

Chapter 8

The Study and Practice of Economics in Ghana

L. Boakye-Yiadom, William Baah-Boateng and Abena D. Oduro

Introduction

As a social science, the discipline of economics has, over the years, witnessed significant changes in scope, depth, and methodology. In Ghana, the study and practice of economics has evolved in terms of teaching content and approach, research focus, methodology, and policy direction.

Prior to the economic reforms in Ghana in the 1980s, government policies and programmes were largely driven by inward-looking and state-controlled economic policies (Killick 2010). The economic downturn suffered in the 1970s and early 1980s as a result of a combination of external factors and domestic economic mismanagement triggered a shift of economic policy focus in favour of outward oriented and private sector strategies. The teaching, study and research in economics changed in line with the shift in economic paradigm.

In the context of developments in the Ghanaian economy and the evolution of economics as a discipline, we examine the evolution of the study and practice of economics in Ghana. To this end, we carry out a review of the teaching and study of economics, economic research, and economic policy-making in Ghana using the University of Ghana as the case study. In the next section we focus on a historical overview of the teaching and study of economics at the University of Ghana. Section three is a review of economic research in Ghana, focusing on the features and trends over the years. In Section four, we examine the links between researchers in economics and policy-makers. The fifth section is devoted to a summary and some concluding thoughts.

L. Boakye-Yiadom (✉) · W. Baah-Boateng · A. D. Oduro
Department of Economics, University of Ghana, Legon, Ghana
e-mail: louisby@gmail.com

The Teaching and Study of Economics in Ghana

Helen Kimble made the following observation about the motivation of students towards the study of economics:

Economics is a subject much in demand for both extra-mural and undergraduate courses. But the motivation of students is sometimes weak; some have a very hazy idea of what economics is all about—except that there may be more money in it than history or sociology—and the discipline of a fairly tough subject causes subsequent changes of heart. Unfortunately many African students are unnecessarily handicapped and discouraged by their lack of mathematical equipment. (Kimble 1969, p. 714)

The orthodox neoclassical and Keynesian principles still feature prominently in the teaching of economics. In microeconomic analysis, students are introduced to the workings of the market based on assumption of rationality of the consumer and the firm. While the consumer is assumed to aim at maximizing satisfaction, the firm operates on the assumption of profit maximization. The invisible hand within the classical framework is argued to allocate resources efficiently, suggesting irrelevance of any external intervention in the market. The failure of the market to ensure the production of certain goods whose benefits go beyond the individual (e.g. public goods) and the existence of externalities (both positive and negative) have often formed the basis of external intervention in the market by government. The problem has always been that welfare economics that exposes students to the social benefit as opposed to private individual motive of economic activities is not often taught in the early years of the undergraduate degree programme.

In macroeconomics, undergraduate students are exposed to the rubrics of Keynesian economics in the determination of equilibrium output in the IS-LM and AD-AS frameworks and at later stages they are introduced to the arguments of the monetarism, structuralism and rational expectations. This section examines the changes in the teaching and study of economics from the perspective of courses and programmes offered at the University of Ghana, the content of courses, and dissertation and thesis areas. A combination of approaches including a review of literature and relevant documents and key informant interviews of faculty and alumni of the Department of Economics of the University of Ghana are employed to inform our analysis.

Trends in Programmes Offered

The teaching and study of economics in Ghana began in 1948 when the Department of Economics was set up as part of the establishment of the University College of the Gold Coast affiliated to the University of London. With the University College tied to the apron string of the University of London until 1961 when the University of Ghana gained autonomy to award its own degrees, the programmes and courses offered were largely influenced and approved by London.

Until the 1980s, the department offered a Bachelor of Science (BSc) Honours programme which was based on the second and third years of academic work. Students were admitted into economics and other programmes and based on performance at the First University Examination (FUE), selection was made into the economics Honours programme, while those not selected into the Honours programme and who were unable to get the opportunity to do honours in other programmes were compelled to settle for a general degree. The economics honours required two end-of-year examinations after FUE, one at the end of the second year (Part I) and the other at the end of the third and final year (Part II). Those in a general degree programme, however, were required to take only one examination after the FUE during the third and final years of their degree programme. All honours candidates in economics were required to take one course outside economics in their second year.

In the 1980s, the Bachelor of Arts (BA) programme was introduced to replace the BSc Honours and General degree programme. Students enrolled in the BA programme to study economics were offered two other subjects in addition to economics and could graduate with BA (single major) or combined major. Students graduating with a single major in economics offered four courses in economics including Microeconomics and Macroeconomics and two courses in the minor subject in Part I. Five courses including Economic Theory (microeconomics and macroeconomics) and Econometrics in Part II, were taken as a requirement for graduation. Combined major students in economics offered three economics courses each in Part I and II including intermediate micro and macroeconomics in Part I and Economic Theory (Microeconomics and Macroeconomics) in Part II. Econometrics was an option for students pursuing combined major in economics. In 1992 when the university embraced the semester system, a course in Cost-Benefit Analysis (CBA) and project work was introduced. Students are exposed to the theory of CBA which largely involves project appraisal in the first semester of the final year and apply the theory in a project work in the second semester. This course is a core for single major students, but optional for combined major students in economics.

Until the 1980s a postgraduate programme in economics leading to the award of a Master of Science (MSc) was offered by the Department. The programme was mainly thesis based until the early 1970s when coursework was introduced in addition to thesis writing to enable applicants with no background in economics pursue a postgraduate degree in economics. The thesis-based MSc programme was offered to graduates with an honours degree in economics. Graduates without a degree in economics were offered the opportunity to pursue an MSc in economics upon the introduction of coursework into the programme. In the 1980s, the MSc was changed to a Master of Philosophy (MPhil) in economics with coursework and thesis requirements.¹ In order to qualify for the award of an MPhil (Economics), students were required to offer five courses including Microeconomic Theory, Macroeconomic Theory and Econometrics in the first year with the second year devoted to thesis writing.

¹ This was in line with a university-wide review of bachelor's and master's programmes.

The Department established strong links with the African Economic Research Consortium based in Nairobi. This organization has as one of its objectives strengthening the capacity of economists on the African continent through training and participation in research. In furtherance of this objective a collaborative Masters programme (CMAP) was developed by the AERC in collaboration with selected Departments of Economics on the continent in 1993. The CMAP has two components. Selected universities offer core courses, i.e. Macroeconomics, Microeconomics and Quantitative Methods, to students during the first year of the programme. Students from all the participating universities who pass the core courses proceed to a Joint Facility for Electives (JFE) during June to October where they take two elective courses.

After completing the electives at the JFE the students return to their home universities to write their theses. The Department of Economics, University of Ghana is one of the initial participating universities in this programme which offers core courses. Even though the CMAP did not require the University of Ghana to offer electives to its students, the department continued to offer two electives in addition to the three core courses. The reason behind this decision was that, the University was running its own approved Masters programme in economics and did not want to abandon it. This would make it possible for the University to run its own Masters programme in case the AERC is unable to run the JFE for one reason or the other. Dividends from this decision were realized in the 2011/2012 academic year when the University of Ghana and three other universities in Ethiopia, Kenya and Tanzania were taken out of the JFE programme and asked to teach their own electives. Indeed, the JFE exposed students to a wide range of elective subjects at the master's level in addition to research methods. Two other public universities in Ghana, the Kwame Nkrumah University of Science and Technology (KNUST) and the University of Cape Coast also run similar postgraduate training in economics with or without JFE participation.

A new postgraduate programme at the Master's level was introduced in 1998 to train middle level personnel in the public sector on economic policy management in Ghana and Africa. The programme which is sponsored by the African Capacity Building Foundation (ACBF) and the World Bank is open largely to public servants in policy oriented positions with bachelor's degrees in any discipline. Students admitted into the programme are not only exposed to economic theories for policy but are also trained in management and business courses such as accounting, strategic management, and financial management. It started as a 2-year taught programme with a 3-month internship leading to the award of a Master of Arts in Economic Policy Management. The length of the course was reviewed and reduced to 18 months and later to 12 months, largely to reduce cost. Over the past 5–10 years, the programme has been open to candidates in the private sector and in non-policy related jobs and has trained a considerable number of people in economic policy management across Africa. Since the inception of the programme, 566 Ghanaians (74% males and 26% females) and other Africans have graduated from the programme.

A thesis-based PhD programme in Economics is also offered at the University of Ghana but has been limited to faculty members. In 2004, the University signed a

collaborative agreement with Harvard University that allowed registered PhD candidates to take 1 year of coursework at Harvard University to help the candidate keep abreast of new developments in the discipline. This collaboration with Harvard University has produced two PhDs.

Trends in Courses Offered

The number and types of courses taught in economics at the tertiary level have changed over time largely due to the availability of capacity to teach the courses. Many more courses have been introduced into the curriculum at the University of Ghana and other universities in Ghana as well as Africa. This is largely due to the expansion of the discipline to cover areas such as urbanization, population, health, environment, tourism and transport. Indeed, at the JFE, courses in health economics, managerial economics, corporate finance and investment and game theory which were not offered during the first 5 years of the programme have been introduced. Undoubtedly, microeconomics and macroeconomics principles and theories are core in all training programmes in economics at all levels and have always been taught and studied as a core requirement in economics training. In addition, quantitative courses (Mathematics, Statistics and Econometrics) that introduce and expose economics students to mathematical and statistical concepts required to understand and explain economic phenomenon have always been taught. In undergraduate training in economics, the introduction to the economy of Ghana course tailored to expose students to understand the structure, performance and policies in the Ghanaian economy has always been offered.

Courses such as Money and Banking, Public Finance, and International Economics have always been offered at the undergraduate and postgraduate levels. Elective courses such as Agricultural Economics, Industrial Economics, Labour Economics, Health Economics, and Resource and Environmental Economics were introduced into the bachelor's and master's programme when expertise in those areas of specialization became available in the 1990s. The JFE under the CMAP programme held in Nairobi every summer has provided a wide range of choice in elective economics courses at the MPhil programme. Courses such as Managerial Economics, Corporate Finance and Investment, Policy Analysis and Economic Management, Agricultural Economics, and Game Theory have been offered at the Masters level.

Course Content and Literature

A common feature of economics as a discipline in the social sciences is the mathematical application to the analysis of economic phenomena. Indeed Kartzner (2003) argued that relative to other social sciences, economics has become "overwhelmingly" mathematical. Undoubtedly, the introduction of high level quantitative techniques in economics has become a controversial issue. It is argued that

the insistence on ever higher levels of mathematics in economics has actually led to shallower understanding of basic economic processes (Krueger 1991). In the teaching of economics globally, students are required to have a basic minimum knowledge of mathematics corresponding to 'O' level mathematics in England or high school graduation in the USA (Kimble 1969) and this has not changed over the years. Indeed, students admitted to pursue a course of study in economics at the University of Ghana are required to have a strong quantitative background that would enable them appreciate basic mathematical concepts relevant to economic analysis. To improve their knowledge in mathematics upon admission, students are exposed to more rigorous concepts in mathematics including multivariate calculus and matrix algebra. This is meant to enhance their ability to carry out optimization problems which are key in economic analysis. Kimble (1969) believes that the process of critical thought and logical reasoning applied to economic problems must be capable for verbal expression. She argues that mathematical formulae may appear more precise, but their precision depends entirely on the definitions which marks the transition from words to symbols.

The teaching approach in terms of the method of explaining economic phenomena and contents have witnessed some changes over time. As the face of the discipline of economics changed globally towards the use of more quantitative techniques in analyzing economic phenomena in the early years of the twentieth century, the teaching of economics at the University of Ghana followed suit. Katzner (2003) suggests that mathematics has become important in economics to among other things attain scientific respectability. In terms of the central arguments in economics, there has not been a noticeable change in the teaching of economics in Ghana over the years. The determination of market equilibrium based on rationality assumption of the consumer and the producer as utility and profit maximizers respectively dominate microeconomic analysis. The theoretical arguments of the Classical and the Keynesian schools continue to form the foundation for teaching of the principles of macroeconomics. In macroeconomics, students are introduced to the Classical, Neoclassical, Keynesian and Monetarist models. The IS-LM model is the workhorse that is used to discuss issues of the determination of national output, employment, and interest rates while inflation and expectations are discussed using AD-AS model. One fundamental concern of the teaching of economics is the high focus on theory with little link to policy. Until the introduction of the Economic Policy Management Programme which combines theory and practice and involvement of practitioners to teach on the programme, teaching at the graduate level and the traditional MPhil (Economics), have often concentrated on theoretical issues with limited involvement of practitioners in the teaching and design of curricula.

Lack of suitable textbooks with local content has been one major constraint to the teaching and study of economics at the University of Ghana in particular and in other universities in Ghana in general. The reliance on British and American textbooks in the teaching and study of economics in Ghana has brought to the fore the applicability of the content of the teaching of the discipline to local context. In the 1960s, most of the textbooks were related entirely to the details of British and US economic and social contexts with little or virtually no practical application in

Table 8.1 A sample of books on Ghana published by Ghanaian and Foreign Academics. (Source: Compiled by the authors)

Author/editor	Title of the book	Publisher	Year
T. Killick	Development economics in action. A study of economic policies in Ghana	Heinemann Educational Books	1978
Jones Ofori-Atta	Introduction to microeconomics	Woeli Publishing Services	1998
Amoah Baah-Nuakoh	Studies on the Ghanaian economy Vol. 1: The pre-“revolutionary” years	Ghana Universities Press	1997
Amoah Baah-Nuakoh	Studies on the Ghanaian economy Vol. 2: Environment, informal sector and factor markets	Woeli Publishing Services	2003
Amoah Baah-Nuakoh	Studies on the Ghanaian economy vol. 3: The industrial sector	Woeli Publishing Services	2003
E. Aryeetey, Harrigan J. and Nissanke M (eds.)	Economic reforms in Ghana: The miracle and mirage	James Currey & Woeli Publishing Services	2000
E. Aryeetey	Globalization, employment and poverty reduction: A case study of Ghana	Institute of Statistical, Social and Economic Research (ISSER)	2005
C. D. Jebuni and A. D. Oduro (eds.)	African imperatives in the new world order. A case study of Ghana	AERC and CEPA	2007
E. Aryeetey and R. Kanbur (eds.)	The economy of Ghana. Analytical perspectives on stability, growth and poverty	James Currey & Woeli Publishing Services	2008
W. Baah-Boateng	Labour market discrimination in Ghana: A gender dimension	Lambert Academic Publishing	2012

Ghana and Africa (Kimble 1969). After 65 years of teaching and studying economics, measures are yet to be initiated to encourage and reward effort in the production of economics textbooks at the tertiary level based on local content and examples in the country. Not only does the use of foreign textbooks in the teaching and study of economics make it difficult for students to comprehend the content of the lecture; it also makes it difficult for them to relate to the issues under discussion.

Ghanaian students in the 1950s and 1960s had to rely on foreign textbooks from Britain and America for a thorough grounding in economic principles due largely to the University’s affiliation to University of London. As time went on, some lecturers quickly developed a Ghanaian-oriented method in their teaching. One of them, upon persuasion, produced a little *Introduction to Economics* which was found to be the first introductory textbook in economics written specially for African readers (Kimble 1969). Jones Ofori-Atta produced a textbook, *Introduction to Microeconomics* which has become a widely-used textbook on principles of microeconomics. Some other economics books tailored to local needs have been produced (see Table 8.1). Three books authored by A. Baah-Nuakoh focus on the structure and performance of the Ghanaian economy and use both descriptive and

quantitative approaches in the analysis and have been a major reference point for academics and students at all levels. In 2000 Aryeetey et al. published an edited book that was to provide a comprehensive perspective and analysis of developments that had taken place since the 1966 publication by Birmingham et al. The book is a collection of papers by Ghanaian and foreign academics that has been a reference point for students, teachers and policy-makers. Aryeetey (ed.) (2005) also edited a collection of research output by Ghanaian researchers that provides insights into issues of employment and poverty reduction in Ghana in response to globalization. Baah-Boateng (2012) provides a comprehensive analysis of labour market discrimination in Ghana from a gender perspective as a reference point for academics, students, policy-makers and gender activists. Nonetheless, the teaching of core subjects in economics (microeconomics, macroeconomics, and econometrics) at all levels in tertiary institutions is still largely based on textbooks written by foreign authors from their economic contexts.

Theses and Dissertations

Research into economic issues as in other disciplines at the student's level in tertiary institutions is captured by the project work undertaken by students at the tail end of their course of study in the form of long essays, dissertations and thesis. The choice of economic issue to research into by the student is often influenced by a combination of factors including the burning economic issues on the ground, student's interest and the expertise and interest of the faculty to guide and supervise the student's work. Theses in economics in Ghana are mostly applied and this has remained unchanged over the years. Indeed, in most universities in the developing world including Ghana, researchers often employ secondary or primary data to existing theories using relevant methodology to confirm existing theories or otherwise.

The fundamental change observed in terms of thesis writing in the field of economics has been a shift from the dominance of more micro and targeted sectoral issues to macroeconomic and financial issues. Master's theses in economics produced before the 1980s were largely micro-based focusing on specific industries or sectors of the economy. Some of the theses written in the 1970s focused on the garment industry, the timber industry, tobacco farming, selected manufacturing industries, women's labour force participation, employment and unemployment, and public policy and fiscal issues (see Table 8.2). The focus of theses changed towards macroeconomic issues from the 1980s, largely in line with economic reforms (Economic Recovery Programme and Structural Adjustment Programme) introduced in 1983 to salvage the Ghanaian economy from total collapse. Some of the thesis areas since the 1990s include government expenditure and economic growth, monetary controls, exchange rate policies, debt burden and balance of payments, and foreign direct investment. The SAP/ERP focused on macroeconomic stabilization and the liberalization of the foreign exchange market and trade regime. Upon the introduction of the economic reforms in Ghana, research conducted by some faculty

Table 8.2 Distribution of M. Phil theses in economics, 1971–2006. (Source: Compiled from the list of theses in the Department of Economics, University of Ghana)

Year	Fiscal	Trade	Industry	Labour and employment	Money and finance	Macro and Int. finance	Health	Environment and natural resource	Poverty and development	Quantitative	Agriculture and water supply
1971			2	1					1		
1973				1						1	
1974	1	2									
1977			2								2
1978	1		1								
1980	3	1									
1981						1			1		
1982	1		1								
1983					1						
1991	1		1		1						
1992		1									
1993	1	1			1	1					
1994		1			1	1					
1995	1	1		1		3					1
1996	2	1	1		3	2	2				
1997		1			1	2					
1998	1				1	2	1	1			
1999	2			1	5	2	1	1			1
2000		1		1	4	4	1				
2001		1		1	4	2	1				
2002	2	1	1		1	3	2				
2003	3	2			6		1				
2004	1	1			5	1	2	2	2		1
2005	1	2	1		4	3					
2006	1	1	1	1	3		2				
Total	22	19	8	9	41	27	10	7	4	2	5

members concentrated on economic issues bordering on stability in the foreign exchange and financial markets, trade liberalization, fiscal management and monetary control with the view to ensuring domestic price stability and economic growth. With the research interest of the supervisor and the student as well as burning issues in the economy being an important consideration in selecting thesis topics, it was not surprising that issues based on the economic reform became the main focus of post-graduate theses.

The changing trend in the theses areas over the years has been informed by a number of factors including the range of electives offered, research interest and expertise of faculty and global economic research and policy trends. Expertise and research interest in the area of money and finance, macroeconomics and international finance, health, environmental and natural resource economics improved considerably from the 1990s. The introduction of elective courses such as environmental and natural resource economics, health economics, and recently labour economics locally and at the JFE has enhanced the interest of students in these areas.

Challenges in the Teaching of Economics in Ghana

One fundamental constraint to the study and teaching of economics at the tertiary level over the years has been the reliance on foreign textbooks with limited local content. While the theories are invariably the same (although not necessarily universally applicable) universally, some of the illustrations and examples used in the texts are often found to be alien to the Ghanaian environment, making it difficult for students to effectively and easily relate to them. The nature, structure and characteristics of economic institutions are not the same. Take for example, a chapter on the money supply process in a standard North American text. The institutional framework for the conduct of monetary policy in Ghana is different from that of the US. Thus, it becomes quite difficult for students to follow the discussion on monetary policy when reference is made to the conduct of monetary policy by the US Federal Reserve.

In addition, some of the economics concepts were developed based on the economic structure of countries in the developed world and cannot be easily situated within the Ghanaian context. For instance, students do not find it easy to appreciate that jobless people who are available for work but fail to actively seek work during a reference period are not classified as unemployed because even though they may be jobless they failed to seek work. Clearly, unemployment is a phenomenon of job seeking out of joblessness.

The teaching of economics in Ghana suffered a setback in the 1980s due to the exodus of academics and other professionals to Nigeria, Cote d'Ivoire, North America and European countries, which started in the late 1970s. This caused the suspension of the MSc (Economics) programme in 1983. As a result, no student from the University of Ghana's Department of Economics submitted a master's thesis between 1984 and 1990 (see Table 8.2). The suspended master's programme

was re-introduced in 1987/1988 as an MPhil. programme upon the return and recruitment of new Ph.D. holders.

The increasing use of quantitative techniques to explain economic phenomena has tended to discourage many students who would love to pursue a career in economics. In 2006, the AERC funded two studies in Ghana and Liberia to find out why women were under-represented in graduate programmes and in the research community. The study found that in Ghana among the sample of final year students in three of the country's five public universities, the majority of both female and male students found economics to be challenging (Oduro 2010). For some undergraduate female students the decision to pursue a postgraduate degree in another subject was because they found economics challenging or difficult. Students who are not well equipped in mathematics are often discouraged from pursuing economics. Even those who are found to be quantitatively inclined and have the opportunity to pursue a course of study in economics based on their performance in mathematics at the senior high school level choose to select areas that have limited quantitative content when they later realize their weakness in quantitative techniques. There are instances when students who have been selected to pursue a single-major in economics in Level 300 based on their performance in Level 200 opt for a combined-major with the view to avoiding coming in contact with Applied Mathematics and Statistics for Economists in Level 300 and Econometrics in the final year.

In addition, the breakdown in the tutorial system due largely to large class sizes does not facilitate effective instruction. The tutorial system was quite effective from the 1950s until the mid-1990s when students' population soared. As pointed out by one of the interviewees, between 1950 and mid-1970s, lecturers were handling tutorials themselves in their offices, largely because of the small class size. As the number of students in the class increased, teaching assistants and national service persons took over tutorials. Over the past one and a half decades, the tutorial system in economics has virtually collapsed. Students identified the infrequency of tutorials and the large class sizes as challenges to their study of economics (Oduro 2010). These challenges continue to hamper effective teaching and learning of economics at the University of Ghana, in particular, and Ghana in general.

Economic Research in Ghana

Introduction

Within the context of developments in Ghana's economy and the evolution of ideas and methodologies within the broad economics discipline, this section assesses the trends in economic research in Ghana. We also review the role and relevance of collaborative and multi-disciplinary research and how these have influenced economic research in Ghana. In reviewing the research output within the economics discipline, our main objective is to distil the changes that have occurred over the

years, factors that have influenced these changes, and the challenges and opportunities associated with economic research in Ghana. We also identify lessons that can be drawn and the implications for the way forward in our quest for excellence in economic research.

The books, papers, and studies that form the basis of the review are largely drawn from the following:

1. Books by economists based in Ghana.
2. Articles in various issues of the Economic Bulletin of Ghana (EBG).
3. Legon Economic Studies (LES) papers of the Department of Economics, University of Ghana.
4. Technical and Discussion papers of the Institute of Statistical, Social, and Economic Research (ISSER), University of Ghana.
5. Publications of institutions such as the Bank of Ghana, and the Centre for Policy Analysis (CEPA).
6. Other articles/papers by Ghana-based economists.
7. PhD (Economics) theses.

Fields of economics covered by these studies include microeconomics, macroeconomics, econometrics, international economics, monetary economics, labour economics, public finance, development economics, mathematical economics, and agricultural economics.

Economic Research in Ghana—Features and Trends

General Overview

Economic research in Ghana has covered numerous themes and has employed diverse methodological approaches. The themes covered include economic history, macroeconomic developments and policy, poverty and well-being, international trade and finance, political economy, agriculture, the labour market, and public finance. While there are various ways of categorizing the studies, it is helpful to group them on the basis of whether they are essentially microeconomic or macroeconomic in nature. In this respect, while both the microeconomic and macroeconomic studies include articles, books, theses, and other unpublished papers, it does appear that with the possible exception of textbooks, books by Ghana-based economists tend to focus on macroeconomic issues. This trend for Ghana is not very different from what pertains in the economics discipline generally.

Presumably, the main reason why macroeconomic themes dominate books on economics meant for a general audience is the fact that topical economic issues tend to be macroeconomic in nature. This is largely because non-economists and the general public tend to identify more with the macroeconomic dimension of economic issues. Thus, issues such as unemployment, inflation, the interest rate, and the exchange rate are typically the economic issues that capture the concern and interest

of the general public, and therefore find space in public discourse. Even for issues that are not inherently macroeconomic (for example, poverty and inequality) their macroeconomic aspects tend to lend themselves more easily to being explained to a general readership, arguably because they tend to be less technical, that is relative to their microeconomic aspects.

It should be noted that the range of variety of topics that have characterized economic research in Ghana has been impressive. The following list provides a flavour of the variety of topics that have enriched the economics literature in Ghana: inflation; unemployment; the taxation of cocoa income; the economics of Ghana's road transport system; economic policy in Ghana; poverty and wellbeing; gender and assets; migration and remittances; education; economic growth; and inequality. In our view, however, economic studies in Ghana have usually relied mainly on the analysis of quantitative data, with econometric techniques as a major methodological tool. It would be useful though for economic studies in Ghana to supplement quantitative analyses with the analysis of qualitative data.

Economic research in Ghana has largely been empirical. Many of these empirical studies, especially the macroeconomic ones, employ time series data. Indeed until the 1980s, time series analyses appeared to dominate Ghana's economic research landscape. Given the relatively few cross-sectional or panel datasets available prior to the 1980s, the preponderance, then, of time series analysis is not surprising. Since the 1980s, however, there has been a significant increase in the number of studies that employ nationally representative cross-sectional data. Factors accounting for this development will be discussed shortly. At this point it would be instructive to highlight some of the cardinal features of economic research in Ghana during specific time periods.

Features of Economic Research in Ghana in the 1960s and 1970s

In the 1960s and 1970s economic research in Ghana was characterized by an exciting array of diverse topics, with many of these studies relying heavily on economic principles and theory to analyze issues. In spite of the rich array of economic issues covered in this era, there was a limitation on the extent to which quantitative microeconomic analyses of issues affecting households could be carried out. This was due to the unavailability of nationally representative household survey data. There was also a dearth of theoretical research, but as implied earlier, this is not a peculiarity of this particular time period.

One other issue that merits attention is the role played by the existence of the reputable Economic Bulletin of Ghana. This journal, now defunct, was a vehicle for the dissemination of the findings of interesting and valuable economic research in Ghana. It does appear that the affiliation of the journal to the Department of Economics, University of Ghana, served to motivate a number of the department's faculty to make submissions to the journal, a development that promoted economic research. Accepted articles covered a wide range of subject areas in economics. There were articles on economic development, labour and demographic studies, trade, educa-

tion, renewable resources and conservation and agriculture, for example. In 1974 J. L. S. Abbey and C. S. Clark published an article entitled “A Macroeconometric Model of the Ghanaian Economy, 1965–1969”. The devaluation of the cedi in 1972 generated a healthy debate and in 1975 the journal published “Devaluation—The Prelude to self-reliance in Ghana” by J. Ofori-Atta. In 1974, T. E. Mswaka published “Tariff Structure and Economic Cooperation between Liberia and Sierra Leone,” and in 1972 T. A. Oyejide published “The ‘Spill-Over’ Effect of Domestic Credit Creation on the Demand for Imports: A Note on the Nigerian Experience, 1970–1971.” Thus even though the *Economic Bulletin of Ghana* was a Ghanaian journal, it was international in its content and perspective. In addition to scholarly articles, the journal included book reviews (see, for example, Ofori-Atta 1968). The Economic Society of Ghana, the publisher of the journal was vibrant and reports on the activities of the society were published regularly.²

While economic research in Ghana during the 1960s and 1970s often employed econometric and mathematical techniques, the prevailing technological and computational constraints naturally had a bearing on the depth and variety of quantitative analysis that was feasible. On the whole, given the computational constraints at the time, the level and variety of quantitative analysis carried out during the period is commendable.

Economic Research in Ghana in the 1980s and Beyond

In the post-1980 era, economic research in Ghana has maintained the general pattern of a concentration in empirical analysis. A major feature of economic research in this era, especially in the 1980s and 1990s, was the prevalence of studies that assessed the macroeconomic reforms and/or analyzed issues relating to the economy’s challenges and prospects. Thus, while Baah-Nuakoh et al. (1996) did a study on export diversification, Jebuni et al. (1992) undertook an evaluation of Ghana’s trade regime, comparing the pre and post-ERP period and linking this to the economy’s performance in the external trade sector. Other studies include an analysis of fiscal deficits, output growth, and inflation targets in Ghana (Sowa 1994a) and an edited volume by Aryeetey et al. (2000) that assessed Ghana’s economic performance.

Regarding the Legon Economic Studies series, the studies covered both micro-economic and macroeconomic themes. The microeconomic themes include the demand for ante-natal healthcare services (Ayivor 1994), factor intensities in Ghana’s manufacturing sector (Baah-Nuakoh 1982), obstacles to growth of manufacturing firms (Baah-Nuakoh 1994), and moonlighting activities in the Canadian labour market (Boateng 1983). The macroeconomic themes, on the other hand, include economic growth (Tsikata 1996), economic research and policy (Anyemedu 1994), governance and economic performance (Sowa 1994b), money demand (Akoena 1996), monetary policy (Antwi-Asare 1994) and money and banking (Gockel 1996).

² Ablo (1972).

Many other studies have been carried out by economists at the University of Ghana's Department of Economics. These studies have covered themes and sub-disciplines such as health economics (e.g. Nketiah-Amponsah 2009; Owoo and Lambon-Quayefio 2013), firms' access to credit (e.g. Osei-Assibey 2013), educational inequality (Senadza 2012; Boakye-Yiadom 2013), labour economics (Baah-Boateng 2012), gender and asset ownership (Oduro et al. 2011), environmental economics (e.g. Twerefou and Ababio 2012), migration and remittances (e.g. Boakye-Yiadom 2008), and impact evaluation (see Antwi-Asare et al. 2010).

The implementation of the ERP and the SAP brought in its wake concerns about the effects of these policies on poverty and inequality. The study of these effects, however, often requires large microeconomic datasets. It is therefore gratifying that the post-1980 era has witnessed a surge in the number of microeconomic empirical studies that utilize large datasets. Many of these studies examine various aspects of well-being and livelihoods, such as poverty, inequality, migration, remittances, health, and education. Other microeconomic studies in this category focus on an analysis of firm activities.

This increase in the volume of microeconomic studies employing large datasets has been influenced mainly by the availability of a number of microeconomic datasets. Notable among these datasets are those from the various waves of the Ghana Living Standards Survey (GLSS). These surveys are a series of nationally representative household surveys on various aspects of living conditions. The first wave of the survey (GLSS1) was carried out in 1987/1988 and the fifth (most recently completed) was carried out in 2005/2006. In this connection, it is worth mentioning that GLSS 6 (the sixth wave) was begun in September 2012. Other large microeconomic datasets that have contributed to the growth in microeconomic research in Ghana include the Demographic and Health Survey (DHS) datasets, data from various waves of the Regional Project on Enterprise Development (RPED) & Ghana Manufacturing Enterprise Survey (GME) surveys, the Ghana Household Asset Survey and the surveys conducted by the Institute for Statistical, Social and Economic Research (ISSER) at the University of Ghana.

The availability of these large microeconomic datasets, coupled with the tremendous advancement in information and communication technology (ICT), has facilitated an increase in research into numerous aspects of living conditions, such as poverty and inequality, education, employment, migration, remittances, and health (for examples, see Asenso-Okyere et al. 1998; Appiah-Kubi et al. 2008; Boakye-Yiadom 2008; Ackah and Medvedev 2010; Oduro et al. 2011). These datasets have further enhanced the scope for the economic analysis of issues that are often neglected by economists. These issues include spousal violence, decision-making, and child fostering.

In addition to the highlighted features of economic research in Ghana in the post-1980 period, there are two comments that should be made. The first is about the role of the African Economic Research Consortium (AERC) in promoting economic research in Ghana, and in Africa, in general. The granting of funds and support, by the AERC, for economic research in Africa has become an important avenue for stimulating economic research in Ghana (for example, see Aryeetey (1992); Jebuni

Table 8.3 Proportion (%) of multi-authored papers in eight leading journals. (Source: Hudson 1996)

Journal	1950–1993	1950–1965	1966–1970	1970–1974	1974–1993
All eight journals	26.4	10.9	22.8	25.1	40.0
Quantitative journals	30.8	13.8	30.8	33.2	44.2
British journals	24.5	9.4	20.2	23.0	37.6
American generalist journals	25.5	10.4	20.0	21.7	39.5

et al. (1994); Osei (1995)). Faculty at the Department of Economics, University of Ghana, have benefitted also from collaboration with what used to be the Overseas Development Agency (ODA) (now DfID), and funding from the MDG3 Fund of the Dutch Ministry of Foreign Affairs. The second point relates to the apparent increase in the number of multi-authored academic work in economics.³ Given the importance and intriguing nature of this issue, we provide a discussion in the next sub-section, taking into account the prevalence of the phenomenon in the economics discipline worldwide.

Collaborative Economic Research

One of the interesting aspects of economic research in Ghana is the degree to which collaborative research is prevalent. Although complete statistics are not currently available, our preliminary checks suggest that collaborative economic research is on the ascendancy in Ghana. For example, using information on articles published in the Economic Bulletin of Ghana between 1966 and 1975, roughly 10% of articles were authored by two or more persons. A similar analysis of ISSER technical publications shows that over the period 1968–1989, joint authorships of economics papers accounted for about 22% of the articles. Even though none of the Legon Economic Studies papers, spanning 1981–1996, was jointly authored, joint authorship of economic papers is arguably on the increase in Ghana.

At this point it is instructive to observe that the economics discipline has experienced a surge in joint-authorship of articles over the past several decades (Hudson 1996). As shown by Hudson (1996), the increase in the proportion of multi-authored papers cuts across all eight leading journals⁴ analyzed in his study (see Table 8.3). Interestingly, this development has been a subject of economic analysis (see Barnett et al. 1988; Piette and Ross 1992; Hudson 1996). A number of hypotheses have been proposed to explain the phenomenon. These include the division of labour and specialization hypothesis, the opportunity cost of time hypothesis, the quality hypothesis, and the diversification hypothesis (Table 8.3).

³ The phenomenon is probably not confined to the discipline of economics.

⁴ The journals are American Economic Review, Economic Journal, Econometrica, Review of Economics and Statistics, Review of Economic Studies, Journal of Political Economy, Quarterly Journal of Economics, and *Economica*.

According to the division of labour and specialization hypothesis, joint-authorship in economics has increased mainly because the growth in the discipline has generated many sub-disciplines, and this often means that research efficiency requires joint-authorship, with each author focusing on a particular component(s) of the work. For many academic institutions these days, the promotion of faculty is critically dependent on the number and quality of their publications. To the extent that this development has considerably increased the opportunity cost of researchers' time, it has implications for the price one has to pay in order to obtain an informal peer review of a manuscript. Thus, the opportunity cost hypothesis asserts that a simple "Thank you" or an acknowledgement in a footnote is increasingly becoming inadequate for eliciting the kind of meticulous review from academic colleagues that would considerably enhance the quality of a paper. In view of this, according to the opportunity cost hypothesis, the offering of co-authorship is often the equilibrium price for a thorough informal review of papers (see Barnett et al. 1988). According to the quality hypothesis, the increase in co-authorship of economics papers is driven by the increased competition for journal space. It argues therefore, that since the co-authorship of a paper by the right mix of authors enhances the paper's chances of being published by a reputable journal, there is an incentive for researchers to seek collaboration. Finally, the diversification hypothesis argues that there is a large random element in journals' editorial review process. As a result, within a given period of time (e.g. 2 years) a researcher risks not getting any publication. In this context, co-authorship is a natural attempt by academics to increase their publishable outputs per period, thereby diversifying their portfolio of journal submissions in order to reduce risk and uncertainty.

The above hypotheses are all plausible explanations for the apparent increase in co-authorship of economics papers in Ghana. Significantly, there is a tendency, in contemporary times, for funders of research to require collaboration, sometimes across disciplines. We believe this has further contributed to the growth of collaborative economic research in Ghana. An example of a multi-disciplinary collaborative research involving economists is the project on Chronic Poverty and Vulnerability in Ghana, which was carried out by economists, sociologists, and a geographer.

Challenges and Opportunities Associated with Economic Research in Ghana

The challenges confronting economic research in Ghana are numerous, but surmountable. Since most economics researchers are based in the universities, it is important to mention the challenge posed by rising class sizes. This inevitably imposes huge constraints on the time of lecturers, especially with respect to the assessment of students and the supervision of student research.

There is also the constraint posed by the competition for research funds. In view of the keen competition for the limited funds available for economic research, the requirements of funding institutions tend to be exceptionally high. Such high

requirements often mean that considerable time and effort need to be invested in the writing of excellent proposals if one is to have a credible chance of winning any grant. Given the challenge of large class sizes and the related heavy research supervision load, many academics are often unable to attract adequate funding for economic research.

The above constraints notwithstanding, there is a sense in which the opportunities for economic research in Ghana can be described as immense. A major reason for this assertion is the increasing availability of data, especially microeconomic data, in the case of Ghana. There is also the massive boost in economists' capacity for analyzing large datasets owing to the emergence of more powerful econometric and statistical software. Thus, with this improvement in data availability and software technology, it is possible to carry out certain kinds of economic research without a grant, the main constraint here being time. Regarding the availability of data, it is worth emphasizing that economic researchers in Ghana would benefit from broadening their country focus to include countries for which relevant data exist.

The massive technological advancement in computer technology and ICT offers a huge boost to economic researchers in Ghana, and indeed to researchers worldwide. With the emergence of the Internet, it is now possible to access data, literature, and information that researchers, a few decades ago, could only fantasize about. Furthermore, with the increased capacity for communicating via email, mobile phones, Skype, and video conferencing, researchers' capacity and opportunities for collaborative research have increased dramatically. For example, researchers can co-author a paper without physically meeting.

Additionally, although student research supervision does impose considerable constraints on academics' time, it can be an avenue for churning out joint publications, i.e., by the student and the supervisor(s). It must be stressed, however, that for this to be efficient, there should be an effective system for ensuring that the research topics of graduate students are closely linked to the research interests and/or expertise of faculty. Such an arrangement is likely to improve the quality of supervision and enhance the publication profile of lecturers.

The Links Between Policy-Makers and Academia

Seneca, a teacher and advisor to Nero, the Roman emperor was of the opinion that academics must use their knowledge for the public good. The academic could be excused from this obligation due to ill-health or old age, if the services of the academic are refused by the state or the state is so corrupt that it is not capable of benefitting from the advice of academics. This obligation of academics to put their knowledge to good use thus requires that there are links or bridges between academia and policy-makers.

In this section we shall examine the links between economists in academia and policy-makers in Ghana and how research findings are disseminated to policy-makers. Although we acknowledge that there have been links between the two spanning

the years since the establishment of the departments of economics in Ghana, in this section we shall use the Department of Economics of the University of Ghana as a case study. We will examine how the links are created between economists in academia and policy-makers, how the links are utilized and the outcome for both policy-makers and academia. We use information collected from a sample of former and current lecturers of the Department of Economics at the time of the survey, as well as insights from some policy-makers.

The Creation of Links

Links between policy-makers and academia can be created at the instance of the policy-maker or the academic or due to the initiative of a third party. Policy-makers have different mechanisms that they can use to establish links with academia. Government can establish an institution that provides funding for research. Access to the resources can be by competitive bidding on research topics and themes that have been decided by the institution using clearly defined procedures. Two examples of such institutions are the National Science Foundation (NSF) of the USA and the Economic and Social Research Council (ESRC) of the United Kingdom. These bodies promote research with several objectives, including improving upon the economic competitiveness of their respective countries and to inform policy. Ghana does not have a similar institution that provides regular funding to social scientists to promote research that will push forward the knowledge frontier or be utilized by policy-makers to inform policy.

There are other mechanisms available to policy-makers to establish links with academia. These are commissioned research, invitations to participate in brainstorming sessions, to prepare policy documents and to join technical and advisory teams. In Ghana, policy-makers have initiated links with economists in academia using the latter set of mechanisms. Academics worked with officials of the National Development Planning Commission to prepare major policy documents such as the Ghana Poverty Reduction Strategy Paper (GPRS I) and the Growth and Poverty Reduction Strategy Paper (GPRS II). In particular, academics were members of the technical teams that prepared the annual progress reports of the implementation of the GPRS I and II. They have been members of technical teams that formulated pension reforms, financial sector reforms, trade policies and policies on child labour. Some lecturers of the Department of Economics have spent a stint working with government during their sabbatical leave.

Academics also reach out to policy-makers, thus creating links between them. Policy-makers have been invited by lecturers in the Department of Economics, University of Ghana to participate in research projects. In some instances this is because the topic being researched required the participation of a policy-maker. In other instances a third party, i.e. the funding agency of the research project, required the participation of policy-makers in the project. Policy-makers performed a number of roles as members of the research team, ranging from providing analytical input, participating in the preparation of the research output or playing an advisory role.

Another set of actors who are important in the Ghanaian policy arena are the development partners and non-governmental organizations. Some researchers have received funding from these agencies to undertake research and short-term consultancies and this has created opportunities to link up with policy-makers. Academics have also spent a stint working with these organizations.

Dissemination

If research findings are to be utilized by policy-makers, the findings must reach the policy-makers, be read by them and understood by them. Policy-makers must be involved in discussions with academics about their research findings and the research findings must be relevant to policy-makers (Knott and Wildavsky 1980). The most frequently used means whereby researchers in the Department of Economics, University of Ghana, make their research findings available to policy-makers is by sending them copies of the research findings, synthesizing the research findings into a policy brief and inviting policy-makers to dissemination seminars. Other (not frequently used) means are the preparation of a short piece for publication in the media and posting the research findings on the web page of the researcher.

Utilization of Research Findings and Policy Impact

Lecturers of the Department have seen their policy advice and the output of their commissioned research translated into policy documents and implemented. Examples of such positive impact are in the area of reforms of the Social Security and National Insurance Trust and provisions of the Ghana Labour Act. In one instance the findings of the research were an input into the budget of one of the Ministries and in another instance the recommendations are being implemented by the Ministry. Almost all researchers (i.e., in our survey) who had spent a stint working with government mentioned that their ability to influence policy was constrained by already determined paradigms. According to one researcher "Some policy-makers or development partners can be inflexible on some issues."

It is important to distinguish between commissioned research and non-commissioned research. The issues of relevance and utilization of research findings do not apply to the former since the research is conducted at the request of the policy-maker and the terms of reference are defined by them. Policy-makers gave a mixed response to the question on the relevance of non-commissioned research. Not all non-commissioned research was relevant to their work. There were mixed responses concerning whether the presentation of the findings of non-commissioned research was too technical. Research findings may not be utilized if clear policy options are not provided.

Impact on the Researcher

The academic is unlikely to be unaffected by interactions with policy-makers and there can be some positive synergies for the academic. Spending a stint working with government can keep the academic economist in close touch with policy developments and the reality associated with policy-making. According to one lecturer, working with government resulted in a “more broadened outlook on economic thinking with a lot of actual practical experience.” The experience gained by working with government can provide the researcher with relevant and practical experiences to buttress points made whilst teaching. According to another lecturer, “My students appreciated my real world insights and examples.”

Similar positive experiences were recounted by lecturers who worked with development partners. Working with development partners widened the network with other academics, improved access to data and built on the analytical and skill capacity of researchers. One researcher came away with a “more nuanced outlook on the impact of economic policy.”

Conclusion

The depth and scope of economics have evolved over the years as economists have applied the tools of the discipline to a wide array of issues. In the process, there have been notable changes in thematic emphasis and methodology. In Ghana, the discipline of economics has witnessed changes in teaching and research, while the links between researchers and policy-makers continue to register modest gains. Factors underlying most of the changes observed include increasing specialization, the increased application of mathematics and quantitative techniques, the remarkable advancement in ICT and software technology, and the growing interaction with other disciplines such as sociology and psychology.

Bridges have been built between policy-makers and academics in Ghana, and academics have had some influence on policy design. There is concern among some policy-makers that not all research findings are relevant or accessible, and that this explains why they are not utilized. This raises the question of whether all research has to be policy relevant and whether the researcher cannot have the luxury to undertake research that pushes the knowledge frontier, but does not have direct or immediate policy relevance. The answer is that each academic needs to determine that balance between policy relevant research and research that is of purely academic interest at that moment in time. What is missing in Ghana is an institutional framework that provides government with cutting edge research on issues that it considers relevant. Such an institution will strengthen even further the links between policy and economic research and the positive synergies that exist between the two.

References

- Abbey, J. L. S., & Clark, C. S. (1974). A macroeconomic model of the Ghanaian economy, 1965–1969. *The Economic Bulletin of Ghana*, 4(1), 3–32.
- Ablo, E. Y. (1972). Report on economic society of Ghana conference held at Kumasi in March, 1972. *The Economic Bulletin of Ghana*, 2(1), 53–54. (Note).
- Ackah, C., & Medvedev, D. (2010). *Internal migration in Ghana: Determinants and welfare impacts*. World Bank Policy Research Working Paper No. 5273.
- Akoena, S. K. K. (1996). *The buffer stock model of money demand: Review of studies and applications to Ghana*. Legon Economic Studies, Department of Economics, University of Ghana, No. 9607, Legon.
- Antwi-Asare, T. O. (1994). *Seasonality in the money stock and its implications for monetary control in Ghana*. Legon Economic Studies, Department of Economics, University of Ghana, No. 9410, Legon.
- Antwi-Asare, T., Cockburn, J., Cooke, E. A., Fofana, I., Tiberti, L., & Twerefou, D. K. (2010). *Simulating the impact of the global economic crisis and policy responses on children in Ghana*. Innocenti Working Papers, 2010–05.
- Anyemedu, K. (1994). *Economic research and policy in Ghana*. Legon Economic Studies, Department of Economics, University of Ghana, No. 9408, Legon.
- Appiah-Kubi, K., Oduro, A. D., & Senadza, B. (2008). Understanding poverty in Ghana: Risk and vulnerability. In E. Aryeetey & R. Kanbur (Eds.), *The economy of Ghana: Analytical perspectives on stability, growth and poverty*. Rochester: James Currey/Woeli Publishing Services.
- Aryeetey, E. (1992). *The relationship between the formal and informal sectors of the financial market in Ghana*. AERC Research Paper No. 10, Nairobi.
- Aryeetey, E. (Ed.). (2005). *Globalization, employment and poverty reduction: A case study of Ghana*. Institute of Statistical, Social and Economic Research (ISSER).
- Aryeetey, E., Harrigan, J., & Nissanke, M. (Eds.) (2000). *Economic reforms in Ghana: The miracle and the mirage*. Oxford: James Currey/Woeli Publishing Services.
- Asenso-Okyere, W. K., Anum, A., Osei-Akoto, I., & Adokunu, A. (1998). Cost recovery in Ghana: Are there any changes in health seeking behaviour? *Health Policy and Planning*, 13(2), 181–188.
- Ayivor, E. C. K. (1994). *An economic analysis of the demand for antenatal healthcare services in northern Ghana*. Legon Economic Studies, Department of Economics, University of Ghana, No. 9404, Legon.
- Baah-Boateng, W. (2012). *Labour market discrimination in Ghana: A gender dimension*. Saarbrücken: Lambert Academic Publishing.
- Baah-Nuakoh, A. (1982). Factor intensities in Ghana manufacturing. *Legon Economic Studies*.
- Baah-Nuakoh, A. (1994). Obstacles to growth of manufacturing enterprises in Ghana: Results of a firm level survey. *Legon Economic Studies*.
- Baah-Nuakoh, A., Jebuni, C. D. Oduro, A. D., & Asante, Y. (1996). *Exporting manufactures from Ghana: Is Adjustment Enough?* ODI., London.
- Baah-Nuakoh, A. (1997). *Studies on the Ghanaian economy Vol. 1: The pre-“Revolutionary” years*. Ghana Universities Press.
- Baah-Nuakoh, A. (2003a). *Studies on the Ghanaian economy Vol. 2: Environment, informal sector and factor markets*. Accra: Woeli Publishing Services.
- Baah-Nuakoh, A. (2003b). *Studies on the Ghanaian economy Vol. 3: The industrial sector*. Accra: Woeli Publishing Services.
- Barnett, A. H., Ault, R. W., & Kaserman, D. L. (1988). The rising incidence of co-authorship in economics: Further evidence. *The Review of Economics and Statistics*, 70(3), 539–543.
- Birmingham, W., Neustadt, I., & Omaboe, E. N. (1966). *The economy of Ghana: A study of contemporary Ghana* (Vol. 1). London: George Allen and Unwin Ltd.

- Boakye-Yiadom, L. (2008). Rural-Urban linkages and welfare: The case of Ghana's migration and remittance flows. PhD Thesis, Department of Economics and International Development, University of Bath, UK.
- Boakye-Yiadom, L. (10–12 October 2013). *Basic education and issues of costs, access, and equity: Evidence from Ghana (1991–2006)*. Paper presented at the African Social Research Initiative (ASRI) conference at the University of Michigan.
- Boateng, K. (1983). *Participation in moonlighting activity in the Canadian labour market: A comparison between immigrants and Canadian-Born workers*. Legon Economic Studies.
- Gockel, A. F. (1996). *Historical perspectives of money and the evolution of banking in Ghana*. Legon Economic Studies.
- Hudson, J. (1996). Trends in multi-authored papers in economics. *The Journal of Economic Perspectives*, 10(3), 153–158.
- Jebuni, C. D., Oduro, A. D., Asante, Y., & Tsikata, G. K. (1992). *Diversifying exports*. The Supply Response of Non-Traditional Exports to Ghana's Economic Recovery Programme ODI Research Report, ODI/University of Ghana, Chameleon Press, London.
- Jebuni, C. D., Oduro, A. D., & Tutu, K. A. (1994). *Trade, payments liberalization and economic performance in Ghana*. AERC Research Paper 27. Nairobi: African Economic Research Consortium.
- Katzner, D. W. (2003). Why mathematics in economics? *Journal of Post Keynesian Economics Summer*, 25(4), 561–574.
- Killick, T. (2010). *Development economics in action: A study of economic policies in Ghana* (2nd ed.). London: Routledge.
- Kimble, H. (1969). On the teaching of economics in Africa. *Journal of Modern African Studies*, 7(4), 713–741.
- Knott, J., & Wildavsky, A. (1980). If dissemination is the solution, what is the problem? *Knowledge: Creation, Diffusion, Utilization*, 1(4), 537–578.
- Krueger, A. O. (1991). Report of the Commission on Graduate Education in Economics. *Journal of Economic Literature*, 29(3), 1035–1053.
- Mswaka, T. E. (1974). Tariff structure and economic co-operation between Liberia and Sierra Leone. *The Economic Bulletin of Ghana*, 4(1), 33–51.
- Nketiah-Amponsah, E. (2009). Demand for health insurance among women in Ghana: Cross-Sectional evidence. *International Research Journal of Finance and Economics*, 33, 179–191.
- Oduro, A. D. (2010). *Women in economic research and graduate training in West Africa*. AERC Special Paper No. 46. Nairobi: AERC.
- Oduro, A. D., Baah-Boateng, W., & Boakye-Yiadom, L. (2011). *Measuring the gender asset gap in Ghana*. Accra: Woeli Publishing Services.
- Ofori-Atta, J. (1968). Foreign exchange crises; by Paul Einzig. London: Macmillan & Co. Ltd. *The Economic Bulletin of Ghana*, XII, 58–59.
- Ofori-Atta, J. (1975). Devaluation-The prelude to self-reliance in Ghana. *The Economic Bulletin of Ghana*, 1(1/2), 3–34.
- Ofori-Atta, J. (1998). *Introduction to microeconomics*. Woeli Publishing Services.
- Osei, B. (1995). *Ghana: The burden of debt service payment under structural adjustment*. AERC Research Paper 33. Nairobi: African Economic Research Consortium.
- Osei-Assibey, E. (2013). Source of finance and small enterprise's productivity growth in Ghana. *African Journal of Economic and Management Studies*, 4(3), 372–386.
- Owoo, N. S., & Lambon-Quayefio, M. P. (2013). National health insurance, social influence and antenatal care use in Ghana. *Health Economics Review*, 3, 19.
- Oyejide, T. A. (1972). The 'Spill-Over' effect of domestic credit creation on the demand for imports: A note on the Nigerian experience, 1970–71. *The Economic Bulletin of Ghana*, 2(3), 41–47.
- Piette, M. J., & Ross, K. L. (1992). An analysis of the determinants of co-authorship in economics. *The Journal of Economic Education*, 23(3), 277–283.
- Saffu, E. O. (1968). Nkrumah and the Togoland question. *The Economic Bulletin of Ghana*, XII, 27–36.

- Senadza, B. (2012). Education inequality in Ghana: Gender and spatial dimensions. *Journal of Economic Studies*, 39(6), 724–739.
- Sowa, N. K. (1994a). Fiscal deficits, output growth and inflation targets in Ghana. *World Development*, 22(8), 1105–1117.
- Sowa, N. K. (1994b). Governance and economic performance in Ghana. *Legon Economic Studies*.
- Tsikata, G. K. (1996). Economic growth in Ghana: Some stylized facts. *Legon Economic Studies*.
- Twerefou, D. K., & Ababio, D. K. A. (2012). An economic valuation of the Kakum National Park: An individual travel cost approach. *African Journal of Environmental Science and Technology*, 6(4), 199–207.