



# **Information Efficiency in Financial and Betting Markets**

Edited by Leighton Vaughan Williams

CAMBRIDGE

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*edited by*

**LEIGHTON VAUGHAN WILLIAMS**



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# Introduction

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A central issue in the analysis of markets is the degree to which they are *efficient*. Although 'efficiency' has a variety of meanings in different contexts, a situation is sometimes termed 'efficient' if it is not possible to increase the well-being (utility) of any one person without reducing the utility of another. This is usually referred to as Pareto efficiency. An implication of Pareto efficiency is *productive efficiency*, a situation which exists when it is not possible to increase the quantity produced of any one good without reducing the quantity produced of another.

In the analysis of betting markets – and, indeed, financial markets more generally – however, the examination of efficiency assumes an informational dimension, the existence of which may well be related to that of Pareto or productive efficiency, but the meaning of which is quite distinct. It is this form of efficiency which is the subject of investigation in this volume. This book traces the development of the idea of informationally efficient markets, and identifies the various precise definitions and variations of the concept extant in the literature on financial markets. The theoretical background is clarified, and empirical tests of information efficiency are reviewed and evaluated.

While most studies of information efficiency are conducted within the framework of conventional financial markets, there are a number of special features of betting markets which warrant particular attention and make them of unique relevance to a study of market efficiency. In particular, these markets not only possess many of the usual attributes of financial markets – notably a large number of investors (or bettors) with potential access to widely available rich information sets – but also the important additional property that each asset (or bet) possesses a well-defined end point at which its value becomes certain. This contrasts with most financial markets, where the value of an asset in the present is dependent both on the present value of future cash flows and also on the uncertain price at which it can be sold at some future point in time.

The defined termination point of betting markets is of particular appeal, therefore, in that it allows researchers employing empirical techniques to avoid many of the difficulties associated with indefinite expected future outcomes. Moreover, by enabling a more productive and clearer learning process, a delineated end point might be expected in particular to promote information efficiency. Evidence of inefficiency in such markets is therefore of special significance. The possibility of insider information and consequent opportunities for insider trading in betting markets is also somewhat analogous to the operation of conventional financial markets, but in some respects easier to measure and assess. For these reasons, the information provided by an examination of betting markets is a convenient and useful perspective from which to consider the evidence and interpretations of consumer and investor behaviour in conventional financial markets, as well as the operation of these markets.

This volume has a two-tiered structure. Part I consists of three chapters. Chapter 1 reviews the academic literature which has investigated the issue of information efficiency in conventional financial markets. The development of the idea of an informationally efficient market is explored, and the various classifications of this issue are identified. Empirical tests of information efficiency in these markets are assessed and evaluated. Chapters 2 and 3 review the academic literature which has investigated the issue of information efficiency in betting markets. The various empirical tests which have been applied in this area are assessed and evaluated. Part II is a collection of hitherto unpublished readings which draws on expertise across the spectrum of research into the issue of information efficiency in betting markets. Each of the contributions is novel and original, but set within the existing framework of literature. As such, this volume will serve as a valuable asset for those who are coming fresh to the subject, as well as for those who are more familiar with the subject matter.

I have greatly enjoyed writing this book, and editing the collection of readings. In great part, this is due to the kindness, support and generosity of family, friends and of colleagues from across the global village of academic research. Special thanks also to all who have contributed to this book. In every case, the contribution offers a new and valuable insight into this fascinating subject.

Welcome to the wonderful world of information efficiency!



# **Part I**

## **The concept of information efficiency**

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