

FIRMS AND MARKETS

Essays in Honour of Basil Yamey

Edited by K. TUCKER and C. BADEN FULLER



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EDITORS' INTRODUCTION

Professor Basil Yamey is a scholar in many fields and a man of many talents. These essays by former students on economic aspects of firms and markets are offered as a tribute to Basil Yamey's illustrious scholarship in the field of economics.

Basil Yamey

Basil Yamey has established an enviable record of scholarship as is testified by the bibliography of his work listed at the end of this book. He was born in 1919 in South Africa where his father was involved in the distributive trades. After graduating from the University of Capetown in 1940 he went to the London School of Economics as a Lecturer. Following the Second World War he spent a brief period at Rhodes University in South Africa and at McGill University, Canada and was made a Reader in Economics at the London School of Economics in 1950. By the mid-1950s he had established his reputation in economics principally through his critical assessment of resale price maintenance as well as his research on the workings of commodity markets and (with Peter Bauer) on the economics of development.

In 1961, he was made a Professor at the London School of Economics. Over the years he has added to our stock of knowledge by publishing on a wide variety of subjects including: the economics of distribution, the economics of commodity markets, the economics of auction markets, industrial economics, competition law and, of course, the economics of development. In addition, he has continuously published on the history of accounting and is considered a leading authority on early accounting practices.

Basil Yamey is, and has always been, concerned with understanding how businessmen make decisions; why firms are successful; what makes markets function, and whether it is appropriate for governments to intervene. It is therefore no surprise that he has also made his mark outside the academic world. For twelve

years he was an active and respected member of the Monopolies and Mergers Commission. There he was influential in forming the opinions of the majority but was equally able to write succinct and devastating dissenting opinions in those cases where he felt his colleagues had erred in their logic. His scholarship extended to the history of art. For fifteen years he was a trustee of the National Gallery and for two of those years he was also a trustee of the Tate Gallery. He is a member of the management committees of the Courtauld and the Warburg Institutes.

Basil Yamey has taught many thousands of students from all parts of the world. Attracted by his international reputation they have attended his lectures which have over the years covered foreign trade, development economics, competition law, futures markets and of course industrial economics. They have been taught by him in classes comprising people from countries that were the cradle of ancient civilisation as well as those from nations more recently formed by political and social forces of modern society. Former students currently occupy influential posts in academia, the business world and public institutions in countries both large and small and at all stages of development.

Students who have attended his classes over the years or who have had the privilege of being supervised by him in their post-graduate studies have never been left in any doubt as to his ability as a teacher. His presentation was never based on out-of-date lecture notes; his delivery was suitably succinct; his logic was always robust; and his commentary was packed with challenging and stimulating ideas. When it came to assistance with a manuscript, one could always rely on incisive remarks about the facts and conclusions, a careful scrutiny of the argument and help with re-drafting beyond the normal call of duty as a supervisor.

Former students of Basil are most grateful for his attention to their learning process while at the School. There are many who, while there, came to regard him as a very good friend. Among them are the contributors to this volume. With the support and kindness of his wife Helen whom he married in 1949 the Yamey household became a 'Home away from Home', renowned for a spirit of lively hospitality and unpretentious conversation. One always learned something from their travels, their keen interest in the arts and their contacts with public life. But friendship was the most memorable element. For those of us who have called on Basil's personal counsel, his professional advice or an objective

appraisal of our academic efforts, this friendship in all its dimensions has been extended across time and space.

In 1984, Basil retired from teaching to devote more time to his activities as advisor to companies and to his research into the history of accounting. There is no sign of any diminution of his wit or intellect.

This Book

The ten essays in this book cover a variety of topics in the field of the economics of firms and markets. Each of these essays is associated with the research of Basil Yamey, whose bibliography appears at the end of this volume. For convenience we have grouped the essays into seven sections.

In the first section there are two essays on the **Workings of Commodity Futures Markets**. In the first, Goss and Giles set out a model of price determination and the allocation of available supplies between consumption and storage. They estimate their model using data on the US soybeans market and the Australian wool market. In the second essay, Brasse undertakes a semi-strong test of efficiency for the Tin Futures Market on the London Metal Exchange. She finds that forward pricing errors did exist and that the market has not adjusted perfectly to the receipt of new information. There are close ties between these two essays and the work of Basil Yamey. Basil Yamey and Barry Goss edited the authoritative book *The Economics of Futures Trading* (1976). In addition, Yamey has written a number of scholarly articles on the operations of commodity markets, hedging and the efficiency of futures markets.

In the second section there are two essays on **Competition in Service Industries**. In the first essay, Baden Fuller contributes to the long standing debate on the effect of seller concentration by analysing the causes and consequences of rising concentration in the UK grocery trade from 1970 to 1980. He finds that this rise in concentration has been beneficial to the consumer. In the second essay, Whitehead analyses the structure and conduct of the UK building society movement and the factors which influenced the stability and effectiveness of the rate 'cartel'. These two essays on the evolution of markets and the nature of competition are closely related to the work of Basil Yamey. Basil Yamey is an authority

on competition in the distributive trades establishing his reputation in the 1950s through journal articles and his book *The Economics of Retail Price Maintenance* (1954). He continues to write on the subject and is widely known as co-editor (with Ken Tucker) of the Penguin book of readings *Economics of Retailing* (1973).

The third section contains an essay by Webb and de Jong on **Auction Markets**. They model the optimal strategy for winning a single contract offered under the sealed bid or tendering system where competitive behaviour is uncertain. They extend their model to multiple contracts; group tendering behaviour; changing uncertainty and fixed costs, and they discuss the equilibrium. This essay is closely related to the work of Basil Yamey who was interested in the operations of competitive bidding and the Dutch auction, not only through his research into futures markets but also as a scholar contributing on bidding rules (see for example *Journal of Political Economy*, 1972).

The fourth section contains two essays on the subject of **Firm Behaviour**. The essay by Peck examines Gibrat's law of proportional effect and how econometric regressions applied incorrectly can produce misleading results. He models a firm's investment behaviour in an industry under constant returns to scale where all firms are price takers with finite capacity. He shows that although this model is inconsistent with Gibrat's Law, simulation of this model produces data which when subsequently analysed show spurious confirmation of Gibrat's Law. The second essay by Gorecki discusses predatory pricing in the Canadian drug market. He examines Hoffman-La Roche's monopoly position in the Diazepam and Chlordiazepoxide tranquiliser markets in Canada prior to 1969. He shows how Roche's tactics to discourage new entry included the promotion of rival products owned by Roche, price cutting and predatory pricing; and that despite these tactics new entry did occur. Of course both these essays are linked to the work of Basil Yamey who established a reputation in industrial economics early on in his career. He was always aware of the problems of interpreting econometric regressions in industrial economics (see for instance his article with Caves in the *Quarterly Journal of Economics*, 1971). His article on predatory pricing (*Journal of Law and Economics*, 1972) is considered a classic. He is perhaps most widely known through his editorship of the Penguin book of readings; *Economics of Industrial Structure* (1973).

In the fifth section of **Law and Economics**, the essay by Markovits

discusses monopolistic competition and the second best. He proposes a taxonomy of analysis of the distortions to allocative efficiency caused by investment in increasing product quality and variety. He uses the concepts of aggregative, particular and non-additive distortions and shows how these concepts can be related to anti-trust. This essay is also related to the work of Basil Yamey who was (and still is) active in applying the economic precepts to the law. Basil Yamey started to write on law and economics early in his career (see for instance his book *The Economics of Retail Price Maintenance*, 1954, and his monograph with Stephens, *The Restrictive Practices Court*, 1965). Not listed in his bibliography are his contributions in the reports of the Monopolies and Mergers Commission.

In the sixth section in **International Trade**, Snape's essay discusses the effect on exporting countries of restrictions imposed by importers. He ranks the effects of tariffs, quotas and subsidies under different scenarios. These scenarios include competition or monopoly in either domestic production, domestic importation or foreign production, or combinations of all three. Like so much of Basil Yamey's work in the field of development, this essay deals with a subject which is a matter of concern to both the developed and developing nations. Most of Basil Yamey's prolific and influential writing on the subject of development has been with Peter Bauer, starting with their *Economic Journal* article in 1951 and *Economics of Underdeveloped Countries* (1957).

It is fitting that the final section concerns the **History of Thought** and that it contains an essay in appreciation of Alfred Marshall's *Industry and Trade*. Basil Yamey is an admirer of Marshall and always maintains that much of present-day 'modern economics' can be found in the classics. It is no surprise therefore that in this final essay, Williams argues that Marshall is both analytical and empirical and that he uses innovative methodology giving prominence to the use of long time-series and cross-country comparisons. Marshall's book contains discussions of many topics of relevance to modern economists including horizontal combinations, collusion, vertical integration and the role of the state in lowering industry entry barriers.

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PROFESSOR BASIL S. YAMEY: A TRIBUTE

The essays in this book are by active, busy academics and professional people. Their readiness to write new articles in honour of Basil Yamey reflects the affection and respect in which he is held by those whom he has taught. The quality and range of the publications listed in the bibliography testify to the incisiveness of his mind and the breadth of his interests.

The evidence presented in this volume of his work as a teacher and scholar is impressive. It does not and cannot take account of his contributions to the subject as an editor, colleague and collaborator.

He was Editor of *Economica* from 1960 to 1973. The high level and wide range of the contents of *Economica* over this period reflect the exacting character and the breadth of Basil Yamey's scholarship. They reflect also his unfailing readiness to help contributors ranging from graduate students to senior academics in the revision of their manuscripts, far beyond the call of duty, or the practice of a great majority of journal editors.

The same readiness to help has been conspicuous in his relationship with his colleagues. Informative and helpful comment from fellow academics is a perquisite of a university post, but here again Basil Yamey gives far beyond what is normally expected from a colleague.

I have left to the last his rôle as a collaborator, which I am well placed to assess. We have worked together on and off for more than thirty years. I find it hard to convey my debt to him as collaborator. We have published jointly two books and many articles, but he has been of the greatest help with almost all the books and articles which have appeared under my name since 1951. He usually improved my drafts greatly, at times out of recognition.

I may mention a specific example. In 1973 I wrote a short article for a bank review on the implications of the Link Scheme of foreign aid, the proposal to issue Special Drawing Rights to less developed countries as a form of official foreign aid. Before submitting the article I requested comments from three senior col-

leagues, all full professors with international reputations, even world standing, in monetary economics and macro economics. In soliciting their opinions I asked them particularly to look for any technical defects in the argument. All three said that they could find no fault with the argument. After receiving their comments I asked Basil Yamey for his opinion. I had not done so at an earlier stage because the article dealt with an area in which he had never worked until then. He promptly detected two gaps in the arguments and helped to close them. He thereby made the article proof against substantive criticism as became clear subsequently. I mention this episode as an example of his acuteness, and of his ability to exercise it over a wide range, including ground previously unfamiliar to him.

Basil Yamey has thus contributed to economics as scholar, teacher, editor, colleague and collaborator. The extent of his contribution has been exceptional under these headings taken singly, and much more so in combination.

Collections of essays in honour of a scholar are apt to be published at a time when the powers of the person so honoured may be on the decline. Readers of this volume may be assured that this does not apply in the present instance. Basil Yamey's intellectual powers are altogether unimpaired. This is evident to his friends, colleagues and students. It will become evident to others as he continues to publish in the coming years.

Peter Bauer
London School of Economics

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PART ONE

WORKINGS OF COMMODITY FUTURES MARKETS

1 PRICE DETERMINATION AND STORAGE IN COMMODITY MARKETS: SOYBEANS AND WOOL

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1. A Model of Price Determination and Storage

1.1 The Theoretical Model

This paper presents a model of price determination and allocation of available supplies between consumption and storage, based on the theoretical model of Peston and Yamey (1960).¹ Estimates of this model are presented for two commodities: US soybeans and Australian wool. Each country is a major world producer of the respective commodity, and the US soybeans futures market is one of the most active futures markets in the USA, while the Sydney wool futures market is Australia's most developed, and the world's largest such market in wool.

Within the market for each commodity three sub-markets are distinguished: that for storage, for futures, and for present consumption. Storage itself may be hedged or unhedged.² Within each sub-market appropriate demand and supply relationships may be distinguished.

The demand for hedged storage comes essentially from long hedgers (FLH_t) who require the commodity at a later date for processing or to fulfil a forward commitment, and who face the risk that the price of this input will rise. They hedge against this risk by a purchase of futures contracts, and, using the cash price as a proxy for the forward actuals price, their demand for hedged storage is assumed to be a decreasing function of the forward premium.³ The supply of hedged storage (H_t) is assumed to be provided by economic agents who hold inventories and sell futures contracts as a hedge against the risk of a fall in the cash price. In addition, they are assumed to seek gain from their hedging activities, and since a forward premium which declines gives a gain to short hedgers, the volume of short hedging is assumed to be an increasing function of the forward premium (since this premium must decline as the delivery date of the future approaches).

4 *Price Determination and Storage*

Not all storage is hedged. Some agents, speculators in spot (U_t), hold unhedged inventories in anticipation of a rise in the cash price. Their price expectations are assumed to involve them in a reciprocal demand for, and supply of, unhedged storage. The demand for unhedged storage is assumed to vary inversely with the spot price, and to be unresponsive to the futures price.

The futures market partially overlaps, but is not synonymous with, the storage market. The supply of futures contracts is provided by short hedgers and also by short speculators in futures (SS_t), the latter being economic agents who sell futures because they expect the futures price to fall. Similarly, the demand for futures is provided by long hedgers and by long speculators in futures (FLS_t), the latter being agents who expect the futures price to rise and employ risk capital to purchase futures in support of those expectations. The supply of futures by short speculators is assumed to vary directly with the futures price, while the demand for futures by long speculators is assumed to vary inversely with that price. Both such activities are assumed to be unresponsive to the spot price.

In periods when hedgers are net short, the demand for hedged storage is assumed to be provided by long hedgers and sufficient long speculative positions in futures to balance the hedged storage market. Similarly, in periods when hedgers are net buyers of futures, the supply of hedged storage is assumed to be provided by short hedgers and sufficient short speculative positions in futures to balance the hedged storage market.⁴

The total demand for storage consists of the demand for hedged storage and the demand for unhedged storage; the total supply of storage comprises the supply of hedged storage and the supply of unhedged storage.

The demand for present consumption (C_t), is provided by 'consumers', and their demand for these agricultural products is a derived one because they are really processors of the commodity. Consumers are assumed to carry no stocks in their capacity as consumers; any inventories which they in fact hold are classified as either hedged or unhedged storage. That is, consumers who carry inventories are classified as either hedgers or speculators in spot with respect to their stockholding function (only). Demand for present consumption is assumed to vary inversely with the spot price and to be unresponsive to the futures price. The supply in the sub-market for present consumption is that part of the available supply of the commodity (in a sense to be defined) which is not

allocated to storage. The sub-market for present consumption is not the same as the spot market for the commodity, because a spot purchase may be made for either consumption or storage purposes.

The theoretical determination of spot and futures prices and the allocation of available supply between consumption and storage is illustrated in Figure 1.1. In that diagram the futures price (P_t) and the spot price (A_t) are shown on the two parts of the vertical axis, while the quantity of storage is measured from left to right, and consumption is measured in the reverse direction, on the horizontal axis. In the diagram the demand for hedged storage (FLH_t) varies inversely with the futures price and is drawn for a given spot price; similarly, the supply of hedged storage (H_t) varies directly with the futures price and is drawn for a given spot price. The demand for unhedged storage (U_t) is also drawn for a given spot price.

Equality between the total demand for storage ($FLH_t + U_t$) and the total supply of storage ($H_t + U_t$) determines the total volume of storage (OK_t) and the futures price OP'_t . Of this total storage, OB is hedged as given by equality between H_t and FLH_t (for convenience H_t and FLH_t are assumed to be equal at the price OP'_t ; otherwise the rule defined above would be employed). The equilibrium futures price may alternatively be seen as determined by equality between the total supply of futures ($SS_t + H_t$) and the total demand for futures ($FLS_t + FLH_t$). That part of the exogenously determined available supply which is not allocated to storage is available for consumption, and is purchased by consumers at the spot price A'_t , which is the spot price for which U_t , FLH_t and H_t are drawn. Theoretically the problem is to find a total demand for storage (D_t) and a total supply of storage (E_t) and hence a futures price (P_t) and carryover (K_t), such that the rest of available supply will be cleared from the market by consumers at the price upon which D_t and E_t are conditional.

1.2 Specification of Equations

Supply of Hedged Storage. As explained above, hedging of inventories by short hedgers can be expected to increase with the price spread. If short hedgers are assumed to pursue the aim of profit maximisation, they may be seen as equating the current forward premium (the return on a unit of hedged stock held to maturity) with the marginal net cost of storage. Hedged stocks may be carried at times of spot premium, but this would be for

convenience yield reasons (which can make the marginal cost of storage negative).

A soybeans processor who has bought cash beans may wish to protect the value of his bean inventory by a sale of bean futures. If the price of beans, in relation to the price of soybean oil and soybean meal futures, does not afford an adequate crushing margin, the processor can put on a 'reverse crush' by purchasing oil and meal futures in conjunction with the sale of bean futures. This will be done in the expectation that the market will correct itself, and when a satisfactory margin has appeared, the reverse crush will be unwound by buying bean futures and selling oil and meal futures. A processor pursuing either of these options would be included in our H_t category, and hence the supply of hedged storage can be expected to vary directly with the price spread ($P_t - A_t$), with the ratio of the price of bean futures to that of oil futures, and with the ratio of bean futures prices to meal futures prices. In experimental work with soybeans data, commercial stocks performed better than total stocks as an indicator of inventories eligible for hedging, and better results were obtained with beans' cash and futures prices entered as separate variables.

The specification of this equation is therefore:

$$H_t = \theta_1 + \theta_2 P_t + \theta_3 A_t + \theta_4 CK_t + \theta_5 (P_t/P_t^m) + \theta_6 (P_t/P_t^o) + u_{1t} \quad (1)$$

and

$$u_{1t} = \rho_1 u_{1t-1} + \varepsilon_{1t},$$

where CK_t is end of month US commercial stocks of soybeans, P_t^m and P_t^o are the prices of soybean meal and oil futures respectively, and ε_{1t} is a well behaved error term. It is expected that θ_2 , θ_4 , θ_5 and θ_6 will be positive in sign, while θ_3 is expected to be negative.

In the case of Australian wool, non-Australian Wool Corporation (AWC) inventories proved to be the best indicator of the volume of raw wool eligible for hedging, outperforming its nearest rival, the monthly output of raw wool. Accordingly, in the wool model, the short hedging equation is

$$H_t = \phi_1 (P_t - A_t) + \phi_2 NK_t + \phi_3 + v_{1t} \quad (1a)$$