

## STOCK MARKET STRATEGIES USING FUNDAMENTAL ANALYSIS - WITH SPECIAL REFERENCE TO STOCK OPTION

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### **Abstract**

*To a fundamentalist, the market price of a stock tends to move towards its “real value” or “intrinsic value”. If the “intrinsic/real value” of a stock is above the current market price, the investor would purchase the stock because he knows that the stock price would rise and move towards its “intrinsic or real value” If the intrinsic value of a stock was below the market price, the investor would sell the stock because he knows that the stock price is going to fall and come closer to its intrinsic value. All this seems simple. Now the next obvious question is how do you find out what the intrinsic value of a company is? Once know this, one will be able to compare this price to the market price of the company and decide whether you want to buy it (or sell it if you already own that stock). To start finding out the intrinsic value, the fundamentalist analyzer makes an examination of the current and future overall health of the economy as a whole. After analyzed the overall economy, one have to analyze firm they are interested in. They should analyze factors that give the firm a competitive advantage in its sector such as management experience, history of performance, growth potential, low cost producer, brand name etc. Find out as much as possible about the company and their products. Fundamental Stock Analysis is typically more closely tied to buy and hold investors, whereby day traders use solely technical analysis and most swing traders use both fundamental and technical stock analysis. Technical analysis is specifically important for swing traders with a very short time horizon (that is, a couple of days or just a few weeks). Most swing trading software uses only technical analysis but the Stock nod neural network uses a blended custom recipe of both technical's and fundamentals. Stock fundamental analysis can answer questions that are beyond the scope of technical analysis, such as “Why is this security price moving?” Hence, the present study focuses on stock market strategies using fundamental analysis with special reference to stock option and study based on secondary sources of data collection.*

**Keywords:** *Real Value, Investor, Intrinsic Value, Stock Price, Economy, Stock Analysis, Technical Analysis, Fundamental Analysis, Health of the Economy and Performance.*

## Introduction

Fundamentalists study the cause, not the “should”. They make their decisions on quality, value and depending on their specific investment goals, the yield or growth potential of the security. They are concerned with the basis, the corporation’s financial strength, record of growth in sales and earnings, profitability, the investment acceptance and so on. They also take into account the general business and market conditions. Finally they interpret these data inductively to determine the current value of the stock and then to project its future price. Fundamentalists are patient and seldom expect meaningful profits in less than one year. In the long run, the fundamentalist who selects quality stocks when they are undervalued and sells them when they become fully priced will make substantial profits. But as John Maynard Keynes often noted, “In the long run, we’ll all be dead”.

Compared with long- term investors, technicians seek to keep their money working as profitably as possible at all times. When trading, they want to score profits quickly, and if the stock or market does not perform as anticipated, they are willing to take a small, fast loss. Many people rightly believe that when you buy a share of stock you are buying a proportional share in a business. As a consequence, to figure out how much the stock is worth, you should determine how much the business is worth. Investors generally do this by assessing the company’s financial in terms of per-share values in order to calculate how much the proportional share of the business is worth. This is known as “fundamental” analysis by some, and most who use it view it as the only kind of rational stock analysis. Although analyzing a business might seem like a straightforward activity, there are many flavors of fundamental analysis. Investors often create oppositions and subcategories in order to better understand their specific investing philosophy. In the end, most investors come up with an approach that is a blend of a number of different approaches. Many of the distinctions are more academic inventions than actual practical differences. For instance, value and growth have been codified by economists who study the stock market even though market practitioners do not find these labels to be quite as useful. In the following descriptions, we will focus on what most investors mean when they use these labels, although you always have to be careful to double-check what someone using them really means.

## Objectives of the Study

The present study aims with following objectives:

1. To know about Stock Market Fundamentals
2. To study about stock fundamental analysis (Value, Growth, Income, GARP, Quality)
3. To know about quantitative stock fundamental analysis - buying based on numbers

4. To analyse reasons to conduct fundamental analysis

#### **Operational Definitions**

“Fundamental analysis is a stock valuation method that uses financial and economic analysis to predict the movement of stock prices”

“The fundamental information that is analyzed can include a company's financial reports, and non-financial information such as estimates of the growth of demand for products sold by the company, industry comparisons, and economy-wide changes, changes in government policies etc.”

#### **Stock Market Fundamentals**

When using stock market fundamentals, a trader will look at the company behind a stock instead of a price chart. The essence of stock market fundamentals is trying to determine whether a company would be a good buy or whether it is underperforming. Traders who use stock market fundamentals look at the balance sheet and other financial statements of a company before making a trading decision. When trading in the stock market, there are two different methods of analyzing a stock. A trader could use fundamental analysis or technical analysis. Technical analysis is a strategy that utilizes looking at price charts and the price history of a stock. This method tries to identify patterns in the price movements to determine when to get into and out of the market. Fundamental analysis does not use any of these indicators, but instead attempts to identify the true value of a stock by looking at the underlying company. Individuals who use stock market fundamentals will regularly look at financial documents of the company such as the balance sheet. When using this method, factors such as the cash flow of a company are thoroughly examined. They will look at the return on assets of a company and try to determine how efficiently it is operating.

When looking at the financial statements of a company, fundamental traders will utilize a number of different valuation multiples to make assumptions about a company. Valuation multiples are formulas commonly used to analyze certain aspects of a financial statement. For example, one of the most common valuation multiples is the price-earnings ratio. In order to calculate this, a trader would divide the market value per share of a company by the amount of earnings per share. This number can then be compared to other companies in the same industry to determine if the company is generating enough earnings per share. Utilizing stock market fundamentals is the way that the majority of stock traders operate. Technical analysis is thought of as something that cannot work consistently by many traditional stock traders. By determining whether the underlying company of a stock is a solid company or not, a trader can more accurately determine what the price of the stock will do in the future. The debate between technical analysis and fundamental

analysis will most likely always be going on, but both of them have some merit when it comes to analyzing stocks.

### **Stock Fundamental Analysis (Value, Growth, Income, GARP, Quality)**

#### **Value**

A cynic, as the saying goes, is someone who knows the price of everything and the value of nothing. An investor's purpose, though, should be to know both the price and the value of a company's stock. The goal of the value investor is to purchase companies at a large discount to their intrinsic value what the business would be worth if it were sold tomorrow. In a sense, all investors are "value" investors they want to buy a stock that is worth more than what they paid. Typically those who describe themselves as value investors are focused on the liquidation value of a company, or what it might be worth if all of its assets were sold tomorrow. However, value can be a very confusing label as the idea of intrinsic value is not specifically limited to the notion of liquidation value. Novices should understand that although most value investors believe in certain things, not all who use the word "value" mean the same thing. The person viewed as providing the foundation for modern value investing is Benjamin Graham, whose 1934 book *Security Analysis* (co-written with David Dodd) is still widely used today. Other investors viewed as serious practitioners of the value approach include Sir John Templeton and Michael Price. These value investors tend to have very strict, absolute rules governing how they purchase a company's stock. These rules are usually based on relationships between the current market price of the company and certain business fundamentals. A few examples include:

- Price/earnings ratios (P/E)
- Dividend yields above a certain absolute limit
- Book value per share relative to the share price
- Total sales at a certain level relative to the company's market capitalization of market value

#### **Growth**

Growth investing is the idea that one should buy stock in companies whose potential for growth in sales and earnings is excellent. Growth investors tend to focus more on the company's value as an ongoing concern. Many plan to hold these stocks for long periods of time, although this is not always the case. At a certain point, "growth" as a label is as dysfunctional as "value," given that very few people want to buy companies that are not growing.

Growth investors look at the underlying quality of the business and the rate at which it is growing in order to analyze whether to buy it. Excited by new companies, new industries, and new markets, growth investors normally buy companies that they believe

are capable of increasing sales, earnings, and other important business metrics by a minimum amount each year. Growth is often discussed in opposition to value, but sometimes the lines between the two approaches become quite fuzzy in practice.

#### **Income**

Although today common stocks are widely purchased by people who expect the shares to increase in value, there are still many people who buy stocks primarily because of the stream of dividends they generate. Called income investors, these individuals often entirely forego companies whose shares have the possibility of capital appreciation for high-yielding dividend-paying companies in slow-growth industries. These investors focus on companies that pay high dividends like utilities and real estate investment trusts (REITs), although many times they may invest in companies undergoing significant business problems whose share prices have sunk so low that the dividend yield is consequently very high.

#### **Quality**

Most investors today use a hybrid of value, growth, and GARP approaches. These investors are looking for high-quality businesses selling for “reasonable” prices. Although they do not have any shorthand rules for what kind of numerical relationships there should be between the share price and business fundamentals, they do share a similar philosophy of looking at the company’s valuation and at the inherent quality of the company as measured both quantitatively by concepts like Return on Equity (ROE) and qualitatively by the competence of management. Many of them describe themselves as value investors, although they concentrate much more on the value of the company as an ongoing concern rather than on liquidation value.

#### **GARP**

Aside from being the name of the title character played by Robin Williams in John Irving’s *The World According to GARP*, is an acronym for growth at a reasonable price. The world according to GARP investors combines the value and growth approaches and adds a numerical slant. Practitioners look for companies with solid growth prospects and current share prices that do not reflect the intrinsic value of the business, getting a “double play” as earnings increase and the price/earnings (P/E) ratios at which those earnings are valued increase as well.

One of the most common GARP approaches is to buy stocks when the P/E ratio is lower than the rate at which earnings per share can grow in the future. As the company’s earnings per share grow, the P/E of the company will fall if the share price remains constant. Since fast-growing companies normally can sustain high P/Es, the GARP investor is buying a company that will be cheap tomorrow if the growth occurs as expected. If the growth does not come, however, the GARP investor’s perceived bargain can disappear very quickly.

### **Quantitative Stock Fundamental Analysis - Buying Based on Numbers**

Pure quantitative analysts look only at numbers with almost no regard for the underlying business. The more one finds them talking about numbers, the more likely they are to be using a purely quantitative approach. Although even fundamental analysis requires some numerical inputs, the primary concern is always the underlying business, focusing on things like management's expertise, the competitive environment, the market potential for new products, and the like. Quantitative analysts view these things as subjective judgments, and instead focus on the incontrovertible objective data that can be analyzed.

In recent years as computers have been used to do a lot of number crunching, many "quants," as they like to call themselves, have gone completely native and will only buy and sell companies on a purely quantitative basis, without regard for the actual business or the current valuation a radical departure from fundamental analysis. "Quants" will often mix in ideas like a stock's relative strength, a measure of how well the stock has performed relative to the market as a whole. Many investors believe that if they just find the right kinds of numbers, they can always find winning investments.

### **Company Size**

Some investors purposefully narrow their range of investments to only companies of a certain size, measured either by market capitalization or by revenues. The most common way to do this is to break up companies by market capitalization and call them micro-caps, small-caps, mid-caps, and large-caps, with "cap" being short for "capitalization." Different-size companies have shown different returns over time, with the returns being higher the smaller the company. Others believe that because a company's market capitalization is as much a factor of the market's excitement about the company as it is the size, revenues are a much better way to break up the company universe. Although there is no set breakdown used by all investors, most distinctions look something like this:

- MICRO - \$100 million or less
- SMALL - \$100 million to \$500 million
- MID - \$500 million to \$5 billion
- LARGE - \$5 billion or more

### **Arguments against Quantitative Fundamental Stock Analysis**

Because quantitative analysis hinges on screens that anyone can use, as computing horsepower becomes cheaper and cheaper many of the pricing inefficiencies quantitative analysis finds are wiped out soon after they are discovered. If a particular screen has generated 40% returns per year and becomes widely known, and if lots of money flows into the companies that the screen identifies, the returns will start to suffer. As "fuzzy" as

fundamental analysis might be, there are often times that knowing even a little about the company are buying can help a lot. For instance, if one is using a high-relative-strength screen, you should always check and see if the companies find have risen in price because of a merger or an acquisition. If this is the case, then the price will probably stay right where it is, even if the “screen” you used to pick this company has generated high annual returns in the past. All Stock nod fundamental and technical analysis filters this “fuzzy” data which allows pinpointed buy and entry signals for any market.

#### **Stock-Option Strategies: Fundamental Analysis**

Doing basic fundamental valuation is quite straightforward; all it takes is a little time and energy. The goal of analyzing a company's fundamentals is to find a stock's intrinsic value, a fancy term for what one believe a stock is really worth - as opposed to the value at which it is being traded in the marketplace. If the intrinsic value is more than the current share price, their analysis is showing that the stock is worth more than its price and that it makes sense to buy the stock. Although there are many different methods of finding the intrinsic value, the premise behind all the strategies is the same: a company is worth the sum of its discounted cash flows. In plain English, this means that a company is worth all of its future profits added together. And these future profits must be discounted to account for the time value of money, that is, the force by which the \$1 one receives in a year's time is worth less than \$1 one receives today.

The idea behind intrinsic value equaling future profits makes sense if one thinks about how a business provides value for its owner(s). If one has a small business, its worth is the money one can take from the company year after year (not the growth of the stock). And you can take something out of the company only if one have something left over after they pay for supplies and salaries, reinvest in new equipment, and so on. A business is all about profits, plain old revenue minus expenses - the basis of intrinsic value.

#### **Greater Fool Theory**

One of the assumptions of the discounted cash flow theory is that people are rational, that nobody would buy a business for more than its future discounted cash flows. Since a stock represents ownership in a company, this assumption applies to the stock market. But why, then, do stocks exhibit such volatile movements? It doesn't make sense for a stock's price to fluctuate so much when the intrinsic value isn't changing by the minute. The fact is that many people do not view stocks as a representation of discounted cash flows, but as trading vehicles. Who cares what the cash flows are if one can sell the stock to somebody else for more than what they paid for it? Cynics of this approach have labeled it the greater fool theory, since the profit on a trade is not determined by a company's value, but about speculating whether one can sell to some other investor (the

fool). On the other hand, a trader would say that investors relying solely on fundamentals are leaving themselves at the mercy of the market instead of observing its trends and tendencies.

This debate demonstrates the general difference between a technical and fundamental investor. A follower of technical analysis is guided not by value, but by the trends in the market often represented in charts. So, which is better: fundamental or technical? The answer is neither. As mentioned in the introduction, every strategy has its own merits. In general, fundamental is thought of as a long-term strategy, while technical is used more for short-term strategies.

### Putting Theory into Practice

The idea of discounting cash flows seems okay in theory, but implementing it in real life is difficult. One of the most obvious challenges is determining how far into the future we should forecast cash flows. It's hard enough to predict next year's profits, so how can we predict the course of the next 10 years? What if a company goes out of business? What if a company survives for hundreds of years? All of these uncertainties and possibilities explain why there are many different models devised for discounting cash flows, but none completely escapes the complications posed by the uncertainty of the future. Let's look at a sample of a model used to value a company. Because this is a generalized example, don't worry if some details aren't clear. The purpose is to demonstrate the bridging between theory and application. Take a look at how valuation based on fundamentals would look:

Assumptions:

Discount Rate 8%  
Growth Rate first 5 Years 15%  
Growth Rate after first 5 years 5%

<b>Part 1: Predict 5 Years of Cash Flows</b>					
	1	2	3	4	5
Prior year cash flow <sup>1</sup>	\$100	\$115	\$132	\$152	\$175
Growth rate <sup>2</sup>	15%	15%	15%	15%	15%
Cash flow <sup>3</sup>	\$115	\$132	\$152	\$175	\$201
Discount factor <sup>4</sup>	0.93	0.86	0.79	0.74	0.68
Discount value per year <sup>5</sup>	\$106	\$113	\$121	\$129	\$137
<b>Sum of PV of Cash flow</b>					<b>\$606</b>

figures in USD Millions

<b>Part 2: Residual Value</b>	
Cash flow in five years <sup>6</sup>	\$201
Growth rate <sup>7</sup>	5%
Cash flow in six years <sup>8</sup>	\$211.19
Capitalization rate (k-g) <sup>9</sup>	3%
Value at the end of year 5 <sup>10</sup>	\$7,039.75
Discount factor the end of year 5 <sup>11</sup>	0.68
PV or residual value <sup>12</sup>	\$4,791.14
<b>Intrinsic value of the company</b>	<b>\$5,397.18</b>



The problem with projecting far into the future is that we have to account for the different rates at which a company will grow as it enters different phases. To get around this problem, this model has two parts: (1) determining the sum of the discounted future cash flows from each of the next five years (years one to five), and (2) determining 'residual value', which is the sum of the future cash flows from the years starting six years from now.

In this particular example, the company is assumed to grow at 15% a year for the first five years and then 5% every year after that (year six and beyond). First, add together all the first five yearly cash flows - each of which is discounted to year zero, the present - in order to determine the present value (PV). So once the present value of the company for the first five years is calculated, we must, in the second stage of the model, determine the value of the cash flows coming from the sixth year and all the following years, when the company's growth rate is assumed to be 5%. The cash flows from all these years are discounted back to year five and added together, then discounted to year zero, and finally combined with the PV of the cash flows from years one to five (which we calculated in the first part of the model). And have an estimate (given our assumptions) of the intrinsic value of the company. An estimate that is higher than the current market capitalization indicates that it may be a good buy. Below, we have gone through each component of the model with specific notes:

- *Prior-year cash flow* - The theoretical amount, or total profits, that the shareholders could take from the company the previous year.
- *Growth rate* - The rate at which owner's earnings are expected to grow for the next five years.
- *Cash flow* - The theoretical amount that shareholders would get if all the company's earnings, or profits, were distributed to them.
- *Discount factor* - The number that brings the future cash flows back to year zero. In other words, the factor used to determine the cash flows' present value (PV).
- *Discount per year* - The cash flow multiplied by the discount factor.
- *Cash flow in year five* - The amount the company could distribute to shareholders in year five.
- *Growth rate* - The growth rate from year six into perpetuity.
- *Cash flow in year six* - The amount available in year six to distribute to shareholders.
- *Capitalization Rate* - The discount rate (the denominator) in the formula for a constantly growing perpetuity.
- *Value at the end of year five* - The value of the company in five years.

- *Discount factor at the end of year five* - The discount factor that converts the value of the firm in year five into the present value.
- *PV of residual value* - The present value of the firm in year five.

So far, we have been very general on what a cash flow comprises, and unfortunately, there is no easy way to measure it. The only natural cash flow from a public company to its shareholders is a dividend, and the dividend discount model (DDM) values a company based on its future dividends. However, a company doesn't pay out all of its profits in dividends, and many profitable companies don't pay dividends at all. What happens in these situations? Other valuation options include analyzing net income, free cash flow, EBITDA and a series of other financial measures. There are advantages and disadvantages to using any of these metrics to get a glimpse into a company's intrinsic value. The point is that what represents cash flow depends on the situation. Regardless of what model is used, the theory behind all of them is the same.

#### **Reasons to Conduct Fundamental Analysis**

Fundamental analysis helps to determine if a company is a good or poor investment choice. Imagine as a venture capitalist or a bank, who must decide if that company is worthy of a loan or equity investment. How can evaluate whether this particular company deserves your investable capital? Fundamental analysts consider the following in making their decision to invest (or not):

- Is the company making a profit consistently? (While this is naturally the most important question for investors, it's important to consider the answer in a bigger context. A single profitable quarter for a new company might be a fluke. In the same regard, a drop in profitability for an established blue-chip company might just be a temporary setback.)
- Is that profit growing or declining over time?
- Is the company holding its own relative to the competition? Is it a leader in its sector? Is that sector growing or declining in importance to the overall economy?
- Can the company pay its bills adequately? If one were to dismantle the company's operations today, what would be the intrinsic value of its assets versus the value of its debts?

#### **Information do one need to Perform Fundamental Analysis**

##### **Reading a Balance Sheet: Assets**

As the name suggests, a "balance sheet" presents a picture of how the company's assets - the value a company takes in - are "balanced out" against its liabilities - what the company must pay out. When Assets equals Liabilities plus Equity, that's when the

statement is said to be in balance. Assets include resources the company has that are worth something. Many of these are self-explanatory, like Cash & Investments. Others are less familiar, like Current Assets, which refers to the value of assets that are readily converted into cash, such as Inventory or Receivables. Longer-term assets vary depending on business type, but may include such things as property or equipment values. Since long-term assets gradually decrease in value over time, Accumulated Depreciation is subtracted from this. Note that depreciated assets may show up as having little or no value on the balance sheet but may have a much greater market value if sold.

#### **Reading a Balance Sheet: Liabilities**

Liabilities are obligations the company has made to outside parties who have provided resources. In essence, these outside parties may have lent money or other supplies to the company and therefore are owed repayment. It's important to note these outside parties do not have ownership in the company; they are creditors. Items under Liabilities include Accounts Payable the amount the company may owe suppliers, and Income Taxes Payable, which is self-explanatory. Note that Current Liabilities, which are short-term, are listed separately just as Current Assets are. This section may also contain long-term debt obligations: for example, if the company has taken out bank loans to finance equipment or real estate, or if the company has issued corporate bonds to investors. A figure called the Quick Ratio helps investors determine if a company's assets and liabilities are in a healthy balance. The quick ratio measures a company's ability to meet its short-term obligations with its most liquid assets. The higher the quick ratio, the better the financial position of the company. It's calculated as follows:

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

Note that the Quick Ratio is more conservative than some other liquidity measures, like the Current Ratio, because it excludes inventory from current assets. If one believes the company might have difficulty turning their inventory into cash, then the Quick Ratio might give a more accurate picture of the company's short-term financial strength.

#### **Reading a balance sheet: Equity**

In a fundamentally healthy company Assets will outweigh the Liabilities. The difference between the two is called Equity. Again, a balance sheet "balances" when Assets equals Liabilities plus Equity ( $A=L+E$ ). This brings us to the bottom section of the balance sheet: Shareholders' Equity. Equity is capital obtained from sources other than creditors. What are these sources? Paid in Capital refers to money investors paid the company for the stock during the initial public offering in order to become shareholders.

Paid in Capital also includes capital raised from any subsequent offerings or sale of new stock. Keep in mind this does not equal the current price of the stock.

However, this does not make the two sides balance. This brings us to the concept of Retained Earnings. Mathematically speaking, this is the amount that makes the balance sheet's two sides even. Put another way, Retained Earnings refers to the income that's been kept (retained) by the company. It's not a pile of cash sitting somewhere; rather it's the amount of money that "belongs to the shareholders", the value the company has generated beyond paid in capital and assets that exceed liabilities. Investors generally like to see Retained Earnings growing over time. A company's balance sheet gives us a high-level picture of a business, but by itself it tells us only so much. Balance sheets always balance Assets with Liabilities and Shareholders' Equity. It takes delving into income and cash-flow statements to learn more about the health of the company and whether growth is trending upwards or downwards over time.

#### **Reading an income statement: Revenues and Costs**

The income statement gives a more detailed answer to a critical question for any investor: is the company making money? The well-known expression "the bottom line" comes from income statements. Specifically, it refers to a company's Net Income. While this is obviously an important figure, it's worth reviewing an income statement line-by-line. There may be little bits of good news or red flags revealed along the way to calculating that final figure. The income statement starts with Net Sales or Revenues, the so-called "top line". When analysts refer to "top-line growth", what they really mean is: Are total revenues growing or shrinking? This is important because if the top line isn't growing, where will sustainable growth come from? The next two lines cover what it cost the company to produce the products and services sold. Cost of Goods Sold covers direct costs of materials, labor, et cetera. Depreciation, Depletion & Amortization is an indirect cost associated with production. For our purposes we'll lump them together. Another line item of cost is Selling, General & Administration Expenses. These costs pertain to operating the company and promoting the product. Analysts watch the so-called "SG&A" costs closely. Problems often show up here before they are apparent in the bottom line.

#### **Reading an income statement: Margins and Earnings**

Gross Income is calculated by subtracting costs from revenues. Gross Income plays an important role in calculating Gross Margin. This ratio measures what percentage of revenue is profit after we remove the costs associated with producing it. Operating Income is calculated by subtracting Selling, General & Administration Expenses (SG&A) from Gross Income. Financial analysts pay close attention to Operating Margin, which is operating income as a percentage of revenue. They are also interested in Profit Margin, which is net income expressed as a percentage of total revenue.

## Conclusion

Fundamental analysis, in finance, is the analysis of a business's financial statements (usually to analyze the business's assets, liabilities, and earnings); health; and its competitors and markets. When applied to futures and forex, it focuses on the overall state of the economy, and considers factors including interest rates, production, earnings, employment, GDP, housing, manufacturing and management. When analyzing a stock, futures contract, or currency using fundamental analysis there are two basic approaches one can use: bottom up analysis and top down analysis. The terms are used to distinguish such analysis from other types of investment analysis, such as quantitative and technical. Computer modeling of stock prices has now replaced much of the subjective interpretation of fundamental data (along with technical data) in the industry. Since about year 2000, with computers now able to crunch vast amounts of data, a new career has been invented. At some funds (called Quant Funds) the manager's decisions have been replaced by proprietary mathematical models.

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