

A Story Behind Each Number

Angus Maddison (1926 – 2010)

Just as the global economy is experiencing one of the biggest economic crises of the past century, the economics profession lost one of the world's most gifted scholars ever to document economic performance over long periods of time. Angus Maddison died from complications arising from leukemia on 24 April 2010 at the American Hospital in Paris. He was buried in the church graveyard in Chevincourt, a village near Compiègne where he had lived with wife Penny for the latter part of his life. He is also survived by his two sons, George and Charles - also an economist - his daughter Lizzy, and five grandchildren.

Angus Maddison has been an active member of the International Association for Research in Income and Wealth since 1968, participated in at least a dozen conferences of the Association, was a member of the editorial board of *The Review of Income and Wealth* from 1990-1997, and published five articles in The Review since 1980. His last two articles in The Review were drawn from the first Ruggles Keynote Lecture on measuring world economic performance which he delivered at the 28th General Conference of the Association in 2004 (Maddison, 2005) and from his introductory lecture on measuring economic performance in China for the 2007 Beijing special conference on Transition Economies (Maddison, 2008). Angus also played a pioneering role in organizing several sessions in the area of measuring long term growth at conferences and stimulated the participation of many scholars in this area.

Angus Maddison's fascination with the big questions of what drives economic growth and development go back to his youth. His encounter with the perils of economic depression was on the doorstep of the town where he was born. Newcastle-on-Tyne, a ship-building and mining city in the North-East of England, was among the worst to suffer from the mass unemployment of the interwar years. In his endearing autobiography, *Confessions of a Chiffrephile*¹, Angus recalls a visit with his father to neighbouring Gateshead where "the buildings were blacker, and the clusters of unemployed thicker than in Newcastle. I saw nowhere so depressing until visiting Calcutta thirty years later." The first book he read on economics was Keynes *How to Pay for the War* finding it "more or less intelligible to a thirteen year old". A reference in Keynes led him to Colin Clark and his *Conditions of Economic Progress* and he "was fascinated at the way it quantified what was going on in so many countries." Perhaps it was at this moment that Angus became a chiffrephile. This, he explained many years later, was "a word I invented to characterize economists and economic historians who, like myself, have a strong predilection for quantification."

In 1944, Angus won a scholarship to Cambridge University initially to read history but soon switching to economics. He found economics a much tougher discipline and the students more dedicated to their subject. But economics teaching at Cambridge was distinctly parochial and Angus found discussions more to his liking at the Marshall Society and the Political Economy Club, originally set up by Keynes, both of which recognized the existence of other British universities, Continental Europe and even America.

¹ Unless noted otherwise, the quotations below are all taken from this article.

Angus started his graduate studies at McGill University and later at Johns Hopkins in Baltimore. His thesis was a comparative study of productivity in the USA, the United Kingdom and Canada and he found the Canadian statisticians at what is now Statistics Canada particularly well-informed and helpful. He returned to Europe for a teaching job at St. Andrews University in Scotland and later an assignment in Rome at the Food and Agriculture Organization. In 1953 he moved to Paris to join the Organisation for European Economic Cooperation (OEEC) where he was to spend a good part of his working life.

Angus worked initially in the Economics Department supporting the work of the Group of Economic Experts whose chairman, Robert Hall, was described by Angus as a “slow speaking Australian of great wisdom and professional competence” and a “master of the meaningful grunt”. An important development at this time was the strengthening of the statistical basis to allow quantitative monitoring of the economies of member countries. Milton Gilbert was recruited to work with Richard Stone to develop standardised national accounts for OEEC countries and was active in establishing the International Association for Research in Income and Wealth. Around this time, Wilfred Beckerman, Angus’ close friend from Cambridge, was recruited by the OEEC to help member countries improve their national accounts statistics..

When the OEEC was enlarged to bring in the United States and Canada, it became the Organisation for Economic Co-operation and Development (OECD). Aid to developing countries was added to the agenda and Angus was appointed secretary to what later became the Development Assistance Committee. His first task was to set up a statistical monitoring system to measure aid flows. Around this time Angus concluded that the “theoretical and statistical basis for analysing growth and stability of the advanced capitalist countries” had been fairly well established and in 1964 he moved to the OECD’s Development Centre which was looking at development issues outside the OECD area. Before doing so, however, Angus took six months’ leave to write *Economic Growth in the West*, the first of the ten major books and numerous articles on long term economic growth that he published in his lifetime. Angus’ work on development issues took him as an economic advisor for the Twentieth Century Fund and Harvard University's Development Advisory Service to Brazil, Guinea, Mongolia, Ghana and Pakistan. In the last two of these Angus was advising on social policy issues including income distribution, and health and education policy.

In pursuit of his interest in social issues, Angus returned to the OECD in 1971 to work in the social affairs department. One of his major achievements was the publication of the first OECD *Yearbook of Education Statistics* in 1974. For the first time this brought together comparable statistics to assess the costs and benefits of education. A problem Angus noted then, and which continues today, was that “There was in fact a good deal of resistance in educational circles to studies which might make it possible to judge the quality of teachers and curricula.” The 1974-75 recession highlighted problems of government spending on social security. Angus established a new committee to look at social aspects of income transfer policy which explored a wide range of distributive issues. Unemployment was another issue addressed by Angus. Typically his first concern was to assemble a data base of comparable statistics and to this end he set up a committee of labour statisticians with key inputs from Connie Sorrentino and her colleagues at the US Bureau of Labor Statistics. The committee established the standardised definitions of employment and unemployment that are used to this day by the International Labour Organization, but just as important, Angus developed an additional range of measures of “labour slack” by correcting for government attempts to disguise unemployment through early retirement schemes and loose definitions of workers’ disability.

Angus was particularly helpful to the first author of this obituary (Derek Blades) who had just been made responsible for OECD's rather stodgy annual, *Labour Force Statistics*. Even though he worked in a different department and strictly speaking it was none of his business, he was very helpful in putting together a much more readable version and added quarterly supplements.

Looking back, Maddison's work from 1971 to 1978 can be seen to have established the OECD's statistical credibility as an impartial advisor on the many social issues of equality, education and unemployment that still dominate the agenda of most Western governments. In addition to all this, Angus continued to write and acquired a Doctorate from the Université d'Aix-Marseille III in preparation for his next career move in 1978 – to the University of Groningen as Professor of Economic Sociology.

Angus moved to Groningen because he liked the academic atmosphere in this typical university town. It provided him with a lot of academic freedom to pursue his research agenda on economic growth and development. In an interview with the University Newspaper, at the time of his retirement in 1997, he said that Groningen (which is in the north of the Netherlands) is “as close to heaven as I can get”. He trained and guided a dozen PhD students, most of whom are still actively working on aspects of growth and development in academia or in the policy research world. It was a delight for Angus' students to work with him. He wasn't only learned but had also travelled widely around the world and never hesitated to help his students do the same. Walking with him through the streets of Prague just after the Velvet Revolution in 1991, the second author of this obituary (Bart van Ark) remarked how much the city had changed in just a decade, to which Angus answered that it still looked much worse than during the late 1940s when he visited Prague which then still was one of the most prosperous cities in the midst of war-ridden postwar Europe.

During the first half of his time in Groningen, Angus continued his broadly based research on growth and development. Following several earlier books he had written on this topic he published two major monographs in 1982 and 1991 and a seminal article on growth accounting in 1987 in the *Journal of Economic Literature*. These writings explained his understanding of the dynamics and sources of growth and development. His characterization of development in terms of secular phases rather than the Kondratieff notion of long waves led to a more gradualist interpretation of the diffusion of technology and innovation, and a greater emphasis on “system shocks”. These shocks were in part historical accidents, but their impact was reinforced by changes in expectations, and fashions in economic policy. These views, based on strong quantitative support, challenged scholars who had advanced the notion of a more abrupt “industrial revolution” in the late 18th century, or traditional development economists who supported the Rostovian view of the need for an economic “take-off” to generate growth. Angus was also an early advocate of the need to take economic institutions much more seriously by developing a model that distinguished between proximate (directly measurable economic inputs, such as labour, physical and human capital and land) and ultimate (institutional, political, social and cultural) sources of growth. The complex interaction of these proximate and ultimate sources allowed a multipolar development in Europe in the Middle Ages.

Maddison also returned to the topic of measuring economic performance beyond the Western world, but began to place it more strongly in an international comparative perspective. In the early 1980s he criticized Paul Bairoch's view that the industrialization of the Western European countries took place at an average standard of living below that of contemporary less developed countries, which was very different from the conjectures by David Landes and Simon Kuznets who believed that by that time Western Europe was already much richer than the rest of the world. To Angus Maddison these remarkably different quantitative conclusions had very important analytical implications: “If Bairoch

is right, then much of the backwardness of the third world presumably has to be explained by colonial exploitation, and much less of Europe's advantage can be due to scientific precocity, centuries of slow accumulation, and organisational and financial prosperity." (Maddison, 1983) Although he used the existing evidence at the time to show that Bairoch and his epigoni probably overstated the contemporary income gap and understated per capita income growth in the developing world, it motivated him to pursue the topic of international comparisons more intensively. Following his later work on China (see below), he returned to the topic of comparative performance between East and West at the time of the Industrial Revolution, when other scholars, notably Kenneth Pomeranz argued that China stayed at a much higher level of development until the end of the 18th century than Europe – a viewpoint which Maddison strongly criticized on the basis of his reconstruction of China's macroeconomic accounts back to the year 960.

During the second half of the 1980s, Angus started a series of benchmark studies of output and productivity aimed at strengthening the basis for international comparisons. This led to a project on International Comparisons of Output and Productivity (ICOP), which focused on measuring levels of performance from the industry-of-origin side rather than the expenditure side (such as in the International Comparisons Program at the World Bank and Penn World Tables). He found that generally expenditure-based studies had a tendency to overstate the comparative output level of developing economies, because the expenditure based approach did not take sufficiently account of the low output level of service sector activities in those countries (Maddison and van Ark, 2002). Several of his pupils did their PhD theses as part of the ICOP project.

During the final years of his time in Groningen, Maddison focused his attention even more on quantifying economic growth for longer time spans and in a broader range of countries. An important part of that endeavor focused on a quantitative assessment of China's long-run economic performance. Angus's early work on China relied mainly on quantitative research by scholars such as Dwight Perkins and Ta-chung Liu and Kung-chia Yeh as well as studies commissioned by the U.S. Congress Joint Economic Committee, which he used in his discussion of the debate between Bairoch and Landes-Kuznets. After the debate he substantially extended his investigation of Chinese economic history exploring the literature on quantitative assessments of China. With new research by himself and by working with others, he eventually published *Chinese Economic Performance in the Long Run* (1998).

The work on China was not only important because of China's historical role in the world economy, but it also was a key part in the puzzle of positioning economies in a comparative perspective. For example, he spent considerable effort in comparing China with Japan rather than with Western Europe as in other studies. While, like many other researchers, he attempted to explain the classic divergences between countries, Angus also devoted much effort in the understanding of important convergences in the past, in most of which China served as an important reference, e.g. Europe's rise from its nadir to overtake China, the Japanese catch-up with China in Tokugawa times, and post-war resurgent Asia, especially China, India, and the so-called tigers, which have reduced their degree of backwardness substantially relative to the advanced countries.

This was also a period in which he began to work and discuss with Chinese economists. The third author of this article (Harry X. Wu) worked intensively with Maddison for many years in the reconstruction of China's national accounts, the development of an alternative industrial output index for China (Maddison and Wu, 2008), and the Chinese translation of his three books including his China book revised and updated in 2007. His criticism of the Chinese methodology used to measure output was very transparent and clear, and gained a lot of respect even from government officials. His

introductory paper at the 2007 Beijing conference on transition economies (which was delivered by Bart van Ark in Maddison's absence) was well received by scholars and policy makers.

On his last trip to China to celebrate the publication in Chinese of *The World Economy: A Millennial Perspective*, Angus was accompanied by the third author of this obituary and the chief translator of the book (Harry X. Wu) to visit Hangzhou, the capital of China's Southern Song (1127–1279) and then the richest country in the world according to his estimates. He was warned about the potential danger of the highway drive and that it would be a tiring day trip but he was still keen to go. Filled with excitement at stepping on the land of Hangzhou, he then realized that it was hard to find any trace of its past prosperity. He remarked that wrong policies or mistakes by the ruling elite could easily wipe out a country's accumulated wealth for centuries – a big question hanging there that had motivated his long pursuit for the underlying explanation of economic growth.

During the final phase of his career, after his retirement from Groningen in 1997, Maddison concentrated on extending his macro-quantitative measures of GDP covering two millennia and all countries in the world. During the 2000s he published several updates and extension of his *Historical Statistics on World Population, GDP and Per Capita GDP, 1-2008 AD*, which is also available on-line from his homepage at the Groningen Growth and Development Centre website (<http://www.ggdc.net/maddison/>). He shook up the profession by provoking them with an estimate of world GDP in the year one. But while many would challenge him on the reliability of such an estimate, most scholars would trust Angus for giving it his best shot given his deep knowledge and broad experience. Angus lived to see the beginnings of "The Maddison Project" aimed at creating a network of scholars to continue his work on world historical macroeconomic statistics in Angus' spirit. David Henderson, another lifelong supporter of Angus' work, summarised the special features of his macro statistics that make them so valuable – they are long, they are expressed in a standard currency unit, and breaks in series are patched up in the best possible way even when they involved changes in national boundaries. Angus' spirit was always: "Here's my best effort. Do better." If someone could, Angus was the first to offer his congratulations.

Angus' thinking about the dynamics of growth and stagnation are also relevant to the recent economic and financial crises. In his last major work, *Contours of the World Economy, 1-2030 AD*, he pioneered a forward looking approach to 2030, predicting a larger role for China and India in the global economy. He also had a less negative view on the impact on economic growth of a moderate increase in global warming than the predominant viewpoint of, for example, the Intergovernmental Panel on Climate Change (IPCC).

Angus Maddison's legacy to the profession is huge. He helped create the Groningen Growth and Development Centre (GGDC), a research group at the University of Groningen that focuses on long-term economic growth. The databases created and maintained by Maddison and his current and former colleagues form one of the most important sources for the analysis of long-term economic growth and are used worldwide by scholars and policy analysts.

Many of Angus' colleagues and friends have exceptionally pleasant memories of his gift for combining work and pleasure in a very natural way. He was a scholar, mentor, colleague and friend, all at the same time. Many will remember the great moments with him and his family at their home in France, at conferences, or wherever else in the world he would be.

Angus Maddison will be missed. But his legacy will stay, and many will continue the work in his spirit.

Derek Blades
Bart van Ark
Harry X. Wu

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