A Statistical Study of Fluctuations of Australian Share Prices

A Thesis submitted in partial fulfillment
of the requirements for the Degree of
Doctor of Philosophy

by

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The aims and scope of this thesis are discussed in Chapter One, which also contains a brief statement of some of the relevant theory, methods of analysis, and influences on share prices. Chapter Two contains a random walk study on Australian Share Prices. It tests the independence of price changes, and represents their probability distribution by a rescaled t distribution, after it is apparent that the price changes are not stationary. Chapter Three uses spectral analysis to further test the independence of price changes. It discusses a seasonal pattern in share prices that emerges, and studies the lead/lag relationships in the business cycles of the various share price index groups relative to aggregate share prices. Chapter Four contains a cross-spectral business cycle study of share prices with the Australian economy. The lead/lag relationships that are found are compared with the results of other workers on the timing of economic fluctuations in Australia. Chapter Five extends the approach of Chapter Four by studying the share price industry groups separately in terms of the general business cycle and special industry influences. Chapter Six contains the conclusion of the thesis. The appendix contains the details of the data and programs.