi	Ethiopia		Swaziland
Niger	Gambia		
Sierra Leone	Kenya		
Tanzania	Liberia		
Togo	Mali		
	Mauritania		
	Rwanda		
	Senegal		
	Somalia		
	Uganda		
	Zambia		
	Zimbabwe		

Source: Derived from Maddison (2010).

FIGURE 5: GDP per capita in South Africa and Nigeria, 1950-2008 (1990 international dollars, log scale)
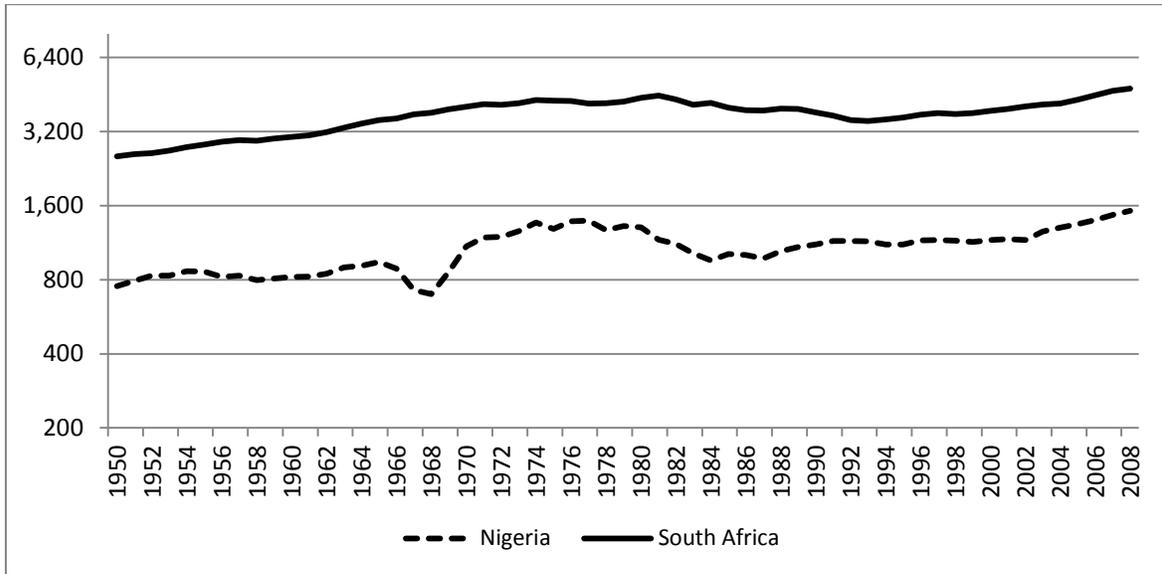
Source: Derived from Maddison (2010).

FIGURE 6: GDP per capita in Kenya and Sierra Leone, 1950-2008 (1990 international dollars, log scale)

Source: Derived from Maddison (2010).

TABLE 3: Share of agriculture in the European labour force (%)

	England	Netherlands	Italy	France	Poland
1300	--	--	63.4	--	--
1400	57.2	--	60.9	71.4	76.4
1500	58.1	56.8	62.3	73.0	75.3
1600	--	48.7	60.4	67.8	67.4
1700	38.9	41.6	58.8	63.2	63.2
1750	36.8	42.1	58.9	61.1	59.3
1800	31.7	40.7	57.8	59.2	56.2

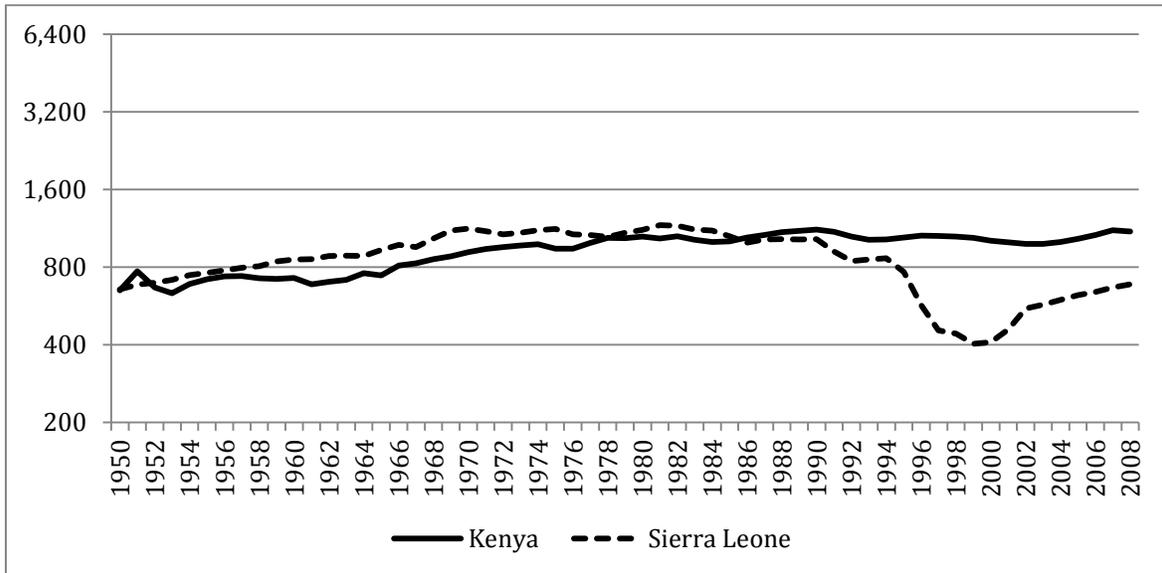Source: Derived from Broadberry, Campbell and van Leeuwen (2013); Allen (2000: 8-9).

TABLE 4: Share of agriculture in the African labour force, countries grouped by per capita incomes in 2008 (%)

	<$750		$750 - $1,500			
	Malawi	Tanzania	Ethiopia	Kenya	Senegal	Zambia
1910						
1920						
1945						
1960-1965	84.4	91.7	96.2			63.2
1970	86.7	91.4	92.5	81.0	73.3	62.8
1980	87.0	87.4	89.3	78.0	70.2	68.0
1990	86.1	86.1	89.4	71.2	65.8	75.3
2000	82.3	83.5	84.9	56.1	58.3	71.6
2010	65.2	73.4	75.2	48.3	57.4	72.8

	<$1,500 - $2,000		> $2,000	
	Ghana	Nigeria	Botswana	South Africa
1910				58.7
1920				69.5
1945				48.4
1960-1965	60.7	78.1	87.4	48.8
1970	57.0	65.6	82.8	34.7
1980	56.5	64.2	59.9	26.0
1990	53.5	71.7	40.3	21.5
2000	53.6	75.0	38.3	18.7
2010	41.6	58.9	38.6	15.0

Sources: Africa Sector Database; Mitchell (2007).

FIGURE 7: Share of agriculture in the labour force (left axis) and GDP per capita (right axis), 1960-2010

A. Nigeria
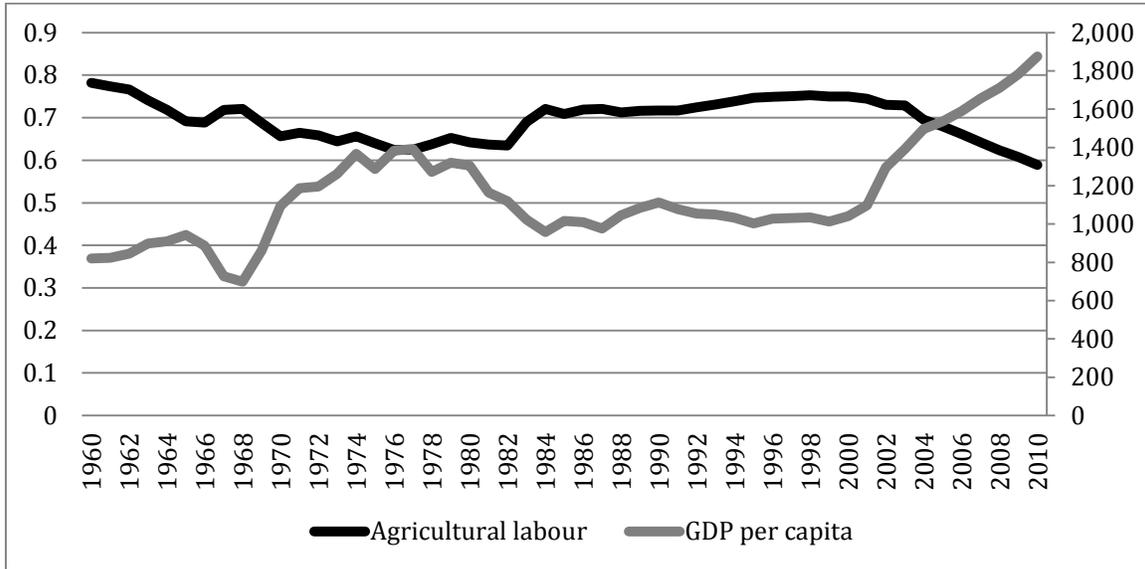
B. Kenya

Source: African Sector Database (de Vries, Timmer and de Vries, 2013).

TABLE 5: Per capita fiscal revenues in Europe, 1500/09 to 1780/89 (grams of silver)

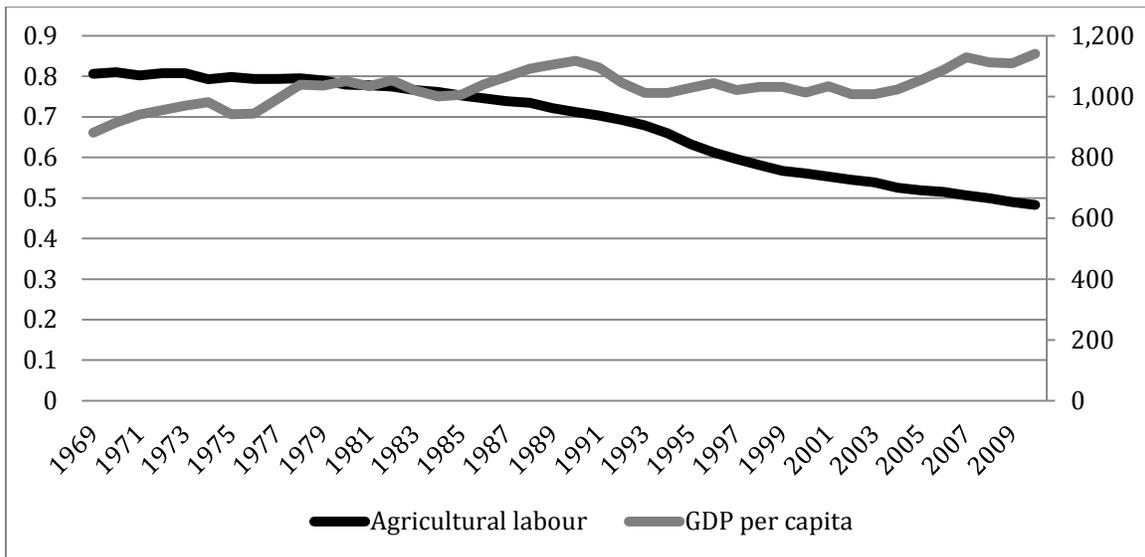|	1500/09	1550/59	1600/09	1650/59	1700/09	1750/59	1780/89
Dutch Republic	--	--	76.2	114.0	210.6	189.4	228.2
England	5.5	8.9	15.2	38.7	91.9	109.1	172.3
France	7.2	10.9	18.1	56.5	43.5	48.7	77.6
Spain	12.9	19.1	62.6	57.3	28.6	46.2	59.0
Venice	27.5	29.6	37.5	42.5	46.3	36.2	42.3
Austria	--	--	--	10.6	15.6	23.0	43.0
Russia	--	--	--	--	6.3	14.9	26.7
Prussia	--	--	2.4	9.0	24.6	53.2	35.0
Ottoman Empire	--	5.6	5.8	7.4	8.0	9.1	7.1
Poland	1.5	0.9	1.6	5.0	1.2	0.8	11.2

Source: Karaman and Pamuk (2010: 611).

TABLE 6: Fiscal performance in African countries (by per capita incomes in 2008

A. Average across African countries

Income level	% of GDP	Tax effort (2007)	Per capita (US$)
< $750	22.4	0.88	69.81
$750-$1,500	21.9	1.21	126.22
$1,500-$2,000	41	1.10	552.46
< $2,000	37.3	1.09	1,971.29

B. Averages excluding oil producers

Income level	% of GDP	Tax effort (2007)	Per capita (US$)
< $750	21.7	0.97	45.77
$750-$1,500	21.9	1.21	126.22
$1,500-$2,000	49.6	2.06	220.75
< $2,000	32.1	1.66	1,284.08

Sources and notes: Calculated from African Economic Outlook (2010). Part B excludes countries where resource revenue represents more than 50 per cent of total revenue.

TABLE 7: Fiscal revenues in Africa

A. Colonial period (£ per head, current prices)

	South Africa	Nigeria	Kenya	Sierra Leone
1911	2.88	0.15	0.30	0.33
1921	4.71	0.26	0.64	0.41
1931	4.03	0.25	1.00	0.50

B. Since independence (% of GDP)

	South Africa	Nigeria	Kenya	Sierra Leone
1990	--	--	19.5	5.6
1995	--	--	21.6	9.4
2000	26.3	--	19.7	11.4
2005	30.1	9.4	20.2	8.7
2010	28.8	9.7	20.3	9.8

Sources and notes: Colonial period: Total tax revenue in current £ divided by total population, from Gardner (2012). Since independence: Cash receipts from taxes, social security contributions and other revenues such as fines, fees, rent and income form property or sales, expressed as a share of GDP, from The World Bank: Data (http://data.worldbank.org/indicator/GC.REV.XGRT.GD.ZS). Grants are also considered as revenue but are excluded here.

TABLE 8: Activity index of European parliaments, 12th to 18th centuries (calendar years per century in which parliament met)

	12th	13th	14th	15th	16th	17th	18th
North Sea Area							
England	0	6	78	67	59	73	100
Scotland	0	0	10	61	96	59	93
Netherlands	0	0	0	20	80	100	100
Mediterranean							
Castile and Leon	2	30	59	52	66	48	7
Catalonia	3	29	41	61	16	14	4
Aragon	2	25	38	41	19	11	1
Valencia	0	7	28	29	12	4	0
Navarre	2	7	17	33	62	30	20
Portugal	0	9	27	47	12	14	0

Source: van Zanden, Buringh and Bosker (2012: online appendix S1).

TABLE 9: Polity index scores in Africa (range -10 to +10)

	South Africa	Nigeria	Kenya	Sierra Leone
1910	4	--	--	--
1950	4	--	--	--
1960	4	8	--	6
1970	4	-7	-7	1
1980	4	7	-6	-7
1990	5	-5	-7	-7
2000	9	4	-2	0
2010	9	4	8	7

Sources and notes: Polity IV database (http://www.systemicpeace.org/inscr/inscr.htm). The polity index score is obtained as the democracy index score minus the autocracy index score. Details of the components of the indices are set out in Marshall, Gurr and Jaggers (2013).

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