

# Part I

## Market Efficiency

### ...and Value in an Imperfect Market

You now understand the theory of finance in perfect markets. It is precisely the four perfect market assumptions — no information and opinion differences, no transaction costs, no taxes, and perfect competition — that have allowed modern finance to become the “science” that it is today. Every important concept of finance has been derived in this perfect markets context first. In fact, with only a few exceptions, most finance formulas used in the real world today are still based on the (false) assumption that the world is perfect!

Fortunately, many financial markets are close to perfect, so the distance between theory and practice in finance is often small. However, it is almost never zero. The real world is definitely dirtier than our perfect one, and you can’t just close your eyes and wish you were still in Kansas. Thus, the chapters in this part explain how you can navigate the troubled waters of the real world.

### What You Will Learn in This Part

- In Chapter 11, you will learn not only why the four perfect market assumptions are too good to be true, but also why they are so important. You will learn to think about what happens when individuals have different information, when financial markets are noncompetitive, and when investors or firms have to pay transaction costs and taxes. Sometimes you can

adjust the perfect markets formulas explicitly to take market imperfections into account; sometimes you can only do so intuitively.

*Typical questions:* What are typical transaction costs, and how do you work with them? How do taxes work? Why are capital gains better than ordinary income? If you have to pay 40% income taxes on interest receipts, the inflation rate is 2% per annum, and your investment promises 5% per annum, how much can you buy in goods tomorrow? Should you take this investment if you can earn 5% in taxable bonds and 3% in tax-exempt municipal bonds?

- In Chapter 12, you will learn about a concept that is not as strict as that of a perfect market: an efficient market. A market is said to be efficient if it uses all available information in the price setting. *All perfect markets are efficient (in equilibrium), but not all efficient markets are perfect.* Whether financial markets are efficient is the question that lies at the heart of “behavioral finance,” a field of finance that asks whether individual investor irrationality — doubtlessly present — can be strong enough to influence financial market prices.

*Typical questions:* Could it be that market efficiency is not absolute but comes in different degrees? What exactly are the disagreements between classical finance and behavioral finance? What processes can stock prices reasonably fol-

low? Do stock prices follow random walks? What is the signal-to-noise ratio in the context of financial markets? What is an arbitrage? What should you think of market gurus? What can you learn from stock price reactions to events?

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