BETTER INVESTMENT DECISIONS

Guide to Fundamental Investing in the Stock Market

HENRY CHIEN

Better Investment Decisions

Guide to Fundamental Investing in the Stock Market

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PREFACE

INVESTMENT FOUNDATIONS: WHY A FEW STOCKS LEAD TO BIG RETURNS

LIFE IS NOT ABOUT BEING AVERAGE

Prevailing wisdom suggests that index funds are the best way to invest in stocks. After all, only one-third of active managers (investment funds) have outperformed their benchmarks (the index) over a 10–15-year period. I used to believe this too and doubted whether successful stock-picking was possible. Then I worked in the world of equity research.

I learned that professional investors often have constraints that limit their ability to pick stocks successfully. Individual investors like you, on the other hand, are free to pick anything to invest in. There is actually a great opportunity to pick individual stocks. In following companies closely for many years as an equity research analyst, I could see the connection between the quality of the business, the industry it operates in, and the stock's future returns. I learned which of the practices of stock-picking used by professional investors

actually work. Here is what I found from a decade of experience on Wall Street.

1. *Most active managers create portfolios of specific styles or exposures*. These are often exposures by market, company size, or industry. Today, an index, which is calculated by a computer, can also create these exposures. Other investment styles, such as value or quality, can also be created by an index. This means many active funds are set up to create something an index can already create more efficiently. It is difficult for them to beat the index, because they often only pick stocks in the index! They are constrained in their selection, and the underperformance is not due to a lack of stock-picking opportunities.

2. *The performance of unconstrained, concentrated portfolios is different.* You start to see signs of successful stock-picking when you look at funds that provide a different kind of portfolio to the index. Baron Funds, for example, has portfolios that concentrate on select companies. It focuses on growth opportunities and competitive advantages—something you'll learn how to do. They pick different stocks from the index and concentrate on fewer stocks. Jennison offers a growth fund with a concentrated portfolio of stocks from several markets and sectors. It focuses on secular growth opportunities. Both funds have outperformed their benchmarks. They use strategies that work. Stock-picking is a source of success for many funds.

3. *The styles of successful investors can be modeled.* Stock investing is learned by studying best practices, and then developing them into a unique style. Billionaire investor Eddie Lampert closely

studied the early years of Warren Buffett's portfolio. He studied Buffett's decisions to develop his own investing style. You too can learn stock investing skills. This book is designed to help you learn how to pick stocks, using the best practices of institutional investors. The goal is to give you the right foundation to develop your own unique and successful investing style.

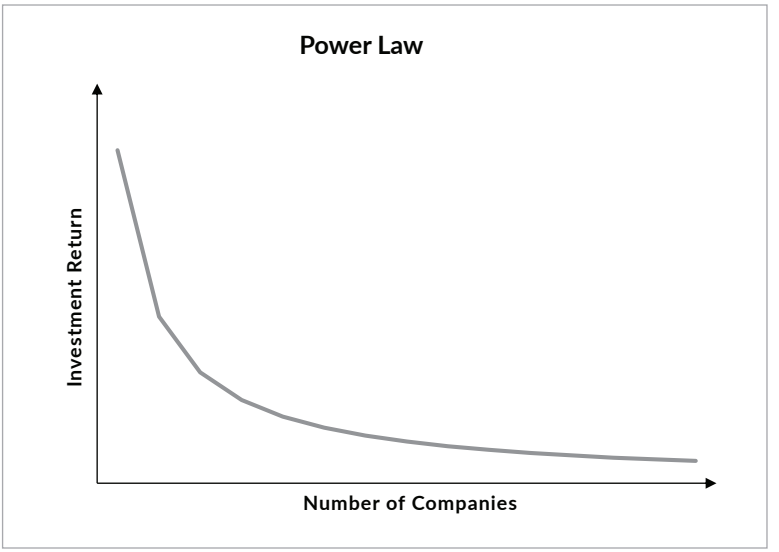
MAKING BETS FOR LIFE-CHANGING RETURNS

Here's the first secret of investing: all it takes to achieve life-changing returns is one or two well-placed bets with a portion of your capital. The reason is, the best businesses often grow their earnings more strongly and far longer than others. The returns of these stocks will drive the returns of your portfolio. Researchers found that from 1990 to 2012, U.S. mutual funds that concentrated in one or two stocks in each sector, tended to have better performance. Warren Buffett's long-standing investment strategy at Berkshire Hathaway is to find a few good businesses with stability that will last[1]. He expects these stocks will grow to dominate its portfolio. The reason this happens is the best companies often show increasing returns with greater scale. Meaning, the companies that get ahead, get further ahead.

As Peter Thiel describes in *Zero to One*, power laws are visible when you follow the money. These describe severely unequal

1 Berkshire Hathaway invests capital from premiums of its insurance company, or the "float," which is set aside for claim payments. Since Berkshire invests partially "borrowed" capital (at zero cost), it focuses on stability and duration of returns. Berkshire Hathaway looks for businesses and industries unlikely to experience major change and finds the companies that will have competitive strengths ten to twenty years from now.

distributions—such as economist Vilfredo Pareto's 80–20 rule[2]. A small handful of companies will radically outperform all others. The implication is that you can focus on a few investments with vast potential to drive returns for your whole portfolio. In a study of the U.S. stock market, researchers found that 4% of stocks have accounted for nearly all wealth creation since the 1920s. It's even more extreme internationally, with less than 1% of stocks accounting for all wealth creation since the 1990s. Get the right stock and the payoffs are huge.



Now, could you benefit from both index investing and stock picking? Let's compare three five-year scenarios where you pick an individual stock. Imagine you start with a $10,000 investment portfolio in May

2 Pareto noticed 20% of the people owned 80% of the land in Italy.

2016. We'll take 10% of the portfolio ($1,000) and invest it in either 1) a unique leader in an industry, 2) a leader in the index, or 3) a random stock. Here are the stocks we'll use.

Unique Leaders of Industries (2016)[3]

Professional Services: CoStar ($CSGP[4]): CoStar has the largest collection of commercial real estate data. This includes places for lease, sales information, properties for sale, tenants' information, and so on, and so forth. CoStar had actively acquired data providers and marketplaces to build this data collection. Few alternatives were as comprehensive. You recognized CoStar's advantages of owning proprietary real estate data. You knew it had limited competition, which would mean CoStar's operating margins (25%) could remain at higher levels. You looked at the margins of other real estate businesses, such as brokerages (15%) or commercial developers (15%). In those companies, you saw higher costs and more competition. CoStar stood out to you as a company with limited competition.

Capital Markets: MSCI ($MSCI): The U.S. Department of Labor expanded fiduciary requirements for financial advisors in 2016. Advisors were now expected to recommend low-cost products such as exchange-traded funds or index funds. These were provided by either BlackRock or Vanguard. These funds create portfolios using indexes from the largest providers, S&P Dow Jones Indices, FTSE Russell, and MSCI. The reliance on indexes meant funds rarely

3 Each of these situations represented an attractive investment setup: CoStar (limited competition), MSCI (embedded business), Exact Sciences (s-curve acceleration), Restoration Hardware (business transformation).

4 I add a "$" before each stock ticker, which is the format used in Twitter and Reddit communities.

switch index providers. You recognized the MSCI's index business model would be embedded in the growing index fund ecosystem. It suggested a dominant high-margin position.

Biotechnology: Exact Sciences ($EXAS): In 2015, the Cancer Society recommended a new genomic test called the Cologuard. The test was developed by Exact Sciences. It was a more comfortable alternative to the traditional colonoscopy. If you had undergone a colonoscopy or knew someone who had, you likely heard of this less-invasive test. At the time, Cologuard represented roughly 5% of colonoscopies[5] in the U.S. You recognized this was the time to invest for the acceleration in Cologuard's market adoption.

Specialty Retail: Restoration Hardware ($RH): In 2016, Restoration Hardware was several years into a new growth strategy. CEO Gary Friedman planned to transform the business into a modern, upscale furniture brand. If you followed the retail consumer sector, you heard of his earlier success at Williams-Sonoma. He grew the business from $300 million to $2.1 billion using product presentation strategies. Under his leadership, Restoration Hardware had achieved industry-leading revenue and earnings growth rates. It transformed its real estate presence with new product offerings. You recognized the unique leadership of Gary Friedman and the financial potential of the company's growth strategy.

Here are the returns (May 2016–May 2021) of $1,000 of these unique leaders' stocks:

5 Exact Sciences reported 104,000 Cologuard tests versus 2 million screening and diagnostic colonoscopies.

- **CoStar ($CSGP)**: $1,000 to $5,000
- **MSCI ($MSCI)**: $1,000 to $6,500
- **Exact Sciences ($EXAS)**: $1,000 to $22,000
- **Restoration Hardware ($RH)**: $1,000 to $23,000

The Leaders of the Index (2016)

Apple ($APPL): In 2016, Apple was the smartphone market leader. You saw the Apple iPhone and MacBook every day. The ecosystem of Apple products and services was expanding. There was growth in emerging markets, new products like the Apple Watch, and a growing services business. Warren Buffett's Berkshire Hathaway had just made a significant investment in the company. The Apple ecosystem was starting to look like a subscription for consumers.

Google ($GOOGL): Google was the number one in online search and video hosting with Google and YouTube. This was a dominant market position with network effects. Google had recently separated these advertising-driven businesses from its venture-related investments. You could see the very profitable economics of the internet search and video business.

Microsoft ($MSFT): Satya Nadella had recently taken over as CEO of Microsoft. He shifted the company's strategy toward enterprise and cloud-based services. The strong growth of Microsoft's cloud and Azure business suggested a new growth business. You could see the large enterprise software market opportunity for the company.

Here are the returns (May 2016–May 2021) of $1,000 of these index leader stocks:

- **Apple ($AAPL):** $1,000 to $6,000
- **Google ($GOOGL)**: $1,000 to $3,000
- **Microsoft ($MSFT)**: $1,000 to $5,000

Getting More Upside than Downside

Let's compare the returns of the three scenarios and assume you invested the remaining $9,000 into an S&P 500 Index fund (such as $SPY). ($9,000 invested in $SPY turned into $18,000.)

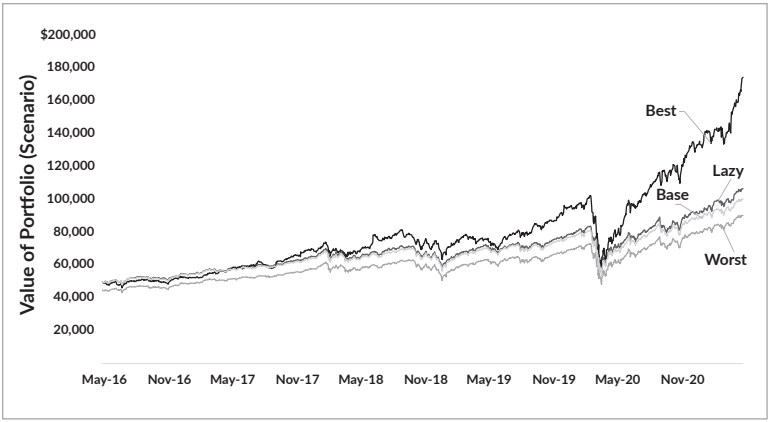
Best case: You prepared yourself to recognize profitable patterns. You pick $RH to invest $1,000. Your portfolio goes from $10,000 to $41,000 (310% return).

Worst case: The stock you pick goes bankrupt to $0. Your portfolio goes from $10,000 to $18,000 (80% return).

Lazy case: You pick one of the leaders of the S&P 500 index (we'll use $GOOGL). Your portfolio goes from $10,000 to $21,000 (110% return).

Baseline: You don't pick any individual stocks and invest everything with the S&P 500 index. Your portfolio goes from $10,000 to $20,000 (100% return).

There is an asymmetry in the potential scenario returns. The best-case 310% returns are much higher than the worst-case 80% returns.



Looking for asymmetry is the first principle of stock-picking. A stock you pick could become a zero, but the potential upside of a leading business can be much higher. This way of thinking is similar to the barbell concept introduced by Nassim Nicholas Taleb in his book *Antifragile: Things that Gain from Disorder.* The barbell strategy places 90% of funds in boring cash or other repositories of value and the other 10% in something maximally risky. The structure protects you from extreme downside and allows for a much larger upside. You let the positive Black Swans take care of themselves. Investing in a leading business is one way to create asymmetry in potential outcomes.

HOW TO PICK STOCKS: ACE FRAMEWORK

The practice of stock-picking is as follows. Breaking things down, simplifying situations, and then looking for patterns. You focus on what matters. Once you have the information, you use a framework to make an investment decision. That's it.

To make stock investing simple, I'll walk you through a three-part process. You can use this to pick stocks for returns: the ACE framework of **A**symmetry, **C**hange, and **E**xpectations. You'll learn to evaluate any company, so you can pick stocks to create returns for your portfolio.

Asymmetry means focusing on the upside and the downside of the stock. The associated chapters will walk you through how to simplify a business, so you can figure out what will make the stock move. You will learn what makes a great business model. Then, you will learn how to value any stock so you can estimate its return potential. You will learn to read company financials like an analyst. You will recognize when a company has upside potential, and look out for major risks that will lose you money.

Change means focusing on what is and isn't changing so you find stocks that will give you the longest returns. The associated chapters will show you how to size up opportunities. You'll look for long-term winners in an industry, so you can find companies with the greatest potential returns. You'll learn to identify companies that will likely grow rapidly and learn to recognize meaningful change. You will think like an insider to find the most valuable assets. You'll learn to recognize dominant companies.

Expectations means focusing on investments the market will reward, so your stock returns benefit from changing investor expectations. You will understand what is priced into the stock. You'll learn how to invest for catalysts, which are specific changes that will move a stock price. And you'll learn the warnings signs of stocks to sell.

Asymmetry, **C**hange, and **E**xpectations, is a framework to help you to make better investment decisions. Each part of the ACE process will be explained with real-life examples and practical step-by-steps for you to implement.

As you build this foundation, you'll increasingly learn the tactics of professional investors. You'll learn how to find what stocks will move, and how to turn observations into profitable investment ideas. You'll have a framework to anticipate market volatility, to invest with an economic cycle, and even to evaluate an entire industry. Near the end, you will have developed an investor mindset. You'll learn how find ideas from the large funds. You'll also find guidance to develop your own unique advantage.

• • • •

You are the ACE in this investment journey. This book is designed to train your mind to see stock investment opportunities more clearly. You will learn to pick stocks that will reward your portfolio for many years. Let's get started!

Investment Foundations

- A few stocks can make life-changing returns. All you need is a portion of your capital.
- Investing involves breaking things down, simplifying situations, then looking for patterns.
- Use the ACE framework of Asymmetry, Change, and Expectations to pick stocks.

- **Asymmetry** is looking for more upside and less downside.
- **Change** is looking for investments that last.
- **Expectation** is looking for what the market rewards.

- You are the ACE in this investment journey.

CHAPTER 1

THE RIGHT WAY TO FIND INFORMATION

Before we begin, we'll cover the major sources of information and the key accounting concepts that we'll use. Feel free to skim this section and refer to it later as needed. There is also a financial model I've created for you. The model will help you better understand the financial insights in the book. Use this link to download the material: www.henrychien.com/book-model

READ THE ESSENTIAL SEC FILINGS

You can find filings in the *Investor Relations* section of the corporate website. Under *Filings*, you can usually screen them by category. All filings are available on the SEC EDGAR (Electronic Data Gathering, Analysis, and Retrieval) website. There you can search for the ticker or name of a company to see all its filings. All public companies are required to submit their filings via EDGAR, and the database is freely available.

Key Information in the Annual and Prospectus Reports (10K and S1 Registration)

The 10K annual filing and the S1 registration statement provide the most information. You can find details on a company's business model, its operating metrics, and its financial statements. There is also commentary on the industry it operates in.

Business and Management Discussion and Analysis sections provide commentary on the business. You can usually find detail on the business's products or services, its value to customers, and the market in which it operates. There will also be commentary about the company's key financial metrics. The discussion usually describes the company's growth strategy.

The Risk Factors section is where you can get a sense of the risks that could impact a business. It lists the events that could impact the company's performance and earnings potential. It is a valuable area to find what influences business performance.

Management Compensation is where you can find details of management's compensation plans. This can include specific targets for the business. The annual filings also disclose the ownership stakes of the leadership team.

Key Updates in the Quarterly and Event Filings (10Q and 8K)

The 10Q filings provide quarterly updates and the fully audited financial statements for the period. 10Q filings provide disclosures of important events, such as regulatory matters, or updates on new

risk factors. These disclosures may be omitted in the company's press release.

The 8K filings disclose key corporate events, such as new shares issued, corporate deals, and earnings updates. They disclose material changes, which means new information that will likely move the stock price. Material events include management changes or regulatory events that will impact operations.

Key Information in the Proxy Statement (DEF14A)

In the proxy statement, you can find more detail on executive compensation. The executive leadership will often have incentive targets based on market capitalization or earnings. These incentives influence the company's strategic focus. The filings sometimes list the company's peers, usually for compensation purposes. The peer list is a useful source of comparable companies or comps.

REVIEW COMPANY INVESTOR PRESENTATIONS

Investor Presentations are often hosted on the *Investor Relations* section of the corporate website. *Investor Day* or *Analyst Day* presentations provide a more detailed walkthrough of a company. These provide information on the market and the company's financial targets. Management will often detail the company's growth strategy in these presentations. The financial targets can help you estimate the upside potential of a company.

Investment Bank Conferences provide overviews of the company's business model and growth strategy. Sometimes near-term financial

targets are provided. Some companies have these Q&A recordings hosted on their website. Transcripts of these events are also provided on data terminals such as Koyfin, FactSet, Bloomberg, and Sentieo. Some companies also have Q&A recordings hosted on YouTube.

Earnings Releases are sources of operational metrics and business updates. These are posted on Investor Relations pages and are also in the 8K filings on EDGAR. Earnings releases are where a company provides forward-looking guidance. These are the company's public targets. Guidance influences investor expectations of the company.

Transcripts of Earnings Calls (Q&A) are a source for business updates. The Q&A often contains information on the financial model or drivers of a business. Earnings transcripts are available on data terminals. You can also search Google for "earnings transcripts" to find websites with transcripts (Seeking Alpha, Motley Fool, Docoh).

EXAMINE THE FINANCIAL STATEMENTS

When investing in stocks, you'll want to follow a business through its accounting statements. There are three financial statements: the income sheet, the balance sheet, and the cash flow statement. Each provides a financial view of the business. We'll walk through a basic business from each perspective. The accounting terms will be described at high level so don't worry if you don't understand the numbers, you'll learn to interpret them later in the book.

Income Statement: The Profit and Loss Ledger

The income statement is a ledger that records sales and expenses

as they happen. It records transactions, but not necessarily cash movements, since sales and expenses can be done on credit.

The business sells a service or product to generate revenue, which is recorded on the top line of the income statement as sales. The day-to-day costs of the business are recorded as operating expenses on the income statement. These include sales payroll, marketing fees, and office expenses. What remains for the business is operating income. How profitable the business is can be measured as operating income as a percentage of revenues (operating margins).

Earnings (Net Income). Net income is the operating income minus other non-operating expenses. Non-operating expenses include interest, other expenses (such as non-recurring bank charges) and taxes. Net income is the bottom line of the income statement and represents the earnings for equity (stock) holders. Net income is added—or subtracted, if negative—to the retained earnings (or accumulated deficit) line in the stockholders' equity section of the balance sheet. Divide net income by the number of shares outstanding to get earnings per share (or EPS). We buy shares for their future earnings, which we expect will be higher, and therefore provide us a financial return.

Shares of the Company. When a company sells its shares to raise money, which is raising equity, the number of shares increases. When stock options are given to employees, the number of shares will also increase if the options are exercised. The diluted share count is the number of shares adjusted for exercised stock options. More shares dilutes the earnings per share for each stockholder and therefore lowers the financial return. When a company repurchases

its stock, it reduces the number of shares outstanding. This increases the earnings per share, which raises the financial return.

Balance Sheet: The Financial State of the Business

The balance sheet is divided into assets and liabilities and is a snapshot of what the company owes (liabilities), and what it owns (assets). Assets—factories, real estate, computers, offices, brands, etc.—make money for the business. Liabilities—debt, payables (i.e., bills), loans, leases, taxes, etc.—are what the business owes. The balance sheet also shows the amount of cash available.

When cash for a transaction is received or paid at a later date, it creates short-term operating assets and liabilities on the balance sheet. Cash expected from customers is accounts receivables (an operating asset). Cash owed to suppliers is accounts payables (an operating liability). These are called current assets and liabilities, and they are expected to be converted to cash in a year.

Other uses of short-term cash are recorded in current assets and liabilities. When a business purchases goods to sell from suppliers it creates inventory assets. When a business receives upfront customer payments, it creates deferred revenue liabilities[1]. The total cash used in operating assets and liabilities is called working capital. This is the money required for day-to-day business operations.

Equity versus Debt Capital. Every business requires capital to acquire or build the infrastructure it needs to expand. Airlines

1 Deferred revenue is considered a liability because the services are "owed" and to be delivered.

borrow money to purchase airplanes to offer more routes and fly people around their network. Software companies sell shares to pay employees to build a new service infrastructure. Money (capital) used to invest and build the business comes from borrowing, as liabilities, or from selling shares, as equity.

When a company takes out a loan from a bank or issues a bond to an investor, the debt is recorded as a liability on its balance sheet. Interest expenses are then recorded on the income statement as they occur. Leases are also recorded as liabilities since the company has effectively borrowed to pay money over time for the space.

When a company sells its shares to raise equity capital, the money is recorded as additional paid-in capital, under stockholders' equity on its balance sheet. The newly issued shares are added to the shares outstanding on the income statement. When the company repurchases its shares, the dollar amount is recorded as treasury stock, as a negative number under stockholders' equity.

Long-term Investments. When a business uses money to create or buy long-term assets, such as building new production facilities or buying storefront properties, the costs are recorded as capital investments. The investment costs are "capitalized," meaning they are recorded as long-term assets on the balance sheet.

Investment costs are spread out over time, based on the expected life of the asset, as operating expenses on the income statement. For physical or tangible assets, such as property or equipment, the costs are expensed as depreciation. For non-physical or intangible assets, such as brands or customer relationships, the costs are expensed as

amortization. Depreciation and amortization are operating expenses on the income statement. These expenses reduce the asset's values on the balance sheet.

Software and technology companies do not always capitalize technology development costs. Instead, they are recorded as payroll or research expenses on the income statement. Software and technology companies are asset light. Their development costs to build the business are recorded almost entirely as expenses on the income statement.

Capital Expenditures. General investments into the business are recorded as additions to property and equipment, or capital expenditures (capex). These are reported in the cash flow statement. Capex in the cash flow statement is added to the property and equipment asset value on the balance sheet.

Acquisitions. When a company acquires another business, the accountants measure the fair value of the acquired assets and liabilities. This value is added to the company's balance sheet. The acquisition price is usually higher than the fair value. The additional premium is recorded as goodwill. Goodwill represents the intangible value of the acquired business, above the net fair value of its assets and liabilities.

All assets of the business are financed with either liabilities, debt or other types of borrowing, or equity, newly issued shares or retained earnings (net income). The value of total assets will therefore be equivalent to the value of total liabilities plus stockholders' equity. Hence the name, balance sheet.

Cash Flow Statement: The Cash Movements of the Business

The cash flow statement is the record of actual cash movements. Cash flow represents the cash the company can use to invest, repay debt, or pay equity holders.

Cash flows from operating activities record the total cash generated by the business. The earnings or net income amount is adjusted for the non-cash expense items, such as depreciation and amortization, or share-based compensation. Then it is adjusted for the cash used or provided from working capital, the changes in operating assets, and liabilities.

Cash flow from investing activities records the cash used for capital investments. This includes capital expenditures, or investments in plants, property, and equipment. It also includes cash used to pay for acquisitions of other businesses or to create new assets.

Cash flow from financing activities records cash raised or used from various financing options. It can include cash from selling or buying back shares. Or cash from new loans or paying down borrowings.

Free Cash Flow. Cash from operations minus capital expenditures equals "free" cash flow. This is cash flow generated by the business's operations after maintenance investments. Free cash flow represents the cash available to shareholders of the business for that period. Since free cash flow is after capital expenditures are paid, it reflects the business's ability to generate cash from its operations and investments. Over the long run, earnings and free cash flow do become equivalent so they are used somewhat interchangeably in this book. The more free cash flow the business can generate over time, the more valuable the business becomes to its shareholders.

COMPARE KEY MEASURES

We know future free cash flow and earnings are fundamentally what makes a company's shares valuable. This is because earnings belong to the equity shareholders of the business. Retained earnings increase the stockholders' equity in the balance sheet. Free cash flow represents the cash generated by the business that is available to shareholders. This cash can be used to pay dividends or be reinvested into new projects. However, if the business is in an earlier stage of development, and is investing heavily to build new projects, earnings and free cash flow may be negative. In these cases, we can use other earnings measures to track the company's growth and profitability.

Adjusted Operating Profit and Cash Conversion: The Earnings Measures

Operating profit. Operating profit is the profit before interest and tax, or earnings before interest and taxes (EBIT). This is also referred to as operating income. Operating profit margins can be used to compare businesses with different levels of debt and tax brackets. Trends in operating profit may be a better indicator of the underlying business performance than earnings per share, which can be influenced by changes in taxes, interest, and share count.

EBITDA. Earnings before interest, taxes, amortization, and depreciation (EBITDA) is the operating profit before depreciation and amortization expenses. Since these expenses are from capital investments, they are already "spent", and are non-cash expenses. EBITDA represents the cash profit of a business—before investment expenses.

EBITDA measures the cash operating profit for the period (like free cash flow, but before any investments). It is particularly useful for businesses that use acquisitions to grow. The amortization expense that comes from acquisitions will reduce reported margins, even though there are no cash expenses for the period. This makes EBITDA a useful indicator of the underlying cash generation potential of a business.

Keep in mind that depreciation expenses are very real costs for businesses. Most need to continuously invest in new assets in order to grow in the long run. Tangible assets like facilities and equipment are often worn down with use and must be replaced. In these cases, EBIT or EBITA may be better measures since they are after depreciation expense is paid. Intangibles, such as brands or customer relationships, may not necessarily lose value in the same way as tangible assets. In such cases, amortization expense can be excluded from profit measures, if the intangible asset does not need to be replaced.

Free Cash Flow Conversion. You can calculate free cash flow as a percentage of EBITDA to measure the business's cash conversion—the rate of turning cash earnings into free cash flow. This is useful to check if the business is generating positive free cash flow consistently.

Use EBITDA and free cash flow conversion together to track the business's profitability and cash generation over time.

Book and Enterprise Value: The Value Measures

Book Value. The book value is an estimate of value to shareholders if all the business's assets were sold off to pay off all its liabilities. What remains is the equity value. The value is based on the accounting estimates "booked" on the balance sheet. Book value grows as the company creates earnings, which are added to stockholders' equity as retained earnings on the balance sheet. Book value can be useful to determine the downside value of a business. It is more useful for businesses with physical assets. Businesses that create intangible products, such as services or technology businesses, do not always book the value of their intangibles on their balance sheets. The cost of software development, for example, is often expensed as employee payroll on the income statement. The value of the software is not necessarily reflected on the balance sheet. This makes book value, as a measure, less useful to value intangible businesses.

Enterprise (and Market) Value. Enterprise value is the value of the entire business based on the current market value of its equity shares and the total value of its debt. Cash is subtracted since it could be used to pay off debt. In other words, the net debt amount is used as the value of its debt. The enterprise value is the market price for a buyer to settle with all the business's equity and debt holders in order to purchase the company.

Enterprise value is used to measure value for both equity and debt holders. You calculate enterprise value as a multiple of an important financial metric. For example, sales, operating profit, or EBITDA (EV / sales, EV / EBIT, and EV / EBITDA). The multiple measures the business's valuation to both equity and debt holders. You can use

the EV multiple to compare the valuation of different businesses based on various financial metrics.

The market value of the business is the total value of its outstanding shares or equity. This is the market capitalization (market cap) of the company and the value for stockholders. The market value is compared with earnings (stock price / earnings per share). This multiple measures the business's valuation to stockholders. We'll often estimate a company's future enterprise value first, then subtract the expected net debt. This is the implied future market cap that we'll use to estimate the future share price.

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To look beneath the hood of a company, start with its filings. Head to the Investor Relations page on its website. The SEC filings (10K – MD&A and Risk Factors) have information on the business and its historical metrics. The investor presentation describes the strategy of the company. Look at the earnings press release for the latest operational updates.

The income statement is the transaction record to see the latest business trends. The balance sheet tells you how much capital the company has, where the money comes from, and where it has invested its money. The cash flow statement tells you how the cash is moving around in the business.

Where to Find Essential Information

- Key SEC filings are the 10K/S1 filings for detail on the company, 10Q/8K for updates, and proxy DEF14A for management information.

- Use investor presentations, earnings releases, and transcripts. They contain information on the business growth strategy and operational updates.
- The income statement records sales and expenses. The balance sheet highlights the financial state. The cash flow shows the movement of cash.
- Future cash flow and earnings are what make a company's shares valuable. Compare the company's earnings measures versus its enterprise value or its market capitalization.

PART I

INVESTMENT PRINCIPLE #1: ASYMMETRY

INVESTMENT PRINCIPLE #1

ASYMMETRY

Invest in More Upside than Downside

Ideal stock investing is asymmetrical, meaning the rewards (i.e., the returns) are much higher than the risks (i.e., the potential loss). To achieve this, we'll focus on studying business models to find companies with less downside and more potential for upside.

A stock's future upside comes from the business's future earnings and its market valuation. We first simplify and break the business down to its essential elements, its business model. We then evaluate its potential and its risks, based on the business model, then the financial numbers. We'll pay close attention to financial risk. You'll learn to use a financial model, step by step, to estimate the company's future earnings, to calculate its expected stock price. To end this section, we'll put it all together with an investment case.

CHAPTER 2

HOW TO SIMPLIFY YOUR INVESTING: RECOGNIZE QUALITY BUSINESS

The first step to evaluating any stock is to break the company down into its core elements. We'll do this now with DermTech ($DMTK), to help explain the essentials of a business model.

DEFINE THE OFFERINGS AND THE MARKET

The business's product or service. DermTech ($DMTK) provides a genomic-based test for dermatologists to test people's skin for melanoma. Each test kit costs a dollar amount that varies depending on whether it is charged to patients or to insurers. Health insurers will pay or reimburse patients for the test if it is covered by the plan.

The product's value to its customers. The test itself is a simple, non-invasive sticky patch that gathers skin cells to test in DermTech's labs. The test is an alternative to skin biopsies, which are painful and leave scars. The value to patients is a pain-free, non-scarring melanoma test. The genetic test is also more accurate compared to a visual examination, which means fewer lifetime biopsies. The value to insurers is lower lifetime costs to test for melanoma.

The addressable market of potential customers. DermTech's market for test sales is U.S. dermatologists that will test and monitor their patients for melanoma. The company has identified a segment of potential patients within the U.S. who are at risk of melanoma and could use the test. DermTech also targets commercial health insurers to increase insurer coverage of the test.

Management's vision for the business. Founder-CEO John Dobak's vision is to build DermTech into a dermatology platform of genomic testing products. He expects this genomic testing to become adopted by dermatologists because of its accuracy, and for patient comfort. He believes the DermTech patch will become the leading option for melanoma tests. Dobak also expects most commercial insurers will cover the test since it can create cost savings for insurers.

PROJECT HOW THE COMPANY WILL MAKE MONEY

The growth plan for sales. Management expanded the sales team to cover a targeted group of dermatology clinicians. These clinicians treat the majority of potential patients who could use the test. It also hired an insurance executive to work to get the test covered by commercial insurers. More insurer reimbursement will support higher prices for the test.

How the business will profit. The target selling price of DermTech's test will be higher than the cost to produce the test which creates gross profit. As the business expands, revenues should grow faster than expenses. This means it can scale, which leads to higher profit margins and faster earnings growth.

There are three types of expenses for DermTech that could lead to scale:

- *Costs of facilities and equipment.* Some lab and manufacturing expenses are fixed. The expenses do not increase proportionally with sales. So higher volumes leads to higher profit margins.
- *Research and sales expenses.* The initial costs of research studies for the new product are quite high. Sales expenses to achieve commercial insurer reimbursement coverage are also high. These expenses are likely to decline relative to sales as the test becomes more accepted.
- *Advertising and sales expenses.* Sales expenses become more efficient as the company builds relationships with the dermatologist community. As it creates awareness with patients, it can reduce expenses on advertising.

IDENTIFY THE FACTORS THAT WILL MOVE EARNINGS

With the essentials of DermTech's business model in mind, we can imagine what will create more earnings for the company. More tests ordered by clinicians will increase sales. So will higher test prices with commercial insurer coverage. These are the critical factors that will drive earnings and move the price of the stock. We can focus our research efforts on those pieces.

Our look into profits also identifies the potential for the business to scale. We've identified some leverage in the business model.

DermTech's production and testing facilities can likely produce the test at lower per-unit costs with higher volumes. This means the business could have strong earnings potential with scale.

We've also identified several assumptions. We assume dermatologists and patients will prefer DermTech's test to a skin biopsy for melanoma. The value is its accuracy and non-invasiveness. This leads to test sales. We assume health insurers will provide reimbursement for the test for the cost savings. The expectation is the test's higher accuracy means insurers will pay for fewer melanoma tests in the long run, which saves them money. Insurance coverage leads to higher test prices. We presume there will not be competitors offering similar or low-cost genomic tests. We assume DermTech's production and testing facilities become more efficient at larger volumes. This creates profit. If we get these assumptions right, which is our investment thesis, then the stock should do well for us.

Top-performing analysts on Wall Street first identify a stock's critical factors, then spend all their time proactively researching these factors. This is what Jim Valentine saw in the top-ranked analysts at Morgan Stanley. He is the author of *Best Practices for Equity Research Analysts*, and a former top-ranked analyst himself. He suggests the following framework to identify a critical factor:

Use the EPIC framework

Exceeds a materiality threshold: The factor is material to earnings, meaning it causes earnings to change by a minimum amount, such as 10%.

Probably going to occur: High probability the factor will occur.

I'm good at forecasting: The factor can be estimated into a financial forecast.

Consensus is poor at forecasting: The factor is not widely understood.

In the next section, we'll use these assumptions for DermTech to create a financial forecast. We will confirm the critical factor and show how it drives the stock's upside. But first, let's discuss one of the most important influencers of a business' value: its management.

ASSESS THE MANAGEMENT TEAM

Leaders and management teams greatly influence a company's structure and prospects. As you study the business, pay attention to signs that indicate the presence of a high-quality management team. Look for the patterns that tend to be common across the best management teams from a variety of industries.

Look for Clear Targets

Henry Fernandez, the CEO of index provider MSCI, sets a target of 10% subscription growth each year. This is higher than the usual single-digit growth rates of financial data subscriptions. I found it remarkable that MSCI maintained such stable subscription growth. I once told this to the President and Chief Operating Officer at a conference. He told me MSCI's growth is like a "duck paddling furiously beneath the water." On the surface, it looks like a smooth glide of growth. However, underneath the surface, there are teams

that are relentless in helping the company achieve its targets. Clear targets reflect the high-performance standards at MSCI to achieve industry-leading growth.

Clear targets reflect strong systems. Gartner, a technology research firm, sets sales headcount and productivity targets each year. Chief Financial Officer Craig Safian sets a path of productivity improvement for each new set of hires. The process is described as the Gartner sales playbook This system is one reason why Gartner is able to achieve industry-leading growth rates in selling its technology research.

The consistency of management's targets is an important indicator. Peter Dameris, the CEO of IT staffing firm On Assignment, made sure the company consistently met its quarterly financial targets. The staffing business is notoriously volatile. On Assignment was able to achieve this by securing large enterprise contracts and providing staff for project assignments. In doing so, the company also achieved the best growth rates in the tech staffing space. The consistent targets reflected a successful business strategy and predictable operations.

Find Customer Focus

Susan Salka, CEO of staffing company AMN Healthcare, focuses the company on serving the workforce needs of healthcare systems. AMN started out as a travel nurse staffing provider, then gradually expanded its services to serve other customer needs. It pioneered managed-services contracts to cover all the temporary staffing needs of large healthcare systems. It partnered with other staffing companies to fill the need for doctors and other hospital roles.

By continuously meeting more of the needs of its healthcare customers, AMN grew its sales faster and more consistently than other healthcare staffing providers. It even expanded into workforce services like executive training and language translation software. AMN was able to achieve a decade of consistent earnings growth by continuously anticipating and meeting more of the needs of its healthcare customers.

Dan Rosensweig, CEO of student services company Chegg, defined the company's customer focus in education. The company chose a customer issue to address (the high cost of education), and its expected role (to provide low-cost educational support). Chegg's target market would be college undergraduates. Chegg then created products around student needs: homework help for students, on-demand tutoring, internships, and so forth. The products were all digitally-based and delivered online at low prices. Students saw the clear value—particularly in homework help—and embraced the solutions. As a result, Chegg's subscriptions grew rapidly, and in just a few years, it became the leader in this student services space.

Focus on Cash Flow

The best operators tend to invest cash well. Henry Fernandez directs MSCI to invest with a "triple crown" criterion—invest in projects with the highest return, shortest payback, and highest valuation. As a result, MSCI's profit margins are among the highest of any industry, and it generates lots of free cash flow. The company also distributes its free cash flow to shareholders at favorable times. MSCI took advantage of a steep equity market dip in the fourth

quarter of 2018 to purchase its own shares. The company used nearly $1 billion in cash to buy MSCI stock and has bought back enough of its own shares that MSCI now has negative equity on its balance sheet. The stock repurchases have more than offset the entire value of its initial equity investment—this is remarkable.

Ultimately, management must be able to create cash flow and equity value over time. Jeff Bezos led Amazon to $1.7 trillion in equity market capitalization from just over $100 million in initial funding. One sign of his investment ability early on was making free cash flow per share the ultimate financial measure for Amazon. The cash flow focus created incredible long-term value. This is not to say capital use is negative. Mark Zuckerberg and Sheryl Sandberg of Meta (formerly Facebook) raised over $1 billion in capital. The business also trades at an impressive $1.7 trillion in equity value. The capital was critical for strategic acquisitions, such as Instagram and WhatsApp, early in their growth. These investments reinforced Meta's social network advantages so it could become the dominant social media business. As a result of this dominant position, Meta could generate consistent growth in free cash flow per share.

Ultimately, problems occur when the management team is unable to create a clear path to positive cash flow. Laureate Education built a global network of schools, but it was weighed down by too much debt to generate free cash flow. 2Uaggressively raised equity to develop new online degrees but it overestimated its ability to turn a profit. In both cases, the stocks could not increase in value. We'll review these case studies in the next chapter.

Determine the Incentives

Berkshire Hathaway's Charlie Munger likes to say, "Show me the incentive, and I will show you the outcome." The metrics used to compensate managers[1] will influence a company's financial targets and strategic decisions. Ownership stakes[2] will also influence strategy. The best managers often have considerable skin in the game. This means they have a personal interest in the company's growth and the stock's value. They hold sizable stakes in the stock *and* are paid from long-term earnings, or higher stock values.

Henry Fernandez owns 10% of MSCI's stock and is compensated based on the company's earnings per share growth. He makes strategic decisions that directly benefit MSCI's earnings or its stock value. Fernandez aggressively repurchased MSCI stock during the 2018 stock market dip. He immediately cut costs in 2020 when the pandemic started to prepare the company for a downturn. Then, as financial markets recovered the following year, he rapidly re-invested this cash into new products. The net result was record earnings and stock price for MSCI in 2021. Jeff Bezos also limits salaries for all Amazon employees to $100,000 cash. Additional compensation is paid in long-term stock. This way, employees are incentivized the same as shareholders. Many of Amazon's (successful) long-term projects, such as Prime and AWS, have created massive equity value for the stock.

1 Compensation is disclosed in the proxy filings.

2 Ownership is disclosed in the annual 10K filings.

Buying and selling activity of company insiders can also be an indicator things are going well. Insiders are the executives and board members of the company who usually know the company very well. Data sources like OpenInsider track their selling and buying activity. Large insider purchases can sometimes signal positive corporate developments. The CEO of Tesla, Elon Musk, personally purchased $10 million of Tesla stock in February 2020. This was just ahead of the company's production accelerating and its profits becoming meaningful. The stock went up 10x from that point.

Founder-CEOs, like Elon Musk, often have sizable financial stakes in their company. The founder's personal mission creates a personal incentive to create lots of value in the stock. In his book *100 Baggers*, Christopher Mayer found a large proportion of stocks that returned 100x were of founder-led companies. The founder-led CEOs tended to invest more and focus on long-term shareholder value. This helped create the 100x stock returns.

Identify the Strengths

Successful leaders often have unique strengths. Jerre Stead, CEO of Clarivate and formerly of IHS Markit, is all about disciplined margins and consistent growth. One sell-side analyst described him as "maniacal" about cost controls—a comment Jerre Stead loved.

Susan Salka has a unique vision of AMN Healthcare's role in serving the long-term workforce needs of the healthcare industry. AMN grew to become a unique talent-solutions partner for the largest healthcare systems.

Patrick Dovigi, the founder-CEO of GFL Environmental, is skilled in doing roll-up acquisitions. He started with a single waste transfer station and built a national environmental solutions provider with debt-enabled acquisitions. GFL has a disciplined playbook to acquire and integrate small companies, which drives its industry-leading growth.

MSCI invested in environmental, social, and governance (ESG) a decade ahead of its competitors. This was due to the consistent focus on growth by its founder-CEO Henry Fernandez in achieving growth. MSCI is now the dominant leader in ESG data, which became the fastest-growing area of capital markets.

Peter Dameris used his corporate deal-making skills to transform the On Assignment business. He grew it from a small contract staffing business to an enterprise IT services provider through acquisitions and corporate relationships.

Other analysts echo similar themes. Mark Mahaney, who, at the time of writing this book, is the oldest and longest-serving internet analyst on Wall Street, came to similar conclusions in his twenty-five years covering the internet sector. He also favors management teams that are founder-led. He looks for a long-term orientation, a great industry vision, and a maniacal focus on customer satisfaction. Getting product innovation and the customer value proposition right, he says, is the key fundamental driver for internet stocks.

In the book *Good to Great*, Jim Collins and his research team studied what it takes to turn a good company into a great one. Collins suggests that one common factor is the presence of a Level 5 leader.

These are leaders with a paradoxical blend of personal humility and indomitable will. They are fanatically driven to produce results and do whatever it takes to make the company great. They set high standards and ensure the company meets its targets.

RECOGNIZE THE CHARACTERISTICS OF GOOD BUSINESS

Having a basic idea of what constitutes a good business structure can save you the headaches of poor performance. The first indicator of good business is a recurring business. The risk of the company losing sales is reduced when there is consistent activity with its customers. We can have more confidence that the stock's future earnings will be stable. Predictable companies are usually valued higher as well.

Find Recurring Revenues: Predictable Sales

Recurring revenues mean sales repeat. For DermTech, dermatologists regularly order skin tests for patient cancer screening. The number of melanoma screening tests has not changed dramatically from year to year. If DermTech's genomic test becomes dermatologists' standard choice for melanoma screening, the company will likely sell a recurring volume of tests each year.

Essential subscriptions offer another example. Verisk sells subscriptions of data and analytics to property insurance companies. They are essential for insurers to do business. Verisk's claims-data is required for insurers to be compliant with local reporting laws. The analytic products enable them to price premiums and process claims. Verisk's business is highly predictable with over 80% of its sales recurring or subscription-based. Insurers, on the other hand, have

more variability since insurance premiums can fluctuate. Premiums change due to price competition or to cover the costs that come with significant weather events.

As an equity analyst, I covered a wide variety of sectors: business services, information services, education, environmental waste services, and staffing and payroll. Of all these companies, the business models with high recurring revenues—information services companies like Verisk and MSCI—traded at higher valuation multiples. Their stock returns were consistently better. Some of these firms had proprietary data that was critical for their customers' businesses. Those firms had even higher margins and more consistent earnings growth. Investors in those stocks were rewarded with even better returns. The embeddedness of those services made the business model stronger.

Consider the Embeddedness: Critical Services

Think about how essential a product or service is to a customer, or how embedded it is within a business. For example, Excel is a staple for financial professionals to build models and make decisions. Naturally, a Microsoft subscription is essential for most financial firms. Similarly, HubSpot's suite of email services is used heavily by marketing professionals. In contrast, the office supply of milk for coffee is not considered essential for equity research. At my former investment bank—despite the outrage of my colleagues— milk was eliminated with cost cuts.

Learn how a service is used by customers to judge how embedded it is within customers' systems. MSCI creates indexes, which are used to measure the investment performance of different markets,

such as emerging market equities. MSCI's emerging market index is used by pensions and large investors to benchmark their portfolio performance and select specific investments. The index is a critical part of the investment process, in order to measure returns and to create portfolios. Since the service is so embedded, not only is it highly stable, but it is also difficult for users to switch. This makes it harder for competitors to offer alternatives and strengthens MSCI's position.

Identify the Differentiation: Ecosystems, Unique Experiences

Consider how unique or differentiated a product is compared to those of competitors. This may prevent a customer from switching to another product. Differentiation comes in many forms. For example, Apple offers an integrated ecosystem of computers, phones, and software services. It is more convenient for Apple users to stay within the Apple ecosystem. Berkshire Hathaway became a major shareholder in 2018 for this reason. Ted Weschler, who was responsible for Berkshire Hathaway's investment in Apple, noticed the subscription-like elements of Apple's offerings. He believed the ecosystem created a long-lasting differentiation for the company versus competitors.

There are many ways to create differentiation. The continuous glucose monitor, created by DexCom, provides continuous blood sugar readings for diabetics, without the pain of a prick. This unique value helped grow this new product category, which could become the new standard of care for diabetes. Bath & Body Works provides a unique retail experience to sell its body care and fragrance products.

Its distinctive store experience and its brand help it stand out in the mind of its customers.

Map Distribution and Supply: Ready Access

Access to customers, or distribution, is an important factor for success. If a business does not have ready access, it carries an operational risk. DermTech relies on dermatologists to prescribe the test to patients, then relies on insurance to receive payment for the test. Since neither is secured, its revenue model is harder to predict, making DermTech's future earnings riskier. On the flip side, if DermTech secures both dermatologists and insurers, its business becomes very attractive because it will be much harder for newcomers to achieve this.

Access to distribution makes a business stronger. Bath & Body Works distributes its products across its own retail storefronts and online stores. During the 2020 pandemic, Bath & Body Works adapted to the new selling environment better than most retailers by moving its inventory to its online channels. Businesses that dominate distribution, such as Meta for social media, Google for information, or Amazon for retail, are among the strongest business models out there, and are very hard to displace.

Control of supply can also be critical for a business. Electric vehicle manufacturers need components like semiconductors and batteries to meet their production targets. In 2018–2020, Tesla secured access to these essential components when it pivoted to new chip suppliers. Tesla avoided the worst of the chip and material shortages in 2021 and achieved record production levels. Many competing

auto manufacturers were unable to source the necessary number of components to produce their electric vehicles. This led to lower production volumes and lost sales for these companies, and, as a result, lower stock prices.

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Simplify a business to its basic components. What is the offering and the target market? How does it plan to make money? Then you can identify the critical factor that will make its earnings move. Now you know what information will be most important to the stock. Ignore the rest.

To assess the management team, look for clear targets (indicates high standards), strong customer focus (indicates strong business value), and strong cash flow focus (indicates solid financial management). Look for managers who own lots of stock and who are aligned with your interests in their compensation and goals. Find leaders with unique strengths, and you will likely find a promising stock.

Recognize the characteristics of a quality business. That's your first step to finding great stocks. Find recurring revenues, meaning sales that consistently repeat. The more embedded the product or service is with the customer, the better. Identify the differentiation that ensures the business will keep its customers. Make sure the company has secure access to its customers and its suppliers.

How to Simplify a Business

- Break down a company into its core elements: the offerings and the market. Then project how it will make money. Identify the factors that will move earnings and the price of the stock.
- Assess the management team. Look for clear targets and a customer focus. The best managers create cash flow. Look for incentives aligned with yours, such as sizable management stakes and insider buying. Leaders of the best companies often have unique strengths.
- Recognize the core indicators of good business: recurring revenues, embedded products or services, unique differentiation, and access to distribution and supply.

CHAPTER 3

HOW TO FIND INSIGHTS FROM FINANCIALS: POTENTIAL PROFIT AND HIDDEN RISKS

There is a story behind the company's financial numbers. The financials indicate the upside potential and the risks of the business. The basic framework is as follows. Pinpoint what is behind the company's growth. Look for signs the business can scale and increase sales faster than costs. Identify the source of operating leverage, which will boost earnings.

Then be aware of three critical capital-related risks. Identify any risk of bankruptcy. Pay attention to the debt trap. Look for signs of delayed profitability. All three financial risks can be seen in the financial numbers.

Sustainable demand is what ultimately fuels growth. Scale and operating leverage are the keys to profit potential. Together, these create the earnings to drive the upside in a stock. The ideal business model is asymmetrical. As it expands, it shows increasing returns to scale,

with increasing profits. Let's get you ready to read the financials like a skilled analyst.

IDENTIFY WHAT MAKES THE COMPANY GROW

To find the drivers of revenue growth, look for the largest business unit or segment. This will be listed in the earnings releases and financial filings. Look for the *volume* of products or services (units, subscribers, transactions) and then the *price* of those products and services (revenue per user or per unit). Each indicates a different type of growth.

Volume measures demand for the business. Evidence of consistent volume growth is usually a positive sign. It suggests a recurring business model and a stock that will likely be less volatile. Look at the rate of volume growth over a few quarters to check if growth is sustainable or at risk of slowdown. When volume growth rates are lumpy—high in one period, then much lower the next—it likely indicates swings in demand. The business may operate in a volatile environment, such as in retail sales or in capital markets. Earnings growth will likely move around as well, which will make the stock volatile.

Price increases come from higher-value products and new services. Higher prices (above inflation) usually improve profit margins. The is because prices can often rise without increasing operating costs, whereas higher volumes almost always come with increased production costs. Price trends can therefore indicate the business's future profit. The best businesses can increase prices, make customers happy with better products, and increase sales volumes, all at the same time.

You'll want to focus on the organic numbers in the financials, which exclude the impact of acquisitions. When a company acquires other businesses, their sales are added to the financials, and it often skews the growth calculations. Wherever possible, use organic year-over-year growth numbers. This allows you to see the underlying volume and price trends clearly.

Determine the Demand Drivers: Lightspeed Commerce

Lightspeed provides point-of-sale (POS) systems and software. Its customers are small- and medium-sized retail and hospitality businesses. These systems take orders and accept credit and digital payments. The software tools help businesses manage physical inventory and sell their products online.

Lightspeed makes most of its money in two ways: software subscription licenses and fees from payment solutions. Subscriptions are driven by the number of customers. Payment fees are driven by the volume of transactions.

Let's look at Lightspeed Commerce's ($LSPD) growth numbers. Around February 2021, you notice a change in business demand.

Lightspeed's organic revenue growth for the third quarter of 2021 (3Q21) was 53% year over year (y/y). The drivers of this growth were provided:

- Customer base locations increased 27% y/y organic in 3Q21.
- Gross transaction volumes on the platform increased 29% y/y organic in 3Q21, which improved from the 25% organic y/y rate the previous quarter (2Q21).

- Lightspeed Payments volumes accounted for 15% of transaction volumes.

Look for trends in the numbers. Two things can be seen in this report. 1) The customer base is growing at a slower rate than revenues. 2) Gross transaction volumes are growing slightly faster than customer numbers, but also at a slower rate than revenues.

Revenues are growing much faster than both the customer base and gross transaction volume metrics. This indicates price increases or new services added. Lightspeed's average revenue per unit (ARPU) increased. This was due to fees related to Lightspeed's Payments solution and customer purchases of new modules.

Lightspeed's growth is coming from the sales of new software products and payments services. These are sold to its existing customers. We should pay attention to how many potential customers can adopt these new solutions. As Lightspeed sells these solutions to its customer base, its revenue growth will be higher. However, once it reaches most of these potential customers, its growth rate will be moderate, unless its customers continue to add new services. Over time, Lightspeed's growth rate will correspond to the growth of new customers and transaction volumes.

Lightspeed's revenue mix is also changing. The growth of payment services means more of Lightspeed's sales come from transactions. This means Lightspeed's revenues will be more sensitive to its customer's sales trends. Revenue growth could become more variable from quarter to quarter—moving with the ebbs and flows of retail and hospitality sales trends.

LOOK FOR POTENTIAL TO SCALE (GROSS MARGINS OR UNIT ECONOMICS)

Gross profit is the profit after paying the direct costs of goods sold (COGS). These are the costs of producing and delivering products or services. COGS examples include the wages for staffing services, the fees for computer or support services for software firms, the costs for apparel inventory for retailers, and the costs of materials for automotive production. (Gross margin = gross profit divided by revenues. Gross profits = revenues – cost of goods sold.)

Gross margin analysis indicates the business's potential to scale. Scale is where earnings grow faster than revenues. The higher the gross margins can reach, the better. Ideally, the cost to produce each unit of service or product goes down with more volume. For example, bulk orders of inventory usually result in discounts. Or the business figures out ways to produce and deliver its products and services at a lower cost, such as by selling more digital materials. Not only does this produce higher earnings, but higher gross margins also mean more money to use for making sales or new products. This strengthens the business model and propels growth. And on the flip side, a business with low gross margins will have a difficult time expanding if all its money is used up in producing its products and services.

Identify the Core Costs: AMN Healthcare Services versus Lightspeed Commerce

Let's compare two business models. AMN Healthcare Services ($AMN) provides staffing solutions to hospitals and other care

centers. Its COGS are primarily employee wages and housing expenses. AMN uses its assignment fees to pay salaries to the temporary nurses, who provide nursing services for hospitals. The business value is finding, then assigning the nurses, who then provide healthcare services—most of which is labor based. Customer payment for AMN's services mostly flows to pay the temporary nurses on assignment. AMN has gross margins of 32.6%.

Lightspeed Commerce ($LSPD) provides a POS software and hardware solutions. Its COGS are the cost of software support, hosting infrastructure, hardware, and fees to payment processors. Lightspeed's services are essentially code delivered by chips, which are, in a sense, one-time expenses. The business value comes from the instructions within the software. The software helps manage transactions, customer orders, inventory, payments, etc., most of which arecomputer-based. Customer payments for services mostly flow directly back to the company. Lightspeed has gross margins of 57.7%.

Determine the Cost to Replicate: Staffing Services versus Payment Systems

The other element to consider is the cost to replicate the product or service. When this cost is minimal, the business has more potential to scale.

In AMN Healthcare's model, if hospitals need more nurses on staff, AMN must find more nurses to place on assignment. When there is higher customer demand for nurses, AMN can raise wages to help attract nurses and then charge higher fees to hospitals. However, on

an aggregate level, the number of nurses is limited. It takes one to two years to train a new nurse. The cost to grow is stable for AMN, though limited by the number of trained nurses available.

In Lightspeed Commerce's model, if retailers and restaurants need more software modules, like payments, Lightspeed can replicate the code instantly. It can deliver the new software online at a minimal cost. The cost to grow software is very low. In addition, computer processing costs tend to decline, as chips become denser and more powerful. Lightspeed can potentially offer new software services at a lower cost. The only limitation is the ability of talented employees to create and maintain the software[1] that customers want.

From this analysis, we can conclude that in the long run, Lightspeed's business model has more potential to scale—its earnings can likely increase at a faster rate than its sales[2].

Find Potential to Scale Efficiently: Chegg's Transformation

Chegg ($CHGG) started as a textbook rental business for college students. The company purchased textbooks, then shipped them to students who rented them, for a small fee. For students, the rental fees were lower than the full cost of a textbook. The business became popular on college campuses and grew to become the largest textbook rental company in the U.S. by the time its stock went public in 2014.

1 Actual "costs" of making software are payroll, usually R&D, which is reported as operating expense.

2 In some periods, AMN's stock will have higher returns when its earnings "cyclically" accelerate, like in 2021.

From a business model perspective, college books are 1) pricey, 2) only rented once per semester, and 3) costly to ship. Chegg's growth required up-front capital to purchase textbooks, which were sizable relative to the rental fees. For each rental, Chegg also had to pay fulfillment and shipping fees to get it to students. Chegg's gross margins were only 34%, even with its national network of operations. Overall rental contracts were also declining since Amazon entered the textbook business with lower prices. Because margins were low, Chegg needed lots of capital to expand. The company launched an initial public offering of its stock, or IPOed[3], in 2014.

Chegg's new management, led by Dan Rosensweig, announced a major change to Chegg's business model in 2015. Chegg would outsource the entire textbook rental business to a textbook logistics company. Ingram, the logistics company, would provide the rentals using Chegg's brand, and pay Chegg a small fee. Chegg would then focus on creating digital content for college students. The financial optics of management's new strategy did not look good. Textbook rentals were the core of the business. With this new arrangement, Chegg's sales were expected to decline 20% in a year, and its earnings were forecasted to turn negative. The stock dropped 50% over the next year, with only a few of the original IPO investors sticking with the stock.

Yet beneath the numbers, a business transformation was underway. Chegg used its capital to create digital homework help solutions. This included study tools and textbook solutions, all delivered online

3 Chegg raised $187.5 million in an initial public offering in November 2013.

as Chegg Study. It used the well-known Chegg brand to support its advertising and online content. This helped to create awareness of the new service among students.

From a business model perspective, capital was invested into creating digital content. To create textbook solutions, Chegg paid a one-time license fee to publishers. The cost of goods sold was now the amortized expense from investments in content and technology support, and the license fees. The digital content could be replicated at a minimal cost. The content was then delivered cheaply over the internet to a student's own personal computer. Other operating expenses included research and development and employee payroll. These were the costs to create the new products. Chegg grew its workforce gradually so it could eventually become net profitable.

Chegg's study tools were a hit across colleges. It filled a widespread student need for homework help that existed on many campuses. The Chegg Study platform became the leading homework support service for college students. Chegg essentially took a cost-heavy and capital-intensive logistics business, kept the brand and marketing, and replaced it with a higher-margin digital content business. Chegg steadily expanded its gross margins to 70% over the next five years, as subscriptions increased on the low-cost platform. The business model was a financial success.

The higher gross margins provided Chegg with the capital to invest in new products, such as Q&A solutions, online tutoring services, career placement services, etc., which were all digitally delivered. Growth was no longer capped by capital or logistical limitations. Chegg could now access all college students. Revenue growth

accelerated to over 30% annually. Chegg's stock re-valued in the ensuing years to reflect this new business, and earnings growth kept it going. The share price grew from $5 / share to nearly $28 / share in 2021. The stock provided 5x returns and was a five-bagger from 2016[4].

IDENTIFY THE SOURCE OF LEVERAGE (OPERATING MARGINS)

Operating profit is the profit after paying the operational costs of running a business. The operational costs (after paying COGS) are usually related to employee payroll. They include sales, general and administrative (SG&A), research and development, and sales and marketing. These expenses each represent different business operating functions. (Operating profit = gross profit – operating expenses.)

Operating margin analysis reveals the potential for leverage in the business. You want to identify the costs that can be used to create multiples of sales. These costs are leveraged and act like a force-multiplying lever to create more earnings growth.

One example is fixed operating costs. A waste disposal facility has fixed costs. Labor and wages, maintenance fees, and power costs are all required to keep the facility operational. Costs are fixed no matter what level of waste is processed.

Say total fixed costs are $20. Waste volumes increase from 100 units to 150 units. Gross profit is $1 / unit. Gross profit increases from

4 Chegg's stock took a round trip from $40 to $100 then back in 2021 due to changing expectations of the college market during the COVID-19 pandemic. You'll soon learn why with the section in this book on addressable markets.

$100 to $150, which is a 50% increase. The $20 fixed cost is then paid. The total earnings for the disposal facility increase from $80 to $130. That is a 62% increase in earnings, which is faster than the 50% increase in volume. Fixed cost leverage leads to stronger earnings growth when volumes and sales increase.

Here are some examples of business models with leverage.

Recognize Fixed Cost Leverage: Scorpio Tankers, Gartner, Amazon

Scorpio Tankers ($STNG) provides transport vessels for charters to ship refined oil products by sea. The cost of a vessel is a one-time capital investment. The cost to operate the tanker fleet is also fixed. The costs for crew wages, provisions, maintenance, and repairs stay the same, even when charter prices change. Voyage expenses, such as fuel, are variable and can increase.[5] These expenses are embedded in the charter price, so they do not impact earnings. So, if charter fees increase, all the additional fees flow to the company as profit. These fees can rise when there is more demand to ship oil, or when vessels are limited. The increase drops to the bottom line to create more profits and higher margins—all from fixed cost leverage.

Leverage is also possible in service businesses. Gartner ($IT) sells subscriptions for research products to corporations. The products are created by a team of technology experts. To grow research sales, Gartner hires more salespeople. Gartner's growth model involves

5 Voyage expenses, including fuel costs, and fees for canals and ports, are included in the charter fee.

an extensive sales training program known as the Gartner sales playbook. The sales strategy emphasizes renewals and upsells of new research products. Upsells are like price increases and tend to produce higher margins. Renewals also require minimal costs. The playbook helps the salesforce increase its productivity. Gartner can then generate more earnings per dollar of sales expenses in payroll. Gartner hires aggressively to maintain its industry-leading subscription growth rates. Sales productivity creates leverage for Gartner to grow its profits at a faster rate.

Amazon ($AMZN) built its marketplace business around fixed cost leverage. The technology infrastructure of Amazon's marketplace is made up of fixed expenses. Fulfillment networks, facilities, and data centers all represent fixed costs. Amazon's marketplace strategy is to keep variable costs low and focus on growing volume. Variable costs of products, packaging, payments, support, and marketing are kept to a minimum. Prices for customers are also kept as low as possible. Then the company takes advantage of leverage from fixed costs by generating as much sales volume as possible. Amazon's focus on quickly moving large amounts of volume at low costs also had another benefit. The company has a cash-generating operating cycle[6]. It moves inventory so efficiently that it can collect cash from customers before paying its suppliers.

See the Beauty of Attractive Economics: MSCI

MSCI ($MSCI) has one of the most attractive economics I've ever

6 For most retailers, it's the opposite: cash is used up for inventory, then cash is received from customers.

seen. MSCI creates tools and datasets for the investment community—institutional investors like pensions and fund managers. MSCI's index business creates and calculates indexes that are used to construct and monitor portfolios. For example, the MSCI Emerging Markets Index is used to benchmark and create a portfolio of stocks from emerging markets.

The index business model is simple: collect securities data from vendors, compute models, calculate and price indices, then deliver the index. This can be done through application programming interfaces (APIs), software apps, or other data partners. Customers pay a subscription or license fee to use the index.

Indexes are embedded in their customer's investment processes. The index is used as a benchmark to create and monitor portfolios. Or it is used to create products like exchange-traded funds (ETFs). As a result, MSCI's index business is 97% recurring.

Gross margin costs are the costs of software production and delivery of the index models. These are the costs of data centers, cloud fees, platform and infrastructure, market data fees, and payroll for support and research. Once created, the indexes are standardized and can be used by many customers. The cost to replicate and deliver the indexes digitally is minimal. So, the gross costs decline as a percentage of revenue, as the company grows. The initial production costs are one-time in nature, so, the business can scale.

There are also several sources of cost leverage. High renewal rates for this critical product mean sales and marketing expenses stay proportionally low. Research and development costs are also stable.

The models and methodologies are built once and then sold many times. Payroll accounts for 65% of MSCI's costs. The company leverages its global base and hires more employees in lower-cost locations.

MSCI created a highly leveraged setup for growth. Between 2015 and 2020, MSCI's gross margins expanded from 69.2% to 82.8%. Its operating margins expanded from 36.1% to 52.1% over the same period. Sales consistently grew 10% each year. Earnings grew at nearly double that pace—15% to 20% growth each year—benefiting from scale and operating leverage. The cash earnings margin or EBITDA margin of the index business expanded to over 70%—an outstanding level of profitability.

MSCI invests its cash flow with a focus on incremental returns. Investments are guided by the triple-crown framework. The priorities are 1) high return on investment (ROI), 2) quick payback of fewer than three years, and 3) high valuations. Indexes were re-packaged and sold to create new financial products. These included derivatives, such as futures and options. New indexes were made for fast-growing sectors. Environmental, social, and governance (ESG) indexes and factor-based indexes were created and sold. Most of these contributed earnings very quickly. MSCI's achieved stellar incremental returns of 70%, based on the reported financials.

From a dividend perspective, 40–50% of earnings were also distributed as a dividend (which creates a 0.66% dividend yield). Capital was also used for share repurchases, which added 5–6% in returns from fewer shares. These capital returns added to the underlying 15–20% in earnings growth from the business.

MSCI was an obvious long for hedge fund clients the whole time I covered it. The growth of indexes and ETFs fueled the story.[7] As ESG investing took off in capital markets, MSCI's ESG business became another growth driver. MSCI's earnings per share growth propelled its share price from $40 / share in 2016 to $630 / share in 2021—a nice 15x bagger return for its investors!

Watch Financial Leverage Carefully: Scorpio Tankers

Some companies use another type of leverage: debt. Scorpio Tankers ($STNG) uses debt to fund its growth, borrowing cash to buy tankers to add to its fleet. The costs of debt are interest and repayments. These are typically fixed. So long as the new ships' incomes can cover the costs of debt, the additional income flows directly to Scorpio's bottom line. The financial leverage boosts Scorpio's earnings, and margins too, as long as incomes rise.

Financial leverage works on both the downside and upside for shareholders. Instead of using cash from earnings or selling shares, Scorpio can borrow money to expand rapidly and keep most of the additional profits. This increases the earnings upside for shareholders. However, debt also increases the downside. Scorpio risks bankruptcy if there is not enough cash flow to pay the interest on the debt. Bankruptcy usually wipes out the shareholders' equity value.

You measure financial leverage with the net debt-to-earnings ratio.[8]

7 In the case of floating interest rate debt, the rate will move with market interest rates.

8 Net debt is total debt minus the available cash. EBITDA, or earnings before interest, taxes, depreciation, and amortization, is the usual measure for cash earnings.

The ratio is the number of years of cash earnings it takes to pay off the debt. Higher leverage ratios make earnings more volatile, which makes the stock price more volatile. Scorpio's net debt-- earnings ratio was 6.8x in 2020, which is high even for this sector. The stock's implied volatility[9], which is its expected price range, was close to 70% in a single year. Stocks with high financial leverage often move significantly during major economic shifts because of the higher potential upside and downside. These stocks sell off the most in recessions and often regain value sharply during recoveries.

WATCH OUT FOR THE FINANCIAL RISKS

The balance sheet is where we see a business's capital structure, which is the relative mix of equity, debt, and cash. It shows how the business finances its growth and operations. Too much debt can lead to serious financial risk for a business. Too much equity capital also has its risks. Here are the essential financial risks to look out for here.

The worst risk for a stock is the company running out of cash. The company will miss its debt payments. When a company defaults on its debts, legal contracts are often triggered that give bond holders or the bank control of the business. If the company files for bankruptcy, debt holders are prioritized, and equity holders are usually

9 The higher the implied volatility, the wider the expected price range. The stock's implied volatility is calculated from options prices. Your stock brokerage will usually quote implied volatility for the next 30 days as an annualized percentage. To convert the annual level of volatility to a specific period, divide the annualized number by the square root of the number of periods. For example, an annualized volatility of 16%, divided by the square root of 252 (~16), translates to 1% daily volatility, since there are 252 trading days in a year.

wiped out[10]. The stock price will trade in the pennies, depending on expectations for potential equity value left over.

Avoid Risk of Bankruptcy: Corinthian Colleges' Collapse

Corinthian Colleges ($COCO) was one of the largest for-profit college operators, with close to 80,000 students at its peak. Corinthian is an example of how bankruptcy can happen when there is not enough cash flow. After the financial crisis of 2008, most private lenders exited the student loan industry. The federal government became the de facto lender for student loans, and therefore the main payer for for-profit colleges. In 2010, the Obama administration decided to rein in the sector. It limited student loans of non-high-school graduates for for-profit colleges. New regulations on federal payments were placed on the sector[11]. Corinthians Colleges' programs were directly impacted by these restrictions. Corinthian attempted to create its own student financing program, but willing investors were limited. Student enrollment started to decline across the company's colleges.

Entering the 2013 academic year, Corinthian reported $90 million in debt and $40 million in cash. The company was losing about $10 million per quarter. The business was seeing negative operating leverage. The largest costs were educational services expenses. These included payroll for faculty and administration, and facilities

10 In a corporate bankruptcy, the company either is liquidated, where assets are sold off to pay off debts, or is reorganized into a new entity. Either way, stockholders usually are paid last (if at all) for their shares.

11 Federal student loans were restricted for non-high-school graduates. New regulations on the for-profit college industry, such as the 90/10 rule, capped federal-student-loan-related revenues, while the Gainful Employment rule limited federal student loans to programs based on student debt and earnings standards.

expenses. These were largely fixed, even as its campus revenues turned lower. Corinthian's expenses from bad debt and missed student payments were also rising. It also had $8 million in interest payments per quarter.

From a balance sheet perspective, the company was teetering on the edge of bankruptcy. The only positive sign was that Corinthian reported positive free cash flow (FCF) of $30 million in F1Q13[12]. Most of this was $22 million in prepaid tuition. This represented cash payments from the federal government for student loans. With this cash flow, the company was able to keep its operations going. It cut costs and closed campuses in order to reduce its losses. Its cash levels declined to $28 million at the end of the academic year in June 2014. The stock price even rose (slightly) as the company survived another year.

However, all it took was a delay in cash payments for this company to collapse. Here's how the downward spiral happened.

- Banks cut off its access to capital. Operational losses reduced the value of the tax credits on its balance sheet. Lower equity values violated bank covenants for minimum balance sheet values. Banks then cut off its access to loans and raised its interest rate payments.
- Losses from operations declined further. Campus closures and marketing cuts led to fewer new students signing up for classes. Enrollments declined another 10% for the semester.

12 Fiscal year 1Q 2013. Fiscal means the company year. Corinthian's year ends in June to reflect the academic year.

- Poor student outcomes, i.e., unemployed graduates, led to more student defaults on loans. This led to more program closures. This prompted multiple state investigations into potential fraud.[13]
- The Department of Education then announced a delay in student loan payments to Corinthian. This came immediately after the announcement of state lawsuits and civil investigations.

To start the 2014 academic year, Corinthian now needed an extra $20 million to pay the $8 million interest to its lenders and to fund the $10 million loss per quarter to run its operations. Corinthian no longer had access to either debt or equity capital. No banks were willing to lend to the company. The only hope was to find a strategic buyer. However, most potential buyers were turned off by poor student metrics. Many of its programs were likely noncompliant with the new federal guidelines. No investor or bank wanted to take the risk.

This was the end for Corinthian Colleges. Without cash flow, the company could not survive. Within a few weeks, Corinthian had defaulted on its interest payments and then filed for bankruptcy. The stock immediately traded into pennies. All of Corinthian's assets were sold off over the next year.

To avoid bankruptcy risks, examine cash and debt levels. Check

13 Multiple state investigations into allegations of fraud related to student job placement rates.

the expected cash flow of the business. Make sure the business has enough cash to run its operations.

The Risk of the Debt Trap: Laureate Education's Leverage

The next risk is the debt trap. You can't grow out of debt. Take Laureate Education ($LAUR) as an example. When I was a research analyst, our bank helped take Laureate public in 2017. Laureate had spent many years acquiring universities worldwide with lots of debt. The issue was that it now had 8x leverage (debt / EBITDA).

Laureate's debt structure meant that for every $100 in cash earnings (EBITDA), there were $800 in loans. The loans carried an 8% interest rate, which is $64 in interest per $100 of earnings. This leaves $36 ($100 minus $64) in cash earnings for the equity holder.

The business must invest capital expenditures each year to maintain the campuses at its universities. Laureate made $100 in earnings for every $500 in tuition sales. It invested about $50 in capital expenditures (capex) per $500 in sales.

After capex, there is a $14 cash loss ($36 minus $50) per $100 in earnings for the equity holder. The debt expense plus the capex needs meant the company needed to grow earnings by at least 14% to generate enough positive free cash flow to maintain its equity value. Laureate needed to grow enough to cover its debt.

Now, Laureate's campuses historically increased student enrollments in the 4–5% range, year over year. To grow earnings at a higher rate, management decided to cut operating costs and reduce capex spending. Schools now spent less on advertising to attract new students.

Unfortunately, this created a new problem. One of its largest schools, Walden, couldn't meet its new student enrollment targets for fall 2017. Because of the marketing cost cuts, Laureate's enrollment growth was now slower than expected. Laureate was trapped—it could not grow out of its debt.

The stock price never went above its IPO price of $13.50. The company simply could not generate enough earnings growth to pay back its debt and increase its equity value. The stock was still considered cheap at a 10x EBITDA valuation, but it didn't matter. The board of directors finally told the company to evaluate all strategic alternatives to find a way to pay back its investors. Management decided to sell off all its schools and pay down its debt.

At a company dinner with other research analysts during the IPO, the CEO of Laureate asked, "What's the right leverage level? 5x, 6x?" We had all given him the same feedback: investors would have issues with Laureate's leverage. But none of us had a specific number in mind that was acceptable. Today, with some reflection on the deal, I now have a better answer: 4x leverage is the max. With $400 in loans per $100 in earnings, Laureate could cover its interest and capital expenditures to have $18 in cash profits. Assuming the stock is valued at 10x cash earnings (EBITDA), the return or free cash yield for shareholders' equity would be 1.8%—a suitable minimum return.

The 4x leverage level also happens to be the line in the sand for investors to consider a stock hairy (meaning significantly risky). You can use that level as a rule of thumb for your investing as well. If you invest in a stock with over 4x leverage, be sure it can generate

enough earnings to cover its debt payments and still grow its free cash flow.

The Risk of Delayed Profitability: Lightspeed Commerce's Guidance

Selling equity also carries risk. Many companies can raise equity capital in public markets before making profits. Technology companies often are unprofitable at first. The investments needed to build their products are mostly payroll to employees, which are booked as expenses. Software companies also spend heavily on marketing expenses upfront, especially for subscription products. The assumption is that once customers are signed up, they will pay for services for a long time. With equity, there is minimal bankruptcy risk—after all, the company has cash. The risk for an equity holder is a dilution in profits and a stock with considerable sensitivity to growth.

Consider Lightspeed Commerce's capital structure. Lightspeed raised nearly $1 billion by selling stock in 2021. There is $2 billion of paid-in capital reported as shareholder's equity at the end of 2021, and only about $30 million of long-term debt.

Lightspeed has about $300 million of cash on hand to support the business. That could fund at least three years of operations with negative ($100 million) earnings, or losses, each year. It expects to be cash earnings profitable in 2022, so the risk of a cash shortage appears to be manageable.

Looking at the rest of the balance sheet, Lightspeed has $1.5 billion in assets. There is about $1 billion in goodwill, which comes

from acquisitions, meaning most of its capital has been used to buy businesses. Lightspeed is not yet profitable, which you can see in the equity. There is an accumulated equity deficit[14] of $600 million from negative retained earnings. This is the sum of negative earnings over the years.

Since the company has chosen to sell more shares in 2021 to raise capital, the diluted share count has increased by 22% on the income statement. This reduces or dilutes the earnings for each share. Lightspeed must grow its earnings by at least 22% to offset the dilutive effect of equity sales.

Lightspeed has no earnings yet, so the value of these shares is highly sensitive to when future profits will be generated by the company. For shareholders to have a 10% annual return on the $2 billion in equity invested into Lightspeed, the company will need to generate $200 million in earnings each year. Management has said in investor conferences that the company can eventually generate 20% in EBITDA margins. Hitting that earnings target roughly would require $1 billion of revenue. Lightspeed generated $220 million in revenue for 2021. To reach $1 billion in five years, it must grow its revenues by over 35% organically (without acquisitions) each year.

Lightspeed's valuation, excluding its cash, was $8 billion when it sold shares in 2021. This premium above the $2 billion in equity book value suggested investors were expecting much higher growth rates—likely closer to Lightspeed's growth rates of nearly 80% at

14 Retained earnings is booked in the equity portion of the balance sheet. It records the accumulated income (or deficit) from the company's net income (or loss) over its lifetime.

the time. Lightspeed's equity value is based on earnings far in the future. This means the value of Lightspeed's stock is highly sensitive to expected growth rates and profitability.

In early 2022, Lightspeed's management announced new revenue guidance. It implied slower growth trends, and the stock immediately re-valued. Lightspeed's growth would moderate to a 30–40% multi-year growth target. The stock price then dropped by over half over the next month. Lightspeed's equity valuation dropped to roughly $2 billion in value, to reflect the (lower) guided growth rate. This decline highlights the risk of investing in companies with delayed profitability.

In the next section, you'll learn how to value the equity of a company. You can be better prepared for equity-related risks with a stronger sense of the stock's value.

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Financials show you the economic potential of a business. Look at the split of volume and price to sense how the company is making money. This gives you a better understanding of what will make the company grow. Volume tends to reflect underlying customer demand, while price tends to reflect new services. The more transactional the business model is, the more exposed it is to changes in its end market.

Look at the gross margins, or the unit economics, to find the potential to scale. Find signs that gross margins can expand, which usually means the product or service can be replicated cheaply, which then leads to scale. Then look for operating leverage in the business. You want to find costs that are fixed, or will grow slower than sales, so

these costs can create multiples of sales. Scale and leverage are the keys to profitable business potential. A company that can scale with cost leverage will grow earnings faster than sales as it expands. This leads to increasing returns with scale.

Head to the balance sheet to check the financial risks. The worst risk is that the company runs out of money—it has negative cash flow and too much debt. This leads to bankruptcy and zero equity value. Too much debt can also stifle a business's earnings to the point that it cannot grow its equity value. When a company raises money by selling stock, it dilutes the value of its shares, meaning the company must then grow faster to offset the impact. This makes the stock's value more sensitive to growth and to any delays to profitability. Watch out for these financial risks.

How to Read the Financials

- Financials indicate the true economic potential of a business. Find what makes the company grow by looking at volume and price separately, to measure growth from business demand and from higher-value products.
- Look for the potential to scale, where earnings can grow faster than sales. To do this, examine the unit economics and the gross margins of the business.
- Find the source of leverage in the business, where costs can create multiples of sales. You want to identify companies with the potential for increasing returns with scale.

- There are three financial risks for a company: running out of money, being trapped by debt, and delaying profitability. The first two increase with more debt capital, the third with more equity capital.
- See "Financial Patterns" in the back of this book for illustrations of these concepts.

Feel smarter? Tell a friend! Post a photo of yourself reading this book (you savvy ACE investor) to show off your new skills. Tag me and I'll send a personal word of thanks!

CHAPTER 4

HOW TO VALUE ANY COMPANY'S STOCK

What makes a company financially valuable? The value of a business is the cash it will make you in the future. Value can be estimated in two ways.

The first is via a growth-based valuation. You estimate the value based on its future size and expected growth. For example, Sea Limited is growing its internet businesses. We'll estimate growth for the next five years. To do this, we'll think about the size of the company's target markets, how fast it can build or expand, and how profitable the business will be. We value the business based on a multiple of its expected earnings. The multiple reflects its earnings power to create cash over its lifetime.

The second is via an asset-based valuation. Wevalue the business based on its expected cash flows. For example, Mountain Pass is developing a rare earth mine. We estimate the expected cash flows over its lifetime. To do this, we'll think about production volumes and the price of the commodity. Once we estimate future cash flow, we then discount it with a rate that reflects the potential risks of the

project. We add up the present value[1] of all the expected cash it will create over its lifetime.

Let's illustrate each method with these companies step by step.

SIZE UP THE GROWTH: SEA LIMITED'S EXPANSION

We'll value Sea Limited ($SE) on its growth potential. The company is making traction in Southeast Asian and Latin American internet markets. There are three growth businesses in the company: the e-commerce platform (Shopee), the gaming developer and publisher (Garena), and the financial services provider (SeaMoney). We'll consider them separately and then value the entire company together.

E-commerce transactions in these markets are growing 18% each year. Growth is fueled by a young urban population shopping online with smartphones. Sea's marketplace, Shopee, is the leader in Southeast Asia, with a 60% market share. Online sales are still quite low (roughly 10% of total commerce) in these markets. More mature markets like China are close to 40%. We think the e-commerce market can expand to these levels. We can find these growth estimates in industry reports[2].

We assume Shopee remains the leader due to its network advantages. The take rate, or commissions on transactions, tends to rise with higher volumes. Shopee is also expanding into the Brazilian

1 Since money has a rate of return (interest), future cash has a higher value. We discount future cash flows with a discount rate (implied interest) to reach its present value. The discount rate incorporates a variety of risks.

2 Sources include Punch Card, eMarketer, Bain & Company, Technavio, Statista, SEC Filings, Google, Temasek and Bain, e-Conomy SEA 2021.

market. Sales growth will therefore be slightly higher. We estimate e-commerce revenues could increase over 30% per year from 2021 to reach $16 billion by 2026. Management expects cash margins to be positive by 2023 and will use the earnings to fund investments in the business.

The financial services business—SeaMoney—will grow initially as a payment solution for Shopee. Close to 28% of Shopee's transaction volumes are paid with SeaMoney's service. We estimate this will rise to 55% over the next five years. Alibaba, which operates the largest e-commerce marketplace in China, also has its own payment solution (Alipay). Alipay handles 70% of all its transactions. SeaMoney could grow to be a $3 billion business by 2026 based on this estimate. SeaMoney is expected to have positive cash flow in 2023.

The global gaming market is growing by 12% a year. Young people are highly engaged in gaming worldwide. Garena's Free Fire franchise is the best-selling mobile game in Southeast Asia and Latin America. We believe Free Fire could last as a dominant gaming franchise, like League of Legends or Call of Duty. We also expect Garena to develop new games that will sell in these markets. We assume Garena will hold its market share. We estimate digital entertainment revenues will grow 12% a year from 2021 to reach $7.6 billion by 2026. Cash margins for the business will be stable at 65%.

We expect Sea Limited to generate $26.6 billion in total sales by 2026. Since Sea is reinvesting its earnings aggressively, overall profits will be slightly positive by this time. We assume Sea can achieve margins like Alibaba (close to 20% cash margins) over time. Alibaba and other similar e-commerce and gaming companies have been

conservatively valued between 2–4x revenue multiple historically. This equates to $94 billion in enterprise value for Sea Limited in five years. Add in the expected net cash of $13 billion by 2026. And assume about 670 million shares outstanding from share-based compensation each year. This leads to a $148 price target in five years. Discounted at a 10% rate, Sea's present value will be $88 / share today.

Historical Multiples	**EV/NTM Sales**
Tencent Holdings Limited (TCEHY)	4x
Alibaba Group Holding Limited (BABA)	2
Pinduoduo (PDD)	4
Amazon (AMZN)	3
Median	**3x**

SE Forecast	**Forward EV / Sales Valuation**
Sales '26 ($B)	$26.6
Multiple	3x
Enterprise Value ($B)	**$83.8**
Net cash	(13.0)
Market cap. ($B)	**$96.8**
Shares (m)	652.3
Value / share	***$148***
Discount rate	10%
Years	5
PV of share	**$88**

VALUE THE ASSET: MOUNTAIN PASS MINE PRODUCTION

Now we'll value the Mountain Pass ($MP) mine based on its expected cash flows. The company has invested in expanding its production of refined rare earth products. These products are used in magnets, such as for motors in electric vehicles.

The mine's production schedule calls for 6,000 metric tons of neodymium and praseodymium (NdPr) products and 40,000 metric tons of basic rare earth elements per year. Each metric ton of NdPr sells for roughly $88,000 and each metric ton of rare earth element sells for $4,000. We expect production of NdPr plus basic rare earth elements will drive annual sales of $560 million. We expect cash margins of 67% (meaning 67% of sales in cash as profits). This equals roughly $350 million in cash earnings per year. The mine can produce for twenty-four years at this level. The production schedule is in Mountain Pass's investor presentation, located in the Investor Relations section of its corporate website.

We'll project the project's cash flows over its lifetime, based on expected production and current rare earth prices. Then we discount it to the present value. We use the discount rate as a hurdle rate, or minimum rate of return, which is based on the risk of the opportunity. There are several risk factors to consider for this mine.

Since the mine is in the U.S., there is limited risk of nationalization, which can occur for mines in emerging countries. Mountain Pass could even have favorable U.S. government policy support. Mountain Pass will be the only source of rare earth compounds in

North America[3]. Rare earth compounds are required for electric motors and could become a strategic area for national development. The new production process to recover individual rare earth elements carries another risk. It assumes management will hit production milestones without unanticipated costs or delays.

Assume the production schedule is on track and the quality of the mine's resources is as expected. We can use an optimistic 7.5% rate to discount the $350 million of cash flow per year. The net present value of cash flows for twenty-four years equates to $4 billion estimated net asset value (NAV)[4]. With the current 180 million in shares outstanding for the company, this equates to $22 / share in NAV for Mountain Pass.

The NAV estimate can change based on new investments that impact future production levels. The prices of NdPr and other rare earth compounds will also directly impact sales and the NAV estimate. Rare earth supply and demand trends will be a large factor that determines market prices. Since the cost of production is relatively fixed, any price increases will directly benefit earnings.

To incorporate new expectations, the stock can also be priced as a multiple to estimated NAV levels. If we expect new projects to raise production or higher prices of rare earth materials, we could estimate a premium. The stock could trade at a 1–2x premium to NAV or between $22 and $44 per share.

3 Close to 85% of rare earth compounds were produced in China in 2020.

4 Net asset value (NAV) here is the sum of the present value of its expected cash flows. NAV uses the net present value (NPV) method, which takes each year's cash flow and discounts it to present value using a specified discount rate. Excel's NPV function can do these calculations.

Free Cash Flow Per Year		
Revenue	$694,600,000	Margin
EBITDA	441,110,000	63.5%
Tax rate	*21%*	
Tax expense	92,633,100	
Free Cash Flow	**$348,476,900**	

NPV Valuation	
NPV ($M)	$3,827
Discount rate	7.50%
Shares (m)	178
Value per share	**$22**

INVEST IN INCREMENTAL RETURNS: COMPOUNDERS

The connection between a business's growth and its future cash flow is the incremental rate of return. Say a company generates $100 million in free cash flow per year. It has identified several growth opportunities. It plans to expand its products and services to new markets. It chooses to invest $100 million and then achieves 30% profit on this incremental capital invested ($30 million of earnings or 30% in return).

If the business can consistently deploy all its free cash flow to growth opportunities at those returns, it will grow cash earnings by 30% a year. Share prices follow the earnings of a business over time, so we can also expect its share price to compound at a similar rate. Businesses that can do this are called compounders The critical link between growth and future cash flow is the return on incremental capital, which then drives a change in the share price.

This is a core concept in Warren Buffett's investment philosophy. In his 1992 Berkshire Shareholder Letter, Buffet said "Leaving the question of price aside, the best business to own is the one that over an extended period can employ large amounts of incremental capital at very high rates of return. The worst business to own is one that must, or will, do the opposite—that is consistently employ ever-greater amounts of capital at low rates of return."

The more capital the business can deploy at high rates of return, the more earnings it can generate, and the more valuable its share price will be. In the next section, we'll learn to identify patterns of dominance that create high incremental rates of return. Usually, such dominance comes from long-lasting competitive advantages. We also learn to identify and estimate large growth opportunities.

See this concept in action with the financials of index company MSCI. The business develops and sells its products very efficiently. MSCI has grown sales by roughly 10% per year. Incremental margins are stable and over 70%[5]. This suggests product sales continue to be very profitable. Return on invested capital has increased from 13% to 16%. This suggests MSCI is making incremental investments at even higher rates of return. Earnings per share have grown between 20% and 30% each year. This creates similar returns in the stock price.

5 To calculate the incremental operating margin for a period: (change in operating profit) / (change in revenues). Returns on invested capital = operating income (after-tax) / book value of equity + debt of the prior year

MSCI	2016	2017	2018	2019
Revenue ($M)	$1,151	$1,274	$1,434	$1,558
YoY % growth	*7%*	*11%*	*13%*	*9%*
Operating Income ($M)	$488.1	$579.5	$694.1	$777.7
Incremental operating margin	**111%**	**74%**	**72%**	**68%**
Return on invested capital	**13%**	**16%**	**16%**	**15%**
EPS	$2.96	$3.98	$5.37	$6.44
YoY % growth	*28%*	*35%*	*36%*	*20%*
Stock price (year-end)	$79	$127	$147	$257
YoY % growth	*9%*	*61%*	*17%*	*74%*

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The value of a business is the cash it will earn in the future. There are two ways you can think about the value: the expected growth or the expected asset value.

Growth is for companies building new products or services. Estimate the future size of the business. Think about the growth of the market, how fast the company can build or expand, and how profitable the business will be. Look at how similar businesses have grown. Then apply a comparable multiple.

Use asset value when there are fixed cash flows. Find guidance for the expected production and expected cash flows for the lifetime of the asset. Apply any relevant price estimates. Then pick a discount rate to reflect the risk factors that could impact the assets' future cash flows. Use the discount rate to estimate and sum up the present value of all the expected cash.

Incremental returns connect the business's growth and its future cash flows. The more capital a business can deploy at higher rates of return, the more earnings it will generate, and the more valuable its share price will be.

How to Value a Company

- The value of a business is based on the cash it will earn in the future. The value is estimated by the trajectory of growth, or by the value of the asset.
- Growth-based valuation estimates future earnings, and the stock is valued as a multiple of future earnings. The multiple reflects investor expectations of the business's long-term earnings potential.
- Asset-based valuation estimates the future cash flows. The cash is discounted at a rate to reflect potential risks, such as inflation. The value of the asset is based on the present value of its expected cash flows.
- Incremental return connects growth and cash flows together. More capital deployed at higher rates of return generates more earnings, which leads to more valuable stock.

Download the financial model for the next section here: www.henrychien.com/book-model

CHAPTER 5

THE STEP-BY-STEP METHOD TO ESTIMATE A STOCK'S UPSIDE

A financial model ties the business model, the financial structure, and the discount rate, into a business valuation. This model takes assumptions and turns them into a stock's value. As the business executes its strategy and creates new targets, the financial model helps create valuations for new scenarios. It also points to important upside or downside factors for the stock's valuation.

Follow the steps to build a DermTech ($DMTK) financial model. You can find the working spreadsheet at www.henrychien.com/book-model. All the information is drawn from the sources listed in the essential information section.

STEP-BY-STEP FINANCIAL MODEL: DERMTECH

Step 1: Model the unit economics and revenue drivers

DermTech's management has provided targets for volume (number of tests) and price (average selling price). We'll incorporate these

into a model to estimate DermTech's revenues. The company's investor presentation outlines management's operational targets for the business. This is found in the Investor Relations section of its website.

Management expects to hire up to 70 sales reps to target the 5,000 healthcare professionals who perform the most biopsies for patients. Sales targets are an average of ten tests of DermTech's pigmented lesion assay (PLA) product per month, per clinician. The company expects to reach an average selling price (ASP) of $600 / test with insurance reimbursement. Say we give the company five years to reach these targeted levels, and this assumption drives our revenue growth estimates.

If a company does not provide revenue guidance or long-term targets, there are various ways you can estimate growth numbers. First, examine the company's historical growth trends. Are they improving or slowing? A basic forward estimate could extrapolate the past trend, assuming it is sustainable. Second, compare the growth with the industry and other publicly traded competitors. After some data collection, you'll have bands of upside or downside to help estimate the company's future growth.

When you compare industry growth rates with the company's growth, you can see if the company is gaining, losing, or maintaining its market share. If you have a view of the company's future market share, you can also estimate growth with faster, slower, or level rates compared to the industry's trend.

Step 2: Model the margin and expense assumptions

Start with gross margins.

The CEO says gross margins for the Medicare-reimbursed test (which has an ASP of $600 / test) are currently 60–70%. If the company is successful in getting the test commercial insurer coverage, management expects DermTech to reach this ASP level and gross margin over time. Insurance decisions will take a few years. So, we'll conservatively assume it will take a minimum of five years for prices to rise to this ASP level and for DermTech to reach 60–70% gross margins.

We'll want to estimate the potential cost leverage from growth. DermTech's management has not given any long-term guidance in either its filings or its earnings commentary[1]. It has only stated that it expects the company to increase its expenses significantly.

We'll have to make some of our own assumptions. We can consider the trajectory of similar business models. One ideal company for DermTech to model is Exact Sciences ($EXAS), which provides a genomic colonoscopy test alternative. Exact's product, Cologuard, is recommended as a standard screening measure by medical organizations. The test is also widely covered by insurers. As Exact Sciences grew its testing volumes, its gross profit margins also expanded, due

1 In the 10K annual filing, refer to the commentary of the Business Description and the costs discussed in the Management Discussion and Analysis sections, for indications of the business model. You can also confirm this with information in transcripts and investor presentations.

to the fixed cost nature of the labs. Sales, general, and administrative expense (SG&A) intensity also lessened over time.[2] There was leverage from sales and commercial development expenses.

Let's apply a similar trajectory to DermTech. We'll model expanding gross margins, assuming higher prices from commercial insurer reimbursement. And we'll assume there is fixed cost leverage with higher volume from its labs. DermTech will initially spend heavily on sales marketing to build awareness of the test. This will be the bulk of its operating expense. Over time, the intensity of marketing could moderate, which would also improve the company's operating margins.

Hold off on estimating depreciation and interest expenses for now, since they are driven by capital investments and the use of debt. We'll model these capital estimates first.

Step 3: Model the business' capital needs

Working capital. To estimate working capital needs, check how much cash is used for day-to-day business operations. These are recorded as operating assets and liabilities on the balance sheet.

DermTech disclosed in its 10K annual filings that it expects to have negative working capital use, much like in previous years. So, we start with the assumption that cash needs will increase. The simple way to model working capital needs is to assume it will grow with the business. To do this, calculate the operating assets as a percentage

2 Lower intensity meaning SG&A as a percentage of revenues declines over time.

of revenues and operating liabilities as a percentage of costs. Do this for the most recent year, then project this forward to future years.

Accounts receivable represent sales, where cash is to be received in the future. Accounts payable are costs, where cash is to be paid in the future.

- An increase (decrease) in operating assets leads to a reduction (growth) in cash. More accounts receivable means less money (temporarily) collected from sales.
- An increase (decrease) in operating liabilities leads to an increase (decrease) in cash. More accounts payable means less money (temporarily) used for expenses.

The change in working capital used in a period is calculated in the cash flow statement as the changes in operating assets and liabilities. In our DermTech model, we estimate the company's working capital needs will increase as the business grows.

Investment capital. Capital investment will be required to maintain business assets and to develop new capital projects. This is recorded as capital expenditure, or capex.[3] We'll estimate future capex as a percentage of revenues, which assumes investments will grow with sales. DermTech discloses in the property and equipment section of the 10K annual filing that it can scale up its current facility to 300,000 tests per year. It plans to build new facilities to further expand capacity to 1 million tests.

3 Search terms "working capital", "capital investments" and "useful lives" for guidance in the 10K or S1 filings.

Since the current facility is already built, only maintenance investment is required for the current level of tests. This means a lower capex as a percentage of sales. As test volumes reach 300,000, we'll want to project a higher capex percentage to estimate the additional capital needed to build the new facility. The capex is added to the property and equipment asset on the balance sheet.

Once we estimate the total capital investments over time, we expense it as depreciation expense on the income statement. This is based on the lifetime of the asset. DermTech's test facilities have an estimated useful life of two to five years. So, we can estimate the assets will depreciate by 20% each year, over five years. We record this annual depreciation expense on the income statement. This depreciation reduces the value of the asset on the balance sheet.

The same model process applies to intangible investments, with amortization expense. Amortization estimates are often provided by companies and are based on their own estimates of intangible value. You can find them in the annual 10K and quarterly 10Q filings. DermTech does not have significant intangible investments.

Step 4: Estimate capital from debt and equity

Once we estimate the business's expected earnings in the income statement and its capital needs in the balance sheet, the cash flow statement ties everything together. We now see the company's expected free cash flow. We can compare it to its current cash balance to identify if, and when, the company will need more capital. DermTech is an early-stage company that expects negative earnings. Therefore, it will require significant capital to grow. We'll need to

estimate additional capital raises, to cover its investments and operations. There are two forms of capital raises: debt and equity.

Debt or equity? Equity capital, or the sale of new shares, will increase the share count and then dilute earnings per share. Debt capital, or the issuance of new loans, will create more debt and interest expenses. Debt increases financial leverage.

Debt is often used for tangible assets, such as real estate, planes, or factories, which can either be re-sold or create consistent cash flows. Banks and bondholders tend to prefer to lend against assets with future cash flow or that can be sold to other buyers. This ensures that interest payments are covered, and that money can be recovered in the event of default.

DermTech's investment into its new facility could potentially use debt financing. We'll use our capex projections to estimate how much debt will be raised, assuming DermTech can get investors to fund the project. Once we estimate the total amount of debt, we can estimate interest expense[4], based on the market rates of debt for similarly rated companies. In this case, it will likely be a higher-yield debt rate, to reflect the higher risk of default.

The rest of DermTech's future capital needs will come from equity. Since the company is in the early stage of commercializing a new product, there are minimal cash flows. This makes it unlikely that debt investors will lend to the company to fund its expansion.

4 Since this is an early-stage company, we can use the rates of a high-yield bond, the riskiest class of corporate debt. We can find market rates under the Trade Reporting and Compliance Engine (TRACE) on the FINRA regulatory authority website.

Usually, only equity investors will take the risk of these kinds of new ventures, in exchange for a share of the earnings upside.

Another source of equity. Another source of new equity is share-based employee compensation. We can estimate this compensation as a percentage of operating expenses. To estimate the price of the future issued stock, we can assume the stock's value will increase at the same rate as earnings. We can then calculate the additional number of shares created, then add this to the share count. Larger companies sometimes offset the share dilution with stock repurchase programs. In those cases, we'll also estimate the capital used for the repurchase programs. Then we can estimate the number of shares repurchased and remove it from the share count.

Step 5: Estimate the stock's valuation

With these building blocks in place, we can now estimate the future value of the stock based on our estimate of future earnings. But wait! DermTech has negative earnings for the next several years! How do you estimate the company's value if you don't have the full earnings model?

The shorthand method to value stocks is to use a multiple of some financial metric, based on the valuation of peers (comparisons). This method is used widely by investors and corporate buyers. We'll use the metric that is the best indicator of future earnings for the business, then apply a peer multiple to estimate the valuation.

DermTech's critical metric is future revenue, since it reflects the growth of its genomic tests which will drive future earnings.

DermTech does have revenues, so we can price the stock based on the revenue multiple of comparable companies. As the company turns profitable, we can use various earnings metrics—expected gross profit, then expected operating profit, then finally, future earnings per share (EPS) or free cash flow.

Here are a few pointers on how to pick multiples and find appropriate comparisons.

PICK THE STOCK'S MULTIPLE: TYPES OF COMPARISONS

Pick the multiple that allows you to compare the stock with those of similar companies, which are the comps. Real estate agents use the same process with comps to estimate a house's market price. Multiples and comps are ways to price stocks based on actual transactions. Bankers use detailed comps to value companies for sale to corporate buyers or investors. The ideal comp group is one that other investors will also use to compare the stock.

The forward next twelve-month (NTM) multiple is the standard for investors. This is the multiple of the expected sales, operating profit, or earnings per share over the next twelve months. You always want to use forward multiples because the stock's value is based on future expectations. Most data terminals have templates for the most common multiples: EV / NTM sales, EV / NTM EBITDA, and NTM P/E.

The best multiple is the one that lets you compare the earnings potential of companies. You want to get as close to actual earnings as you can, if possible.

For technology companies, the enterprise value to gross profit multiple (EV / NTM gross profit) is often appropriate. Many have significant upfront product development or research expenses, which skews earnings. Gross profit reflects their underlying profitability and can be used to compare valuations.

For companies with varying growth, you can normalize for different growth rates. One way is the NTM price-to-earnings-growth (PEG) ratio. Or you can use forward multiples on earnings further out. Such as forward three-year sales or earnings per share multiples. This can be appropriate for valuing long-term growth investments.

Multiples are based on either the market capitalization (value of equity) or the enterprise value (value of equity plus debt). Sales and operating profit are before interest expenses are paid, so it reflects potential cash flow to both equity and debt holders. For those metrics we'll use the enterprise value as a multiple, such as the enterprise value to sales multiple (EV / NTM sales).

Earnings per share, or net income, comes after interest expenses are paid, so it represents earnings for equity holders. For earnings, we'll use equity market capitalization as a multiple of net income. This is the price of the stock as a multiple of earnings per share, the price-to-earnings (P/E) ratio.

Find Appropriate Comps: Use These Sources

The best comparable stocks are companies with similar business models, target markets, and financial structures. If you are familiar with the industry, you'll have a sense of comps already. Think direct

competitors or peer companies. DermTech's comps are early-stage genomic testing or diagnostic companies. Here are some sources to help you find appropriate comps for a stock.

Research analyst coverage. Look for research analysts that cover the sector (healthcare diagnostics in this case). Search for the coverage list of these research analysts on Google or using a data terminal. Look at what other companies they cover. Analyst research coverage tends to align with the buy-side. You can see how institutional investors categorize the stocks and what comps they will use. Most diagnostic research analysts cover Exact Sciences ($EXAS). Other companies with analyst coverage in the space include Veracyte ($VCYT), Invitae Corp ($NVTA), and Natera ($NTRA).

Proxy filings for corporate peers. Form DEF 14A, which is filed with shareholder votes, sometimes includes a peer group. The peers are used to compare the stock's financial performance and executive compensation rates. DermTech does not list a peer group, though Exact Sciences does. One of its peers is Guardant Health ($GH), a direct competitor to Exact Sciences.

Mergers and acquisitions in the space. Deal multiples usually reflect the purchase of an entire company. These strategic acquisitions can give you a sense of valuations in the space from the perspective of large buyers. Exact Science purchased the genomic testing company Genomic Health ($GHDX) in July 2019. The Genomic Health acquisition deal multiple is a potential take-out valuation for DermTech if it can grow to Genomic Health's size and financial profile, and then be acquired by a larger company.

For DermTech, we'll use stocks with similar market capitalizations and revenue size to estimate the future value of DermTech's stock. $VCYT, $NVTA, and $NTRA are genomic healthcare diagnostic stocks that fit this criterion. The multiples of this group are also close to the $GHDX take-out multiple, which is a good supporting sign. We'll use the median historical EV / NTM sales multiple of this group to value DermTech's stock.

PUT IT TOGETHER INTO A PRICE TARGET

I like to value companies with five-year growth estimates. The timeframe depends on the type of business and the investment scenario. DermTech is at least a five-year story. It will take several years to secure insurance coverage and to build awareness among clinicians of the new product. Let's use the median multiple of our diagnostic comp group with our five-year sales forecast. This estimates DermTech's future enterprise value.

To get to the equity market capitalization, we'll subtract the expected value of net debt to calculate the stock's valuation. Take the enterprise value, minus the estimated future debt and add expected cash to calculate the equity market value at the end of year five. Then use the estimated diluted share count, after equity raises or share repurchases, to estimate a value per share. This estimates the future stock price by year five.

Next, discount back the year-five price with an equity discount rate to get to the present value of the stock. The discount rate incorporates a variety of investment risks. It creates a minimum hurdle return rate.

I like to keep it simple and use a high 20% discount rate for these early-stage stock investments. We'll get into discount rates in more detail in the next section. For volatile sectors, such as resources, it also makes sense to use a high discount rate to reflect the additional risks.

DermTech's estimated sales and comp multiple suggests $DMTK could reach close to $21 / share in five years or a present value of $8 / share. That's the price target for our financial model if the company can achieve its targets!

Comps (Genetic Testing)	**Historical EV / NTM Sales Multiple**
VCYT	6.6x
NVTA	5.5
NTRA	4.4
GHDX (take-out)	6.2
Median	5.9x

DMTK Forecast **Forward EV / Sales Valuation**	
2025E Sales ($M)	$223
Multiple	5.9x
Enterprise value ($M)	**$1,313**
Net debt (cash)	(99)
Market cap. ($M)	**$1,412**
Shares (m)	68.6
Value per share	**$21**
Discount rate	20%
Years	5
Present value / share	**$8**

Confirm the Critical Factor

Using the financial model, we can assess the impact of different scenarios, including different volumes of tests or average selling prices, or changing levels of margin and operating leverage. We can use the model to estimate the stock's valuation in these scenarios. We can also adjust the minimum discount rate and see the impact on the stock price.

When we simplified DermTech's business model, we expected test volumes and prices would be critical to the company's earnings. The DermTech financial model confirms that prices are the critical factor. Small changes in average selling prices lead to a significant impact on future earnings. Insurer reimbursement is the key to higher selling prices, and the key factor for the stock to work. This requires successful clinical studies, for insurers to see the value of the test. Any positive reimbursement developments will likely move earnings expectations and the stock price.

PRICE RISK INTO THE DISCOUNT RATE

Let's consider how to use the discount rate. The discount rate is the minimum rate of return an investor expects in compensation for the risk of investing in the security. There are several categories of risk present in all securities. These are layered together into the equity discount rate. A higher discount rate lowers the value of future cash and future earnings. This lowers the value of the stock, so the expected returns are higher to compensate investors for the risks. Here are the important risks that are present in the discount rate.

Inflation Risk

Inflation risk comes from price increases which lowers the future value of cash. Inflation risk is priced in the risk-free interest rate. This is usually measured by the market rate of a loan to the U.S. government, an entity that has never defaulted. The benchmark is the yields (market implied rate) of U.S. treasury-issued securities of various durations.

The overnight interest rate is set by the Federal Reserve's federal funds rate. The yield for longer durations of treasury securities (five to ten years) tends to include a premium over the overnight rate. The premium reflects potential policy rate increases or the risk of higher inflation. In the past, Federal Reserve policy rates have been set based on inflation trends, which tend to rise with faster economic growth.

The yield of the ten-year U.S. treasury bond (1.7% in late 2021) is the most common long-term risk-free interest rate benchmark. Treasury Inflation-Protected Securities (TIPS) have interest payments that are adjusted for inflation. TIPS yields, therefore, represent inflation-adjusted, risk-free interest rates. The difference between the yields of TIPS and treasury bonds (of comparable duration) is the breakeven inflation rate. It reflects the market's expectations of the inflation rate through that period.

Credit risk

Credit risk is the risk of cash not paid back from a loan. This is priced in the market rate (yield) of a loan to a company. One common

benchmark is an index of AAA-rated corporate bond yields (2.9% in late 2021). These are rates for the highest-rated corporate entities, meaning they have the lowest credit risk. The spread between the corporate bond yield and the comparable risk-free yield is the additional premium that exists to compensate investors for the credit risk.

If a company has sold bonds, we can see the market's expectation of its credit risk in the market yields of its corporate bonds. Look for individual company bond yields on the FINRA regulatory agency website. The Trade Reporting and Compliance Engine (TRACE) reports all corporate bond transactions. You can track company bond yields over time as a real-time indicator of the market's expectations of the company's credit risk.

Equity Risk

Equity risk is the risk the company does not generate earnings, which makes the equity worthless. Debt holders also have first claim to cash and assets from a company in a bankruptcy. Equity holders come last, only after debt holders are paid, so the risk for equity shareholders is higher.

Equity risk is measured in the rate of dividends and earnings yields. One common benchmark is the S&P 500 index. Take the S&P 500 index's expected dividend yield (1.4%) and add it to next year's earnings yield, or the earnings per share as a percentage of the price of the index (4.9%).

This is an implied equity risk estimate (currently 6.3% here) based on the rate of return from expected dividends and earnings. This measures the market's expectations of earnings risk of the largest 500 companies in the U.S. market. It is the expected return to compensate investors for taking on this equity risk.

Stock-Specific Risk

Idiosyncratic risk is the unique risk of an individual stock. This includes the specific risk of the company or the industry. When we invest in individual stocks, we take on this additional idiosyncratic risk. Our expected return should therefore be higher than the equity market benchmark. The higher 10–20% equity discount rate incorporates this additional unique risk into the minimum hurdle rate.

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Stop guessing and start estimating the stock price. The basic steps to a financial model are as follows. Estimate sales growth. Then estimate margins and expenses. You can now estimate future earnings. Then, estimate the business's working capital and investment needs. If it needs more capital, estimate debt or equity raises into your assumptions. This will impact interest and share count.

To price the stock, pick a multiple that can be used with comparable companies. The best comps are companies with similar business models, markets, and financial profiles. Look at research analyst coverage, proxy filings, and deals in the space. Use a discount rate that incorporates the expected risks of the investment.

How to Estimate the Stock Price

- Model the unit economics and revenue drivers.
- Create the margin and expense assumptions.
- Model the business's capital needs.
- Estimate capital from debt and equity.
- Estimate the stock price.
- Use comps from research coverage, proxy filings, and corporate deals.
- Confirm the stock's critical factor. Then incorporate risk with the discount rate.

INVESTMENT PRINCIPLE #1

ASYMMETRY

Invest in More Upside than Downside

HOW TO SIMPLIFY A BUSINESS	Find out how the company makes money. Look for managers who focus on customers, making targets, and generating cash flow. Look for recurring businesses that are unique and embedded with customers.
HOW TO READ THE FINANCIALS	Look for potential to scale in the unit economics. Identify operating leverage from the costs. Watch out for financial risks: bankruptcy, debt traps, delayed profitability.
HOW TO VALUE A COMPANY	Value the business based on its expected growth, or the expected cash flows of the asset. Invest in high incremental returns.
HOW TO ESTIMATE THE STOCK PRICE	Estimate the business's revenues, margins, and capital. Pick a valuation multiple with comparable companies. Create a target price.

CASE STUDY

ANALYZE FINTECH COMPANY UPSTART

Let's use the techniques we've covered to build an investment case for Upstart ($UPST), an artificial intelligence (AI) lending platform. We'll evaluate the risk and upside of this stock and then make an investment decision.

SIMPLIFYING THE BUSINESS: AI-LENDING ECOSYSTEM

Upstart ($UPST) provides an AI-based credit model for banks to decide whether to approve a loan. The AI predictive model uses more datasets than traditional models like FICO's. The company says the model can approve more borrowers with lower overall loan default rates. Upstart partners with banks and charges them a fee per loan approved. It also helps find borrowers with its own marketing strategy. Most Upstart-approved loans come directly from Upstart's website. Once approved, banks make the loans, which are then held by the bank or sold to an institutional investor.

Upstart's current focus is personal loans. Upstart's AI model approved just under 5% of the $98 billion in new consumer personal

loans issued in 2020. The company provides these statistics in its investor presentations. Management believes all lending decisions will be AI-enabled because the economics for lenders are better. Over time, it expects to expand Upstart's AI model into new loan markets, such as auto and mortgage loans.

Revenue growth is driven by loan transactions. Upstart's tremendously high annual revenue growth rate—200% in early 2021—caught my eye. Upstart's sales are driven by the number of loans it processes on behalf of its bank partners. In contrast, a typical bank generates revenues from the interest on its loans. Upstart can grow more rapidly since it does not do the actual lending. A typical bank is constrained by the amount of money it can lend out. The bank must consider the size of its assets, its cash availability, and its risk tolerance for defaults. Upstart can grow faster by signing on new bank partners to approve and process more loans.

Finding the drivers of personal loan growth. Upstart's investor presentation provided details on its addressable market of personal loans. I learned that these loans are used to consolidate credit card debt. I studied the historical trends of the personal loan market. I found data in the Federal Reserve Economic Data (FRED) database, and in loan reports published by TransUnion, a credit score provider.

Credit card debt and loans tend to increase with economic expansions, and then decrease with recessions. People can borrow more as their income and wealth rise as the economy grows and there are more jobs available. I expected positive economic growth and employment trends in the U.S. to support the growth of personal

loan transactions for the next few years. This in turn would drive Upstart's sales growth, based on the number of personal loans it approves.

Partnership growth strategy. In earnings calls, CEO Dave Girouard described Upstart's plans to expand through partnerships. I had recently read *How Google Works* and learned of Google's ecosystem strategy. Google partners with key players in the marketplace and supports the ecosystem. It avoids direct competition with existing businesses. The strategy was wildly successful in Google's growth. I thought Upstart could support the banking ecosystem with its AI model in a similar way. I believed the industry would readily embrace Upstart. In contrast, I thought fintech lending firms like LendingClub or SoFi Technologies, which compete directly with banks in offering consumers financial products, would face more competition.

SIZING THE OPPORTUNITY: PERSONAL LOANS

The size of the personal loan market was roughly $153 billion in 2019, based on reports from TransUnion. If Upstart's growth continues at its current pace, its market share will increase from 5% to over 17% in five years. This means Upstart could approve nearly $30 billion in personal loan transactions by 2026[5]. This is an aggressive assumption—why so fast? Upstart's business seems like the FICO score business. FICO's popular credit-decisioning product was widely embraced as an efficient way to check credit risk. All banks in the

5 Assumes total amount of personal and auto loans to grow at a 2.5% rate each year.

U.S. use FICO to make loan decisions. If Upstart's model prices risk as well as it states, banks can grow their businesses more profitably, with more loans at lower loss rates. I think this is a strong incentive for banks to adopt Upstart's model in their operations.

Upstart's loans average $10,000 in size[6]. I assume this average will grow by 2% yearly to reach about $11,000 by 2026. If Upstart achieves a 17% market share, that equates to $29 billion in personal loans. Dividing this amount by the average loan size, it could approve 2.7 million personal loans by 2026. If Upstart can also achieve a 3% share of the automotive loans market, that's about $7 billion in automotive loans. That would mean an additional 300,000 in automotive loans issued. I assume the fee per loan transaction grows with inflation at about 2% a year to reach $700 per loan. This means Upstart's revenues could grow from $850 million in 2021 to reach $2.3 billion by 2026.

Since Upstart will likely reinvest earnings into the auto loan business, there will be pressure on margins for the next few years. I do think EBITDA margins could eventually rise to 20% as the business scales. Upstart achieved these margin levels in early 2020 when its business was rapidly expanding.

VALUING THE STOCK: FINTECH MULTIPLES

The distinction between Upstart's transaction model versus a bank lending model is important for its valuation. Upstart makes money from fees per loan transaction as opposed to the interest rates on

6 Calculated using transaction volumes in dollars and numbers of loans disclosed in Upstart's 10K filings.

the loans. Bank lenders make money from the interest on loans but also take on the risk of loan default—the credit risk of the loans. When banks give out too many loans to borrowers who cannot pay back the loans, they lose money and run out of money to lend. Most transaction-based businesses do not take much credit risk, and can therefore grow more aggressively.

The price-to-earnings (P/E) multiples of these companies differ depending on the business model. Transaction-based models, such as those of LendingTree or FICO have 15–30x P/E multiples. LendingTree makes money from fees when matching customers with financial product providers. FICO makes money from fees when generating scores when new bankc ards are opened. Lending models, such banks and other lenders have 10–15x P/E multiples. These companies make money from interest on loans. Their stock valuations are lower to reflect the credit risk of making loans, which in turn, lowers the growth potential of these companies.

Upstart's business model combines a marketplace (like LendingTree) with a credit scoring system (like FICO). The median historical EV / NTM sales multiple of these transaction-based business models[7] is 5.6x. The median historical P/E multiple is 26.5x. I apply these multiples to my $2.3 billion revenue and $4 earnings per share estimate for 2026. This averages to roughly $87–$104 per share by 2026. I discount the stock by 10%, which results in an average present value of $60 for the stock.

7 I use Affirm, FICO, and LendingTree as the comp group.

Historic Valuation Table

	NTM P/E	EV/ NTM Sales
FICO (FICO)	19.7x	9.1x
LendingTree (TREE)	33.3	2.2
Affirm (AFRM)	N.A.	5.6
Median	**26.5x**	**5.6x**

UPST Price Target Summary

P/E	$65
EV/Sales	54
Average	**$60**

UPST Forecast
Forward EV / Sales Valuation

Sales '26 ($M)	$2,347
Multiple	5.6x
Enterprise value ($M)	**$13,146**
Shares (m)	150.3
Value / share	**$87.4**
Discount rate	10%
Years	5
Present value of share	**$54**

Forward P/E Valuation

Adj. EPS '26	$3.93
Multiple	26.5x
Value / share	**$104**
Discount rate	10%
Years	5
Present value of share	**$65**

ESTIMATING RISK AND UPSIDE

We'll now discuss the risk and reward of this stock. I'll show you my thought process and let you judge the opportunity. You now have a taste of this investment thesis. Is this type of investment suitable for your portfolio?

Risk: The risks to consider include what could go wrong in the business and what factors could make your investment thesis incorrect. Your risk is how much you will lose if adverse events happen and the stock heads to a lower valuation. Another risk is volatility, which is the price change of the stock. Volatility becomes a risk if you need to sell the stock to raise cash. If you buy stocks with borrowed money, volatility is especially dangerous. If the stock price falls significantly, you may need to add more cash or be forced to sell the stock. If prices decline and volatility increases, you may need to raise cash or sell the stock at lower prices to meet the margin requirements.

Here are critical risks I identified in the risk section of Upstart's 10K filing:

Business Model Risks

The investment thesis is based on banks adopting Upstart's AI loan-decisioning model to make loans. The incentive for banks is to increase their loan volumes while keeping overall loss rates low. Upstart-approved loans may have higher than expected loss rates, due to loan defaults and/or missed interest rate payments. This will mean the AI model may not be appropriate for all loan markets. The pool of potential bank partners will be smaller, so Upstart's potential

market share would also be lower. Fewer customers and potential transactions will reduce the stock's earnings potential.

Funding risk. Upstart distributes roughly two-thirds of the bank loans it approves to institutional investors. Upstart also partially finances these loans for a short time—which you can see on its balance sheet. This means there are some market-related risks that Upstart takes in its business. It relies on institutional investors and market funding sources to purchase these loans. There is a risk that these capital sources could become limited in times of market distress.

Consumer lending cycle. Consumer lending tends to contract when there is a downturn or a recession in economic activity. This creates a cyclical risk of an economic downturn negatively impacting the company's earnings. FICO's earnings declined by roughly 15% in 2009 due to fewer transactions. Credit use declined after the 2008 recession and financial crisis. Upstart's earnings could decrease similarly in an economic downturn. Fewer consumer loan transactions would lead to lower earnings.

Capital requirements. While Upstart is cash-profitable, the company is investing heavily for future growth, so its earnings are expected to be minimal. It may need to raise capital to finance new acquisitions, or launch a major product strategy. Upstart could raise more equity and sell additional shares. More shares would lead to lower earnings per share for existing shareholders. Upstart would need to grow fast enough to offset this dilution. The stock's value will also be sensitive to changes in growth trends.

Volatility-Related Risks

Stocks of high-growth companies can be very volatile. Fintech company Block (formerly Square, $SQ) saw its shares trade at EV / NTM sales multiples between 3.5x and 12x through 2018–2021. Valuations bounced up and down as its revenue growth improved and slowed each year. Upstart's multiple could be similarly volatile. The stock's value is based on earnings several years out. The stock will therefore be very sensitive to changes in expected growth rates and profitability. The option-implied annual volatility for Upstart's stock is 90%, which means the stock's price range could be this wide.

Time: The thesis's timeframe is several years. Upstart's sales cycle for new bank partners is between six and fifteen months. CEO Dave Girouard expects it will take at least two to three years to enter a new market like automotive loans. So, the timeframe for Upstart to show meaningful progress is at least one to two years to grow its current personal loan offerings. And it will likely take three years or more for Upstart to establish itself in new loan markets. Once a bank partner is in place, loans can be approved almost instantly. Close to 70% of Upstart's loan approvals are fully automated. This means that once Upstart has enrolled several lending partners, it can scale up transaction volumes quickly if consumers embrace the offerings.

Return: The potential return is based on the stock's future valuation based on our estimated earnings and multiple. We assume Upstart will achieve a sizable share of the personal loans market, and make meaningful progress in the auto loan market. This will generate Upstart's earnings. We also assume investors will value the company as a transaction-based financial technology firm. This leads to our multiple.

Upstart could see more upside potential with scale. Since most of its loans are automated, it can likely increase its margins as it expands. The costs of approving loans are technology-based (i.e., infrastructure and servicing costs), and are likely fixed. Upstart could improve its contribution margins, which are the gross margins of its loans. If its earnings grow faster than expected, the stock has more upside.

If the estimated price target offers a 20% or higher potential return, I think the stock offers enough upside versus the risk.

Critical factors. First is the performance of loans approved by Upstart's AI model. The loss rates of Upstart's approved loans will be important to monitor. Second is the product's adoption across lending markets. Loan volumes and market share will be important indicators of Upstart's progress. Third is the consumer lending cycle. Loan delinquencies will be an essential indicator for overall bank lending to expand or contract.

I'll focus my research efforts on these factors. For example, I'll search for any credit quality data on $UPST-approved loans. I will compare this with FICO-approved or other bank-model-approved loans. In addition, I'll study the auto loan market to see if there are any structural differences compared to the personal loan market. I'll also closely monitor default and delinquency trends in consumer lending.

PART II

INVESTMENT PRINCIPLE #2: CHANGE

INVESTMENT PRINCIPLE #2

CHANGE

Invest in Stocks That Will Last

Once we've found asymmetry in a stock, we'll look for supportive change and patterns, to identify a long-duration investment. Investors always look for favorable situations.

First, we size the business opportunity. Then, we estimate growth based on the type of change, distinguishing between secular and cyclical change. Finally, we look for business value and industry structures that support lasting advantages. We'll also think like an insider to find the most valuable businesses.

This section shows you how to look for companies that likely have strong earnings potential and higher returns. These are the power laws in action. The focus is on finding the few companies with the most profits to drive the longest returns for your portfolio.

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CHAPTER 6

HOW TO IDENTIFY A STOCK'S TRUE POTENTIAL: ADDRESSABLE MARKETS

A business grows[1] by investing its earnings into new opportunities, such as developing new products and services or expanding existing ones into new markets. Higher earnings lead to a higher stock price. The stock's long-term upside is therefore dependent on all the potential business opportunities. This is called the total addressable market (TAM) of the business.

"What's the TAM?" is often the first question an investor asks. The TAM represents all customers the business could potentially serve. Once you understand a company's TAM, you can estimate its long-term earnings power based on the growth opportunities of the business. You can also anticipate how change will impact the business's earnings trajectory.

The concept of a TAM is straightforward. You need an accurate

1 If a business does not expand, it simply produces cash, like a bond, and likely provides dividends for investors.

perception of the type of customers, the business value provided, and the drivers that make the market. The expected TAM is critical to a stock's valuation. You can see this in the following examples from the education sector. These stocks moved dramatically due to investors' changing TAM estimates.

DEFINE THE ADDRESSABLE MARKET: STRATEGIC EDUCATION IN THE 2020 PANDEMIC

Strategic Education ($STRA) provides college degree programs online and on campuses nationwide. The programs are targeted at working adults. Strategic was a great investment story in the education sector. Strategic's enrollment growth was one of the best in the industry. Its schools had effectively cut tuition prices with scholarships and had become more competitive. Strategic attracted high-quality students[2] through partnerships with corporations like Ford and Chrysler, providing low-cost degrees for their employees.

Strategic's growth came from an addressable market of corporate employees. Many worked in the retail, food service, auto-dealer, and telecom sectors. These were working adults taking degree programs part-time, to advance their careers through education. Strategic's management had said on earnings calls that its business improves when the economy improves. More working adults lead to higher enrollments.

Then the COVID-19 pandemic hit in 2020. New investors—

2 Quality student metrics such as low student loan default rates and debt-to-earnings ratios.

particularly fast money hedge funds—bought the stock as a recession investment. The thinking was education was a counter-cyclical business that would do well in a downturn and that unemployed workers would take new degrees to upskill themselves. This would benefit Strategic's degree business. This happened in the 2008 recession. Their mistake was that those types of students were not Strategic's TAM.

Most of Strategic's potential students were in sectors directly impacted by the pandemic. Many were furloughed or laid off due to the pandemic-related shutdowns. With fewer working adults, Strategic's TAM contracted. So, what happened with the business? New enrollment growth downshifted from a 15%+ y/y pace to a 20% *decline* y/y in the first quarter of 2020. Strategic's management announced this at the end of a conference call, after the usual Q&A. This amplified the surprise to investors. What happened to the stock?

Lots of selling. The stock dropped from $180 to $100 in two days. Our desk was flooded with calls from investors in the stock. I explained the addressable market dynamics to one aggressive investor. He immediately asked, "Okay, where is this piece of (technical term) going, $70?" I did some quick mental math—calculating the implied decline in EPS with a lower education downturn multiple—to confirm. Yes, the $70 level was in the cards. Strategic's stock settled in the low $50s as the stock reflected lower expected earnings in the recession. The lesson? Get the total addressable market right.

FIND AN EXPANDING MARKET: CHEGG'S PIVOT TO A DIGITAL MODEL

Let's revisit Chegg and its business pivot. We saw how Chegg's digital

content business could scale faster and more efficiently, compared to the rental business. Chegg's pivot also expanded the company's TAM. As a textbook rental company, Chegg served the 40% of college students who use textbook rentals. As a digital content business, Chegg would provide digital services to college students.

Chegg's TAM expanded from students who rent textbooks, with its rental service, to students who need homework help, with its study tools. Which market is larger? It turns out that nearly all college students need study help. Both strugglers and high achievers say they turn to remedial resources for support. Chegg filled a large need.

The company paid publishers license fees to create textbook help content. It bundled the solutions together into the Chegg Study service and marketed it with a digital content strategy. Students absolutely loved it. Subscribers grew 30–40% annually as the company rapidly signed up students. With a large audience of potential subscribers, revenues grew from $250 million to $650 million in five years. The stock price increased more than three-fold from 2017 to 2021.

Chegg's new TAM was critical to seeing this earnings potential[3].

The COVID-19 pandemic then disrupted the market. Investors first thought Chegg's market expanded in the pandemic. As students took more online college classes, they also signed up for Chegg's study tools. Chegg's stock doubled in price between 2020 and 2021, from $40 to $80 / share, as its subscription growth accelerated. Then in

3 You can usually find information on TAMs in 10Ks, presentations, or transcripts of investor events.

late 2021, Chegg's management realized there were fewer college enrollments. Many students did not go back to school the following semester. Management projected slower subscriber growth. The stock then came right back down to a $25 / share level at the end of 2021.

In 2021, Chegg expanded its study tools to international subscribers. Chegg Study launched in several English-speaking countries, such as Britain and Australia. The international expansion of its TAM could drive the next leg of growth for the company. Figuring out Chegg's new TAM will tell you what price the stock can go to next.

Remember the leaders of the index earlier? Here are the TAMs of those companies: Amazon (200 million Prime members), Google (4 billion online searchers), and Meta (formerly Facebook, 3 billion social users). These massive addressable markets created the largest companies in the world. The addressable market is what creates the earnings upside for a stock's returns.

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A business needs a total addressable market (TAM) to grow. Pay attention to the target customers described in investors materials and earnings calls. If the business truly has found a large number of potential customers it can serve, the stock has lots of upside. New markets can come from new products or initiatives. Make sure to get the TAM right when picking a stock. A mis-read TAM can lead to issues for the stock. A large, expanding TAM can mean a sizable upside.

How to Size Up the Business Opportunity

- Define the business's total addressable market (TAM) of potential customers. This represents the growth opportunities for the business.
- Large, expanding markets create significant upside for a stock.
- The TAM expectations are critical for a stock's potential returns. Get it right!

CHAPTER 7

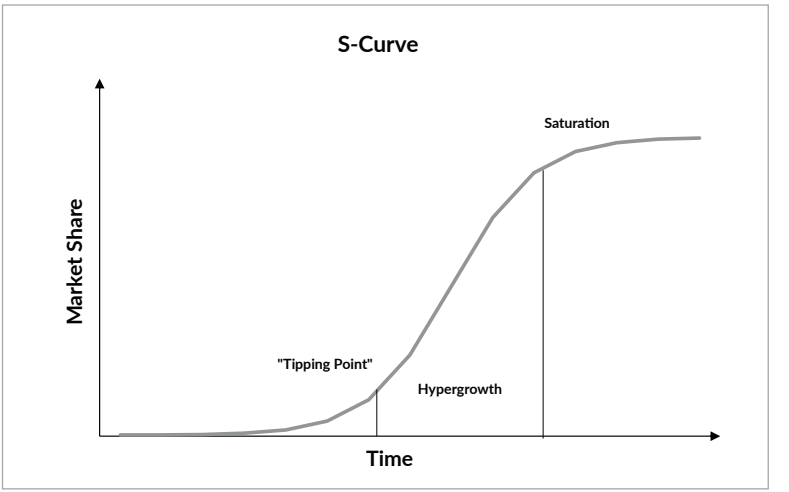
THE PRINCIPLE OF GROWTH: HOW TO FIND UPSIDE OPPORTUNITY

Once you have sized the TAM, the S-curve is one way to estimate growth. Use the S-curve to model growth for innovative companies or new entrants in a market. Either a new category is created, or shares are taken from incumbents. The S-curve models the historical patterns of technology in new consumer or business products[4].

Once a product has reached critical mass with its early adopters (typically 10% of the market), it passes a tipping point This happens when the product reaches the early majority (typically 70–80% of the market). As adoption reaches 50% of the market, growth typically slows as new competitors emerge.

Once market share passes the sweet spot of 5–10%, the product has likely found a firm footing in the market. You want to invest at this

4 Alex Sacerdote uses the S-curve as part of Whale Rock Capital's investment process in combination with finding competitive advantage, operational abilities, and long-term earnings power.



point. The company could enter the steeper, rapid adoption phase of the S-curve. The stock will re-value to reflect growth acceleration, ideally as the company also scales up earnings. You can then estimate its growth trajectory. The five typical adopters in a market are as follows.

Innovators. A new product or technology is first adopted by the innovators, who typically represent 2–3% of the market population. They enjoy experimenting and will purchase a new product to see what it can do.

Early adopters. Then come the early adopters. Typically about 10% of the market population, this group will adopt new technologies to solve a concrete problem. They are usually opinion influencers as well. Once a critical mass of early adopters has developed, the diffusion of a technology or product starts to spill over.

Early majority. Next comes the early majority. Typically representing 40% of the market population, these buyers will wait until a product

starts to become mainstream. They purchase based on standards developed under the influence of early adopters. Early adopters and early majorities are usually financially well off, which allows them to buy new technologies.

Late majority. The late majority represents 30–40% of the market population. They will adopt a product once it is further developed and designed for the mass market. The late majority is made up of followers who are more risk averse compared to the early majority. They are uncertain about their ability to use technology.

Laggards. Laggards are averse to technology and resistant to change. Laggards typically represent about 10% of the market. If they buy a technology, it is mainly because the product has become so pervasive, they have little choice but to use it.

You'll see in the last major section how an S-curve can be used to build an investment case for MSCI's new ESG business. For now, we'll show this with a household example from the world of streaming content and television.

DISCOVER A NEW CATEGORY: ROKU'S ADOPTION CURVE

In 2010, Roku ($ROKU) introduced a new product—a low-cost device to stream online content. Consumers could use the player to watch online content directly on their TVs. The first model was developed in collaboration with Netflix, where Roku's founder was formerly an executive. Roku then partnered with TV manufacturers in 2014 to offer a built-in Roku operating system (OS) as part of a new category of smart TVs.

Roku's low cost and ease of use helped it win over early adopters. Since it was a neutral platform, it could offer content from all networks and streaming services. This further expanded its appeal. Roku reached a 10% share of smart TV devices in 2016. The stock went public a year later. In hindsight[5], this marked the tipping point of 5–10% share, ahead of the acceleration in Roku's adoption curve.

As more customers turned to streaming services for content, the adoption of Roku's platform also accelerated. Sales grew 29% y/y in 2017, then accelerated to 45% y/y in 2018, and then 52% y/y in 2019. The stock price rose from $20 in late 2017 to reach $110 by early 2020, representing a 5x bagger return.

Roku grew to be the leader of smart TVs. The company's market share of smart TVs reached 31% in 2020. However, by this point, 80% of U.S. households owned a smart TV, meaning the S-curve for streaming TVs was near its peak. To continue to grow device sales, Roku's smart TVs now need to take market share. Or Roku needs to partner with new TV manufacturers, or expand into new markets. Growth could slow as Roku now faces more competition. Most consumers already have connected TVs. As Roku's growth slows, the stock will re-value to a lower multiple, as it did in early 2021.

Roku still has a strong market position. With a nearly one-third market share in smart TVs, Roku has a platform to offer new services. The business can find new opportunities, such as the Roku

5 I invested in Roku in 2018 and, alas, sold it (too soon) a year later. My mistake? Not sizing the long-term upside.

advertising platform. Roku is also developing ad-supported services, like the Roku Channel. The next phase of the company's growth will come from the TAM of its advertising-related services. Once this becomes clear, the stock will then reflect this opportunity.

LOOK FOR MEANINGFUL CHANGE: IDEA PROMPTS

Attractive investments come with change. Recognize a trend clearly and you often spot a market opportunity. Consider the following prompts and see what comes to mind. Learn to identify change and you'll likely find a growing business. We'll dive into several of these examples in more detail in the expectations section.

Spot the Signs of Change

New products. Index provider MSCI ($MSCI) sees strong sales in its environment, social, and governance (ESG) business, which provides data and indexes to support ESG investing strategies. Growth is driven by capital flows into ESG funds and broad ESG adoption across the institutional investor community.

Strategic change. Chegg ($CHGG) pivots its textbook rental business into a digital student services business, which expands its addressable market and creates the foundation of a higher-margin and higher-growth business. Growth is driven by more college students using digital services to help with their academic work.

New management. Playboy ($PLBY) makes several acquisitions and key leadership hires to expand the Playboy brand to multiple consumer markets, increasing the potential future earnings of the company. Growth is driven by the increasing market share of

Playboy-branded products and services in these markets.

Labor trends. AMN Healthcare's ($AMN) travel nurse staffing services see stronger growth from rising nurses' wages due to staff shortages amidst higher hospital admissions. Growth for staffing services is driven by increasing demand for healthcare services, particularly from hospitals, and the limited supply of nurses in the industry.

Economic improvement. Equifax's ($EFX) credit bureau business sees more fees from mortgage credit checks due to rising sales of residential real estate. Growth is driven by inquiries and the issuance of new mortgages. The company's workforce solutions business sees improving sales in income and employment verification services. Growth is driven by rising employment as economic activity expands.

Industry cycle. Bath & Body Works ($BBWI) sees stronger growth from its retail stores re-opening as more consumers shop in malls. Sales growth is also driven by rising consumer incomes in an expanding economy, which tends to drive more retail spending activity.

Demographic changes. An aging Boomer population leads to more diabetes patients, many requiring care management. This trend drives sales of continuous glucose monitor devices from companies like DexCom ($DXCM). Growth is driven by the number of insulin-using patients who use these devices.

Policy changes. Climate change regulation and consumer demand for low-carbon products drives corporate demand for carbon offsets. Carbon Streaming Corporation ($NETZ) raises capital to invest in carbon credit projects. Growth is driven by carbon price levels and expected sales of carbon credits.

New technology. Electronic payments drive the growth of payment networks provided by Visa ($V) and demand for point-of-sale systems from Lightspeed ($LSPD). Growth is driven by the volume of transactions that occur on these networks and systems.

Differentiate Between Cyclical and Secular Change

When looking at a business opportunity, it's important to recognize if the change is secular or cyclical. Secular opportunities last for many years and usually represent an expanding addressable market. Cyclical opportunities are more limited in time, as the addressable market has ups and downs. The key thing to remember is investments in cyclical stocks need proper timing and usually require a study of supply and demand. Investments in secular stocks can be held for many years. They usually require a study of addressable markets and the underlying growth curve.

Secular change is fundamental or structural change. It usually reflects a permanent shift in the marketplace. Technology often enables this change—Chegg's digital services model and Roku's streaming platform were built on the internet. Demographic changes are the other major driver. The growing Millennial workforce is one reason for the growth of indexes and exchange-traded funds (ETFs). These products are often the default choice for Millennial retirement accounts.

Cloud software services are an example of a secular trend. Twilio ($TWLO) provides infrastructure for businesses to communicate digitally with customers. It makes money with fees based on messaging usage. It is enabled by the widespread use of smartphones

and the need for businesses to reach customers digitally. Snowflake ($SNOW) provides a data warehouse. This helps enterprises create insights and data-intensive applications. It makes money with fees based on the consumed storage, computation, and data resources. It is enabled by the growing use of data to make business decisions.

Other major trends, like athleisure in retail, crypto in finance, and social media in communications, all represent secular change. These are all enabled by technology and new demographics.

Cyclical change is change that moves in cycles, marked often by booms and busts. The economic cycle influences many sectors. For example, as the economy expands, more people have jobs with health insurance. This leads to more demand for healthcare services, which creates nurse staffing needs for hospitals. This drives more growth for staffing companies like AMN Healthcare. The reverse then happens when employment declines in a recession.

Industries also have their own cycles. Historically, the tanker industry has seen decade-long cycles of booms and busts. Scorpio Tankers' earnings fluctuates based on the balance of available ships and the demand for oil transport. An excess of ships leads to lower earnings, while a shortage of ships leads to higher earnings. Consumer tastes also change constantly. This leads to product cycles in retail companies like Bath & Body Works or gaming cycles for companies like Electronic Arts. Other sectors, like housing, resources, and semi-conductors, all have their own cycles. These are driven by the changing balance of supply and demand. Capital movements also strengthen these cycles since capital finances supply expansions.

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The growth rate is the foundation for a stock to appreciate. Use the S-curve for new categories of products. The best time to invest is when the company reaches close to a 10% share, meaning it has been embraced by early adopters. Growth will likely accelerate at this stage of its life cycle.

Find investment ideas by looking for change. Look for new products, strategic changes, and/or new management. Or pay attention to trends in industry, demographics, or policy. Change creates growth opportunities. Cyclical change is temporary and has ups and downs. Cyclical stocks require investment timing. Secular change represents a permanent shift. Secular stocks can be held for many years.

How to Find Upside from Growth

- The growth rate is the foundation for a stock to appreciate. Use the S-curve model to estimate the growth of new products and services in a market.
- Look for meaningful change to spot new growth opportunities. Cyclical change moves in cycles of booms and busts, often due to supply and demand trends. Secular change can last for years and represent an expanding market.
- Cyclical stocks need proper timing, depending on the balance of supply and demand. You'll learn how to do this in a later section.
- Secular stocks can be held for many years, depending on the adoption curve and the addressable market.

CHAPTER 8

THE SECRET TO FINDING VALUE IN A SECTOR

You've found a sector or trend that you like with a few business models that look attractive. Now you want to pick a company in this area. How do you do it? Well, you could study the history of the sector and then develop your own criteria of what makes a company valuable. This is okay, but it will take time. Also, you risk either knowing too much, becoming product-focused, then falling in love with a company, or knowing too little, relying on abstract investor principles, then rejecting a promising company.

THINK LIKE AN INSIDER

The fastest way, in my experience? Use mental models of the leaders in the industry! Look for what they find most valuable—particularly for strategic acquisitions. Then, incorporate this framework into your investment thesis. Managers will often describe their own mental criteria of what makes a company valuable in the sector.

In the world of data business, there are a wide variety of companies, including ComScore, S&P Global, Moody's, MSCI, CoStar, Dun and Bradstreet, RealPage, Verisk, and IHS Markit. They all share a similar business model but are in different sectors. What makes one more valuable than the other?

I noticed that Verisk's CEO at the time, Scott Stephenson, had three criteria for making a strategic acquisition. The company to be acquired must have proprietary data, be embedded in workflows, and have a first-mover advantage. By focusing on companies with proprietary data, I was able to quickly screen and identify the most valuable stocks. Then, studying how the data is used allowed me to narrow this list further to the most embedded businesses. Companies that fit both criteria also tended to be the first movers into their respective markets.

This approach works quantitatively as well. I searched for industry analysis on the valuations of M&A transactions. One consultant, Outsell, did a study of corporate deals in the sector. It found that organic revenue growth was the primary driver of M&A valuations, and the price buyers will pay to acquire information firms. Organic growth was the quantitative criteria to determine what makes a data firm valuable.

The ideal value framework considers the company's strategic value as well as its growth. Growth can be measured by earnings growth. The characteristics of proprietary data, embeddedness, or first-mover advantage likely add a premium. It makes the company more predictable and more dominant, therefore valuable.

To put this together, I can take the earnings multiple, normalize it to earnings growth, and compare it to the market multiple. The valuation I used was a forward price to earnings (P/E) to growth (or PEG ratio), compared to the S&P 500 index's PEG ratio. I used the relative PEG premium to compare information services stocks. Now I have a valuation range for information services stocks.

To find what else impacts valuations, I also looked at times when the stock multiples changed significantly (using a simple P/E). Reading the earnings transcripts, I could see what changed. It was usually the growth trends of companies' end markets. For example, the end market for credit rating companies S&P Global and Moody's is corporate bonds issuance. When the volume of new issuance slowed or contracted, the multiples of these two stocks tended to decline as well.

Now I have a framework to pick stocks from this sector. I'll use a combination of strategic characteristics, organic growth, and end-market trends. I have a selection of data companies with proprietary data and embeddedness characteristics. I can selectively invest or diversify in these stocks based on the trends in their end markets. I used the valuation range as a reference point for prices. MSCI met the strategic criteria, had the strongest organic growth profile, and also had positive end-market trends. I chose to professionally recommend it to my institutional investor clients. This worked out really well for investors. MSCI was the best-performing stock of the group in 2016-2021. It was also one of the top ten returning stocks of the S&P 500 index for that period.

Use Executive Frameworks

Waste companies: Waste executives say landfills are the most valuable assets. They would acquire any landfill if given the chance. The highest-margin companies in the space are Waste Management and Republic Services. They own and control the most landfill assets. Waste managers like franchise markets, where one waste company is the exclusive provider. These markets have the best price trends. The fastest-growing companies in the space are Green for Life, Waste Connections, and Casella Waste Systems. All these companies focus strategically on franchise markets.

Staffing companies: Staffing executives look at bill rates when looking at staffing businesses. ASGN Inc. (technology) and AMN Healthcare (healthcare) focus on professions with the highest bill rates. They are the fastest-growing public staffing companies. And they are usually the best-performing stocks in the sector.

Education companies: Education operators prefer to acquire schools with the highest student quality. You can measure quality with student debt-to-earnings levels and student loan repayment rates. You can use this to screen education stocks. Strategic Education and Grand Canyon Education show the highest-quality metrics. These two companies have the best enrollment growth and margins.

LOOK FOR SUPPLY CONSTRAINTS

Another way to find value is through the economic principles of supply and demand. Look for supply and demand imbalances to find where prices will rise. Then identify the companies that provide

the services or goods that are in limited supply. There is where you will find a valuable businesses in an industry.

Supply and demand is most useful when the supply of goods and services is constrained. For example, there is demand for waste services (trash volumes) versus supply of waste services (disposal capacity). The supply of disposal capacity is limited, which makes waste disposal companies valuable. Copper mines will produce a limited amount of the commodity. When there is more industrial demand for copper, the mines become more valuable.

This framework can also apply to intangible businesses. Proprietary real estate datasets owned by companies like Black Knight or CoStar are also limited in supply. No other company can create this data. When there is growth in real estate, demand for these data services increases. The datasets become more valuable.

Supply and Demand of Trash

Let's walk through how supply and demand shapes the structure and earnings of the waste industry. Think about your household trash, which is known as municipal solid waste (MSW). A garbage truck picks up the trash bags each week. Its next stop is a transfer station. Then another truck transports the waste to the disposal service. This is typically a landfill, alternative recycling facility, or waste-- energy plant. To a waste company, the demand is the volume of trash, and the supply is the various disposal services.

Demand for waste disposal. The Environmental Protection Agency (EPA) regulates the U.S. waste industry. It collects data for municipal

solid waste or residential waste. On the EPA website you can find MSW waste volumes, which have grown 1–2% each year as the population expands, even as waste per capita (person) has declined over time. Most MSW waste is disposed of in landfills. The data suggests that demand for waste disposal will likely steadily increase, as long as this trend continues.

Supply of waste disposal. A company like Waste Management ($WM) provides disposal services in two ways: through its fleet of trucks for trash collection, and landfill facilities for trash disposal. What is the industry supply of landfills? Waste Management's annual filings show that regulatory permits are required to operate landfills. And these permits have become more difficult and expensive to obtain. A Google search can show some research on landfill capacity. One thing is clear. No new landfills have appeared since the 1990s. The number of landfills is fixed. Landfill capacity can only be added to existing ones with regulatory permits and approvals.

Landfill disposal fees. Demand (waste volumes) rises while supply (landfills) remains fixed. What do you think will happen to landfill prices? They will likely go up. A quick search confirms this. Landfill disposal prices, known as tipping fees, have steadily increased since the late 1990s. Rising fees mean higher profit margins for the owners of landfill businesses since these facilities have high levels of fixed costs.

Earnings of landfill owners. We'll now look into the finances of the largest landfill owners, Waste Management ($WM), Waste Connections ($WCN), and Republic Services ($RSG). These three collectively own two-thirds of total landfill capacity in the U.S.

How do these businesses do in this kind of environment?

Looking at revenues over time, you'll see that revenues have grown at a 2–4% rate each year. All three waste companies have high profit-margins. They post 30+% in EBITDA or cash operating margins. This is well above those of industrial businesses like Caterpillar ($CAT), which typically has 20% cash margins. Margins have also expanded over time, so earnings for waste companies have grown at a much faster 10% annual rate. Stock valuations (measured by a P/E multiple) for waste companies have also risen with margins over time, so these stock prices have increased 10–15% each year.

When we focus on specific regions where landfill disposal capacity is near its limits, we see an even greater effect. Many waste companies disclose regional exposures in their annual 10K filings. The Northeast United States has limited landfill capacity, and its tipping fees are also the highest in the nation. Casella Waste ($CWST) owns and operates landfills exclusively in the Northeast. From 2015–2021, Casella grew its free cash flow at an even faster 15–20% rate. This growth was supported by rising regional landfill prices and small acquisitions. With rising multiples, Casella's stock price increased an average of 30% each year!

Why Landfills have Higher Margins

Why is the landfill business more valuable than the collections business? After all, the collection of waste is essential. Let's walk through the business from the perspective of a garbage hauler. Our friend makes some money collecting waste. You say to me, "Let's start a waste company. We'll rent a garbage truck and find a collection

contract to bid on. We can collect trash tomorrow and then get paid! There are no barriers to starting the business. Let's do it." Now think about what would happen if everyone in our town decided to do this as well.

When a hundred haulers bid for a few contracts, collection prices go down. When the city puts up collection contracts, private haulers can only compete with lower prices. The service is a commodity since everyone offers pretty much the same service. Collection fees turn lower, while the costs to operate the collection trucks stay the same. So profits for the collection business decline as the margins compress.

Now switch to the perspective of the landfill owner. There are now hundreds of haulers competing to collect trash. There is no way to create a new landfill, and no alternative disposal service. Permit requirements mean only existing owners can add capacity. The landfill owner does not worry about competition taking away business.

Because of this, landfill fees have historically increased by roughly 10% per year. Most landfill facilities earn over 30% in cash margins. Even when it is time to expand capacity with regulatory approvals and permits, the landfill owner can raise its fees to cover the additional costs. The landfill business can maintain a reasonable rate of return. The limited supply and regulatory barriers protect it from competition. This advantage is what makes the landfill business valuable.

The underlying theme is money attracts new competition. Lower-cost services arrive to compete, and lower prices drive down

margins. This pattern has been observed over and over in business. For example, in the early 2010s, the U.S. oil production industry grew rapidly, enabled by new ways of extracting oil and gas from shale. Profit margins reached as high as 40% for some companies. This attracted a huge influx of capital, which nearly doubled U.S. oil production in less than five years. The flood of new oil helped precipitate a rapid decline in oil prices. Margins compressed across the sector. Many oil production companies were barely profitable for the next decade. The question is, how can a business protect its margins from competition? We'll answer this in the next chapter.

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The secret to finding value is to think like an insider. Look at the criteria executives use to make strategic acquisitions. This will greatly simplify your thinking. Find the assets that are in limited supply. Once you understand which assets are valuable to insiders, you will have an idea of what stocks will likely perform the best in a sector.

How to Find Valuable Assets in a Sector

- Think like an insider to quickly find the most valuable businesses. Use the criteria executives use to make strategic acquisitions to identify what is valuable in a sector.
- Look for supply constraints in assets or resources. It creates higher prices when demand rises. Find the companies that own these key assets.
- Businesses protected from competition tend to have higher margins. They are more valuable.

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CHAPTER 9

HOW TO FIND LONG-TERM WINNERS: SIMPLE PATTERNS AND STRUCTURES

The world of business isn't fair. Strong business models come when a company successfully differentiates from its peers. When it does, it faces reduced competition. This means stable prices and better earnings for shareholders.

To find potential long-term winners, study patterns of competition. Start with market share. Pay attention to which firms are gaining share and which ones are losing share. See if there are new entrants.

Look for a business that has high market-share, as this suggests structural advantage. Figure out why it is so dominant. Usually, it's not a secret—these are leaders of their industries. Dominant businesses are protected from intense competition. Look for signs of price increases and rising profit margins.

Avoid businesses that face too much competition. This usually means there are many similar products or services offered in the market. Intense competition will lower prices, which lowers profits

for investors. Or worse, competition will lower sales for the business, if it loses market share to other producers.

FIND PATTERNS OF DOMINANCE

There are patterns to winning positions. Business strategy often plays an important role. Leaders can acquire intermediators or suppliers to integrate the industry. This integration usually supports stable prices and market share. The business can embed its service into customer workflows, which limits alternative providers. All these strategies make it harder for new competitors to take market share, so profits will be more stable. Some industry structures naturally lead to dominant businesses. In the industry for data benchmarks, many customers concentrate on one or two providers. Patterns like these are building blocks for a company's dominance. The more you find, the more likely the company can grow earnings for many years. These patterns create a stable, high-returning stock to invest in.

Here are a few examples of how companies achieve dominance.

Dominant Market Share Examples

- Social networks (Meta, Snapchat, YouTube)
- Search (Google)
- Credit ratings (S&P Global, Moody's)
- Waste industries (Waste Management, Republic Services)
- Indexes (MSCI, S&P Index, FTSE Russell)
- Software (Microsoft)

Controlling the Path to the Customer: Bath & Body Works

Distribution, or the path to the customer, is extremely important for any business. It can be a critical advantage in a business model. Controlling distribution channels provides value to customers and eliminates intermediary fees.

As discussed earlier in this book, Bath & Body Works ($BBWI) designs and distributes its own brand of body care and fragrance products. The company distributes the products through its own network of retail stores and its online platform. It can create a unique shopping experience with its sleek and stylish retail stores. Bath & Body Works frequently launches new soaps, fragrances, and candles to match customer tastes. The experience is integrated with its digital platform. The company also operates distribution centers to support its operations. This allows it to position inventory closer to stores and support changing customer demand.

Integrated operations allow Bath & Body Works' business to be highly agile to change. During the COVID-19 pandemic, many of its retail stores were faced with shutdowns and capacity restrictions. The company adapted its distribution to the new environment. It discounted its retail inventory and shifted product distribution to its online channel. Bath & Body Works grew its online sales as customers ordered its home products: soaps and sanitizers, home fragrances, and body care products. The company continued to grow even as its physical retail stores saw steep declines.

Profit margins are also higher because of this integration. Bath & Body Works' operating margins are 29%, compared to a much lower 13% at Hanesbrands, a similar-sized retail company. Hanesbrands

owns several leading innerwear and activewear brands. It distributes its products wholesale through mass-market retailers like Walmart. Hanesbrands' operations have lower gross margins, in part due to the lower wholesale prices for its products. The company must compete for limited shelf space at retailers by discounting its merchandise or offering promotions.

Vertical integration is when a company owns and integrates the supply chain and distribution of an industry. Companies that do this can become mini monopolies. CoStar ($CSGP) consolidated the critical datasets used by commercial real estate professionals. For thirty years, CoStar built and acquired various databases, including property records, sales listings, transactions, leases, tenants, and so forth. CoStar now owns and operates the most comprehensive commercial real estate database.

The CoStar database subscription is a requirement for most commercial real estate firms. CoStar distributes the information through its own online platform. Intermediaries, such as information brokers or data collection services, are eliminated. CoStar can now add valuable services to its platform using this proprietary dataset. The data is used to create analytical tools for customers to see trends and insights. CoStar continued to add new assets by acquiring several digital real estate marketplaces. It is now integrating marketplace listings and advertising services for property managers and landlords. CoStar has integrated the datasets, and now marketplaces, of the commercial real estate industry. It gets to keep almost all the profits related to these services. CoStar has limited competition, stable growth, and a very healthy 24% cash margin.

Controlled Distribution Examples

- Bloomberg (Financial information)
- Google (Search)
- CoStar (Real estate information)
- Amazon (e-commerce)

Integrating with Industry: Gartner, Moody's, DNB

There are businesses that provide a critical part or service for an entire industry. Since the business is essential to its customers' operations, it rarely loses sales. Customers are unlikely to switch to other providers, so the business has few competitors. The business's product is also a relatively small cost for the customer. These are called toll road businesses[1]. This is my favorite type of business model and likely one of the strongest out there. These are embedded companies that have stable growth and often very high margins. Many firms in the information services industry[2] are considered toll road businesses.

Gartner is one example. Corporate executives use Gartner research to stay ahead of technology trends. They value Gartner's Magic Quadrant reports, which rank different vendors, to help make purchasing decisions. Chief technology officers and chief marketing

1 *Quality Investing: Owning the Best Companies for the Long Term* has a section on toll road businesses. They have the "position of being a small, but vital cog" in the industry, with significant barriers to entry.

2 Information services companies include MSCI, Verisk, Gartner, Moody's, Dun and Bradstreet, and S&P Global.

officers rely on Gartner analysts' recommendations. Technology leaders also network at Gartner conferences to make connections for future sales. Purchasing managers can hire Gartner to help optimize their contract costs. Gartner has embedded itself into the technology purchasing decisions of companies worldwide.

Credit ratings offer another example. Ratings are an essential part of corporate bond markets. Credit funds have mandates that define their investable universe, which are usually based on tiers of credit ratings. These ratings are provided by the major credit rating agencies, Moody's Investors Service ($MCO) or S&P Global Ratings ($SPGI). Corporations pay for these ratings to raise money from these institutional investors. Without these credit ratings, neither corporations nor investors can do business together.

Indexes are toll roads for funds. When financial advisors suggest an index fund like the S&P 500 index fund, they select an S&P index. The fund providers, typically State Street, Vanguard, or BlackRock, pay a license fee to S&P Dow Jones Indices. If the financial advisor recommends a mutual fund, such as one from T. Rowe Price or Fidelity Investments, the index is also involved. These funds use indexes to benchmark their returns. The investment fund pays a subscription fee to use the index and to report the information. Indexes are an essential part of the investment business.

There are many technology-based toll roads. Shopify's services are embedded in many small e-commerce stores. These stores use Shopify's tools to build and host online storefronts, to market the business, and to manage orders and payments. Shopify takes a subscription fee to support these online business owners. PayPal is a critical service for many merchants to accept payments from

customers online. PayPal takes a fee to handle the transactions. If the payment is with a credit card, then it most likely flows through the Visa or Mastercard network. The two networks account for over 80% of all credit transactions. They also take a small fee per transaction.

Embedded businesses can have tremendous staying power. Dun and Bradstreet (D&B, $DNB)[3], which was founded in 1841, and still exists today, is an example of this. D&B provides businesses' credit scores, which are essential for businesses to do transactions with credit. D&B also provides and manages the DUNS registration number. This number is the standard identifier for businesses and it is used worldwide.

Dun and Bradstreet barely grew for most of the 2010s, and yet its market share hardly changed. The business retained its market position, and even the stock price stayed flat. D&B was firmly embedded in the ecosystem. Even as its business stagnated, no meaningful competitors emerged to provide businesses credit scores. D&B was eventually bought out in 2018 by a private investment fund, which replaced D&B's management team. D&B was re-listed on public markets in 2020 with a new strategy to grow in data analytics using its datasets.

Toll Road Examples

- Verisk (Insurance claims)
- FICO (Credit scores)

3 Fun fact: Abraham Lincoln worked at Dun and Bradstreet as a credit reporter.

- Visa (Payments)
- Intuit (Tax preparation)

Be the Benchmark: Verisk and MSCI

Another route to dominance is to be the benchmark or gold standard. Markets sometimes coalesce around a few providers. In the insurance world, analytics provider Verisk is the gold standard for underwriting and claims data. Verisk started as a consortium for insurers to share claims data. Property and casualty insurers use the data to price their insurance decisions. Verisk continually grows by developing new analytics and services for its insurer customers.

Most stock investment funds use indexes provided by three major providers, S&P Dow Jones Indices, FTSE Russell, and MSCI. Each has its own respective market. MSCI's Emerging Markets Index is the benchmark for emerging markets stocks. The S&P 500 index is the benchmark for the performance of U.S. large-cap stocks. Competition is often friendly since benchmarks don't directly compete with one another. Prices are stable for index providers. They grow alongside assets in the investment industry.

When the cost of a benchmark is small relative to the customer's overall business, it is more likely to keep its position. There is little incentive to look for another provider. All the examples mentioned have fees that are relatively low for their customers. The benchmark will grow with its customers each year. If the business can use technology to make its costs more efficient, as Verisk and MSCI do, margins can continually increase. This can turn moderate single-digit

revenue growth rates into double-digit earnings growth rates. This makes for a stable, high-return stock.

Benchmark Examples

- MSCI (Indexes)
- Verisk (Insurer data)
- S&P Global (Financial data)
- Gartner (Research)

RECOGNIZE PROFITABLE INDUSTRY STRUCTURES

An important mental model is the structure of an industry—the relative market shares of leaders and potential newcomers. They reflect competitive dynamics. The ideal situation is a friendly group of mini monopolies. Each monopoly has a unique advantage and its own share of customers. This leads to stable profits and market share. A market with many customers is also preferable since it tends to prevent price pressures.

Find a Collection of Mini Monopolies or Fragmentation: Waste Industries

The ideal industry structure is often an oligopoly with friendly competition. Each business has its own turf. Collectively, the leaders have a majority of the market share[4]. The waste industry offers an example

4 Sometimes annual filings describe market share. Otherwise, use a Google search to look for market share statistics from industry research journals or other sources.

of this structure. Together, the big three waste companies dispose of 70% of solid waste in the U.S., based on landfill volumes. Each has its own market and rarely competes head-to-head with others. Waste Management operates in urban areas, Republic Services in the southern states, and Waste Connections in rural areas.

The businesses all see steady growth in waste volumes. They each have a network of waste routes and disposal facilities in their respective regions. They can consistently raise prices with inflation or new services, and optimize the prices for their own markets. There is little sign that newcomers will enter to take a share or undercut prices in their areas. The leaders keep most of the profits in their markets. At the same time, regulators are satisfied there is enough competition with multiple operators. This leads to a stable rate of incremental return and healthy margins. This drives consistent earnings growth for all three companies, and in turn, their stocks' returns.

Fragmented markets offer acquisition opportunities. The rest of the waste market is comprised of smaller family-operated waste collection businesses. It offers an opportunity to create growth through acquisitions and integrations. Larger waste companies have the advantages of scale, such as a network of transport and landfills, and access to capital. Waste companies can acquire these smaller operations and tuck them into their infrastructure. They can usually acquire them at cheaper multiples. Once the smaller operations are integrated, their margins usually improve. This boosts earnings for the acquirer. Green for Life ($GFL) started as a small waste company in Toronto in 2007. It expanded its operations using this tuck-in acquisition strategy with private equity and debt capital. GFL

was able to grow its earnings and become one of the largest waste companies in North America in fewer than ten years.

An outright monopoly—one company with a majority share—can also be ideal, though it often comes with government regulation. Utilities are examples of government-regulated monopolies. They have no competition. Instead, they have limitations on their growth and margin, such as from government price restrictions. An example is NextEra Energy ($NEE), one of the largest electric power and energy infrastructure companies in North America. NextEra's rate-regulated utility businesses have their price increases approved by regulatory bodies. The company's growth strategy is to develop and maintain a low-cost position in order to increase its profits. It grows by investing in the construction and operation of new generation and transmission facilities. The benefit of this structure is NextEra's future earnings are predictable, and it can pay a regular dividend to its investors. Monopoly stocks like these can offer stable dividend yields for investors.

Monopolies are sometimes hidden in plain sight. Companies like Google (for search) and CoStar (real estate data) are monopolies in their segments, ut they are viewed by regulators as part of larger markets. Google is part of the broader advertising market, and CoStar is part of the larger real estate market, even though they both fully dominate in their respective products and services. These monopolies are often the best stocks for investors. Companies like this enjoy all the benefits of limited competition as well as steady sales and increasing margins, which creates strong earnings growth, without extensive regulatory oversight or pressure to lower margins.

More Customers is Better: Aircraft Manufacturing vs. Credit Ratings

The concentration of customers and suppliers matters for a company's position[5]. It can influence prices for the business. For example, in the aircraft manufacturing industry, there are only two major producers, Airbus and Boeing. This represents a seemingly attractive oligopoly structure. However, their customer base is also concentrated. The companies sell to a small set of commercial airlines and governments. Only a few major contracts are awarded each year. The two companies must compete intensely on price to win deals. This lowers the price of contracts, which reduces overall industry margins. This lowers the potential returns for investors.

The structure of the credit ratings industry's customer base is more ideal. The two major credit ratings agencies, Moody's Investors Service and S&P Global Ratings, rate nearly all corporate debt. They also operate in an oligopoly structure. Their customer base, in contrast, is extremely fragmented. Thousands of companies hire ratings agencies to provide ratings for their debt. The ratings agencies do not compete on price. Instead, they offer slightly different methodologies. In practice, most companies pay to have both ratings on their debt—which the agencies encourage—to have multiple views. A fragmented customer base encourages friendly competition. Prices are stable, which supports better industry margins, and higher returns for investors.

5 One useful framework is Porter's five forces, which considers competitive factors that shape profitability: competition, potential new entrants, power of suppliers, power of customers, and threat of substitutes. AKO Capital also uses concentration to evaluate industries.

Fragmented Markets

- Payroll services (ADP, Paychex)
- Waste services (GFL Environmental)
- Childcare services (Bright Horizons)

Collection of Monopolies

- Insurance analytics (Verisk)
- Waste landfills (Republic Services, Waste Management)
- Stock Exchanges (Intercontinental Exchange, Nasdaq)

SPOT THE COMPETITIVE ADVANTAGES

As an equity analyst in 2016, I was eyeing the index company MSCI (formerly Morgan Stanley Capital Index) as a potential company to cover. At the time, it was a small index company known for its global indexes, such as the MSCI All Cap World Index (ACWI) and the MSCI Emerging Markets (EM) index.

Indexes seemed to last a long time, so I suspected the industry had significant barriers to entry. For example, the Dow Jones Industrial Average index—which tracks the price of thirty large companies in the U.S.—was created in 1885. After so many decades, it is still quoted as a measure of stock prices today.

I decided to cover the company and recommend the stock to investors after discovering its numerous advantages. These were

long-lasting advantages that would likely protect MSCI from competition. This would support higher margins and more stable growth, and in turn, better stock returns for investors. In studying MSCI's annual filings and Investor Day transcripts to research the company, I was able to spot several competitive advantages.

Technology barrier for index calculations. Index calculations involve hundreds of real-time stock prices and are very computationally intensive. It's not easy for any upstart to build the infrastructure of data feeds and set up real-time calculations to generate an index. Nor is there any incentive for customers to calculate the index themselves. The data collection and manipulation abilities are a technological advantage.

Proprietary research for indexes. I learned that years of research are required to design and create a new index. For example, MSCI's environmental, social, and governance (ESG) indexes were built from nearly a decade of research and gathering of ESG data. The proprietary research and intellectual resources required to make an index are significant. This makes it hard and expensive for someone else to replicate.

Network effects and benchmarks. It's much easier for investors to focus on one or two indexes to measure a market. MSCI's indexes were already the benchmarks for international stocks. The most popular were the MSCI ACWI index and MSCI EM index. The growth in exchange-traded funds (ETFs), which are built with indexes, also meant the users of indexes were growing. MSCI was one of the top three index benchmarks used by ETFs. I saw the network effect in action and believed MSCI's indexes were becoming stronger.

Reporting requirements for indexes. In digging into the customers of MSCI's indexes, I also learned they have specific reporting requirements. MSCI's customers are large institutional investors. They have investment policies that require an investment benchmark when reporting returns. Many specifically name MSCI (or providers like S&P Dow Jones Indices or FTSE Russell). Since reporting is a critical part of the investment business, most investors would likely stick with their index provider.

With all these advantages, it's no wonder that I couldn't find any major upstarts in the index industry. This meant MSCI's business would likely avoid intense competitive pressures. If more and more investors use indexes, MSCI could grow its earnings from its index business. The stock would create attractive returns for investors.

Now let's look at some competitive advantages in other industries.

Recognize Network Effects: Amazon, PinDuoDuo

A network effect happens when a business becomes stronger with more users. This creates advantages that reinforce its growth. Amazon's marketplace uses network effects as part of its strategy. It focuses on offering the lowest prices on products, which attracts customers. More customers on the platform attract more sellers to the Amazon Marketplace. Amazon also provides tools and data to help merchants sell more products to customers. More types of products offered in the Amazon Marketplace attract even more customers. More volume allows the company to lower prices even further, which attracts more customers. Each step strengthens the position of Amazon's marketplace. This reinforcing process is also referred to as a business flywheel

The only way alternative marketplaces can compete is by focusing on a specific niche. Chewy, for example, focuses on pet food. It is one of the few e-commerce competitors in the U.S. that has successfully competed against Amazon and won. It has its own flywheel based on personalized customer service in the pet food space.

Pinduoduo, an e-commerce marketplace in China, designed network effects into its business model. Founder Colin Huang envisioned a company that would combine the affordable retail experience of Costco with the entertainment of Disney. It would create "value for money and entertainment combined." On Pinduoduo, buyers could team up at specific times to buy promotional items. New buyers invited their friends and family to form shopping teams. These teams created bulk orders. The sellers received larger order sizes at more predictable times. They could then offer lower prices and product promotions.

This created a virtuous flywheel.[6] Groups of active buyers attracted merchants. The larger volumes allowed merchants to offer more competitive pricing and customized products. This attracted new buyers who invited their friends and family[7]. This drove low-cost organic traffic to Pinduoduo's marketplace, and more buying interactions. The model, and its network effects, created a huge success. Pinduoduo grew to become the second-largest e-commerce marketplace in China in less than five years.

6 Flywheel is a business model concept of building momentum with self-reinforcing improvements.

7 Pinduoduo's business model is also amazing from a cash perspective. Like Amazon receiving payments before sending orders, Pinduoduo also receives cash from team buying games before it delivers goods and services. Pinduoduo's model has a negative cash conversion cycle.

Visa, the world's largest digital payment network, is another example of network effects. Visa's network facilitates money movements between banks, merchants, and consumers. Most merchants accept payments with Visa cards since most consumers have a Visa debit or credit card. Banks issue cards that connect to the Visa network in order to move money between the merchant and the consumer. As more transactions occur on Visa's network, it encourages more consumers, merchants, and banks to use its network. This also creates a tremendous barrier for any payment upstarts. Visa's network has steadily increased its market share of transactions over the years, benefiting from this network effect.

Credit bureaus also benefit from the network effect. Banks send credit and payment information to the major credit bureaus (Equifax, TransUnion, and Experian). As more people use credit cards, these datasets become larger and more accurate. The information then helps banks anticipate the repayment trends of their customers. It also helps them make decisions on new loans and credit lines. The datasets of these credit bureaus become stronger as more information is reported. This makes it highly unlikely a new credit bureau can emerge, unless it can offer better insights from a different data source. The market shares of these credit bureaus have been very stable over time, due to this effect.

Network effects can also occur when having more users helps the business improve its products. Netflix's viewer data provides insights into what content consumers like to watch. It used these insights to develop and market its own unique content, such as the popular *Orange Is the New Black* series. Original content made the

platform more attractive to viewers, which helped fuel the growth of Netflix viewers. Netflix grew its subscribers market share to over 55% by 2020. Growth was steady for many years, with Netflix leading as the provider of streaming content. This position was only challenged when competing platforms began to create their own content.

Identify Intangible Benefits: Playboy's Brand

Leading consumer businesses often provide intangible benefits beyond the actual product. Keep an eye out for consumer companies that have carved out distinctive values for customers. These values embed the brand into consumers' minds. It gives the business a meaningful advantage over its competitors.

Most consumer brands offer this intangible benefit. Nike's brand, for example, embodies inspirational and democratic values. Restoration Hardware's brand communicates a luxurious and sophisticated lifestyle. Apple's products also provide an aesthetic value to customers, akin to luxury goods from brands like Louis Vuitton. Apple's values around uniqueness and creativity helped Apple grow its market share with consumers. These values stood in contrast to corporate business values. In the corporate world, Microsoft dominates with its business software. These companies all created leading positions in their respective product categories.

The Playboy brand is one of the most recognized consumer brands globally. Playboy is building its presence in the sexual wellness and style and apparel consumer categories. Investing in the company under the leadership of Ben Kohn is a bet on the Playboy brand.

The stock's thesis is that the new management team can create a dominant consumer business using the brand's intangible benefits.

Look for Patterns Across Sectors

You'll learn to see parallels in other sectors for competitive advantage—maybe not all at once, but at least one or two. Tesla's self-driving capabilities offer it a huge advantage compared to other electric vehicle upstarts. The company has years of research and on-the-ground testing of its autonomous driving capabilities. This proprietary technology is very difficult to replicate. Meta (Facebook) used the acquisitions of Instagram and WhatsApp to build network- effect advantages. Meta incorporated these new social dynamics to reinforce its leadership in social media. Moderna's proprietary mRNA technology creates an advantage for developing new medical treatments. Messenger RNA was used to develop Moderna's COVID-19 vaccine, and the know-how will likely be applied to create new vaccines and therapeutics. Upstart's AI model could become more accurate as it approves more loans, which would make its loan decisioning platform more useful to its bank customers.

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Competition is the invisible hand that determines profits. Profits eventually drive returns. Look for the patterns of dominance. A business that controls its path to customers and integrates with its industry will likely have a dominant market share. These businesses can maintain higher profits for longer. Recognize the industry structures that create profit. Having more customers and a collection

of mini monopolies is often the best situation. It leads to friendly competition. Friendly competition supports better profit margins.

Competitive advantages are what keep a business dominant. Recognize the signs. These include network effects, intangible benefits, and proprietary assets. These are very hard to replicate. The more advantages the business has, the more likely the business will keep its profit share. Look for these advantages to help you find the long-term winners in any sector.

How to Find Long-Term Winners

- Long-term winners often have a structural advantage. This includes controlling the path to the customer, integrating with the industry, or becoming the benchmark. This leads to a dominant market share.
- A collection of mini monopolies in fragmented markets is ideal for friendlier competition. This creates stable profits for the leaders. Having more customers tends to be better for keeping prices stable.
- Competitive advantages lead to profits. Examples include proprietary assets, network effects, regulatory requirements, and other intangible benefits. The more advantages, the better.
- See "Financial Patterns" in the back of this book for illustrative tables.

**Excited to find some winning stocks?
Get together with a friend and brainstorm
some dominant companies.**

INVESTMENT PRINCIPLE #2

CHANGE

Invest in Stocks That Will Last

HOW TO SIZE UP THE BUSINESS OPPORTUNITY	Define the addressable market to recognize the stock's potential. Find large, expanding markets for stocks with continuous upside.
HOW TO FIND UPSIDE FROM GROWTH	Find ideas by looking for change. Differentiate between the cyclical (trade) and the secular (hold) investments. Use the S-curve to spot accelerating growth.
HOW TO FIND VALUABLE ASSETS IN A SECTOR	Think like an insider to find ideal acquisition targets or look for supply constraints in assets or resources. Use executive frameworks to find the most valuable businesses.
HOW TO FIND LONG-TERM WINNERS	Find dominant businesses with patterns. Look for structural advantage with customers, industry structures with friendly competition, and competitive advantages in the business.

PART III

INVESTMENT PRINCIPLE #3: EXPECTATIONS

INVESTMENT PRINCIPLE #3

EXPECTATIONS

Invest in Market Rewards

Now it's time to consider how ideas are implemented in stock markets. John Maynard Keynes compared investing to picking the winner of a beauty contest. The idea is not picking the person you find the most attractive, but rather the person you expect will be the most attractive for the most people. For music, you would pick the most popular artist that everyone will likely listen to. On some level, particularly in public markets, you make investing decisions based on what everyone else will think in the future.

Stock prices reflect the expectations of investors in the market. Public markets are liquid, meaning shares are usually easily bought and sold. Stock prices continuously reflect changing expectations. In this section, you'll learn institutional investor tactics, using case studies, from the point of view of an investment analyst. You'll learn how to track and take advantage of changing expectations.

The types of events that change expectations are called catalysts. We'll examine what kind of catalysts move share prices. You will learn to recognize situations where a stock will re-value, to reflect new expectations. We'll also cover short-selling, so you know when to sell a company. This section shows you how to invest in market rewards.

CHAPTER 10

THE CARDINAL RULE OF EXPECTATIONS: HOW TO USE WALL STREET ESTIMATES

Stock expectations can be seen in the earnings estimates of research analysts. They work at investment banks (known as the sell-side) and provide research coverage of the stock. The average (or median) is the consensus (Wall) Street estimate. Some stocks also have a whisper number estimate. This is a gauge of expectations of investors (known as the buy-side) that traders and research analysts put together. The whisper number is used by active traders to quickly price a stock after an earnings release.

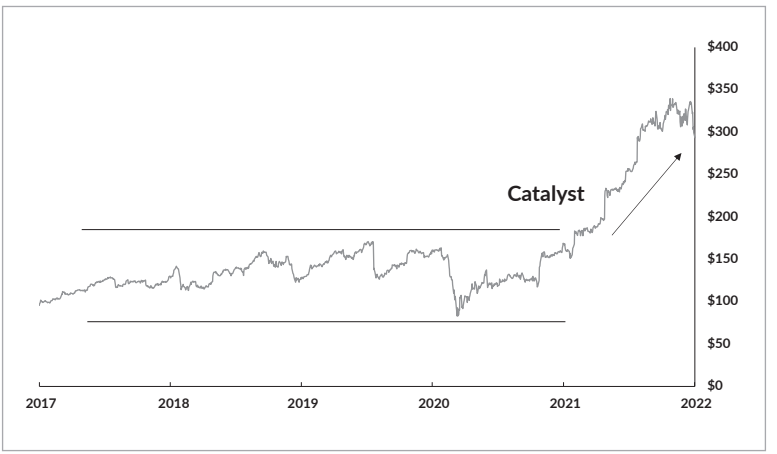
One framework used by equity long/short funds is to invest for changes to earnings estimates. You monitor what is priced into a stock, anticipate a change in expectations, then invest to capture the price move as earnings estimates are revised. Earnings reports are usually the catalyst to change expectations. We'll use Gartner's turnaround as a case study to invest for estimate revisions.

TRACK WHAT CHANGES ESTIMATES: GARTNER'S TURNAROUND

In 2017, Gartner ($IT), a technology research firm, acquired the best practices business CEB. CEB's growth was stagnant at the time. Gartner planned to integrate CEB's offerings into the company and improve CEB's operations with the Gartner sales playbook. The playbook worked well in Gartner's core research business. However, this was the first time the strategy was applied to a large turnaround acquisition.

CEB's turnaround took much longer than Gartner's expected one-year timeframe. CEB's product re-positioning efforts initially led to lower growth, which dragged down Gartner's earnings growth rate. Street earnings estimates were gradually lowered for the next two years, and the stock price remained flat over that time.

Then the COVID-19 pandemic hit in 2020. Earnings estimates were sharply lowered again. Analysts expected Gartner's corporate



customers would cut costs to prepare for the expected downturn, and spend less on Gartner research. Travel restrictions during the pandemic were also expected to hurt Gartner's conference business.

The signal for a bottom in earnings estimates was when business activity appeared to normalize in the back half of 2020. Gartner had reported better-than-expected research sales and positive sales trends from the CEB business. Earnings estimates were then raised over the next few quarters, as analysts forecasted stronger trends for the Gartner research and CEB businesses.

Invest for Changing Expectations: Long/Short Equity Strategy

Time to jump into the mind of a hedge fund equity analyst[1] who follows Gartner and the broader business services sector. Our analyst starts to notice changing business trends at the end of 2020 and then identifies the investment opportunity.

Step one: Know the catalyst. Gartner is a subscription-based enterprise IT research business. The business took a hit in the COVID-19 pandemic environment. Companies cut back on their spending and travel, which reduced sales of Gartner research products. Most of Gartner's conference events were also canceled.

Management will provide annual financial guidance for the coming year (2021) with the 4Q earnings release. This will be released in early February. There will also be potential updates for 1Q. This

1 Based loosely on conversations with a former client at a hedge fund when I covered Gartner as an analyst.

is first-time guidance for the year, so it will directly impact earnings estimates. Management's guidance in the 2Q and 3Q earnings releases are usually adjustments.

The critical driver for the company's earnings is contract value growth. This represents the growth in the value of annual research subscriptions. Contract value growth has contribution margins in the high 60%s versus 30% for the overall business. Stronger contract value growth increases Gartner's margins, and leads to faster earnings growth.

The ideal catalysts are the 4Q and 1Q earnings releases. This is where management's annual guidance and expectations for contract value sales are most impactful to full-year expectations. The next step is to model Gartner's contract value and earnings, and compare this with current Street estimates.

Step two: Find clues for upside. We follow business services companies and sense that coporate spending is stabilizing. Enterprise software companies have reported positive sales through the year. Gartner's comments in recent investor meetings also suggest a stable selling environment. Let's build our financial model. Our thesis is that Gartner's contract value growth will recover to its historic 7–8% level the next year. We can reasonably estimate $750 million in EBITDA for 2021. Current estimates are closer to $700 million, so there's a potential 7% upside—worth a small shot. We put on a position in the stock ahead of the 4Q earnings report (February 2021).On the day of the release, Gartner introduces new guidance for 2021 ($760 million in EBITDA). This looks good. The stock also pops up 12% that day. Gartner's track record for financial guidance

has historically been reliable. The company usually meets or beats its forecasts. So far so good for the thesis.

The 4Q earnings call gives more clues on company trends. Management says the selling environment for Gartner's research products is healthy. This supports the thesis. Another highlight is that the sales growth of Gartner's Global Business Services (GBS), which are CEB products, is accelerating. We've been waiting for signs of a turnaround for several years—GBS growth is finally positive! Great sign.

We receive a subtle and meaningful comment from management. Gartner's CFO thinks there could be a "growth inflection in 2Q," meaning an acceleration. That's perfect. Inflections tend to move earnings expectations and stock prices.

I put together Gartner's bullish comments with the positive reports of growth from other business services companies. We are increasingly confident in the positive outlook. Gartner's business trends are likely improving. The 2Q inflection excites me. I now see another potential catalyst that could change earnings expectations.

I update my model to estimate sales growth accelerating in 2Q. With this model, I create scenarios with this new growth level and varying levels of operating leverage and margin expansion. My estimate for Gartner's EBITDA could be as high as $900 million for 2021.

Compared with the current consensus estimates, that implies a nearly 20% upside to earnings expectations. There could also be multiple expansion in the stock. Positive progress with the GBS turnaround suggests even higher levels of growth for the years ahead. Higher growth expectations could support a higher multiple.

Step three: Check investor positioning. It is time to get a sense of how the Street and other investors are positioned in the stock. I regularly check a few indicators in the weeks leading up to a company's next earnings release. If all investors think the same, we may collectively run up the stock's price into earnings. We talk with our trader to follow the stock's trend, pre- and post-earnings. We are looking for a clue if other investors are also catching on and buying the stock. The stock has jumped post-earnings, though the price is mostly stable. It doesn't suggest investors are crowding into the stock. I'll check short-interest levels. It is currently 1.3% of the stock's float, meaning there are some shorts in the name, but not a ton. Shorts can be a catalyst if they cover and turn to potential buyers.

Are other funds positioned for a beat? I'll call a few sell-side research analysts and talk to a few analysts at hedge funds. There does not seem to be much chatter on this name. Other analysts are focused on the hotter plays of re-opening stocks. Or commodity-related investments. I'll double-check sell-side estimates and look for changes since the last earnings report. Did Gartner pass new information to the Street? Or are there new events in estimates that we are not aware of? This doesn't seem to be the case.

Ahead of the next earnings release, I'll also check the options market. Implied volatility (IV) for options of the stock is close to 30%. This is within the stock's usual historical implied volatility range, ahead of an earnings release. Option prices do not imply additional catalysts. If they did, implied volatility would be higher. I look for concentrations of options at specific price levels where investors are positioned. There is no clear indication of a position, either way.

I bet more on the stock for the upside. I think more investors will buy in.

Trade day: Earnings Catalyst! And Repositioning. In May 2021, Gartner's 1Q21 earnings are released. The company reports a strong earnings beat and 2021 financial guidance is raised to $1,000 million in EBITDA (*wow!*). This compares with Street estimates of $700 million, or a 40% increase. I love a beat and raise!

Will Street estimates go up? Check! On the call, management confirms the 2Q growth inflection. Check! The market opens, and the stock jumps another 20%. Amazing. Trim the position slightly (close 50 bps2 for gains) on the price. Our investment thesis is confirmed, and earnings expectations will increase. I've also noted some potential coming catalysts (Gartner's conference business could re-open soon). This is a great trade for the team.

Expectations move higher on this catalyst. We've captured the earnings upside with our position. Trends for the company are positive so we'll keep the stock as a core long position for the book. Rinse and repeat! Where's the next trade?

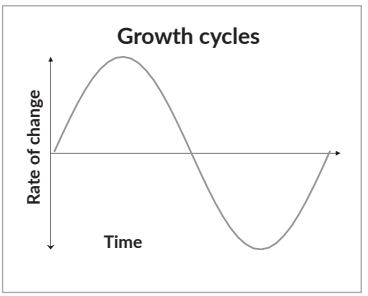
FOCUS ON THE RATE OF CHANGE: UPSTART'S ACCELERATION

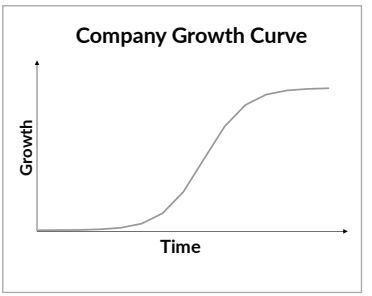
The movement in rate of change often moves investor expectations. Consider Upstart's stock in 2021. The stock's price entered the year in the $40s, trended to the $60s, then jumped to the $120s after its 1Q21 earnings release in March. The stock trended at this level for few months, then rapidly doubled to the $220s after the 2Q21

2 "BPS" is short for basis points. 1% = 100 bps.

earnings release in August. Over the next few months, the stock ran upward to $400. Then, the price tapered to levels in the $330s, then dropped back to the $200s following the 3Q21 earnings release in November. What was going on with the stock?

Think of rates of change like a sine curve or a cycle. The rate of change is an indication of the slope of a business's growth curve. As the rate of change improves, it suggests the business is gaining momentum, and the growth curving is steepening upward. As the rate of change slows, it suggests the business has reached a plateau, with the growth curve flattening downward.





A steeper growth curve suggests higher future earnings. A flattening curve suggests lower future earnings. A step up (improvement) or step down (slowing) in the growth often leads to significant revisions to earnings expectations. This could be in sales, subscribers, or contract value—any critical factor. Improving growth rates lead to higher expectations and a higher stock price, and vice versa. InflCetions in growth rates are one focus of long/short hedge fund investors. Analysts use quarterly models to identify inflections, and then invest for the earnings revisions.

Upstart's 4Q20 earnings-release reported that in 2020 the company's revenue grew 40% year over year (y/y), and the release provided guidance for 2021 revenues to grow +114% y/y.

In the 1Q21 release, 2021 revenue guidance was raised to +157% y/y, then in the 2Q21 release, it was raised again to +220% y/y. With such an acceleration in expected growth in both earnings reports, the stock doubled after each release. The Street's sales estimates for 2022 and 2023 also doubled from the time of the 1Q21 release in February to the 3Q21 release in November. The catalyst was the sharp increase in the expected rate of growth.

In the 3Q21 release, revenue guidance for 2021 was raised slightly to +244% y/y. While stellar, this rate was much less of a raise when compared to prior quarters. Without a significant step-up in growth, Street sales estimates for 2022 and 2023 were mostly unchanged after the report. The stock price at $300 implied considerably higher growth. The stock's next twelve-month (NTM) sales multiple had already risen to 30x from 14x earlier in the year.

The stock price fell since there were fewer willing buyers at $300 price levels. Much faster growth rates were needed to raise expectations. Even our optimistic growth estimates earlier, using a 30x sales multiple, would value the stock at close to $300 several years out.

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The cardinal rule of stocks: changes to expectations change stock prices. You can follow investor expectations with Wall Street's earnings estimates. To pick stocks this way, track the factors or events that will change management's guidance. This will signal

opportunities for estimate revisions. Once you see there is enough upside to earnings estimates, you have an opportunity to invest.

Rate of change is the other method to track expectations. Follow the movement of rate of change. As it improves, it suggests a business picking up momentum. When it slows, it suggests a slowing business that could plateau. Look for future inflections—sharp changes in the rate of change—since they nearly always change expectations.

How to Invest for Estimate Revisions

- Stock expectations are seen in the earnings estimates of Wall Street research analysts. Track the critical factors that could change these earnings forecasts.
- Identify the catalyst, such as new management guidance. Find clues that suggest upside or downside. Estimate the earnings impact. Check investor positioning.
- Focus on the movement of rate of change. Look for inflections—sharp changes in the rate of change—which nearly always lead to estimate revisions.

CHAPTER 11

HOW TO FIND STOCK IDEAS: INVESTING IN CATALYSTS

The process of investing for catalysts is simple in concept. Identify a change that will lead to estimate revisions. Position an investment ahead of the event when the market will realize the change. The question is, how do we find the catalysts?

In a one- to two-year timeframe, new business developments or industry events can lead to better business targets. This creates opportunities for estimate revisions. Research analysts usually model management's targets into estimates. So estimates will move higher to reflect higher targets.

In a multi-year timeframe, secular trends, such as demographics or new technology, can create growth opportunities. These trends change the long-term growth expectations of a business. This leads to steadily rising earnings estimates. Analysts tend to estimate moderating (or slowing) growth several years out. They assume companies will mature. When companies can grow consistently year after year, their forward estimates are often steadily revised upward. Business transformations or innovations can also create new growth scenarios that lead to upward estimate revisions.

Hedge funds look for catalysts to move the stock so they can achieve their required returns within the year. Getting these returns is how they make their performance fees. By learning to spot catalysts, you too can time your investments to benefit from changing expectations. Here's an example of how several catalysts impacted the L Brands / Bath & Body Works stock.

LOOK FOR WHAT IMPACTS EARNINGS: BATH & BODY WORKS

The catalyst for Bath & Body Works (formerly L Brands) was the COVID-19 pandemic-related shutdowns. Bath & Body Works operates its supply chain and distribution as an integrated operation. It also has both retail and online e-commerce channels. At the time, the company operated Victoria's Secret, a lingerie retailer that had stagnated and declined for several years. An activist investor pressured the company to split the businesses. In May 2020, the company decided to sell Victoria's Secret. The Bath & Body Works business would be its own entity. The new structure allowed analysts to focus exclusively on the faster-growing Bath & Body Works business. This is where we'll focus on positioning an investment for changing estimates.

Like many other retailers, Bath & Body Works closed its stores as the COVID-19 pandemic emerged in early 2020. Its retail sales declined of 20–40% y/y in the first half of 2020, similarly to that of other retailers. By mid-2020, the consensus analyst estimate for Bath & Body Works' 2021 EPS was $1.50. This was well below the $2.31 in EPS it reported for 2019. The stock price dropped from $20 / share at the start of the year, to a low of $12 / share in May 2020. The timing and expected impact of the pandemic was very unclear

at the time. Earnings estimates implied minimal expectations for a sales recovery for 2021.

There were signs the business was adapting to the pandemic change quite well. Reported earnings for 2Q20 (released in August 2020) were very impressive. Once you looked beyond the headline number (sales down 20% y/y, due to declines in the Victoria's Secret business)—you could see impressive growth. Bath & Body Works shifted its business distribution to direct sales, or e-commerce, where sales increased 191% y/y. Direct sales more than offset retail store declines. Gross margins also expanded for Bath & Body Works due to fewer price promotions with e-commerce sales.

Demand for Bath & Body Works' products seemed to improve, even with the closure of its retail stores and the negative retail sales environment. Management pointed out that its consumers were spending more on its soaps and bath products during the COVID-19 pandemic. The stock price recovered to its 2019 levels of $25 / share as Street EPS estimates moved from $1.50 up to $2.11 for 2021. The pandemic appeared to be a positive catalyst for the business.

The next few earnings releases indicated the re-opening of stores could accelerate growth for the company. The 3Q earnings release (reported in November 2020) showed that total comparable sales were up 56% y/y for Bath & Body Works. This is a measure of organic growth for retail stores. It showed the growth from store re-openings. Gross margins also improved again, from fewer discounts and leverage from store occupancy expenses. At this point, several retail analysts started to recommend the stock. EPS estimates moved from $2.11 up to $2.72 for 2021.

A simple earnings model for 2021 showed considerable upside. The company could recover to 15% y/y organic sales growth with its stores re-opening. There could be continued margin expansion in its merchandise, plus cost leverage from its stores. Put together, the company could generate $3 in EPS for 2021. When applying a 20x earnings multiple of a comparable company like Ulta Beauty, the estimate implies a $60 / share stock by mid-2021. By that point, investors would focus on earnings estimates for the following year.

The re-opening was underway by early 2021. Vaccines were distributed and most retail stores re-opened nationwide. Monthly retail sales figures from the U.S. Census Bureau showed that the retail sales environment had improved. As stores re-opened, sales trends for Bath & Body Works then accelerated for several quarters. Management raised guidance several times. EPS estimates for 2021 steadily increased to $3.40 by mid-year 2021. The stock moved up to $80 / share.

You can see several catalysts benefiting the stock: the corporate spin-off, distribution shifts, pandemic buying, and retail re-openings. All led to significant earnings revisions. The stock was a great opportunity for investment analysts covering the sector.

RECOGNIZE TYPES OF CATALYSTS

Here are examples of catalysts that have significantly changed expectations for stocks. Use them as a reference to keep an eye out for potential catalysts in your market.

Find One- to Two-Year Earnings Revisions

Industry cycle (Clean Harbors, $CLH): Activity in U.S.-based chemicals and manufacturing industries rebounded in 2017. The industrial sector had recovered from the impact of the oil sector downturn from 2014 to 2016. There was also favorable federal government policy for industrial sectors. Higher production activity created demand for Clean Harbors' ($CLH) industrial waste business. Clean Harbors' revenue growth subsequently accelerated in 2018. The stock quickly re-valued and increased 60% in one year.

Indicator: Improving activity is seen in industrial indicators like the Fed's U.S. industrial production index and the Chemical Activity Barometer. Clean Harbors' management comments on improved business demand, from the recovery in its end markets.

Business strategy (Strategic Education, $STRA): Strategic's Strayer University introduced significant scholarships in 2014. This effectively lowered its tuition price by one-third. The price drop led to an acceleration in new student enrollment growth. The college attracted more working adults. This was used as a proxy for future revenue growth, so earnings expectations also rose. The stock rapidly increased 100% in one year, then stabilized. Earnings growth improved the following years. Donald Trump's election in 2016 created another catalyst. His administration reduced regulatory pressure on the industry. The stock then increased another 120% to a higher multiple and peaked in 2020.

Indicator: Strategic's management's announcement of a major scholarship program for Strayer University. Then subsequent earnings

releases showing strong improvements in new enrollment (starts) growth. Announcement of the Trump administration's de-regulatory initiatives for the for-profit education sector.

Economic inflection (Manpower, $MAN): Manpower provides temporary staffing services to European industrial markets. It saw its stock sell off sharply after the Brexit referendum in the middle of 2016. Analysts broadly lowered estimates, as economists expected a recession to come. Activity in the European economy remained stable, then showed signs of improvement in early 2017. Earnings estimates were revised upward through the year. $MAN's stock increased by 80% over the next twelve months. The stock peaked in 2018, then turned lower as U.S. economic activity slowed, which suggested the peak of the industrial economic cycle.

Indicator: Positive activity levels in the Eurozone PMI Manufacturing Index (50+). Manpower's management's comments on signs of improvement in the economic cycle in the Eurozone area. Slowing trends in the U.S. Industrial Production Index.

Activist pressure (Automatic Data Processing, $ADP). Activist funds create their own catalysts. They take an ownership stake in a company, then influence the company through its board. Activists sometimes campaign for board representation, which is known as a proxy campaign. In 2017, Pershing Square Capital Management acquired a sizable stake in Automatic Data Processing (ADP). ADP was the largest payroll provider in the U.S. Pershing started a proxy campaign to win board seats and influence the company's strategy. It pointed out several structural opportunities for ADP to improve

its margins. This was led by Bill Ackman, the founder and CEO of Pershing.

Ackman lost the proxy campaign and did not secure any board seats. However, the pressure from his activist campaign influenced the company. ADP began to accelerate its efforts to raise company's margins. It enacted a transformation initiative to improve the cost efficiency of its operations. ADP's margin improvement led to higher earnings growth, which helped the stock increase by 70% in two years. Pershing then exited the position for a sizable return.

Indicator: Pershing Capital's proxy campaign announcement. Then ADP management's release of new ADP financial targets with stronger margin expansion.

Industry Cycle (AMN Healthcare, $AMN). Within an industry there can be ebbs and flows of customer activity. The Affordable Care Act (ACA) federal law in the U.S. catalyzed a healthcare cycle. This legislation was signed in by the Obama administration and went into effect in 2014. It expanded the number of insured people, which had the effect of increasing healthcare utilization. Demand for nurses surged from 2014 to 2016, and wages also increased, which led to sharply accelerating growth rates for AMN. The stock increased four-fold in those two years.

Demand then normalized and nurse staffing growth slowed in late 2016. The new Trump administration also limited some of the ACA requirements, which reduced the number of insured people. This all led to slower growth rates for AMN for the following year, and its stock remained relatively level through the year.

Identify Multi-Year Transformations

Multi-year catalysts often involve secular change or business transformations. These impact the business's total addressable markets (TAM) or its competitive advantages. They tend to impact earnings expectations for many years.

Business model transformation (Chegg, $CHGG): In 2014, Chegg transformed its business model. It went from a low-margin textbook rental business to a high-margin digital student services business. Chegg provided study content and tools. The company's addressable market expanded to nearly all college students. Sales growth accelerated as its Chegg Study product became the study tool of choice across campuses. The stock increased 500% over the next three years as its financials showed higher growth and margin expansion.

Indicator: Chegg's management's announcement of strategic change to digital services. Financial targets for the new business model.

Demographics and regulation (Strategic Education, $STRA): In 2010, college enrollment peaked. College demographics shifted from the larger Millennial (72 million in size) to the smaller Gen-Z (67 million in size) group. Enrollments declined for the entire higher education industry in the years after. A new government also reflected a demographic change. Barack Obama won from a clear majority with younger voters (those under forty). One of the Obama administration's initiatives was regulations on the for-profit college sector. This also effectively reduced the number of student loans available for the sector. It also pressured enrollments for the for-profit college sector.

Earnings in the for-profit education sector declined significantly in the years ahead. Many of these college programs were not differentiated or unique enough to find new enrollments. Campus programs experienced negative financial leverage, due to the fixed costs of physical campuses. Many investors exited the sector entirely due to significant regulatory concerns. Stocks in the sector (such as Strategic Education) fell 80% from their 2010 peak over the next three years. Prices bottomed in 2014–2015 for some education stocks. Significant cost cuts and campus closures helped earnings stabilize and, for some, to grow again.

Indicator: New-enrollment decline reported in the National Student Clearinghouse Research Center. Announcement of new Department of Education regulations on the for-profit higher education sector.

Industry trend (MSCI, $MSCI): In 2020, investment capital shifted to environmental, social, and governance (ESG) strategies. There were several signs. Well-known investors left successful firms to start or join ESG funds. The COVID-19 pandemic brought more policy attention to environmental concerns. ESG indexes significantly outperformed, and many ESG funds saw significant capital inflows.

MSCI was (and still is) the leading provider of ESG research and data to the financial industry. Its ESG indexes were widely used across the investment community. MSCI's ESG business was small relative to the overall company. Most earnings estimates did not include the potential opportunity of this business. As the growing ESG business started to accelerate MSCI's revenue growth, earnings estimates moved much higher. MSCI's stock rapidly increased by 90% in one year. MSCI's growth will likely continue for several years as its ESG business expands.

Indicator: Capital inflows into ESG funds. Commitments from the largest asset managers to implement ESG strategies. Improving growth in MSCI's ESG business.

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Catalysts are the spark to change expectations. They accelerate stock price movements. Look for catalysts to better time your investments. Think about business changes. There are industry cycles, business strategies, or even investor activism for one- to two-year catalysts. Multi-year catalysts involve trends or transformations. Look for changes in demographics, business strategy, or regulations. Invest in stocks ahead of these catalysts to benefit from the changes in earnings estimates.

How to Invest for Catalysts

- Catalysts are changes that lead to earnings estimate revisions. Learn to recognize catalysts so you can time your investments to benefit from change.
- One- to two-year catalysts are often new business developments. Pay attention to activity indicators, sales trends, and corporate developments.
- Multi-year catalysts are often secular trends or transformations. Pay attention to management or strategic changes, or to new regulations or trends in the industry.
- Invest in stocks ahead of these catalysts to benefit from the changes in earnings estimates.

Next time you hear about a stock, you know what to ask. What will make earnings move? What's the catalyst? What's the addressable market? Use this to figure out the right price.

CHAPTER 12

HOW TO RECOGNIZE WARNING SIGNS: THE SHORT-SELLER PERSPECTIVE

Short investors borrow shares to sell with the intent of buying them back at a lower price to cover the short (sale). Short sellers look for situations where a stock's expectations will move significantly lower. They will often release detailed short-focused research reports, to point out critical flaws of a company, and its stock thesis. We'll use 2U's stock as a cautionary example to show how an investment thesis turns into a sell.

2U's business model. 2U helps non-profit universities launch online degree programs. 2U helps develop and then market online degrees for the university. It requires around $2–3 million in upfront investment for each program. In exchange, 2U takes 60% of the tuition. Each contract comes up for renewal every ten years, on average. This was a fast-growing business niche. Campus enrollments were declining across the industry, most colleges were looking for new

students, and online education was the new source of growth for many institutions.

SaaS-based investment thesis. 2U's management pitched the company in its 2014 IPO as a software-as-a-service (SaaS) business for the education sector. 2U did look like a SaaS model on the surface. 2U had profitable unit economics. Gross margins were above 70%. Operating margins, while negative, were also improving, suggesting it could scale, with growth.

The thesis was that 2U would scale the same way as SaaS companies like Salesforce ($CRM) or Adobe ($ADBE). 2U would spend heavily on sales and marketing and R&D upfront to build traction in the market. This would eventually translate into attractive profits. Contracts would be renewed regularly and provide steady revenues with minimal additional costs. Once 2U reached this steady state, it could achieve EBITDA margins around the 30–35% level.

Can you identify the fragile assumptions in this thesis? There are some critical differences between 2U's model and a successful SaaS business model.

IDENTIFY FLAWS IN A THESIS

How recurring is the business? Enrollments must be replaced as students graduate from these programs. 2U must find and replace these students, which creates ongoing marketing costs. This could limit the profitability of the business. When a SaaS business like Salesforce signs on an enterprise customer, it provides software that is used regularly by the business. The sales costs to renew

existing clients are usually minimal, and it can focus on adding new customers.

Where is the source of leverage? 2U offers a customized product, a 2U-developed degree that is tailored to individual universities. This means the costs of program development and marketing are specific to each university customer. This could limit the potential for cost leverage. In contrast, Salesforce develops a single underlying application to its corporate customers. Even with individual customizations, the product is the same underlying software. There is cost leverage in software development since the same product can be used by multiple paying customers.

What's the addressable market? 2U's customer focus is universities, which are very different from corporations. Schools have other priorities beyond growth. Leading institutions, such as Ivy League schools, focus on reputation and student quality over enrollment growth. 2U's revenue comes from student tuition, where admissions are determined by the institution. 2U's customers could limit the number of potential students, which in turn, would limit 2U's sales.

What are the competitive advantages? The thesis presumes 2U's pricing levels—the 60% take-rate of tuition—can continue for many years. One of 2U's original founders, John Katzman, left the company to create Noodle, a company that provides low-cost program development services for universities. It can develop programs at a much lower 15–35% tuition take-rate. 2U-developed degree tuition fees are among the highest in the education industry. If other platforms can create a similar service at a lower cost, they could pressure 2U's pricing model. This would lower its growth rate and impact its potential profitability.

SPOT THE WARNING SIGNS

Flaws in an investment thesis are often easy to see in hindsight, but more difficult to observe in the moment. For 2U, what mattered were the warning signs—which short sellers noticed. These eventually triggered several negative catalysts. The events then led to most major shareholders leaving the stock. Here were the warning signs in 2017–2018.

Revenue growth slowed in late 2017. The growth rate dropped ten points from 37% y/y for 2016 to 27% y/y for 3Q17. This suggested demand was leveling off. Management also acquired another business in an adjacent area. This helped raise growth rates, though discerning investors noticed the slower underlying trend. Some critical investors even saw the acquisition as a way for 2U to offset the slowing growth of its core business. Management told investors the acquisition was a strategic one, to broaden 2U's service offerings. Since most investors believed underlying growth was still strong, the stock continued to climb higher.

Stock valuation based on narrative. In early 2018, 2U's stock price reached $100 / share with a valuation of close to 13x EV / NTM revenues. This was well above the 5x EV / NTM revenue valuation of most software stocks, making 2U one of the highest-valued cloud-SaaS stocks in the market. 2U's stock price mainly rose on the announcements of new university partners. This happened even as the company's revenue growth slowed and its profitability worsened. The announcement of its partnership with Yale alone led to a 20% rise in the stock. The CEO described 2U as the future model of higher education on earnings calls and at conferences.

Profitability expected to worsen in 2018. In February 2018, management provided a new financial outlook for 2018 with the company's 4Q17 earnings release. The outlook implied worsening losses for 2U, and even more negative margins. Management expected 2U's costs to accelerate as it signed up new partners, which would lead to higher earnings losses. Still, the question remained: why was revenue growth slowing? Management reassured investors that it expected 2U would reach its profitability targets, though it did not provide any specific timeframe. This created uncertainty in the stock for investors. The stock price had peaked at $100 by this point.

Investors can accept negative earnings from a company, however, they expect to see improvements or less negative profit margins over time. If the company cannot improve its margins, the fear is the company will have trouble scaling to profitability. It will likely also require additional capital. Short sellers often look for signs of deteriorating margins at companies. Lower margins tend to be a catalyst for stock prices to decline.

Management raised more equity in May 2018. 2U had already raised over $170 million selling shares in the prior year. Management had told investors that it did not plan to raise any more equity anytime soon. It expected 2U to have more than enough cash, and to turn cash-flow positive soon. But 2U then announced a much larger $300 million share offering less than a year later. The capital was to support program development and acquisitions. The surprise equity raise was a huge red flag for investors who had just purchased shares. Many began to question the motivations and trustworthiness of 2U's CEO. This marked the start of 2U's stock decline.

WATCH FOR THE SHORT SETUP

A stock price that moves on narrative is called a story or concept stock, and it is vulnerable to short-selling campaigns. Financial metrics and earnings provide investors a foundation to make judgements. These are used to project a company's future business model and the value of its stock. Absent this, the stock is supported mainly by the confidence of investors. All it takes for the stock to turn lower is a detailed, research-heavy short report to make shareholders question the thesis, then a catalyst of worsening financials to confirm the short case.

Short report on 2U. The first crack in confidence for 2U's story came from a detailed short report from Spruce Point Capital in July 2018. The short seller found data on 2U's program enrollments through Freedom of Information Act requests. It suggested several of 2U's largest programs were underperforming. Some had enrollment growth slowing or even declining. It also found evidence that low-cost competitors were growing much faster. Marketing costs overall were likely rising for the company.

Put together, 2U's revenues and margins would likely be much lower than expected. And below management's long-term steady-state targets. Spruce valued 2U's future programs with these new assumptions to make a case that 2U's share value could be 50% lower. Many investors were spooked. The stock dropped from $100 / share to $50 / share by the end of 2018, then recovered to $70 / share levels by early 2019.

High short interest. Short interest is the number of shares sold short as a percentage of the stock's float, or its freely tradable shares.

This measures how many shares have been sold by investors betting the stock price will go down. 2U's short interest nearly doubled from 8% in July 2018 to 16% in May 2019. Rising short interest indicated the short thesis was spreading. It meant more investors were betting on a negative catalyst.

One caveat to note. If the short investors are incorrect, short interest also represents a potential pool of buyers. The short sellers may be forced to cover (i.e., close the short position) if the stock price moves up enough. This short covering can create upward price momentum, which can also lead to dramatic price spikes with a positive catalyst.

Lowered guidance (catalyst). The first catalyst was 2U's 1Q19 earnings report in May 2019. Management lowered its prior financial outlook for 2019 to reflect a lower revenue growth rate and higher loss for the year. 2U's management said the higher losses were related to program investments. It insisted that the slower growth trend was simply temporary, as newer programs were still ramping up and would contribute soon. The stock price was cut in half and re-priced to close to 4x EV / NTM revenues, or $35 / share.

Most experienced public company executives are very careful to communicate clear financial guidance. They know missed or lowered guidance often leads to investor fear. 2U's management, unfortunately, was vague in its investor communication. Especially around the reasons for the lowered guidance. This created fear among investors, which led to the first part of 2U's stock decline.

Three months later, with the release of its 2Q19 earnings report in July 2019, management lowered its financial outlook again. It lowered revenue expectations and raised the expected losses for

2019. Two of 2U's largest programs had reduced their enrollment targets, because the colleges had decided to focus more on improving student quality, and would therefore limit new students. The competitive environment was also becoming more intense for its newer programs. So, management reduced its own growth projections for 2U. This was the breaking point for the stock.

Everyone's worst fears were now confirmed. 2U's growth potential, future profitability, and addressable potential market size were in doubt. 2U's investor communication continued to be vague, especially around its profitability targets. Many investors had already lost trust in the company at this point. Few investors were ready to defend or buy up the shares at lower prices. Most initial shareholders exited the stock completely. The short case was realized. 2U's stock completed its decline. 2U's stock price collapsed to just under 2x EV / NTM revenues and traded at $11 / share.

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Sell stocks when the investment thesis will likely break. This means the company's target growth and profitability are unlikely to be achieved. Look for flaws in the thesis. The reason is likely structural, such as costs turning out to be higher than expected, or the total addressable market being much smaller than forecast.

Warnings signs include slowing growth and worsening profitability, or raising too much capital without a path to profits. Short sellers will attempt to catalyze the move with a detailed short report. Stocks that move purely on narrative, that do not have positive earnings, are particularly vulnerable to shorts.

How to Short Sell Stocks

- A stock is a sell (short) when expectations move lower because of a critical flaw in the thesis. Stocks that move on narrative, without financial earnings, are particularly vulnerable.
- Identify flaws in the investment thesis. The business may have structural limitations to meeting its financial targets. Look for issues that could impact future profitability.
- Warning signs are slowing growth and worsening profitability. Or raising too much equity—without a path to profits.
- Short sellers will often release detailed short reports. These create catalysts to lower expectations in the stock.

INVESTMENT PRINCIPLE #3

EXPECTATIONS

Invest in Market Rewards

HOW TO INVEST FOR ESTIMATE REVISIONS	Invest for changing earnings estimates to find potential returns. Look for change in a critical factor of a business to find estimate revisions.
HOW TO INVEST FOR CATALYSTS	Time investments ahead of catalysts to realize investment returns. Pay attention to new business developments (one- to two-year) and secular trends (multi-year).
HOW TO SHORT SELL STOCKS	Sell the stock if the company can no longer meet its growth or profitability targets. Look for a structural limitation in the business. Watch for warning signs: slowing growth, worsening profitability, raising unexpected equity.

PART IV

ADVANCED TACTICS: INVEST WITH THE BIG PICTURE

ADVANCED TACTICS

This section takes your investing to a higher level of awareness. We'll cover the framework of the economic cycle, so you learn to invest with a cycle perspective. You'll also take the perspective of an analyst considering an investment in a sector. Finally, you'll take the perspective of a risk manager and learn the tools to manage the risks of your portfolio. Consider this section your help to navigate the volatility of markets.

CHAPTER 13

HOW TO FIND CYCLE OPPORTUNITIES

We can group stocks by their economic sectors or industries, such as industrials, consumer, or financials. Since economic activity tends to move in cycles, we can separate the cyclical sectors. These are sectors where earnings are sensitive to changes in the economic cycle. The idea is to pick cyclical stocks at appropriate times.

For example, staffing companies' earnings tend to be sensitive to employment trends. This makes the sector a cyclical one. When economic activity slows down, employment levels decline. Staffing companies also likely see a decline in sales and earnings. We do not want to buy staffing stocks ahead of the economy entering a recession. Conversely, when economic activity turns positive, employment levels rise. Staffing companies will see strong earnings growth. So, we want to buy staffing stocks ahead of the early stage of the economic cycle.

To illustrate how to invest in stocks with a cyclical perspective, we'll first cover the basics of the economic cycle to provide context. Then we'll consider how different sectors have performed in past cycles and review a few cyclical investments.

PAY ATTENTION TO CYCLE PATTERNS

The basic historical cycle of economic activity is as follows. A long period of economic expansion often ends with a brief economic contraction. The economy re-organizes. This leads to a new expansion, and a new cycle. Historically in the U.S., each economic cycle lasts roughly a decade. The cycle is reflected by changes in economic output, employment, and money. The prices of each are measured as inflation, wages, and interest rates, respectively.

Central banks, such as the Federal Reserve Bank in the U.S., influence economic activity through monetary policies. They influence the amount of money in the economy. Interest rate targets influence the cost of credit or new loans. The supply of money typically grows through credit, which is the money created from commercial banks through loans. The central bank's open market operations can directly increase or decrease liquidity. This is the available cash in the market.

Pay close attention to changes in interest rates, levels of credit, and total employment. They directly affect the earnings of certain cyclical sectors. To evaluate how the path of a cycle will impact a company or sector, simply assess the change in those factors. Then consider how they will impact the business's earnings. With that awareness, you can better understand how these stocks will be influenced by the cycle. Let's consider the typical path of a cycle from a central bank's perspective.

Identify the Stage of the Cycle: Fed Policy

Contraction: Federal Reserve Eases Financial Conditions

In response to a recession, the central bank usually acts to lower rates and increase liquidity. This eases financial conditions.

The Fed lowers the federal funds rate, which is the overnight interest rate target. This effectively lowers risk-free rates, and in turn, lowers the rate on all loans and bonds. Bonds are loans sold to investors, while loans are provided by banks. Rates on everything from mortgages to corporate loans are reduced. This lowers the cost of housing for consumers and the cost of debt capital or loans for businesses.

At the beginning of the COVID-19 pandemic in 2020, the Federal Reserve lowered the overnight federal fund's interest rate to a 0–0.25% target range. It also commenced an open market asset purchase program. The Fed started buying a targeted amount of government bonds and mortgages each month. The Fed's purchases effectively increased available liquidity. It increased the amount of dollars available. This helped stabilize markets since it gave market participants a way to access dollars.

The Fed's purchases help raise prices of those government and agency-backed mortgage bonds. This lowers their effective yields, thereby lowering market interest rates more broadly across financial securities. Lower rates also lead buyers of government and mortgage bonds to look for additional yield in riskier assets. For example, they can seek yield in corporate debt—which then raises corporate bond prices. This lowers their yields and effectively lowers rates for companies to raise money with corporate bonds.

The Fed's actions ease financial conditions, and they make more money available. Lower capital costs for consumers and businesses, in effect, allow more money to be spent or invested in new products or services. Lower interest rates encourage demand for new loans from banks—assuming banks have the balance sheet capacity. This also helps creates new money. Investor capital-seeking yield creates demand for corporate bonds or even riskier assets like stocks. This provides more capital for businesses to use to expand their operations. Higher prices for riskier assets also create a wealth effect. This encourages the additional money to be used. Federal and state governments can also give money directly to consumers or businesses. They can do this through stimulus programs or tax cuts.

Early Cycle: Lower Capital Costs and More Cash Creates Expansion

The net effect of lower capital costs and more available liquidity is usually more economic activity. More money leads to more transactions. There is more spending on goods and services, and new investments to create new products and businesses, all of which lead to higher economic output. The net effect of higher economic activity is that usually more jobs become available. This lowers unemployment. As economic output turns positive, this is considered the start of a new cycle. The Fed is typically focused on creating financial conditions for maximum employment. This is one of the pillars of its dual mandate.

The economic output starts to expand and unemployment declines. This is the early stage of a new cycle. Interest rates are likely at their lowest in this part of the cycle, due to the Fed's interest rate

policies in response to the recession. Credit levels expand with new commercial and industrial loans[1], which creates new money. New issuances of corporate bonds also increase money for corporations.[2] The cycle typically develops with economic output, employment, and money all expanding together.

Cyclical sectors typically outperform in the early part of the cycle. Rising employment benefits a variety of consumer sectors. More income is available from more jobs, which supports consumer businesses. This includes consumer retail (more discretionary spending), airlines (more travel), and consumer durables (more furnishings, etc.).

Lower interest rates also support transactions in several sectors. These include real estate and auto sectors, where loans are commonly used. Lower financing costs help create demand. The financial sector also benefits from rising loan and bond levels, as well as higher interest rates. These increase their transaction fees and interest income.

Businesses often broadly re-stock inventory at the very first signs of a new cycle. The industrials sector also outperforms early in the cycle. These sectors include industrial producers (such as Honeywell), transport companies (such as United Parcel Service), and materials companies (such as Sherwin-Williams). They create new goods for consumers and businesses. Business services also outperforms (more staffing or personnel-related services) as output expands.

1 See Federal Reserve Economic Data (FRED) database.

2 See Securities Industry and Financial Markets Association (SIFMA) database.

Mid-Cycle to Late-Cycle: Federal Reserve Tightens Policy in Response to Inflation

When there is more demand than supply of goods and services, prices will typically rise together, which creates inflation. This can be caused by supply disruptions or shortages, especially if the cost of energy rises. Shortages of workers can also lead to higher wages, which also raises prices. Inflation in the past has also come from excessive money supply created and spent on limited goods and services[3]. As inflation rises, the Fed typically shifts its focus to maintaining conditions for price stability. This is the other pillar of its dual mandate. If inflation exceeds its targeted range, the Fed will more likely consider a policy intervention to reduce inflation.

The economy then reaches a higher level of employment and/or inflation that exceeds the Fed's target ranges. The Federal Reserve will typically shift policy to tighten financial conditions. This is usually the mid to latter part of the cycle. The Fed can raise its overnight interest rate targets. This increases interest rates for loans and bonds, raising the cost of capital for consumers and businesses. The Fed can also raise reserve requirements, or the money banks are required to hold at the Fed, which tends to slow the growth of loans. Or the Fed can reduce its open market purchases of government securities. It can sell and reduce the size of its balance sheet, which reduces liquidity, or available cash in the market. This can lead to higher rates for government bonds, which effectively raises the risk-free rate for long-term loans.

3 The 1970s economic environment in the U.S. was characterized by this dynamic.

Mid-cycle sectors include technology companies, hardware, and semiconductors. These sectors tend to outperform in the mid-cycle. This period tends to be stable, so companies continue to invest capital into new projects. Cyclical sectors also typically continue to perform well. Stock performance during the middle of the cycle tends to be driven by earnings growth. So historically, the sector outperformers are those driving the growth of the current cycle.

Toward the latter stage of the cycle, unemployment usually reaches historically low levels. There could be signs of slowing growth in employment. Declines in temporary labor levels are usually a leading indicator. The pace of economic output moderates. Interest rates are also likely at a cycle peak, which reflects Fed policies to tighten financial conditions. There may be some signs of credit deterioration, such as an uptick in delinquency rates on loans at banks[4], or a rise in defaults on high-yield bonds. This means there are more missed interest rate payments due to slower business trends. These indicators suggest credit levels may be over-extended, and will likely be reduced.

Toward the latter part of the cycle, cyclical sectors will typically underperform. Investors tend to anticipate the end of the cycle and reduce exposure to cyclical stocks. Interest rates and inflation reach their peaks. Interest rate-sensitive sectors, such as financials, industrials, and real estate, will also underperform. Investors expect credit levels to contract due to tighter financial conditions.

4 See Federal Reserve Economic Data (FRED) database.

End of Cycle and Recession: Economic Activity Contracts

Toward the end of the cycle, economic activity has likely slowed. There is less growth of economic output to cover the higher cost of loans or debt. Banks and investors also have less money to lend or invest, which leads to higher rates and fewer loans provided. Investors are less willing to purchase bonds due to the risk of default, which raises rates for corporate or high-yield bonds.

Credit levels start to decline as banks and investors collectively reduce risk. Reduced availability of money for spending and investment reduces economic output. This further reduces the number of jobs and pushes up unemployment. Output growth flattens or even turns negative, which leads to an economic recession.

Less growth means more individuals and businesses miss or default on their loan payments. This leads to more fear of losses from banks and investors. This further heightens rates for capital and reduces available credit. Households and businesses sell assets to raise cash. This then lowers asset prices, which further reduces the overall wealth of individuals and businesses. Uncertainty leads to reduced investments in assets or new products and services. This creates a kind of downward economic spiral[5] that continues until confidence stabilizes, and businesses grow earnings again.

Defensive sectors include consumer staples (basic goods and services), utilities (electricity), and healthcare (prescription drugs). These sectors tend to outperform other sectors when the cycle turns

5 The Great Depression of the 1930s saw this economic downward spiral taken to the extreme.

to a recession. Companies in these sectors have stable earnings and dividends. They are less influenced by changes in employment, money, or output.

Recovery: Seeds of a New Cycle

In a recession, the Fed typically takes some action to ease financial conditions, such as lowering rates and/or purchasing securities in the open market to increase liquidity. The increase in money helps ease the economic transition that happens in a recession. Households and businesses shift to areas of the economy where there is more demand for new goods and services. The economy is usually transformed in this recessionary period. New sectors and industries emerge to then drive a new cycle of economic growth. Total output starts to rise, and employment again increases, new credit expands, and a new cycle starts again.

Track the Indicators of the Cycle: Output, Jobs, Capital

Fed policy statements and speeches. The Federal Reserve is usually transparent as to how it observes economic developments. It is also upfront about its plans for monetary policy. You can find these policy guidelines in the Federal Reserve's communications. These include press releases, policy statements, and transcripts of speeches and news conferences.

Pay attention to changes to Fed policy, particularly future interest-rate targets, as well as changes to the Fed's open market operations and plans for its balance sheet. This will impact market interest rates. Major policy shifts tend to occur near turning points of a cycle, such

as the Fed's monetary intervention in April 2020 which marked the bottom of the pandemic recession.

Employment releases. On the first Friday of each month, the Bureau of Labor Statistics (BLS) releases a monthly jobs report. This shows the number of employed individuals and provides the unemployment rate. Every other Thursday, the Department of Labor also releases unemployment weekly claims. This provides a leading indicator of unemployment. The BLS also releases its Job Openings and Labor Turnover Survey (JOLTS), which provides statistics on job openings. It also includes hire and quit rates. These all indicate the demand for labor.

Pay attention to jobs growth, which generally indicates an economic expansion. Weekly claims typically rise sharply in a recession, then decline in the early part of a cycle. When unemployment is at its lowest relative to historical trends, the cycle is usually at its latter stages. The number of temporary help workers also tends to peak near the end of a cycle.

Business activity. These indexes provide an indicator of changes in economic output.

Purchase Managers' Index (PMI). These monthly surveys provide an indication of directional trends in the economy. They measure the activity of manufacturing and services industries in both the U.S. and global markets. An index reading over 50 indicates an improvement in activity when compared to the prior month, while one under 50 indicates a deterioration. PMI indexes tend to signal directional trends for global economic output.

Industrial Production Index (IPI). The Federal Reserve releases the monthly Industrial Production Index. The index measures the production output of manufacturing, mining, and electric and gas utilities industries in the U.S. The Fed also estimates capacity utilization. This calculates production as a percentage of the maximum potential industrial output.

Pay attention to PMI indexes improving or slowing. This tends to correspond to changes in the industrial production index and economic output. Industrial-related stocks usually track these indexes closely. Capacity utilization also tends to peak as growth in industrial production flattens near the end of a cycle.

Capital levels. The Securities Industry and Financial Markets Association (SIFMA) releases estimates of new corporate bond and equity issuance. This represents capital from investors. The Federal Reserve also tracks commercial and industrial loans from banks. This represents lending to corporations.

The Federal Reserve also provides weekly updates of assets on its balance sheet, from purchases of securities. An increase in the Fed's assets usually creates additional liquidity. This often leads to more capital being directed toward investments like corporate bonds.

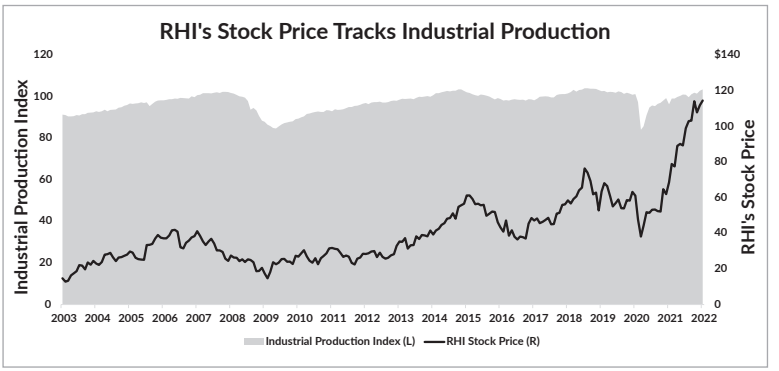
Pay attention to the growth in capital provided to corporations. This is typically associated with an expansion. Capital levels tend to decline in recessions. Fed policies and open market operations will impact overall liquidity. More liquidity can increase the available capital for corporations.

LOOK FOR CYCLICAL SETUPS

Cyclical stocks often provide opportunities for significant earnings revisions as the cycle changes. These are stocks like staffing company Robert Half or oil tanker company Scorpio Tankers. The basic mechanics are straightforward. Analysts' estimates tend to extrapolate recent trends forward (keeping the growth rate the same). So, earnings estimates will usually be too low coming out of a downturn or too high passing the cycle peak. Stocks will therefore typically have a peak multiple in a downturn, and a trough multiple at the end of the cycle. You can develop a sense of the company's range of earnings and peak and trough multiples. With a view of the economic environment, you'll have targets to buy and sell the stock.

Identify the Peaks and Troughs: Robert Half

Staffing company Robert Half ($RHI) is highly influenced by broader employment trends in the economy. Demand for staffing jobs tends to rise as the economy grows. It also declines as the economy enters a recession. The stock price follows directional trends in the

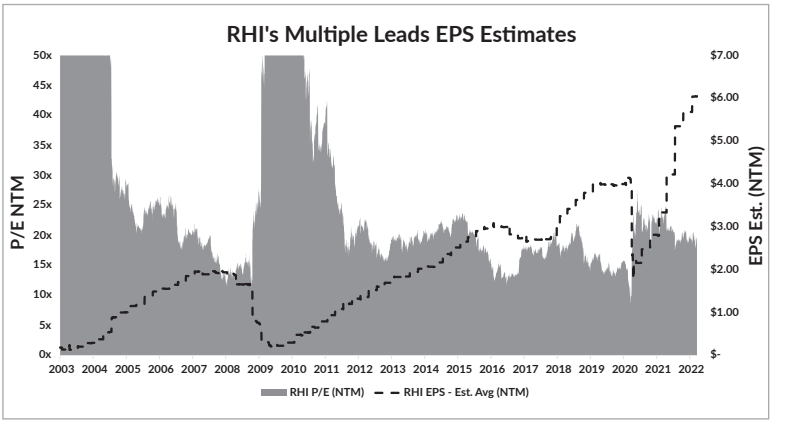


industrial production index. This is because industrial activity correlates with temporary employment levels.

To invest in a cyclical stock like Robert Half, we establish a view of where we believe the cycle is headed. Then we estimate the company's forward EPS and then use an appropriate multiple to price the stock. RHI's multiples are also the highest in the downturn, as investors price in a recovery. And they are the lowest at the cycle peak, as investors price in an expected recession. Usually, we'll use a mid-cycle multiple (19x) to price the stock and use peak/trough multiples to estimate turning points in the stock.

You can get a sense of how RHI's earnings will trend based on prior cycles. Between the Great Financial Crisis of 2008 and the COVID-19 pandemic, Robert Half's business observed one full cycle. Earnings per share (EPS) dropped 86% in the recession of 2008–2009, then rallied during the early recovery of 2010–2012. Earnings then grew by about 20% annually. There was a period of decline during the oil-related downturn in 2015–2016. The industrial cycle then peaked in mid-2018. This turned into a severe recession in the COVID-19 pandemic in 2020. Robert Half's EPS declined by 30% in the downturn.

RHI's next twelve-month (NTM) price to earnings (P/E) multiple moves generally six to twelve months ahead of EPS trends. The stock effectively prices in the expected EPS change for the next year. RHI's multiple peaked in 2015 ahead of the oil-related downturn and EPS decline, which lasted two years. The multiple then reached another peak in mid-2018, as industrial production topped out, and EPS growth slowed during the next two years. RHI's multiple then



trended down to reach trough levels, as the 2020 recession started. It priced in the severe EPS contraction. RHI's multiple then spiked up in late 2020, to price in the sharp recovery of EPS in 2021.

Plot a graph of RHI's EPS back to the 1990s, and you can see three full cycles of EPS rising, sharply declining, then rising again. There are wave- or sine-like patterns of peaks and valleys as its earnings move upward. RHI's NTM P/E multiples range from 15x to 23x through an entire cycle. A data terminal can easily plot these two historical graphs. You can do this for any cyclical stock. By tracking the historical economic cycle, you can get a sense of the magnitude of earnings changes, and the expected range of multiples. From there, we can estimate the top and bottom price of a cyclical stock. We'll do this in the next example.

Invest for the Recovery: AMN Healthcare

AMN ($AMN) is a healthcare staffing company. It provides nurses and other healthcare workers on a temporary assignment basis for

hospitals. AMN's business growth is driven by healthcare employment demand, so it is a cyclical stock. Healthcare utilization tends to be driven by overall employment and insurance coverage.

Hospitals faced a double whammy in the COVID-19 pandemic-induced recession. There was both a steep drop in employment and widespread stay-at-home trends. This led to a severe decline in healthcare utilization, with fewer elective procedures and routine care visits. As a result, demand for AMN's staffing services sharply lowered, though this was offset somewhat by the need for nurses for COVID-19 related medical support.

AMN's management expected earnings to decline through 2020. In its 1Q20 quarterly earnings release—which was slightly positive—it provided an outlook for 2Q20 for lower revenues. This driven by a material decline in healthcare utilization.

The 2Q earnings report, released in August 2020, revealed that AMN's revenues were better than expected (relative to the outlook). Revenues even grew slightly, due to hospital demand for COVID-19 support. Management's outlook for 3Q was for revenues to decline on a year-over-year basis, though it noted some signs of stabilization.

At this point in time, a value investor started to look at AMN. The consensus estimate for AMN's 2021 adjusted EPS was $3.16. This was roughly the same level as 2019's EPS, even though AMN had added a few acquisitions since, which would contribute to EPS. In other words, there was very little expectation for recovery. At that EPS level, with the stock trading at roughly $52 / share, the forward P/E multiple was 16x. AMN's forward P/E multiple (based

on next- twelve-month estimates) has ranged between 14x and 25x over the past ten-year cycle. Since the multiple is at the lower end of the cyclical range, it suggests the stock is also not pricing in a recovery. This is an attractive cyclical investment setup if the environment improves.

The key question was: how will things look one year from now? The COVID-19 pandemic, at some point, would eventually be contained. And more likely than not, people would return to hospitals to receive procedures and get care. Healthcare is not something that is likely to be permanently deferred.

AMN is also a leading provider of travel nurses, and it had increased its competitive advantage in several ways. It created managed services programs, which oversee an entire system's temporary nursing needs. It also provided other valuable services, such as executive recruiting and labor management software. In prior cycles, it historically grew earnings by 15–20% annually. There were signs of a nurse shortage due to an aging workforce, with a sizable gap between healthcare job openings and hires. This would likely be a positive demand driver for AMN's staffing services.

Demand for its staffing services (excluding COVID-19 related demand) declined 20–30% year over year in 2020. You could gather this from the press releases, as well as from earnings calls, where management would discuss business trends. A return to normal demand levels would imply at least 30–40% year-over-year increases for 2021.

Assume AMN keeps its EPS relatively flat for 2020 (roughly $3.16 in EPS) with help from demand related to COVID-19 services. Healthcare services demand rebounds in 2021 by 30–40% (could be $4.10–4.20 in EPS). AMN returns to its historical 10–15% growth rate for 2022 (potentially $5.00 in EPS). Apply a mid-cycle multiple (between the historical 14-25x range) of, say, 20x on 2022 earnings. This would imply a $100 / share stock by fall 2021—roughly double the $50 / share levels seen in 2020.

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Cycles change the levels of output, employment, and money. Cyclical stocks are businesses that are particularly sensitive to these factors. To invest in a cyclical stock, first identify the stage of the cycle. Track capital, employment, and business activity. Pay attention to changes in the Fed's policies. Cyclical stocks tend to rise in the early and mid-part of the cycle. They are usually sold off near the end of the cycle.

To invest in a cyclical setup, identify the peaks and troughs of the cycle. Look at the historical change in earnings during recoveries and declines. Then find the historical multiples for the stock. Use these ranges to estimate the forward earnings and the expected multiple. Now you can estimate the stock's price range. You can then gauge the potential returns, and position for a change in the environment.

How to Invest With a Cycle Perspective

- Economic activity tends to move in cycles. This changes the levels of interest rates, the availability of credit, and the total number of employed workers. Sectors dependent on any of these factors are more sensitive to the cycle.

- Identify the stage of the cycle and the Fed's expected intervention. Think through which sectors are more likely to benefit or perform poorly as the cycle progresses.
- Use the peak and trough multiples and earnings recoveries and declines of prior cycles. Use them to gauge when to invest in a cyclical stock, and what price the stock will likely trade at.

Economic shifts and market dislocations often create cyclical investment opportunities.

CHAPTER 14

HOW TO UNCOVER SECTOR OPPORTUNITIES: CYCLICAL ANALYSIS

We'll use the tanker industry's stocks as an example of how cyclical analysis is used to make an investment decision.

The oil tanker industry is the business of ships that transport oil and oil-derived products overseas as part of the global oil trade. I came across this investment idea through Twitter in early 2020 as the first wave of COVID-19 cases started to impact markets. Economic shutdowns limited oil demand to only essential transport and production. Oil prices declined sharply from the sudden drop in demand. Excess oil supplies led to higher oil inventories. Barrels of oil quickly filled up available storage space and had to be stored in oil tankers at sea, known as floating storage, which was driving up oil tanker rates. The tanker stocks started to appreciate. This was especially noticeable given the sell-off of stocks in the energy sector, as well as the broader market.

One event-driven investor, Harris Kupperman, believed this could be the catalyst for a cyclical trade in tankers. He had followed the

oil tanker market closely for many years. The oil tanker industry had seen its charter rates decline for the better part of the decade. As a result, fewer ships were being built, and existing ships were aging. The tanker industry was about to have a shortage of ships. The spike in oil storage demand could be a catalyst to drive higher charter rates. This would create renewed profits for tanker companies.

Great thesis, right? Admittedly, I bought tanker shares immediately[6]. It was only after the stocks suddenly contracted 20–30% that I realized I needed to do some additional analysis. After doing so, I learned that the tanker industry was a short since tanker rates were most likely heading downward in 2021.

The high-level steps of my analysis to come to this decision were as follows. I believe this research process can be generally applied to many cyclical ideas.

INVESTING IN THE TANKER RATE CYCLE

Study historical patterns: I started with the annual 10K filings of a few major tanker companies—namely, Euronav NV ($EURN), Scorpio Tankers ($STNG), and Frontline Ltd. ($FRO). I also read *Maritime Economics*, a book that provided a broader perspective of the shipping industry. I learned the tanker industry has for many cycles attracted speculators. This made me feel better about my losses. Then, I searched the internet for research papers or

6 George Soros used to say he would "invest first, investigate later." When he was actively managing the fund himself, he said he could investigate an industry in one to two days.

contemporary articles to answer specific questions, like "Why did tanker rates spike in the 1910s and World War I?[7]"

Look for the critical factor: With a sense of historical cycles and with historical price data for the industry, I looked for patterns. It was quickly evident that rising and falling tanker rates were the source of booms, then busts, of profits in the tanker industry. Then, I began to suspect that the supply of ships was a critical factor for tanker rates. Another important factor was oil demand, which was tied to the broader commodity cycle. Capital investments into the sector through loans and new shares also influenced the cycle. Capital is often a factor for many boom-and-bust cycles in commodities.

Use supply and demand: It seemed the movement of tanker rates could be simplified as a function of supply and demand. Tanker ship transport capacity is the supply and oil produced and traded over sea is the demand. Confirming this was simply a matter of putting together the data. I found data from historical company annual filings and government energy databases. I cross-referenced this with data snippets from industry researchers. I pieced together a basic historical supply and demand picture. This confirmed that transport capacity was the critical factor for charter rates.

Project future supply and demand: Then I created forward-looking estimates. I found supply forecasts from tanker company presentations, and oil production estimates from the Energy Information Administration (EIA). I projected expected supply and demand,

7 Ocean freight rates rose during World War I due to lost tonnage, particularly from attacks from German submarines. World tonnage declined by about 15% from 1912 to 1920.

then used a simple model to estimate future tanker rates. I then fed these projections into the financial model of a tanker company, to estimate the stock's future earnings and price.

Make an investment decision: This analysis showed me that tankers were likely oversupplied. This meant tanker stocks were to decline in 2021, and significantly. The conclusion led me to reverse from a bullish thesis to a short (sell). I had long positions in $EURN and $FRO, which I then offset with shorts in $NAT, $STNG, $TNK, and $INSW. I released the analysis on Twitter, which also helped other investors move to better trades. My favorite reaction from @devilbebop was "I never got to thank you, but I think you're as responsible for my [100% return] performance as anyone…your blog post about getting out of tankers was the kick in the pants I needed to see the forest for the trees and allowed me to move on quickly. It snowballed from there."

The following describes the cyclical dynamics of the tanker industry.

Tracking Oil Tanker Supply and Demand (2000–2020)

In the early stage of the commodity cycle of the 2000s, the tanker industry saw a tremendous five-year profit boom. Rising oil production and steady increases in oil transported by sea were met with a limited supply of oil tanker ships. Charter rates, while volatile, trended sharply upward. In 2005, rates skyrocketed from $20,000 / day to $200,000 / day at their peak. That year, the prices of several tanker stocks had increased tenfold from prices three years ago.

Outsized tanker profits quickly attracted investor capital. Investments

into equity and debt, plus aggressive bank lending, helped finance a boom in tanker shipbuilding. New deliveries of very large crude carriers (VLCCs) tripled between 2005 and 2010. Total tanker capacity expanded more than 30% in those five years. The expansion in ship capacity occurred as global oil production reached its peak in 2008.

Ships are typically constructed in one to two years. They have a roughly twenty- to twenty-five-year lifespan, which can also be extended a few years. Following the shipbuilding boom, the tanker industry now had an excess supply of tanker ship capacity versus the volume of transported oil. This imbalance started in 2008 and continued for most of the next decade. The oversupply of tanker capacity caused charter rates to decline almost every year from 2005 to 2020.

A very short boom in rates occurred in 2013–2015. Global oil production picked up, while U.S. sanctions on Iran removed a fleet of ships from the market. Profits from this boom were short-lived. A wave of new shipbuilding quickly followed (sometimes bankers never learn). Oil production then flattened in 2016, and then declined each year through 2020. Tanker capacity remained oversupplied. Tanker rates, therefore, continued to decline through that period.

Identifying What Impacts Tanker Earnings

There is a cyclical pattern in historical tanker rates. There is a boom (rapidly rising rates) followed by a period of intense new shipbuilding. This leads to ship oversupply, which is followed by a bust (declining rates). Then there is a recovery for many years. The

key factor is the balance between the amount of oil transported over sea versus the capacity of available tankers. This drives the direction of tanker charter rates.

The oil tanker business is a fixed-cost business. So, tanker companies' earnings are driven by changes in industry tanker rates. Stock values tend to move with the asset valuation of the ships, which tend to move with changes in tanker rates.

Rate spikes tend to coincide with events where the number of available ships suddenly declines (i.e., from sanctions or even war).

The pandemic in 2020 created an environment where tankers were used for storage. Excessive oil inventory in 2020 widened the spread between current (or spot) oil prices and future (or forward) oil prices. Spot prices were much lower versus forward prices—a phenomenon known as contango. Higher contango created an arbitrage opportunity. Physical oil traders could now buy oil at spot prices, store the oil, and sell the oil forward for a risk-free profit. Many traders hired oil tankers to use for storage in early 2020 to take advantage of this arbitrage opportunity. This suddenly removed tanker ship capacity, which more than offset the loss in demand for oil transport. The question was: would these profitable conditions last for tankers?

Here is the write-up I shared with investors, which has been edited for clarity.

INVESTMENT REPORT

The Short Case for Tankers (June 2020)

Trade recommendation: Short (sell) tankers. The current supply/demand outlook suggests an oversupply of tanker capacity versus oil transport demand. Tanker rates will likely be pressured through at least 2021. Lower global oil production[8] will reduce the volume of oil transported by sea. At the same time, new ship deliveries, together with the return of vessels used for oil storage, will expand fleet capacity. The oil tanker industry is expected to be in oversupply until 2022. This means the bull case of rising charter rates from the lower fleet supply will be pushed out to 2022.

The scenario to be long (buy) tankers is in August or September, at the earliest. If oil production is increased, tanker stocks could recover. This could be driven by increased import demand from China or the United States. Another scenario is the number of available vessels is meaningfully reduced. This could be from the impact of new trade sanctions (though likely temporary), or if more vessels are used for storage from continued oil oversupply (also likely temporary).

The bull case for 2021 is flawed. Tanker rates are already coming down. Global oil production cuts have lowered the volume of oil for tanker transport, which reduces demand for tankers. Temporary

8 Global oil production estimates from the U.S. Energy Information Administration (EIA). New ship deliveries from the investor presentations of tanker companies.

fleet reductions early in the year were due to 1) U.S. sanctions on Iran (removed an estimated 20% of fleet capacity) and 2) oil storage demand in 1Q (removed an estimated 7% of fleet capacity). Both positive impacts to tanker rates are starting to reverse. New sanctions also don't appear imminent. Higher spot (or current) oil prices will reduce price contango (difference between spot and future prices). This makes tanker storage less profitable for oil traders.

There is less storage demand for oil tankers. Due to lower contango in the oil market, the profits of oil storage for physical oil traders are lower. Higher contango previously meant traders could buy oil at spot prices, store it on tanker ships, and sell it at future prices for a locked-in profit. Contango is now much lower, which reduces storage profits. Ships previously used in storage by these traders are starting to return to the market. Larger ships, such as VLCC and LR2 type oil tankers, are likely still being used for storage since it is still profitable to store oil in them. This is supporting higher tanker rates for those vessels, for now. This storage demand is likely to pass if spot oil prices rise further.

Product tanker rates are pressured. Refineries are producing fewer oil products, which is leading to lower volumes of oil products transported at sea. Refineries are closing due to lower profit margins. Product prices have declined, which reduces their revenues. At the same time, crude oil prices have increased, which increases their costs. Oil products can only be stored for a short period (around three months). So, the product tanker ships that were used for storage are also coming back to the market faster. This is further pressuring rates in the product tanker market.

Weak earnings expectations. Analyst estimates[9] for tanker earnings indicate expectations for tanker rates to weaken in 3Q and 4Q later this year. Stock prices now reflect cycle-low multiples, which suggests the market expects further rate declines. Analysts expect lower oil contango will reduce demand for oil storage for tankers. This will lead to more ships being available for transport. Earnings estimates suggest rates will decline for the rest of 2021 and through 2022.

Lower volume of oil transported. Production cuts from the Organization of Oil Exporting Countries (OPEC) plus its allies (Russia, Mexico, and others) are expected to reduce total global oil production. The latest EIA estimates suggest production will decline by nearly 6% year over year (y/y) to 94.8 million barrels. The EIA expects production to increase slightly in 2021 and 2022. However, total oil production levels will remain below the pre-pandemic levels of nearly 100.8 million barrels per day in 2018–2019.

Oil prices appear stable, which suggests a balanced market of supply and demand. So production levels are likely to be maintained to support prices. The total volume of oil transported by sea is expected to decline 3.5% y/y in 2020 and another 2% y/y in 2021. This assumes the share of oil transported by sea increases (due to production shutdowns in the U.S.).

Higher tanker fleet capacity. Total oil tanker fleet capacity increased 6% y/y at the beginning of the year. New deliveries (minus scrapping) are expected to add 3.8% capacity to the total fleet. When

9 Analyst earnings estimates were directionally correct, though were still lowered throughout the year.

adjusting for the temporary fleet reductions due to storage and sanctions, the total fleet size is expected to be roughly flat in 2020. Then it is expected to increase over 4% in 2021, as these ships come back to market.

Lower industry rates expected. A supply and demand model can compare the estimated volume of oil transported at sea versus expected fleet capacity. As ships return to the market from storage, the supply of fleet capacity will increase, while oil demand will decline. The expected ratio of fleet capacity to transported oil volume is comparable to that of the 2016–2018 downturn. Tanker vessel values declined roughly 30% y/y in that period. If the same dynamic occurs, tanker charter rates could decline by a similar magnitude in both 2020 and 2021.

Date	2020E	2021E	2022E	2023E	2024E
Oil transported by sea (mil T)	**2,029**	**1,989**	**2,010**	**2,050**	**2,091**
y/y % chg.	*(3.5%)*	*(2.0%)*	*1.1%*	*2.0%*	*2.0%*
Tanker fleet capacity (dwt)	**396.8**	**420.7**	**402.3**	**393.8**	**389.7**
y/y % chg.	*0.0%*	*6.0%*	*(4.4%)*	*(2.1%)*	*(1.1%)*

Date					
Rates ($ per day / dwt)	**0.15**	**0.09**	**0.12**	**0.14**	**0.17**
y/y % chg.	*(29%)*	*(38%)*	*28%*	*21%*	*15%*
NAV (5-year) ($ per dwt)	**270.5**	**168.6**	**216.4**	**261.8**	**302.3**
y/y % chg.	*(35%)*	*(38%)*	*28%*	*21%*	*15%*

Sell tankers until oil production rises. The appropriate trade for this environment is to short (sell) tankers. Even at these valuations (as of writing this investment report, the stocks are trading at 0.6x book values), asset values could decline further. The earliest time to potentially buy tanker stocks is at the end of July 2020, when there could be changes to oil production targets. Otherwise, the bull case is pushed to 2022.

Until then, and likely well through 2021, the oil tanker industry will have an oversupply of ships. This will continue to pressure tanker rates and therefore tanker stock prices. The recommendation is to sell tankers until global oil production is expected to increase, or until demand for tanker storage comes back. Higher contango in the oil market could increase storage demand, which would support tanker stocks.

Lower tanker stock valuations. Stock valuations can become very depressed with these tanker rate assumptions. We can incorporate these tanker rates and asset-value estimates into a financial model. One way is the net-asset-value method, which sums the estimated future value of a tanker company's vessels, minus its expected liabilities and debt. The expected net asset value of Euronav NV ($EURN) suggests its stock price could decline close to 14% from its current prices.

Another way is the dividend-discount-valuation model, which discounts the expected dividends over the next 10 years based on earnings. We can assume that tanker rates decline for the next two years, then gradually recover to historical levels. The expected discounted dividend value of Euronav's stock suggests the stock price could be 35% lower than current prices.

Alternate Bull Upside Case

The bull upside case is the fleet resizes, which reduces capacity levels and leads to elevated charter rates. There is no data or evidence to suggest this will happen in the coming year, or next, unless oil production changes. Oil production is forecasted to rise in 2022. The potential catalyst for higher oil production earlier could be more demand. This will create pressure for higher oil production.

Chinese oil imports are already above pre-COVID-19 peaks. The data comes from China's General Administration of Customs. Higher imports are likely driven by increased car driving with the rebound of economic activity. Global oil demand could be higher than EIA estimates, which could lead to higher oil production.

The decline in oil production within the United States also appears to be leading to higher oil imports, per data from the EIA. This trend suggests more domestic demand for oil produced outside the United States. If oil production rises outside the U.S., there could be a higher share of oil being transported by sea and more demand for tankers.

If rates rise back to the levels seen in early 2020, the upside for these stocks could be just as large. Euronav's stock could be 55% higher with higher tanker charter rates, based on both a net asset value and dividend-based valuation.

Tanker sector background. The tankers business is simple. It involves the operation of vessels that transport oil and oil-related products from one market to another by sea. Charter rates are driven by the supply of ships relative to the demand for oil transport by sea.

Tanker charter rates can move vertically up and down like elevators, especially when the supply picture changes. There have been periods of rates doubling or tripling in a matter of days. In some years, rates have increased several-fold. The business is a fixed-cost model. Most tanker companies also use financial leverage to purchase vessels. As a result, earnings can move significantly with changes in rates. Tanker earnings are extremely volatile, with extreme upside and downside scenarios possible.

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To uncover opportunities for a sector, find the factors that drive earnings cycles in the sector. Study the industry's history and focus on these periods of significant change. Capital invested into an industry often accelerates earnings booms and busts. Supply changes are often critical to valuations. Once you identify the critical factors, you can estimate the industry's earnings.

Project future supply and demand levels. Supply/demand imbalances often create trade opportunities. Use the expected balance to guide your earnings estimates. Then position your investment for the expected change in earnings and valuations.

How to Invest in a Cyclical Sector

- Study the historical cycle patterns of the sector. Identify the critical factors that drive earnings and stock values. Pay attention to periods where there is significant change to look for catalysts.

- Focus on supply and demand to simplify your analysis of the industry. Many cyclical sectors have booms and busts due to a mismatch in the timing of new supply and demand. Capital investment often accelerates these dynamics.
- Project supply and demand for the sector. The supply forecast is particularly important. An imbalance will move the direction of earnings for the sector. You can then position your investment for the change in earnings and valuations.

CHAPTER 15

HOW TO MANAGE RISK WITH FACTORS: THE LINK TO MARKET VOLATILITY

Congratulations! Now that you are aware of the economic cycle, you can already recognize one key portfolio risk. Risk in this context refers to volatility, meaning potential changes in the stock price. Volatility can be attributed to different factors. You've covered the sector and cyclical factors that impact stocks. Now, you'll learn about various equity factors which are also helpful as quantitative measures of risk.

There are patterns of how equity factors perform in different economic environments. You can use them to be aware of potential risks or volatilities for your portfolio. You can tilt or concentrate your portfolio to a factor, or diversify the risk. The awareness of factors means you won't be caught off-guard by market price movements. Market volatility can often be linked to factor movements.

MONITOR YOUR FACTOR EXPOSURE

Factors are a way to view the different types of risks of a portfolio. These are stock categories based on the quantitative characteristics of a company and its stock price. Quantitative investors often use factors to build portfolios of stocks. Long/short equity hedge funds sometimes create factor-neutral portfolios. Keep in mind that the flows from investors who allocate based on factor groups can often move stock prices in the short term. Most institutional investors I worked with were aware of the impact of factors. So, we want to be aware of our portfolio's exposure to different factors, to recognize potential risks, and then decide how to use them.

Identify the Factor Groups

Equity factors have their origins in academic research. Fama and French proposed three factors—the market factor (or beta), the size factor, and the value factor. The factors were identified as a source of stock returns and volatility (or risk). Other factors, such as growth and quality, were also quantitatively defined over time. Factors can help you define your portfolio so you can better match it to your risk preferences.

Factors are essentially quantitative ways to explain a portfolio's risks and returns above the market returns. Market returns are known as market beta. A portfolio that has more exposure to a certain factor will likely have similar volatility to the factor.

To identify the factor group that applies to a stock, look at its shareholder list and focus on the largest ETFs or mutual funds that own

the stock. You can see how the funds are categorized (and named) by sectors and styles. To examine further, compare the characteristics of the stock with the holdings in a factor ETF. To see if a stock is considered a value stock, check if a value-based ETF is a major shareholder. Then compare its valuation ratios to see how it compares with a stock held by the value-based ETF.

So, what do you do with this? Factors are tools to identify the sensitivity of your portfolio to various risks. For example, if you own higher-beta stocks, your portfolio's volatility will likely be higher than that of the market. Factors also seem to have their own cycles, particularly periods of rotation between the growth and value factors. Recognize your portfolio's exposure to different factors, based on the types of stocks you own. This will help you to be aware of the portfolio's potential volatility.

Here are the essential equity factors and the tickers for the respective factor ETFs (which are U.S. focused), and how to identify and use these factors.

Market factor (SPY): Stock returns from the market. Beta measures how correlated a stock's returns are to the market, based on a regression of the stock's returns versus the index. Higher beta implies the stock has more exposure to equity volatility.

How to use this: Beta is a common indicator of how much a stock or portfolio will move with the market. For example, a stock with a beta of 2 is expected to move 2x more than the market (as measured by the S&P 500 Index).

The Pro-cyclical Factors

Value factor (IWD): Returns from cheaply priced stocks. This was popularized by Benjamin Graham and David Dodd. The value factor is typically calculated with valuation ratios, including price-book value, price-to- earnings (P/E), and enterprise-to- operating cash flows. Keep in mind this is a purely quantitative measurement of value.

How to use this: Value factor tends to move in cycles and perform better with interest rates at cycle lows and when volatility declines.

Small-cap factor (IJR): Returns from smaller companies' stocks. Selected by having a smaller market capitalization (i.e., small-caps) relative to the broader universe of stocks. Smaller stocks have more potential to grow to become larger companies. You can check a stock's size versus the holdings of a small-cap ETF to see if it applies.

How to use this: Small-cap factor tends to perform with rising output growth. Small-cap stocks tend to be more volatile than large-cap stocks.

The Mid-Cycle Factor

Momentum factor (MTUM): Returns from stocks performing well. Selected based on relative returns above a benchmark within six- to twelve-month periods. Momentum reflects the tendency of persistent trends in markets. You can compare a stock's returns to those of stocks in a momentum ETF portfolio.

How to use it: Momentum factor tends to perform better in stable market conditions. Be aware that momentum can crash when

markets decline and volatility increases. Momentum has tended to outperform other factors over a full cycle. Make sure the higher risk/reward of momentum suits your investment preferences.

The Defensive Factors

Quality factor (QUAL): Returns from stocks with strong business models and competitive advantages. Selected based on quality metrics of low financial leverage, earnings stability, and high return on equity.

How to use it: Quality factor tends to outperform in slowing, late-cycle periods when volatility increases. Consider adding more quality exposure in the latter part of a cycle.

Low volatility factor (USMV): Returns from low-volatility stocks. Selected based on the lowest overall volatility in a sector or market, adjusted for correlations with other stocks.

How to use it: Low volatility factor tends to decline less and with lower volatility in market downturns and recessions. Use these stocks to reduce risk.

Yield factor (VYM): Returns from stocks that have stable and increasing dividends. These stocks have higher dividend yields than the market index, and a record of consistent dividend payments. It also includes quality metrics, such as low financial leverage. You can compare the stock's yield with holdings in high-dividend yield ETFs.

How to use it: Yield factor tends to perform better with low growth and rising interest rates. Avoid yield traps, where the stock's yield

looks temporarily high. This can be due to a low stock price or a very high payout ratio. In both these cases, the company's earnings are expected to decline.

The Growth Factor

Growth factor (IWF): Returns from growth companies. Selected based on above-average growth in earnings and sales versus the market and industry. Predicting future growth is intuitively the key source of long-term returns for many investors.

How to use it: Growth factor tends to perform better when momentum returns are positive and when value factor returns are negative.

From a factor perspective, many of the methods we've covered to select stocks are considered alpha signals for growth. These include earnings estimate revisions (from growth opportunities or catalysts), or projecting earnings growth (from competitive advantage). These are ways to earn excess returns that cannot be explained quantitatively with the usual factors.

Summary of Historical Factor Performance with a Cycle

Early-cycle: Small-cap factor strategies historically outperform in early economic expansion. There is also positive outperformance from value and momentum factors.

Mid-cycle: Momentum factor strategies historically outperform through an economic expansion. This is followed by quality factor strategies outperforming in the later part of the cycle.

Recession: Minimum volatility and quality factor strategies

historically outperform in slowdowns. These factors also outperform in economic contractions.

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The volatility of stocks can be mapped to specific factors. Identify which factor is likely to influence the stock. Check the shareholder list to see which factor ETF owns the stock. You can then monitor your portfolio's exposure to different types of volatility. The pro-cyclical factors are value and small cap. The mid-cycle factor is momentum. Defensive factors are quality, low volatility, and yield.

Growth and value factors tend to move in cycles. There have been periods when growth and value factors rotate. One factor outperforms while the other underperforms. Keep this factor cycle in mind.

How to Manage Portfolio Risk

- Factors are your guide to navigate volatility. Use equity factors to monitor your portfolio's exposure to different types of volatility. Look at a stock's shareholder list to look for specific factor ETFs as holders.
- Factors can be grouped as pro-cyclical, mid-cycle, and defensive or late cycle factors.
- Some factors have cycles, particularly value and growth, where they rotate in performance.

Let's help your community learn investing skills. Tell a friend who would benefit from an insight you've learned. Share this book with your community.

ADVANCED TACTICS

INVEST WITH THE BIG PICTURE

HOW TO INVEST WITH A CYCLE PERSPECTIVE	Track the patterns of output, employment, and money. Identify the stage of the cycle to select specific sectors. Use cycle peak/trough earnings changes and multiples to set price targets.
HOW TO INVEST IN A CYCLICAL SECTOR	Study the earnings cycles of the sector to find the critical factor that moves prices. Find supply/demand mismatches to uncover potential trades.
HOW TO MANAGE PORTFOLIO RISK	Identify the factor of the stock based on its shareholders. Monitor the portfolio's factor exposure to identify its potential volatility.

PART V

INVESTOR MINDSET: CALL TO OPPORTUNITY

INVESTOR MINDSET

Everything we've covered so far is the essential apprenticeship of a Wall Street analyst. First, you practice fundamentals of how to model and value a company to identify structural asymmetry. Second, you assess business strategy and competition to look for favorable change and patterns. Third, you understand the dynamics of investor expectations. This is how you recognize opportunities in stocks. Finally, you take the high-level view to invest with the cycle, analyze sectors, and consider portfolio risk.

Practice and apply the tools and concepts outlined. This section is a guide to help develop your own investing style and feel, which will become your unique advantage. You'll learn how to turn an observation into a full-fledged investment thesis. You'll discover how to find ideas and setups by tracking institutional investors. Finally, you'll consider your personality, understand what you like, and develop awareness of your personal risks. You will learn to find your own unique edge. I am excited for your journey and the strategies you will develop!

CHAPTER 16

HOW TO DEVELOP A MONEY-MAKING INVESTMENT IDEA

INVESTING IN ESG WITH MSCI

It's time to put everything together into an investment thesis. Environmental, social, and governance (ESG) has been the fastest-growing investment area in the 2020s. We observe ESG as a kind of change. We define its addressable market, identify competitive advantages, and assess the industry structure. Then we value the opportunity. We'll turn an idea—ESG—into a full-fledged investment thesis for a stock.

An idea starts with an observation or insight. In early 2020, I noticed ESG was increasingly talked about by company executives as a priority, particularly at BlackRock, the largest asset manager in the world. ESG investing seemed to represent the future. Why wouldn't investors want sustainable and positive returns if offered the choice? The question was how could it be an investment opportunity for a stock? Here is the process I used to turn an idea into an investment thesis.

Define the addressable market (TAM). Sizing the addressable market for a new trend is critical because it determines the potential size of a company. I needed evidence that ESG investing could become more than a niche business. From some Google searches, I found a few third-party reports with estimates on ESG market sizes. However, their sizes were wildly different, and even the definitions were inconsistent.

One statistic stood out to me. It came from the Principles for Responsible Investment (PRI). The PRI is a United Nations-supported international network of investors. It works to promote sustainable investing. These institutional investors had pledged to include ESG factors in their investment decision-making. The total size of their assets was $100 trillion. I checked this number against the asset sizes reported by the U.S.-based Securities Industry and Financial Markets Association. I realized that $100 trillion was the size of the entire asset management industry! Every asset manager in the world has pledged to implement ESG into their investment process. This suggested a very large total addressable market for ESG investing.

Look for meaningful change. When looking at a market opportunity, it is important to understand if a trend is secular, as opposed to cyclical, or even faddish. Ideally, the trend is based on a fundamental or structural change in the market, which leads to growth from an expanding market. You identify structural changes by repeatedly asking "Why?" to understand the trend. For example, "Why is ESG investing growing?"

I read widely to look for clues. I read policy recommendations from groups like the Task Force on Climate-Related Financial Disclosures

and the Sustainability Accounting Standards Board. I found research reports on historical ESG strategies, looked at surveys of various investors and family offices, and even read investment implementation guides from the CFA Institute.

ESG investing seemed to be driven by a combination of things: investor preferences (particularly from the Millennial generation), new policy frameworks, widespread initiatives of major financial institutions like BlackRock, and, perhaps most importantly, the outperformance of ESG investment strategies. ESG-related funds were gathering assets. Asset managers were paying close attention to the opportunity. These trends seemed structural to me.

Think like an insider. Finding the most valuable businesses was the next step. Since I covered MSCI's stock at the time, I talked to numerous investors about the company regularly. One investor pointed out that MSCI's CEO Henry Fernandez had said the company's ESG business could be "as large as the (core) index business." On earnings calls, Fernandez made a point to call out MSCI's internal investments in ESG content. MSCI, as well as larger companies like S&P Global and Moody's, all acquired smaller ESG-focused data analytics companies in 2019. I also noticed MSCI's ESG data business was growing at a very fast rate (over 30% year over year).

Putting these signs together, it seemed like ESG data was the most valuable piece of the ESG business. A colleague also suggested an ESG research piece could be interesting for MSCI's stock. This is where thinking like an insider, in this case, talking about ESG with other investors and analysts, was very useful.

Find patterns of dominance. I reached out to a few friendly folks at investment and data firms to learn how they use (or build) datasets to implement an ESG investment strategy. The investment analysts confirmed that access to ESG data was critical to running an ESG investment portfolio. I also learned that MSCI and Sustainalytics were the two major vendors. Most firms also purchased specialized data sets from smaller providers. They did this to build a complete picture of ESG-related risks. ESG datasets were essential for investment analysts. MSCI's dataset seemed to be the most comprehensive.

Spot the competitive advantages. With any fast-growing market, there will be competitors. We want to identify what is most valuable and look for signs of structural advantages. I searched available transcripts and filings to find the revenue sizes of the major ESG data providers. I quickly learned that MSCI was by far the largest provider, followed by Sustainalytics. The two largest ESG data firms seemed to have a clear first-mover advantage. MSCI's ESG product was already being used by large investors. Its ESG indexes were used by these investment funds as ESG benchmarks.

It took nearly a decade for both MSCI and Sustainalytics to build their ESG datasets. I believed these datasets would be extremely difficult to replicate by new competitors, especially since they drew on a large variety of unstructured data sources. I suspected the ESG data market would have similar dynamics to the index business. There would be one or two benchmarks that could remain leaders for many years.

Find growth with the S-curve. Once we have confidence a trend is established, we can estimate its growth. Since ESG is like a new

product in the marketplace, the S-curve adoption framework seemed appropriate to estimate this. Data was limited, so I had to get a little creative with data to make projections.

I had a colleague with access to index ETF and mutual fund data from Simfund. Using this dataset, I aggregated ESG-related assets (using their definitions). I estimated the percentage of assets managed with an ESG strategy. This turned out to be nearly 10%. Since nearly every asset manager pledged to implement ESG, this percentage would rise by 100% over time. The question was, how fast?

It was time to use an S-curve analogy. I thought index ETFs and passive funds were also new products at one point. I tapped the Simfund database again and calculated the percentage of assets in index ETFs and passive funds over time. I now had a similar S-curve of adoption for index ETFs that I could use to estimate the growth of ESG products. I came across the Bass Diffusion model, which simulates an S-curve. I plugged in the market share trends of index ETFs and passive funds. The model had the math that describes this specific S-curve. Then I applied the S-curve to estimate the rate of ESG adoption to project the growth of ESG-related assets.

Value the Opportunity. Now I could make a basic model for MSCI's ESG earnings. I estimated a certain amount of revenues per ESG asset dollar would flow to MSCI's ESG businesses. I projected margins based on management's targets for the business. Then I added the earnings from the ESG business into the MSCI financial model to estimate its impact on company earnings for the next ten years. Finally, I valued MSCI's expected free cash flow into a stock price target.

Here is the report (edited for clarity) I sent to investors highlighting MSCI.

INVESTMENT REPORT

MSCI: Significant Upside with ESG (July 2020)

Bottom Line. MSCI has a significant opportunity in its Environmental, Social, and Governance (ESG) business. We believe the business is under-appreciated for its potential to accelerate the company's growth over the next three to five years. We see MSCI as a secular compounder, and investment timing this year is favorable as Street expectations have come down in recent months. We think MSCI could see an uplift in its free cash flow (FCF) growth from the ESG business. We see the potential for an 80% upside over the next year when the stock's FCF is valued on current market yields.

Our thesis. We believe the investment industry is dramatically transforming toward outcome-oriented investing. We see MSCI's products as key decision-making tools to support new and growing investment strategies.

Opportunity in the Environmental, Social, and Governance (ESG) business.

We think ESG investing across the industry will follow a similar path of market adoption as index or passive investing funds. We believe the growth of ESG-invested assets will likely accelerate and continue for many years. We expect MSCI to be a leader in ESG research and data and estimate a significant revenue opportunity.

We combine revenue growth from the ESG business with MSCI's core index business. We expect the company's overall revenue growth will accelerate in 2021 and 2022. As all MSCI's businesses are subscription or royalty-like, we expect this growth to drive high levels of free cash flow (FCF). This could support a higher stock valuation.

Significant upside versus downside. With contributions from the ESG business, the company is likely to accelerate its free cash flow (FCF) growth. We value the stock at current market free cash flow yields. We potentially see an 80% upside in valuations versus a 20% downside with moderating trends.

Our MSCI valuation scenarios using discounted free cash flow[1] suggest up to an 80% upside ($645 / share) versus an 18% downside ($295 / share). Our thesis of ESG adoption creates an upside scenario for FCF to accelerate to a five-year compound annual growth rate (CAGR) of 12% y/y. This compares to our downside scenario for moderating trends, if ESG adoption slows and FCF settles to a five-year CAGR of 7.8% y/y.

1 The discounted cash flow (DCF) or FCF valuation method sums up the present value of all free cash flows for a specified period (ten years for MSCI) plus the present value of the company at the end of that timeline (terminal value).

The terminal value is the final year's (year 10) free cash flow multiplied by a terminal value multiple. The value is then discounted to present value. The multiple reflects the expected business conditions. I estimated MSCI's terminal multiple based on historical S&P 500 multiples. Comparable companies can also be used to determine an appropriate terminal multiple.

Discounted Cash Flow Valuation ($M)	Upside	Downside
Present value of cash flows	**$7,051**	**$5,797**
Terminal value	45,737	17,242
Enterprise value	**$52,788**	**$23,039**
Net (Debt)/Cash	2,045	2,045
Equity value	**$54,832**	**$25,084**
Outstanding shares (millions)	85	85
Value per share	**$645**	**$295**

Build Up: Terminal Value Multiple		
Risk-Free Rate (10 yr. Bonds)	1.15%	2.50%
S&P 500 FCF Yield Premium (20-year mean)	2.88%	4.80%
Implied market FCF yield	4.03%	7.30%
Terminal value multiple (invert FCF yield)	**24.8x**	**13.7x**
Discount rate	4.8%	5.2%

We use a discounted cash flow (DCF) valuation model for the scenarios (as opposed to historical multiples). To value the terminal value of the company, we use the current FCF yield of the equity market. We take the historical yield premium of the S&P 500's FCF yield versus the expected risk-free rate (ten-year Treasury yield). We invert this yield premium to use as a multiple to estimate the terminal value of the company. We add the net present value of its expected free cash flows to the (discounted) terminal value, to estimate MSCI's expected enterprise value.

Our belief is that in today's environment, free cash flow will be valued at a premium. Historically-low interest rates likely mean that MSCI's FCF yield will be highly valued by the market. Therefore, we value MSCI using the S&P 500's FCF yields. In other words, our

estimate prices MSCI's expected free cash flow at the same valuation as currently implied by the S&P 500. We believe MSCI will be valued as highly as a leading large-cap company. We expect this value will be realized as MSCI accelerates its top line to the 11% y/y growth range while improving its FCF margins to 36% levels.

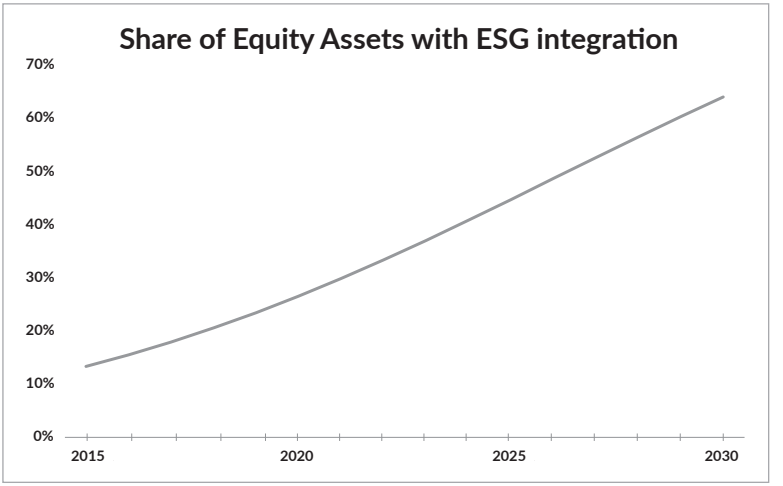
Consensus under-appreciates growth of ESG. Street expectations incorporate only a short period of growth from ESG (accelerated growth from 2021–2022 and then slowing thereafter). In our view, this under-appreciates the sustainability and long-term secular growth potential of the ESG business.

MSCI Sales Estimates ($M)

	Dec '20	Dec '21	Dec '22	Dec '23	Dec '24
Consensus	1,679	1,831	2,017	2,159	2,333
y/y % growth	*7.8%*	*9.1%*	*10.1%*	*7.1%*	*8.1%*
BMO estimates	1,810	2,016	2,237	2,483	2,761
y/y % growth	*7.8%*	*11.4%*	*11.0%*	*11.0%*	*11.2%*

Favorable timing for investment is this year. Street expectations for MSCI's earnings have recently come down. They reflect this year's market volatility and lower equity asset values. These estimates are also likely to be raised as asset prices recover. Higher asset prices will lead to stronger growth expectations for MSCI's asset-based fee businesses.

ESG growth will accelerate and continue for many years. Index investing was widely adopted by investors for its cost efficiencies. We believe ESG strategies will be widely adopted for their return potential.



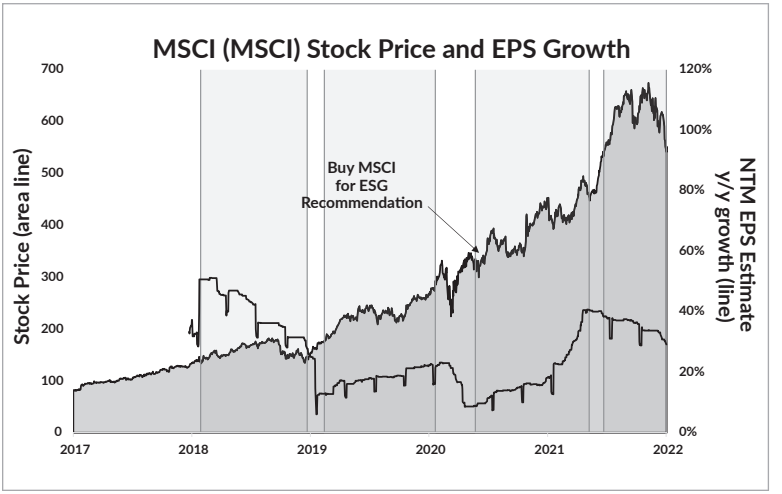
We use an S-curve model, the Bass Diffusion adoption model, to estimate the rate of adoption of ESG strategies by the investment community. This drives the expected pace of ESG growth.

Our research has shown us that passive funds were widely adopted for their cost efficiencies. We estimate passive funds still provide twice the value of active funds. The returns-versus-fees ratio is double that of active management funds (based on median performance). We believe ESG strategies will be as widely adopted for their higher return potential. MSCI's research suggests ESG investing strategies offer consistently higher returns. MSCI's ESG indexes have outperformed the market indexes by 500 bps over the past eight years.

Perhaps more importantly, we see widespread pressure from asset owners. They want asset managers to integrate ESG into their investing practices. Nearly $100 trillion of assets have been committed to implementing ESG strategies. This is essentially equivalent to

the entire asset management industry. We also see a regulatory framework emerging to support ESG investing. Therefore, we see a long runway in market opportunity for ESG adoption.

Much of this will be captured by MSCI, which has a sustained moat. MSCI has invested in the ESG business over the past ten years. Its ESG business is already two times larger than that of its nearest competitor, Sustainalytics. This is based on estimated revenues from public disclosures. We expect this advantage to be sustained over the next three to five years. Extensive research and data-collection efforts are required to build an ESG dataset. We believe this will be difficult for other providers to replicate.



Therefore, we expect MSCI will remain a leader in the ESG business.

Near-term risk is market volatility. Headwinds to MSCI's asset-based business are a risk. Equity market volatility and lower market asset values could lower asset-based fees. This may offset the positive contribution from its ESG business. We believe this risk appears to be suppressed somewhat. There are significant and ongoing liquidity interventions by the Federal Reserve. We believe these interventions are supporting asset prices in the market.

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Small observations can lead to big investment opportunities. Turn your idea into an investment thesis. Define the potential addressable market. Look for meaningful change. Think like an insider to identify value. Look for patterns of dominance. Spot the competitive advantages. You'll find the long-term winner.

You can use the S-curve to estimate growth or think of the type of change to find a comparable situation. Simplify the business. Read its financials to look for scale and leverage. Identify financial risks. Then put it together into a model. Identify potential changes to earnings estimates. You can now estimate a potential return opportunity.

Consider the risk, return, and time for your investment thesis. Make your decision. Take a position in the stock. Congratulations! You are now a stock analyst.

How to Turn an Idea into an Investment Thesis

- Put all the steps together to turn an idea into a full-fledged investment thesis.

- Start with an observation. Define the addressable market. Look for meaningful change to estimate the potential long-term opportunity.
- Think like an insider, find patterns of dominance, and spot competitive advantages to find a likely winner in the industry.
- Estimate growth with an S-curve and use a financial model to value the investment. Look for potential changes to earnings estimates. You can now estimate the potential return of the stock.
- You are now a stock analyst. Take a position in the stock!

CHAPTER 17

HOW TO FIND HIDDEN IDEAS AND SETUPS FROM THE BIG FUNDS

When you invest in a stock, you want to be aligned with its other shareholders. If you know how large institutions invest, you can use a stock's ownership list for a sense check of the kind of investment the stock represents. If you invest to hold a stock for many years, you'll likely want other long-only and passive investors, who tend to be semi-permanent holders. Or if you want to be active with a more volatile stock, you'll seek out other hedge fund investors, who tend to change their stock holdings often.

The more shareholders a company has, the better its stock performs. Chegg was a good example of this. As Chegg's business model evolved into technology services, it also expanded its shareholder base. It went from a niche base of investors (education investors) to a much broader one (technology investors). Another example is the waste-to-energy company Covanta. For many years, the company couldn't fit into any investor funds. It had too much debt and was too international for U.S. equity investors in the waste space.

The stock did nothing for many years until the board of directors hired an investment banker to explore other strategic options. Covanta was eventually sold off to a private equity fund.

IDENTIFY THE OWNERSHIP PATH

There is a typical path for a company's shares. Different types of investors will hold a company's stock depending on the stage of its development. As the business grows, its stock is held by increasingly larger and more permanent pools of capital.

In the private markets, a business idea usually starts with an angel (start-up stage) investment. This capital is used to build the initial products or services. Then, as it gains traction with its market, venture capital (early stage) enters to scale up the business. Sometimes the business is then sold to private equity investors (growth stage). These investors tend to focus on growing cash flows and streamlining operations. These are the major categories of private investors. At this point, the company may also be sold outright to another company as a strategic acquisition. Then all private investors realize their returns.

If there is no such strategic buyer, the next step is for the company's shares to be sold to public markets. This can be done in several ways. It can be acquired by a Special Purpose Acquisition Vehicle (SPAC). This is more common for earlier-stage companies. Or it can go through a formal initial public offering (IPO) process. In an IPO, the company's shares are sold to an initial group of institutional investors, or, sometimes, as a direct listing on an exchange. Keep in mind that SPACs are much less transparent than IPOs. The company is evaluated by a single sponsor (the firm that sets up the

SPAC), as opposed to a group of potential institutional investors. The disclosure requirements for IPO registration statements are more comprehensive as well.

Once a company's shares are listed on an exchange, they can be freely traded, allowing private investors to exit their investments. Early investors or sponsors are usually restricted from selling their shares for a specific period after the company is taken public. These are called lock-up periods. The end of a lock-up period sometimes leads to additional selling of shares, which can lower the price of the stock.

Once shares are traded on public markets, a variety of stock investment funds will purchase them. Specialized investor funds—including hedge funds and funds with specific investment styles, such as small-cap funds— are usually the first to buy shares in earlier-stage companies. As these companies grow, long-only investors will start toi nvest in the shares. These are institutional mutual funds, like Fidelity, T. Rowe Price, or Capital Group. They become long-term, stable shareholders. Once the stock meets index requirements, it is then incorporated into the major indexes. The stock is subsequently purchased by the major passive funds and exchange-traded funds that invest based on these indexes. These funds are managed by BlackRock, Vanguard, and State Street. At this point, the stock is held by advisors and individual investors that use these funds. The stock will also be held by larger pools of capital, like pension funds or endowments. These investors also usually invest in indexes.

We want to invest in stocks that can draw in a wide shareholder base over time. We want the stock to eventually be held by the

larger pools of capital—particularly the long-only mutual funds and passive funds, as semi-permanent owners. These owners create the conditions for the stock's share price to steadily appreciate.

FIND INSIGHT FROM SHAREHOLDERS

Here we walk through the strategies of the key types of public market investors and what it means when they become major holders of a stock.

We'll divide up the institutional investors into three categories. First, stable money is the long-only investment strategy used by mutual funds like Fidelity and Capital. Second, fast money is the long/short strategy used by hedge funds like Marshall Wace and Citadel Investments. Since both categories of funds pick individual stocks, they are considered active investors. Active investors accounted for 52% of managed equity assets in 2021.

The third category is automated money, which represents index-based strategies. These are the exchange-traded funds (ETFs) and index funds offered by firms like BlackRock or Vanguard. These are held by advisors and individuals. Large institutional investors also use index-based allocation strategies. These include pensions like the California Public Employees' Retirement System pension fund. Since these funds pick stocks based on indexes, they are considered passive investors. Passive investors accounted for 48% of managed equity assets in 2021.

Stable Money: Long-Only Investors (LO)

Investment strategy: Long-only strategies only have long (no shorts) positions. The strategies are used by mutual funds to manage retail assets. These funds are usually long-term oriented and tend to hold stocks for several years, at least. Companies also tend to prefer long-only funds as shareholders since they are stable supporters.

Long-only funds have the time and resources to do due diligence for long-term decisions. The largest long-only firms have dedicated sector and product research teams. They have full access to Wall Street and third-party resources and they often directly communicate with companies' management teams. You can often find company CEOs and CFOs waiting in the lobby of these funds' offices. They are rotated into conference rooms to be interviewed by specialized sector research analysts.

What it means: Stocks with long-only funds as major shareholders tend to be of higher quality, in terms of their business model and their finances. These funds typically do lots of due diligence into a stock and tend to be risk averse. Stocks owned by these investors will rarely be blown up for a reason like fraud. Stocks with long-only shareholders will also likely be less volatile. These funds don't usually trade around positions, and they may even buy the dips in a stock to accumulate shares, which helps stabilize the price.

When a major long-only fund becomes a major shareholder of a stock, it usually means the business has passed a certain quality threshold.

Notable funds: Respected funds include Capital Group, Fidelity Investments, T. Rowe, J.P. Morgan Asset Management, and American

Funds. Funds that specialize in growth and innovative companies include Baron, Baillie Gifford, and Jennison.

How to use the information: Look up their holdings for new ideas, or simply pay more attention to a stock when you see these funds are owners. Funds disclose their positions quarterly. Use them for your benefit. A service like MarketSmith provides quantitative scores for stocks' mutual fund ownership. Increasing levels of institutional ownership is usually a good sign for a stock.

Fidelity, T. Rowe, and Capital are all major shareholders of MSCI ($MSCI). Earlier, we covered some of the competitive advantages of the company. Baron and Baillie Gifford were early investors of Tesla ($TSLA). Jennison was an early investor in European payments company Adyen ($ADYEN). Both are innovative companies that grew to become leaders in their respective categories.

Fast Money: Hedge Funds (HFs)

Investment strategy: Hedge funds use specialized strategies to provide alpha returns. These are returns that are above and uncorrelated to the market returns (or beta). Long/short strategies, particularly market (or factor) neutral strategies, are the most common. These strategies use both long and short positions, typically with leverage (borrowed money). They have pods of specialized sector teams. Hedge funds tend to be more active in investment decisions and hold stocks for shorter periods.

What it means: The key thing to remember is that a hedge fund usually owns a stock for a reason. There could be an upcoming catalyst (event) that could impact the stock, an ongoing strategic

business change, or perhaps some emerging secular trend. Lone Pine Capital, for example, likes to invest in secular trends. Whale Rock likes to invest with technology adoptions. When you see a hedge fund become a major shareholder of a stock, it usually means something is changing with the company.

The downside to hedge fund activity in a stock is it tends to make the stock price more volatile. For example, the price of MSCI's stock ($MSCI) moved more than usual in 2020 as hedge funds invested in the theme of ESG data. Long/short funds often move markets in the near term. Since they use leverage, they have very tight risk exposures. When volatility increases significantly, sometimes these hedge funds will de-gross their positions. This means they reduce their stock exposures, all at the same time. This can make stock prices erratic for a period that can range from several days to a few weeks.

Notable funds: Lone Pine Capital and Whale Rock Capital Management are respected for technology investing. Scion Asset Management (Michael Burry of *The Big Short* fame), Miller Value Partners, and Nuance Investments are successful value investors. Each hedge fund has its own style. As you develop your own stock preferences and look through shareholder lists, you'll start to notice certain funds that match your style. You can create a personal list of funds to follow.

Citadel, Point72, and Millennium are the largest long/short equity funds and sometimes they show up on 13Fs.

How to use it: You can check 13F filings for hedge funds that align with your style. Look for hedge fund buying and selling of

new positions as a source of exciting ideas. One caveat is the 13F filings are reported quarterly, so the data will be a few months old.

New positions in the latest 13Fs reported in early 2021 suggested Lone Pine Capital saw a positive change in Snapchat's ($SNAP) growth. And it also saw the secular growth of continuous glucose monitors in DexCom ($DXCM).

Automated Money: Passive or Index Funds

Investment strategy: Index funds and ETFs buy stocks based onindexes (such as the S&P 500 index). These strategies are passive, meaning stock selection and weights are automated. For example, when the Vanguard 500 Index Fund receives inflows of new capital, it will purchase shares of all companies in the S&P 500 index. It will purchase shares in proportion to the weights set by the index. Most target date funds also use an index to select stocks. These are common in individual retirement arrangement (IRA) accounts.

What it means: Indexes are typically market-capitalization weighted. Stocks with higher market capitalization have a larger allocation in the index. So, index funds will purchase more shares of a stock as its market capitalization increases, relative to other stocks in the index. In other words, index strategies will buy more shares as the stock price moves higher (relative to other stocks). This can create momentum in the stock price.

Index funds only buy or sell shares when the fund receives inflows or has outflows. When funds' flows are positive, there are only stock purchases and no stock sales, no matter the price. This can effectively lock up shares and reduce the number of tradable shares, which is

the stock's float. If there is a sudden increase in demand for a stock with limited float, the stock price can move much higher.

How to use it: Indexes are designed around investment factors. These include quantitative measures of risk, as well as sectors, or economic industries. Looking at the type of index or ETF fund that owns a stock gives you an indication of its exposure to factor and sector movements. The stock's volatility will be like that of the specific factor or sector. Pay attention when index or ETF funds own a sizable percentage of a stock's tradeable shares. The stock can have higher momentum, and its price can move strongly.

WATCH FOR INVESTOR FLOWS: DILLARD'S RISE

Stock prices can move dramatically when investor flows converge. Take, for example, Dillard's ($DDS), the fashion retailer. The stock price declined significantly in 2020 (close to 30%). Like many other retail stocks, its business took a hit from the impact of economic shutdowns during the COVID-19 pandemic.

Through 2021, its retail stores re-opened. Dillard's earnings expectations shifted upward. (Like Bath & Body Works, its trends also improved post-pandemic). Estimates for NTM EBITDA increased over 2x. Yet its stock price increased much more—nearly three-fold that year. What happened? Investor flows converged on a stock with a limited supply of float.

Most of Dillard's shares were effectively locked up. Close to 30% of its shares were held by ETFs, particularly small-cap index strategies. Dillard's insiders owned another 30% of the shares. At the end of

2020, roughly 20% of its shares were sold short (this declined to 10% by mid-2021), which represented shares to be bought back at some point. In May 2021, management announced a $500 million share repurchase program. Based on its share price at the time, it represented 20% of the stock's float. This effectively squeezed the short sellers by limiting the number of shares available to trade.

Dillard's tradable stock was in short supply. Inflows increased into small-cap ETF funds in 2021, which created more buying demand. New shareholders also started to accumulate positions in the stock. As a result, the stock price moved sharply higher. The price rise was further fueled by management aggressively buying shares. This also forced short sellers to cover (buy back) their positions. Converging flows on a stock with a limited supply of shares, meant the stock price had to move much, much higher. Dillard's stock price rose from $60 / share in December 2020 to $250 / share at the end of 2021—well above its pre-pandemic levels.

FIND OPPORTUNITIES IN UNDER-OWNED STOCKS: POSITIONING

On an aggregate level, a sector can be widely sold off to become under-owned by institutional investors, such as the case with the energy sector in 2020. One investment tactic is to actively follow investor positioning to find these sectors. When a sector (or a stock) is under-owned by funds and a catalyst changes expectations, its prices can quickly rise. Investors will pile on to the sector to re-weight their exposure.

You can get an initial sense of positioning from market prices and the narrative in financial media like the *Financial Times*, *Wall Street*

Journal, and *Bloomberg*. A sector that is widely hated is usually an under-owned sector. In the early stages of the COVID-19 pandemic in 2020, oil prices had collapsed to zero. Oil prices went briefly negative after the sudden drop in oil demand and the build-up of excess inventories. Energy stocks traded at valuations close to decade lows. Several energy funds closed shop, and a major investment bank exited the sector completely. ESG investment funds, which often avoided the energy sector, attracted record capital inflows instead.

You can also track positioning from reports on fund holdings. These are provided by investment banks' research divisions, like Bank of America Global Research. You can also look at relative sector valuations. By mid-2021, the stock holdings of long-only managers showed that most were underweight energy stocks. Their total energy exposure was only 60% of the weight of their benchmarks. Only a quarter of active managers were overweight in the sector. Valuations, based on EV / EBITDA and Price to FCF metrics, for the energy sector were also the most depressed, when compared with other sectors.

Oil prices recovered in 2020. They continued to increase through 2021 as economies re-opened, rising over 40% in price. Oil consumption increased in a lower oil-production environment. Energy sector stocks rose even more, some by over 60% in price. Energy was the top-performing sector for the year, as funds increased their weights to the sector. Energy stocks continue to be broadly underweighted in 2022. This could indicate potential for further buying, depending on how the energy sector evolves.

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Who owns the stock ultimately drives returns. The more shareholders who own the stock, the better it performs. The best stocks are held by semi-permanent holders.

You can find insights by looking at who owns the shares. The largest mutual funds tend to own higher quality businesses. Hedge funds tend to own stocks that are likely to be moved by potential catalysts. ETF ownership will indicate the risk factors for the stock.

Make a point to follow the positioning of the largest funds. You can identify opportunities in the under-owned sectors. These sectors can re-value strongly when investors re-weigh their portfolio exposures to different sectors.

Keep an eye on stocks that have high ETF ownership. These ETFs can effectively lock up shares. A shortage of shares can lead to significant price movements. There can be strong momentum if buying converges on a stock with limited supply of tradable shares.

How to Benefit from Institutional Investors

- Stocks with a broader base of owners tend to perform better. It is preferable to invest in stocks that will have semi-permanent holders, especially if you want to hold the stock for many years.
- Find insights from the shareholders. Long-only funds are markers of high-quality stocks. Hedge fund presence likely indicates potential catalysts may impact the stock. ETF holders tell you the type of equity factor that moves the stock.

- Attractive opportunities can also be found in under-owned sectors. When investors re-balance their exposures, under-owned sectors can rebound strongly.
- ETFs can reduce the supply of tradable shares. This can lead to significant price movements in the stock when there is a catalyst to change expectations.

CHAPTER 18

HOW TO FIND YOUR UNIQUE EDGE: PLAYING TO YOUR STRENGTHS

The investment concept of edge relates to something that gives you a unique advantage. You'll discover your edge as you develop your own investment style with practice. This section helps you find that unique edge.

THREE SOURCES OF EDGE TO KEEP IN MIND

Information: Do you have a better source of information for the stock? It can be challenging to be ahead with today's fast-moving information flow, but it is still possible.

Analysis: Can you put together the information to see what others might miss? Many of the concepts we covered can help build an edge here. Can you identify possibilities as they emerge?

Behavior: Can you adapt your behavior to be profitable? To act and take risks when others are fearful or inactive, then be conservative when others are optimistic? Or can you be open to new trends?

Finding an Edge

There are always new ways to find information on stocks. For example, look at real-time data around Google search terms, interviews with industry insiders or sell-side analysts, and alternative data sources such as traffic data or credit card transactions. Most analysts closely follow a handful of comparable companies to spot trends. Information as an edge is difficult to sustain, even with hedge fund resources.

The best areas to develop a sustainable edge are likely in analysis and behavior. The concepts in this book have given you an initial foundation from which to invest. With practice, you will develop pattern-recognition abilities, like many experienced investors. You'll recognize similar investment situations. You'll know what framework to use to analyze a company and its stock. You'll learn to see opportunities that others might overlook.

Investing is always done with imperfect information. No one really knows everything. So, an advantage is to be open to new ideas and trends. At the same time, you must watch out for where your perception could be misplaced. A helpful practice is to invert your thinking. Look for the opposite view or think backwards in a situation. What information would make the thesis incorrect?

THE BEST IDEA IS THE ONE THAT FITS YOU

Finding great ideas starts with identifying your financial goals and nature. Have an idea of your appetite for risk, your time available to invest, and your desire for returns. Then be aware of your personality and how you tend to deal with uncertainty.

If you are patient, you may want investment ideas that work for several years. This can mean a business expanding into new markets, where time is a natural advantage. Or if you are conservative, you may want proven business models and more mature companies. It you seek action, invest in stocks that will move with events or change with the cycle. If you like to take risks with new things, you may want emerging companies and new business models, which often have a wide range of potential outcomes.

Risk is a function of uncertainty and potential loss. Time is what is required for an investment thesis to play out. Returns are a function of earnings and multiple valuations. So if you desire higher returns, you will want earnings growth or a sizable change in valuations (the latter is usually a function of the former).

Effective decisions reflect an awareness of your investment approach. If you have a multi-year thesis, you don't want to sell a stock that's down 20% due to temporary headwinds. Or even sell a stock that's up 50% due to an acceleration in growth. That stock could turn into a two- or three-bagger (2–3x your initial investment) in a few years, or even a ten-bagger, depending on how it plays out. If you trade the stock, you may miss it or agonize over getting back in the stock. Similarly, if you are investing in a stock for a specific catalyst, it may make sense to sell the stock when your thesis has been realized, and the stock has re-valued. For many stocks you will often be investing for potential outcomes several years ahead, so it is worth revisiting your thesis as new events occur.

What is Your Personality?

Think about what you find interesting. Curiosity is what will drive you to closely examine a business and an industry to discover investment insights. You will want to plan for a few hours of quiet time to read and think, to give your mind an opportunity to consider the information deeply. If you have knowledge of certain business types or understand the dynamics of an industry, it might be best to start in those places. Enjoy the learning process as much as possible. The market unfortunately does not provide helpful feedback, so cultivate your own internal sense of reward. That is, until the investment makes money!

Have a general sense of how much you can lose, which should influence your risk appetite and choice of investments. As you learn, some of your decisions will likely cost you money, so also keep that in mind. Consider it market tuition. Investment managers plan to be wrong 50% of the time. Investing works because asymmetry in stocks leads to higher returns over time. As your investment decision-making abilities improve, you may consider making larger bets.

This content should not be considered financial advice. Proper advice considers your whole financial picture. You want to consider these factors: investment objectives, risk tolerance, return goals, liquidity needs, tax considerations, legal considerations, and other constraints. Do this yourself or with the help of a financial advisor. Make sure your stock-picking strategy fits with your overall financial picture and personal circumstances.

I consider myself an aggressive investor, so I look for stocks that can increase two- or three-fold over the next three to five years. What is your desired return? My risk tolerance is also high, and I prepare for 20–30% volatility for the portfolio. What level of risk do you plan to take? I expect to hold stocks for several years (at least) and have a plan to cover my liquidity needs. I expect to spend two to three hours a week studying business models. I will look for innovation in quality growth companies. What are you interested in, and how much time will you invest?

Seeing an Investment From Two Styles

Consider Playboy ($PLBY) from two different styles of investing. Playboy was taken private in 2011 by a private equity firm and Hugh Hefner. In 2018, the company appointed Ben Kohn (an executive of the fund) as CEO. Playboy exited the magazine business and expanded into licensing (licensing Playboy brands to third parties). The company also expanded into the direct-consumer (D2C) business by acquiring several e-commerce retail platforms. Playboy also continued to offer digital content subscriptions. The company returned to public markets when it merged with a special purpose acquisition company (SPAC) in late 2020.

Event-driven style: Harris Kupperman (@hkuppy on Twitter) invests for events and catalysts. He looked at Playboy in December 2020, when it first merged with the SPAC, Mountain Crest Acquisition Corp. He bought shares at $10.20, which was close to the $10 / share price the SPAC was offered to its initial investors. He saw the stock as an event-driven trade opportunity.

The deal looked attractive to him. The implied valuation of Playboy was close to 10x EV / EBITDA, which was a discount to the value of most leading consumer brand companies. Management could use the capital to pay down its debt and strengthen its balance sheet. With the company now public, it could also issue new shares to acquire D2C brands and grow its business. Playboy's royalty revenues (its licensing business) were recurring and high-margin. There were also tax offsets that it could use to reduce its taxes. Kupperman believed the company was positioned well after this deal to grow its earnings.

Most importantly to him, only a small float of available shares was offered—only 13% of Playboy's total shares. Since the deal was attractive, he expected share prices to rise once the SPAC attracted the attention of investors. The stock quickly rose to $25 in a few months as buyers came in.

Fundamental research style: HedgeEye retail analyst Brian McGough (@HedgeyeRetail on Twitter) makes fundamental multi-year, research-driven calls. He noticed the stock and modeled the numbers of Playboy's long-term growth strategy.

He examined the new D2C categories—sexual wellness, style, lifestyle, and beauty. He estimated the market sizes and potential sales if Playboy could become a leader in each of these categories. He also estimated how higher licensing royalty rates could impact earnings. The more he learned, the bigger the upside seemed.

He estimated Playboy could get to $1.2 billion in revenues by 2025—well above the $230 million expected for 2021. He applied a 25x

multiple—to reflect a high growth consumer company with strong margin potential—to his $330 million in EBITDA estimate for 2025. In April 2021, he made his call: Playboy could reach $250 / share (a ten-bagger). Since this is a multi-year transformation, we'll see how this story plays out!

PICK WHAT YOU LIKE

Focusing on businesses you find interesting or that are within your industry can be fruitful for your returns. You'll likely spot important characteristics that others may miss. Many of the insights I shared came from a curiosity about the business models of data companies and from following trends in capital markets.

Use the balance sheet to find the capital structure you prefer. Debt financing tends to be used by capital-heavy businesses, such as those with physical assets, such as transport or industrial companies. Too much debt leverage can pressure equity value if earnings cannot grow to offset the expected interest payments. However, the strategic use of debt and the leverage from fixed costs can create lots of upside with growth.

More equity suggests a capital-light business with intangible assets, such as a software or internet company. Since the investments will be expenses, they will likely have lower earnings. The use of equity eliminates bankruptcy risk. However, the dilution to earnings per share can pressure the stock's value. This is also a risk if growth and profitability are lower than expected. However, if the company can generate sizable earnings with its equity, the stock can have lots of upside.

Remember, the ideal state is a self-funded business with a high rate of incremental return from its growth opportunities. When it gets there, the business can be selective in using additional debt or equity capital. There are simply different ways of using capital to get there.

The Quality Investment Style

Say you focus on the indicators of good business—recurring business model, potential for leverage, and consistently positive earnings growth, with minimal need for capital. You'll likely come up with a list of quality companies.

Quality investors focus on these characteristics. This leads to a more stable, slightly higher, return profile. AKO, an equity fund based in London, defines quality as the following business characteristics: strong predictable cash generation, high returns on capital, and attractive growth opportunities. The fund has achieved double the returns of the market for over a decade (9.4% per annum versus MSCI Europe's 3.9%), using a quality investment philosophy.

You can often hold these kinds of stocks for many years, so long as the business continues to grow steadily. You can look at AKO's holdings to get a sense of this style.

YOUR RISK MANAGEMENT

Now it's time to think about your personal investment behavior. Here are the basic steps to manage your own personal risks.

1. Discover your blind spots. ***"It ain't what you know that gets you in trouble. It's what you know for sure that just ain't so"***

(Mark Twain). Ask what about your view might not be true. Check that the evidence truly supports your thesis. Look for a similar investment thesis to help identify gaps in information. List the reasons why a different view could be right. Always look for a wider perspective. Pay attention to smart, believable people, especially if they have a different view of the data.

2. Distinguish price volatility from business performance. ***"The stock market is more of a voting machine than a weighing machine, at least in the short term"*** **(Warren Buffett).** Distinguish between the changes in business trends versus the changes in the stock price. How much of the stock price change is due to volatility? How much reflects actual business performance? Volatility is usually related to factors or near-term events. In the long run, stock price changes are dependent on the company's expected earnings and large investors owning the stock. Focus on the information that is relevant to your investment thesis.

3. Diversify your businesses. ***"Diversification is the only free lunch"*** **(Harry Markowitz).** To reduce risk, you want to diversify your portfolio. You do this by selecting companies that will perform relatively independently of one another. You may also consider diversifying your factors. The rule of thumb for optimal diversification is to have between ten and thirty uncorrelated investments. The more conviction you have, the more concentrated you can be.

4. Finally, when your thesis is incorrect, get out! If your view of a business turns out to be meaningfully different from reality, simply exit the investment. Stock price declines are opportunities to test your investment thesis with new information. You may have a chance to concentrate on ideas where you have more conviction.

• • • •

There are three sources of edge: information, analysis, and behavior. Find one that fits you to develop your unique advantage. Think about your risk tolerance and personality. Are you conservative by nature and want only proven business models? Or do you like to take risk and want to discover new innovative business models? Pick ideas that match your personality.

Curiosity is always an advantage. Pick what you like. Find businesses or industries you find interesting. You'll be able to find the insights others may miss.

To manage your risk, think about your potential blind spots. Distinguish price volatility from business performance. And diversify your businesses. Get out of the stock when your thesis is wrong!

How to Find Your Edge

- There are three sources of edge: information, analysis, and behavior. Find one that fits you.
- The best investment ideas align with your financial goals and personality.
- Pick what you like, as curiosity tends to lead to investment insights.
- Personal risk management. Keep an eye out for blind spots. Distinguish between price volatility and business performance. And diversify your exposure to types of businesses and sectors. Get out when you are incorrect!

WHERE DO YOU FIND INVESTMENT IDEAS?

To get started, visit www.henrychien.com/playbook and read *The Playbook*. This book outlines the characteristics of different ideas.

Do you prefer events? Use the ideas in the catalyst section as prompts for ideas. Get familiar with the market dynamics in the expectations section. Look for opportunities for earnings estimate revisions. Get comfortable with estimating financial earnings.

Want multi-year investments? Use the prompts in the change section to think of emerging themes. Study new addressable markets and estimate long-term earning opportunities. Focus on secular change ideas and study industry patterns.

Use these fundamental methods and you can examine nearly any situation or stock. You'll develop your own unique insights and personal investment style. Soon, you'll build wealth with your investment decisions. I wish you all prosperity!

Check out the Playbook to learn more about fundamental investing strategies.

INVESTOR MINDSET

CALL TO OPPORTUNITY

HOW TO TURN AN IDEA INTO AN INVESTMENT THESIS	Use your observations to create investment ideas.
HOW TO BENEFIT FROM INSTITUTIONAL INVESTORS	Identify the ownership for insights into the stock: long-only funds (quality), hedge funds (catalysts), ETFs (factor). Look for opportunities in under-owned sectors.
HOW TO FIND YOUR EDGE	Look for an edge in information, analysis, and behavior. Pick what fits your personality. Use your curiosity to find investment insights.

PART VI

APPENDICES

APPENDIX 1

WHAT IT'S LIKE AS A STOCK ANALYST

It's 7:00 AM, and I'm at my desk. The first email that catches my eye has the headline, "S&P Global and Markit to Merge in All-Stock Transaction." followed by the message "Thoughts?" from the financials trader. *Today is going to be a busy day*[1].

Okay, what's the stock going to do? Let's read the press release. It's an all-stock merger, with no debt added to/by the companies, and a new target of 2.0–2.5x leverage—all are reasonable. The deal valuation multiple of 19.6x is within the usual multiple range for the sector. The deal is clearly positive for IHS Markit's stock.

The new target of 6.5–8% organic annual growth is higher than before. S&P Global has credit ratings and financial benchmarks. Strategic value comes from combining IHS's data for the energy and auto sectors with Markit's credit-market financial data. The deal likely strengthens S&P Global's competitive position. And it expands its addressable market.

1 I've taken some liberties here in putting together parts of different days into one.

Management's new financial targets include roughly 200 bps of margin expansion for the new company. This is reasonable. There are cost synergies for S&P Global and IHS Markit together. Plus, S&P's Ratings business is improving its cost structure.

What's the impact on earnings and the stock? The target accretion and earnings growth will benefit in 2022–2023. This is a two-year timeframe. S&P Global's stock will most likely price upward, gradually.

Will there be other buyers? Moody's businesses could fit with the credit-risk data. But Moody's management has shown little interest in other sectors outside credit. Exchange operators, which supply financial data, could integrate with IHS Markit's distribution. The London Stock Exchange is a possibility, but it just bought Refinitiv and likely does not have the balance sheet capacity. The Intercontinental Exchange (ICE) is another, but it is focused on other fixed-income markets.

8:00 AM. I send a quick note to the trader. "Solid valuation for IHS Markit shareholders. Though they'll miss Lance[2]. Accretive for '22–23, rev. acceleration and margin expansion—should be positive for S&P stock, though will take time. White Knight[3] buyers—maybe Moody's, ICE, LSE—seems unlikely. Like the deal, makes strategic sense." These are essential details for the trader to price the stock.

Then, I jump on the call with S&P management and their business leaders. The revenue synergies will come from the cross-sales of

2 Former CEO of IHS Markit, who will step down after a transition period.

3 White Knight is an outside buyer competing for the asset, thereby raising the deal price.

S&P's, Platts', and IHS's commodity-related datasets. IHS Markit's new datasets also expand the addressable markets. S&P can distribute data through its Market Intelligence data terminal business. This also strengthens their presence in the environmental, social, and governance-focused investing space. I like this deal—it really strengthens both company's competitive positions.

11:00 AM. Time to make calls to the buy-side. I get a message from a client at a long/short equity hedge fund: "Time for a quick call?" She tracks the stock closely, so we'll talk about catalysts that could move the price.

She asks at once, "Where will margins come from? How are you thinking about the quarter?" She wants to know the high-level takeaways to help her position for the stock's earnings.

I respond, "Ratings most likely for margins. S&P Ratings margins are still below Moody's levels, and they are making progress moving it up. Looks like usual cost synergies from shared corporate overhead in the deal. Margin expansion in Markets Intelligence might slow since the business is heavily investing in the ESG opportunity."

I continue, "Catalyst is corporate debt issuance trend. It still represents 60% of earnings. 2020 looks to be a record for new issuance, helped by the Fed's support. The stock's run up and trading at the 35x P/E levels, so it's likely priced in. Estimates could reset with the 4Q release and 2021 outlook."

That's all she needed! She closes, "Awesome, thanks for the heads up. Jumping on another call."

Sales then connects me with a few other investors to talk thoughts on the deal. More calls as we get the buy-side up to speed on the stock. For some stocks, we become the axe—or the center of information flow for the stock.

1:00 PM. There is some quiet in the afternoon, so I create models and do additional research. I put together the 6–7% revenue growth, some steady 100–200 bps expansion, and 80% cash flow for share repurchases into a spreadsheet model. This gets to 12% earnings growth for the next five years. Long-only investor clients will appreciate this kind of growth. I also work on some estimates to size the ESG opportunity using a variety of fund asset reports. I build a market model to size the potential earnings opportunity for a few stocks.

4:00 PM. I meet with the investment bankers. We talk about the Dun & Bradstreet initial public offering (IPO) deal and finding long-only shareholders. They want to know how investors will react to the deal offer.

"DNB has potential for a long-only shareholder base who like quality companies. The proprietary data of DNB will be recognized as valuable in the sector. Like the Duns number and the DNB credit database. Investors will want examples of these services embedded in business processes. The forward 15x EV/EBITDA multiple is appropriate, at the lower end of the range of public comps, since DNB's organic growth rate is lower.

"For investors to pay a higher 20x multiple, like a Verisk or the IHS Markit, DNB would need higher organic growth than 2–3%.

Ideally, the metrics also show a higher subscription or recurring business model. Long-only investors will want clear financial targets, particularly steps for margin expansion and free cash flow potential. DNB's financials are messy with adjustments, and 15% margins are low for the space. Get it higher with clearer metrics, and there will be more buyers."

6:00 PM. We've published our research notes and checked with a few other institutional investors. Thankfully, I don't have any earnings after the close, so the day is ending peacefully. It looks like we covered the stock from the perspective of the traders, the hedge funds, and the long-only investors. *All in a day's work!*

APPENDIX 2

GAMESTOP'S STOCK EXPLOSION EXPLAINED

GameStop's extraordinary rise in 2021 captivated the world's markets. It marked a new generation's stock market. The stock of a struggling retailer turned into the beacon of rebellion—the internet generation versus the entrenched elite. The rise rattled the stock market's clearing systems. It even led to a congressional hearing. Retail investor Keith Gill turned a $50,000 investment into over $30 million with a combination of call options on the stock.

An attractive valuation, several fundamental catalysts, extreme short interest (and covering), and converging fund flows all combined created an explosive situation.

GameStop's stock traded at cash levels. After many years of struggling sales and earning losses, GameStop's stock was extremely cheap in September 2020. The total market capitalization was $750 million, roughly equivalent to the cash on its books of $730 million. The stock's value implied an imminent bankruptcy risk, even though the retailer had enough cash to fully cover its $470 million in debt.

Two transformative catalysts emerged in the latter half of 2020.

Ryan Cohen's activism. The founder and former CEO of e-commerce pet supply company Chewy acquired 13% of GameStop's stock in August 2020. Cohen took a seat on GameStop's board with a plan to turn the company around. He wanted to create an omnichannel business model, a combination of physical retail and e-commerce. This was enough to attract new investor attention to the company.

Gaming console refresh. At the same time, the arrival of next generation Xbox and PlayStation gaming consoles prompted a console refresh cycle. New purchases of games for these consoles drove new sales growth for the retailer. GameStop's sales volumes rebounded to over 16% y/y for 3Q, which it reported in December. Cash levels rose, and more debt was paid off. Earnings expectations started to move higher.

New investment thesis. By early 2021, some investors believed that GameStop's losses were stabilizing. With Ryan Cohen's involvement, the stock could re-value to a higher multiple, especially if it could grow again. Keith Gill also posted about GameStop regularly on the internet forum WallStreetBets, hosted on Reddit. Michael Burry (Scion Capital) also disclosed a sizable position. As GameStop's stock rose in price, it started to attract retail buyers globally. On the other side were short positions on the stock from several hedge funds.

Extreme short interest. GameStop stock had **a** 130% short interest, making it one of the most shorted stocks in the entire market. The Reddit community, and other quieter institutional investors, understood the situation. A higher stock price could lead to heavy buying from shorts buying back or covering their positions to limit losses.

Shortage of shares. A closer look at the company's shareholders indicated there could even be a shortage of stock. ETFs held close to 20% of GameStop's shares and would purchase more shares as the price increased. Ryan Cohen held 13% of the shares and was committed to the company's turnaround. Fidelity Investments, a mutual fund, also held close to 13% of the shares and was most likely invested with a long-term view. Only the remaining 50% of shares were potentially freely tradable. And there were three times as many shares already sold short.

Many investors recognized this as a dangerous setup. If GameStop's stock price were to rise significantly, short sellers would have to buy shares to close their positions. This would lead to higher prices and trigger even more buying—otherwise known as a short squeeze.

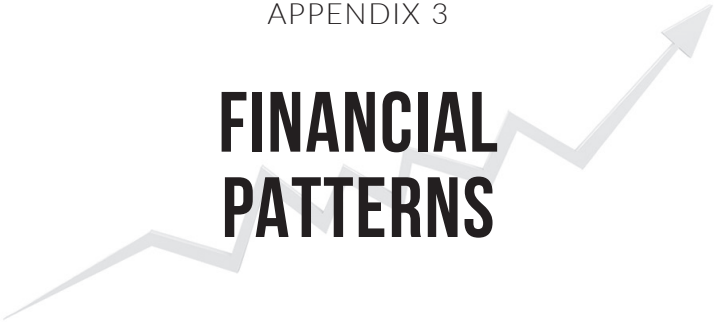
Options momentum. Options accelerated the rise. As GameStop rose from $20 to $40, more buyers emerged. Investors fueled the momentum by buying options to buy the stock at much higher prices in the $70s. Thousands of new contracts were opened. As more buying pushed the stock price up to these levels, option dealers also bought more shares to be able to deliver shares to the option holders. New investors, option dealers, short sellers—all were buying stock. GameStop's price rocketed to well above $100 / share in a few trading days. Short interest dropped to 20% as short sellers closed their positions.

Over the next few months, the stock price continued upward. Short interest declined to 8% as shorts closed their positions. The 4Q earnings release was another positive catalyst. It highlighted better sales trends from the holidays, and sales expectations rose after the

release. New executive officers were recruited, and Ryan Cohen was appointed Chairman. The stock's multiple re-rated to higher levels, and GameStop's value was now comparable to growing retail companies. The stock stabilized at above $120 / share and reached $200 / share by the end of 2021.

APPENDIX 3

FINANCIAL PATTERNS



Potential to Scale Efficiently: Chegg's Transformation (2015–2018)

Chegg, Inc. (CHGG)

Fiscal Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Key Financials ($M)						
Total Revenues	304.8	301.4	254.1	255.1	321.1	410.9
YoY Growth %	*19%*	*-1%*	*-16%*	*0%*	*26%*	*28%*
Gross Profit	104.4	116.8	135.6	174.9	241.1	318.7
Gross Profit Margin %	*34%*	*39%*	*53%*	*69%*	*75%*	*78%*
EBITDA	23.9	3.2	(15.2)	(2.6)	18.2	49.1
EBITDA Margin %	*8%*	*1%*	*-6%*	*-1%*	*6%*	*12%*
Cash Flow Analysis ($M)						
Cash from Operations	68.5	(0.1)	24.3	51.5	75.1	113.4
YoY Growth %	*7%*	*-100%*	*N.M.*	*112%*	*46%*	*51%*
Capital Expenditure	(117.9)	(40.5)	(25.6)	(26.1)	(31.2)	(42.3)
YoY Growth %	*-9%*	*-66%*	*-37%*	*2%*	*19%*	*36%*
Free Cash Flow	(49.4)	(40.6)	(1.3)	25.4	43.9	71.1
YoY Growth %	*25%*	*18%*	*97%*	*2054%*	*73%*	*62%*
Multiples						
EV / Sales (NTM)	1.4	1.4	2.6	5.4	9.9	10.7

N.M. = Not meaningful

Fixed Cost Leverage: Scorpio Tankers (2018–2020)

Scorpio Tankers Inc. (STNG)

Fiscal Years	FY 2018	FY 2019	FY 2020	FY 2021
Key Financials ($M)				
Total Revenues	585.0	704.3	915.9	540.8
YoY Growth %	*14%*	*20%*	*30%*	*-41%*
Gross Profit	239.8	399.2	574.2	202.5
Gross Profit Margin %	*41%*	*57%*	*63%*	*37%*
EBITDA	187.5	310.0	432.6	80.5
EBITDA Margin %	*32%*	*44%*	*47%*	*15%*
Net Income - (IS)	(190.1)	(48.5)	94.1	(234.4)
Net Income Margin %	*-32%*	*-7%*	*10%*	*-43%*
Capital Structure ($M)				
Market Capitalization	954.6	1,278.1	859.4	846.6
Total Cash and Short-Term Investments	593.7	202.3	187.5	230.4
Total Debt	2,910.3	3,122.4	3,047.8	3,117.1
Enterprise Value - EV	3,271.2	4,198.2	3,719.6	3,733.3
Cash Flow Analysis ($M)				
Free Cash Flow	31.7	206.5	419.4	73.3
YoY Growth %	*115%*	*551%*	*103%*	*-83%*
Debt Coverage				
Net Debt / EBITDA	12.4x	8.7x	5.9x	23.4x

Patterns of Dominance: Bath & Body Works (Integrated Distribution) versus Hanesbrands (Intermediary Distribution)

	Bath & Body Works	Hanesbrands
Fiscal Year 2021	**BBWI**	**HBI**
Key Financials ($M)		
Total Revenues	6,434.0	6,801.2
YoY Growth %	*19%*	*11%*
Gross Profit	3,350.0	2,661.8
Gross Profit Margin %	*52%*	*39%*
EBITDA	2,409.0	1,030.1
EBITDA Margin %	*37%*	*15%*
EBIT (Operating Income)	1,888.0	915.9
EBIT Margin %	29%	13%
Net Income - (IS)	844.0	77.2
Net Income Margin %	*13%*	*1%*
Diluted EPS - Continuing Operations	3.07	1.48
YoY Growth %	*86%*	*-1717%*
Capital Structure ($M)		
Market Capitalization	14,364.3	5,447.6
Total Cash and Short-Term Investments	3,568.0	536.3
Total Debt	7,481.0	3,742.5
Enterprise Value - EV	21,399.3	8,653.8
Cash Flow Analysis ($M)		
Cash from Operations	2,039.0	623.4
YoY Growth %	*65%*	*39%*
Capital Expenditure	(228.0)	(69.3)
YoY Growth %	*-50%*	*29%*
Free Cash Flow	1,811.0	554.1
YoY Growth %	*133%*	40%

Profitable Industry Structures: Waste Management (Mini Monopoly) versus Boeing and Caterpillar (Competitive Structure)

Industry	**Aerospace**	**Machinery**	**Waste Disposal**
Company	**The Boeing**	**Caterpillar**	**Waste Mngmt.**
Stock	**BA**	**CAT**	**WM**
Key Financials ($M) - Fiscal 2021			
Total Revenues	62,286.0	52,673.0	17,931.0
YoY Growth %	*7%*	*23%*	*18%*
Gross Profit	5,190.0	13,311.0	6,820.0
Gross Profit Margin %	*8%*	*25%*	*38%*
EBITDA	1,457.0	10,455.0	4,956.0
EBITDA Margin %	*2%*	*20%*	*28%*
EBIT (Operating Income)	(687.0)	8,274.0	2,957.0
EBIT Margin %	-1%	16%	16%
Net Income - (IS)	(4,202.0)	6,496.0	1,816.0
Net Income Margin %	*-7%*	*12%*	*10%*
Diluted EPS - Continuing Operations	-7.15	11.92	4.29
YoY Growth %	*-66%*	*91%*	*22%*
Capital Structure ($M)			
Market Capitalization	114,409.0	105,512.1	61,961.0
Total Cash and Short-Term Investments	16,244.0	6,475.0	118.0
Total Debt	59,641.0	37,584.0	13,928.0
Enterprise Value - EV	156,420.0	136,653.1	75,250.0
Cash Flow Analysis ($M)			
Cash from Operations	(3,416.0)	5,583.0	4,338.0
YoY Growth %	*-81%*	*-22%*	*27%*
Capital Expenditure	(980.0)	(2,647.0)	(1,904.0)
YoY Growth %	*-25%*	*28%*	*17%*
Free Cash Flow	(4,396.0)	4,726.0	2,434.0
YoY Growth %	*-78%*	*12%*	*37%*

Information Services Criteria: MSCI (Proprietary Data) versus Factset (Non-Proprietary Data)

Data Type	**Proprietary Data**	**Non-Proprietary Data**
Company	**MSCI**	**FactSet**
Ticker	**MSCI**	**FDS**
Fiscal Year 2021		
Key Financials ($M)		
Total Revenues	2,043.5	1,591.4
YoY Growth %	*21%*	*7%*
Gross Profit	1,684.9	805.0
Gross Profit Margin %	*82%*	*51%*
EBITDA	1,172.8	538.5
EBITDA Margin %	*57%*	*34%*
Net Income - (IS)	726.0	399.6
Net Income Margin %	*36%*	*25%*
Diluted EPS - Continuing Operations	8.7	10.36
YoY Growth %	*22%*	*7%*
Capital Structure ($M)		
Market Capitalization	40,546.5	14,480.6
Total Cash and Short-Term Investments	1,421.4	717.8
Total Debt	4,334.8	869.1
Enterprise Value - EV	43,596.1	14,629.0
Cash Flow Analysis ($M)		
Cash from Operations	936.1	555.2
YoY Growth %	*15%*	*10%*
Capital Expenditure	(20.0)	(61.3)
YoY Growth %	*-8%*	*-21%*
Free Cash Flow	916	493.9
YoY Growth %	16%	15%

APPENDIX 4

INVESTMENT PRINCIPLES AND ADVANCED TACTICS SUMMARY

INVESTMENT PRINCIPLE #1

ASYMMETRY

Invest in More Upside than Downside

HOW TO SIMPLIFY A BUSINESS	Find out how the company makes money. Look for managers that focus on customers, making targets, and generating cash flow. Look for recurring businesses that are unique and embedded with customers.
HOW TO READ THE FINANCIALS	Look for potential to scale in the unit economics. Identify operating leverage from the costs. Watch out for financial risks: bankruptcy, debt trap, delayed profitability.
HOW TO VALUE A COMPANY	Value the business based on its expected growth, or the expected cash flows of the asset. Invest in high incremental returns.
HOW TO ESTIMATE THE STOCK PRICE	Estimate the business's revenues, margins, and capital. Pick a valuation multiple with comparable companies. Create a target price.

INVESTMENT PRINCIPLE #2

CHANGE

Invest in Stocks That Will Last

HOW TO SIZE UP THE BUSINESS OPPORTUNITY	Define the addressable market to recognize the stock's potential. Find large, expanding markets for stocks with continuous upside.
HOW TO FIND UPSIDE FROM GROWTH	Find ideas by looking for change. Differentiate between the cyclical (trade) and the secular (hold) investments. Use the S-curve to spot accelerating growth.
HOW TO FIND VALUABLE ASSETS IN A SECTOR	Think like an insider to find ideal acquisition targets or look for supply constraints in assets or resources. Use executive frameworks to find the most valuable businesses.
HOW TO FIND LONG-TERM WINNERS	Find dominant businesses with patterns. Look for structural advantage with customers, industry structures with friendly competition, and competitive advantages in the business.

INVESTMENT PRINCIPLE #3

EXPECTATIONS

Invest in Market Rewards

HOW TO INVEST FOR ESTIMATE REVISIONS	Invest for changing earnings estimates to find potential returns. Look for change in a critical factor of a business to find estimate revisions.
HOW TO INVEST FOR CATALYSTS	Time investments ahead of catalysts to realize investment returns. Pay attention to new business developments (one- to two-year) and secular trends (multi-year).
HOW TO SHORT SELL STOCKS	Sell the stock if the company can no longer meet its growth or profitability targets. Look for a structural limitation in the business. Watch for warning signs: slowing growth, worsening profitability, raising unexpected equity.

ADVANCED TACTICS

INVEST WITH THE BIG PICTURE

HOW TO INVEST WITH A CYCLE PERSPECTIVE	Track the patterns of output, employment, and money. Identify the stage of the cycle to select specific sectors. Use cycle peak/trough earnings changes and multiples to set price targets.
HOW TO INVEST IN A CYCLICAL SECTOR	Study the earnings cycles of the sector to find the critical factor that moves prices. Find supply/demand mismatches to uncover potential trades.
HOW TO MANAGE PORTFOLIO RISK	Identify the factor of the stock based on its shareholders. Monitor the portfolio's factor exposure to identify its potential volatility.

APPENDIX 5

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He wrote this book to share his Wall Street knowledge, to empower savvy individual investors with a process to pick stocks for higher returns, and to help aspiring analysts develop practical skills for a lucrative investment career.

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