Knowing What Counts

FOUNDERS CAPITAL MANAGEMENT
2017 ANNUAL REPORT

An innovative money management firm investing in publicly traded equities and fixed-income securities. A deep base in business management with a truly global perspective. A drive to identify true fundamental value. A commitment to buy carefully and hold for the long term. A passion to provide customized investment solutions tailored to each client's financial goals and risk tolerance.

This is Founders.

Founders Capital Management, LLC

2017 Annual Report:

"Knowing What Counts"

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PRINCIPALS' LETTER
From: Founders Capital Management

2017: Knowing What Counts

> **"Not everything that counts can be counted, and not everything that can be counted counts."**
> ***—Albert Einstein***

Investing is similar to life— it's all about perspective. Most of us get caught up in the day-to-day routine, influenced by our immediate circumstances and focusing on the things that impact us in the here and now. Meanwhile, we tend to overlook or delay matters that will influence our long-term well-being. When it comes to investing, many individuals have a propensity to focus on high-flying stocks that could provide immediate gratification in the here and now instead of focusing on what really counts: The safety and security of our capital allocations to ensure our long-term financial well-being—something that is as important as the air we breathe and will not be missed until we need it.

* * *

2017 was another year of astonishment! After a stellar year of returns during 2016, very few expected a repeat performance this past year. Nevertheless, the S&P 500's total return (including reinvested dividends) was *21.8%* in 2017. This rise occurred despite ongoing political concerns: The market impact of Brexit, anxiety over a possible market fallout after the U.S. 2016 election, and unsettling political challenges in the Middle East and North Korea. While there were positive, though less newsworthy, events in 2017—for example, growth in China's economy driven by internal consumption—the "negative" news seemed to win the day with many investors, who decided to keep their money on the sidelines and waiting for a more positive "macro" investment environment.

Throughout 2017, we heard from uneasy investors who contemplated removing their money from the market before the "inevitable correction." It seems that everyone continues to wait for the market to fall off a cliff and, as positive results continue, worry increases. In Wall Street parlance, staying in a positive market while negative news prevails is known as "climbing a wall of worry." The barrage of negative news coverage about impending macroeconomic and political risks increases our inclination to "tune-in," creating a negative feedback loop that makes many people leery of participating in the markets during a period of macroeconomic and political uncertainty. Should I maintain a market position, or should I sell my positions and place money in the bank (earning extremely low interest), and wait for greater clarity before re-entering the market?

As Yogi Berra said, "It's déjà vu all over again." To answer the "stay in or get out of the market" question, we need to repeat what we have stated in the past: We do not know of *any* accurate near-term macroeconomic forecast, and we cannot predict the eventual impact of unforeseen events on the market. What we *do* know is that the global economy continues to grow and that the market will be worth more 10 years from now than it is today. Thus, we remain focused on the long-term growth of our businesses in a global economy, their underlying strategies, their growth in market share, and their improving positions within their respective industries, as opposed to what is happening with overall stock prices due to economic or political forecasts that are apt to be wrong. (For a refresher on macroeconomic forecasting, see last year's letter, "An Artful Pursuit.")

We believe that we remain on the path of prosperity, yet we recognize that there will always be events that cause hiccups along the way—and that most of these events are unforeseeable. If negative events were

predictable, investors would rationally steer away from activity that would cause them harm. Nevertheless, it is human nature to try to forecast what the future may hold. Our view of the future is positive—based not on political considerations or a prediction of the market's future price movement, but rather on the prospects for the great companies we own that constitute the Founders portfolio.

The theme of our 2017 letter is "Knowing What Counts," and our topics include:

- What Counts When Measuring Business Value?
- What Counts When Assessing Business Sustainability?
- What Counts When Investing?
- What Counts in Understanding Human Behavior?

* * *

What Counts When Measuring Business Value?

> **"Price is what you pay. Value is what you get."**
> ***—Warren Buffett***

When measuring business value, it is wise to look at a company's financial statements—including the balance sheet, income statement, and cash flow statement—and evaluate a business from various perspectives. This requires putting on some key investor headgear: The accountant's green eyeshade, the financier's top hat, and the business executive's fedora.

The Balance Sheet

Accounting is the language of business and, therefore, investors should don their accountant's green eyeshade when evaluating a business. To appreciate the makeup and capital structure of a business, the balance sheet is a good place to start—evaluating a company's balance sheet provides a snapshot of the entity's assets, liabilities, and owner's equity. In the early part of the 20th century, investors were taught to focus on the correlation between a company's market value and owner's equity represented on the balance sheet. In those times, the approach to determining company valuation was to take the company assets and subtract all liabilities—the leftover owner's equity provided a benchmark for the enterprise's minimum worth. This approach to company valuation was essentially a determination of the liquidation value of a business (a note to accounting aficionados: We assume the removal of intangible assets from this equation).

Replacing the green eyeshade with the financier's top hat, we recognize that the earlier approach of valuing a business based on its liquidation value does not make sense in the 21st century. Although accounting rules still require a company to list assets, liabilities, and owner's equity, the structure of modern businesses clouds true assets and liabilities as they relate to the balance sheet. For instance, let's look at the assets listed on Apple's and Nike's balance sheets today. Assets such as property, plant, and equipment do not fully appear on Apple's balance sheet, since Apple does not own the factories that produce most of its products—rather, overseas suppliers manufacture and assemble Apple products. (Apple does own a factory in Cork, Ireland that assembles the iMac.) In similar fashion, Nike does not own any plants, property, or equipment but rather outsources the manufacturing of its athletic goods. Because the assets (such as property, plant, and equipment) of Apple and Nike's supplier companies are not represented on either company's balance sheet, we can refer to Apple and Nike as "organic" entities that primarily engineer and develop products—manufacturing is completed to their specifications by contracted suppliers. Thus, intangible assets are more prevalent in contemporary businesses due to evolved business models that rely on supplier networks to develop and deliver products and services.

The financier's top hat requires an investor to look at other assets such as "logistics and distribution." In the past, companies tended to own their warehouse and distribution sites; in contrast, logistics and distribution functions today tend to be outsourced to suppliers. In many of today's company balance sheets, "missing" distribution and logistics assets appear on the balance sheets of companies like Amazon or UPS.

Amazon.com is the main culprit—a Business Weapon of Mass Disruption (BWMD)—driving rapid revolution in distribution and logistics. When we step back to consider Amazon.com, we can understandably wonder what business this company is in—retailing? media? web services? The common thread running through all Amazon businesses is the company's ability to disrupt the entrenched distribution and logistics networks of various industries. Pre-Amazon, retailers believed it was necessary to offer consumers various locations to access their merchandise. Entertainment production companies believed that they could offer consumers their content through a defined number of media outlets. And most corporations believed that they should directly house and distribute data and information to their customers through in-house computers. Along comes Amazon, offering consumers the opportunity to purchase goods from various vendors conveniently through Amazon.com, mostly supplied through Amazon's vast distribution network. Amazon disrupted the media industry by gathering and distributing content to customers through its streaming service. And Amazon offered web services to businesses seeking to outsource the distribution of data and information to their customers via the cloud. Amazon successfully disrupted what appear to be very different industries—retailing, media, and web services—by establishing itself as the more convenient distribution middleman. Next up: Amazon is attempting to disrupt drug distribution—we will address that later in this report

Moving on to the liability section of the balance sheet: While the accountant's green eyeshade should be on when evaluating the debt structure of a company to ensure that the business can meet its obligations (this is on the balance sheet), the financier's top hat is required to further decipher liabilities in a modern business structure. Many businesses today can structure a company's liabilities in a way that may not appear on its balance sheet. For example, the global financial crisis of 2007-2008 resulted from banks using off-balance sheet entities to borrow funds to make mortgage loans from warehouse lenders. Basically, the off-balance sheet entity became a temporary warehouse for mortgages that would be quickly sold to investors. Once the bank sold the mortgages to another creditor in the secondary market, it received the funds and turned around to pay back the warehouse lender for the temporary loan. Given the short time period these mortgages were to be warehoused, accounting rules did not require the banks to recognize this temporary debt. We all know what happened when the music stopped: No buyers appeared for these mortgages, and banks had to place this debt on their balance sheets. In summary: These days, several vehicles exist to minimize the presentation of liabilities on a company's balance sheet, and the financier must be on the lookout for any impact this financing activity can have on business value—especially regarding financial enterprises. (Pension obligations and stock compensation programs should be similarly examined, since these obligations may not be fully represented as liabilities on a company balance sheet.)

If the assets and liabilities of many of today's businesses are convoluted and not quantifiable, what counts when evaluating the financial structure of a business? Now it's time to slip on the management executive's fedora to assess why businesses are constructed the way they are today. In today's competitive business environment, business executives have developed models that optimize adaptability and flexibility to enable them to quickly act on emerging new market opportunities, competitive threats, and/or changing customer needs.

Sporting our financier's top hat, we can see that what counts today in evaluating a company's assets is the maintained property, plant, and equipment; the strength of the enterprise's networked supplier relationships; and flexibility in the company's ability to use these assets to maximize long-term returns on capital. The logistics and distribution network should also be evaluated as companies such as Amazon continue to aggressively penetrate these networks and impact many businesses. A company with a strong, flexible logistics and distribution program can leverage its business to create a competitive advantage. Furthermore, investors should evaluate a company's two greatest assets—its customers and employees—assessing both customer "stickiness" within the business's ecosystem along with the company's ability to attract and maintain the best employee talent. Investing in a company that has a fickle customer base, or where employee turnover is exceedingly high, should be avoided. Finally, investors should monitor a company's debt structure and, more important, recognize business disintermediation and disruption. (We will discuss these concepts in more depth in the next section, "What Counts When Measuring Business Sustainability?")

The Income Statement

Donning our accountant's green eyeshade, we look at the incoming revenues and outgoing expenses reflected on the income statement to determine how much money a company produces over a given time frame. When a company reports its revenues, expenses, and income, these numbers should reliably reflect the company's profits. Replacing the green eyeshade for our financier's top hat, however, we can see that this is not always

the case with today's companies, owing to greater flexibility in reporting income. For example, business titan GE (General Electric) is undergoing a loss in investor confidence, much of it due to the way the company has been accounting for its income and its lack of accounting transparency. In its financial reporting, GE estimates revenues and expenses on projects that involve long-term contracts (such as power generation, large oil-drilling, locomotive production, and long-term construction) using "percentage-of-completion" accounting. GE has to "guesstimate" the revenue it recognizes from these large-scale, extensive items (as well as their timing and ultimate delivery) along with the attributed expenses—i.e., depreciation and amortization, bad-debt reserve, warranties, etc. Put this all together, and the complexity of GE's financial statements—while in compliance with accounting rules—clouds the underlying profits of the business. To be fair, GE is doing things no differently than other companies such as IBM, Boeing, United Technologies, and Lockheed Martin that commit to large, long-term projects to be delivered to customers. These organizations face similar accounting challenges associated with complex contracts and have to guesstimate revenue and expenses. So, what is an investor supposed to do in these situations?

The Cash Flow Statement

Key to determining a company's business value is to analyze its cash flow statement, which is the interconnection between the balance sheet and income statement. The cash flow statement is the basis for determining the accuracy of a company's accounting and for defining the distributable cash available to owners. The cash flow statement is presented in three sections:

1. **Cash flow from operating activities:** This section displays the flow of money (in and out) during a company's stated period of operation and includes net income, depreciation and amortization expense, changes in working capital, etc.
2. **Cash flows from investing activities** presents money that was invested in areas such as property, plant and equipment, acquisitions, etc.
3. **Cash flows from financing activities** exhibits changes in borrowing activity, stock issuances/purchases, and dividends paid to investors

Analyzing the cash flow statement requires all our investor headgear—accountant's green eyeshade, financier's top hat, and business executive's fedora.

Owner's Equity

This brings us to what really counts when measuring business value: The owner's equity on the company's balance sheet. Strapping on our accountant's green eyeshade, we can determine the approximate liquidation value for a company by subtracting its liabilities from its assets. With our financier's top hat on, however, we can see that liquidation value represents the net equity input for the business that ultimately produces cash output. By carefully evaluating the cash flow statement, we realize that the true owner's equity of the balance sheet—i.e., the true value of the company—is determined by a defined set of cash-related variables.

Fundamentally, the foundation on which business valuation is defined is the cash available to owners. The keys to measuring business value are:

- Determining how cash available to owners relates to earnings over time
- Evaluating how this cash is allocated to achieve higher returns than the company's cost of capital
- Assessing the company's cash generating sustainability into the future

If a disparity widens between reported earnings and cash flows over time, then the company's accounting is likely aggressive. Hints of accounting mishap—and fraud—can be detected through a careful inspection of discrepancies between a company's cash flow statement and the linked balance sheet and income statement. The issue is not about compliance with accounting rules or about business structure, but rather how aggressively (or too conservatively) a company accounts for its business activities within accounting guidelines. If a company's accounting becomes divorced from reality and is drawn from estimates that are beyond verifiable accounting, then its financial statements are built on sand instead of concrete.

It is unfortunate that investors need to dissect a company's financial statements to determine whether reported earnings reflect the true earnings of the business. Putting on the operator's fedora: Proper accounting for a company's business activities boils down to a responsibility of business operators to present the true

economics of the business. If there is a divergence between reported Generally Accepted Accounting Principles (GAAP), rule-based reported earnings and the true economics of the business, then management has a duty to explain these differences in detail.

For example, one area in which reported earnings and cash earnings may diverge is due to purchase-accounting. When one company purchases another company, purchase-accounting rules require that goodwill and other intangible assets such as patents, licenses, trademarks, and franchise and servicing rights be recognized on the acquirer's balance sheet. Once recognized, GAAP accounting requires a company to maintain goodwill on the balance sheet and fully amortize other certain intangible assets associated with the acquisition over a period of years. Note that, although intangible goodwill on an acquiring company's balance sheet is not amortized after an acquisition, it can become partially impaired or—in extreme cases—fully written off if shareholder value is destroyed because of an acquisition gone south. For example, in 2012—one year after its acquisition of cloud and software developer, Autonomy—Hewlett-Packard wrote off nearly 90% of the $10 billion acquisition cost. With our financier's top hat firmly in place, we recognize that intangible assets that are adjusted due to purchase-accounting rules are related to expenses that, at the time, have no real economic charge to the company. In HP's case of writing off goodwill associated with its acquisition, the value was lost the day it acquired Autonomy.

We highlight this HP-Autonomy example for a couple of reasons:

1. To provide an example of when management should explain the context of impactful activities in their reported financial statements to provide investors a "true" reflection of the company's economic earnings—such as cases involving purchase-accounting adjustments
2. To point out a significant area where the reported earnings and cash flows of a business can vary due to certain business activities—such as acquisitions

There is one last impactful item in financial statements that requires further evaluation, and where reported earnings may not reflect the true earnings of the business: Affixing our accountant's green eyeshade, we understand that proper accounting requires a business to expense a portion of its owned equipment each reporting period. For example, a company that purchases a $10,000 piece of machinery may depreciate this item over a 10-year expected life at $1,000 per year. The $1,000 expense, although not a cash outlay by the company, is intended to reflect the money "set aside" to replace this piece of machinery at the end of its 10-year life. However, the investor needs to exchange the green eyeshades for the financier's top hat and recognize that, in most cases, reported depreciation understates the expense associated with the eventual replacement of the equipment. In the example of our $10,000 equipment purchase: This same piece of machinery will likely cost around $14,000 to replace at the end of 10 years. Much of the additional cost reflects an annual 3.5% inflation rate applied over the 10 years. We bring this up because we believe that if management faces this type of "large gap" in GAAP accounting—especially in capital-intensive businesses—then this eventual cash impact should be explained to investors so that they can determine the true economic earnings of the business.

Many managers of companies today do attempt to explain differences in GAAP reported earnings and unreported "adjusted earnings." Of course, adjusted earnings are almost always consistently higher than reported GAAP earnings, explained through one-time restructuring charges, adjusted compensation expense, nonrecurring research and development costs, etc. This is due to a common Wall Street desire to "smooth" a company's earnings and provide investors confidence that the company is "meeting the desired numbers." This massaging of numbers by management sends the wrong message to investors. What is important to investors is for management to accurately report and clearly explain the true economic results of the business—both good and bad. Management's choice should be to ignore Wall Street and to eschew blaming (or abusing) current accounting rules to please investors—or to cater to themselves.

What Counts When Measuring Business Sustainability?

We are kicking off this section with some facts about business sustainability: A December 2016 *Harvard Business Review* article titled, "The Scary Truth About Corporate Survival," cites a long-held statistic presented at business conferences: 80% of the companies that existed before 1980 are no longer around—and another 17% will likely not be here by 2021. Since much of the research on corporate survival is conducted on Fortune 500 and S&P 500 firms, two Dartmouth professors (Vijay Govindarajan and Anup Srivastava) decided to broaden the scope of study and evaluated all 29,688 companies listed on U.S. stock exchanges from 1960 to 2009. They divided the companies into 10-year cohorts according to the dates the companies were listed and examined how many in each cohort remained in business after five years. The result: Company longevity is decreasing. For example, companies that were listed prior to 1970 had a 92% chance of surviving the next five years, to 1975. In contrast, companies that were listed from 2000 to 2009 had only a 63% chance of making it the following five years. The reasons attributed to the accelerated corporate death rate in this article tie into our previous discussion on accounting. The key difference in their findings was that, "on average," firms that were listed after the year 2000 invested twice as much money (in percentage terms) on organizational capital—i.e., employee talent—and half as much on physical assets. Although the new-age firms are nimbler and less capital-intensive regarding investments in property, plant, and equipment, their business models are in a constant state of flux and are also easily duplicated. New-age firms that fail to stay on the leading edge quickly dissipate.

Our point: Creative destruction has always been a customary feature of the business world. In the past, however, it occurred at a slower pace based on the need to risk large amounts of up-front capital on assets such as property, plant, and equipment. In today's technology-based world, capital allocation flows largely to talent, resulting in accelerated business cycles in which both ideas and the capital invested in talent are fleeting. This causes creative destruction to occur at a more rapid pace.

The attributes for measuring business sustainability have not changed—but now they are more important. In our 2011 letter, "Staying Out of Trouble," we posited that, while a Masters of Business Administration (MBA) degree may provide a foundation for understanding business, it may not be enough for successful investing. What may prove more valuable for investors is to acquire a "supplemental MBA": *M*easuring *B*usiness *A*bility. The curriculum for Measuring Business Ability would emphasize the importance of understanding the concepts of *economic value* and *business models* to assess a company's sustainable competitive advantage. In our 2011 letter discussion, we identified what we believe counts when determining the difference between "what value is" and "what is valu*able*" and the four "ables" of every business we invest in:

- **defend*able*** businesses that are difficult for competitors to penetrate
- **sustain*able*** businesses that can be viewed many years out
- **predict*able*** businesses that have a high market share of consistently needed products that are integral to daily activity—leading to steady returns on capital and profitability
- **afford*able*** businesses that are selling at a desirable price that provide an investor a fair return over time

Businesses that possess the "ables" create *economic value* by producing distributable owner earnings over time, and by allocating retained earnings effectively toward high returns. Investors should keep a sharp eye on earnings—especially those that are retained by a company—and how they are deployed to obtain future returns for business owners. Fundamentally, when evaluating a business, one should develop a keen understanding of economic value and be aware that corporate earnings should not be viewed on an apples-to-apples basis, primarily due to variations in the capital intensity of one business relative to another.

To emphasize this point, we first looked at an automobile manufacturer—a participant in an industry that tends to practice destructive competitive behavior, achieving an average return of 10% on its employed capital. Given the competitive and capital-intensive nature of this business, little of this company's earnings make their way to owners. For every $3 per share of earnings reported, the carmaker retains $2 of shareholders' money to enable the company to stay on a competitive treadmill. As hard as management tries to generate cash for shareholders, this manufacturer has to retool and/or build factories to produce new autos for future delivery. This type of competitive, capital-intensive business thus places a heavy burden on its retained shareholder earnings, making it difficult for management to achieve an equal return on freshly invested capital compared to prior returns on retained equity. If management fails to obtain a return on this reallocated shareholder capital

that is equal to what was previously achieved, then economic value is destroyed over time. At this point, it is better to have *all* earnings distributed to shareholders. Of course, in many cases this is not possible—a capital-intensive manufacturer that opts to distribute all earnings to shareholders jeopardizes its economic standing in the industry, or else risks its financial well-being as the company is forced to borrow money to maintain its competitive position.

Investors should understand that the restricted variety of earnings can be deemed to possess value but must carry a heavy financial weight. To further illustrate this point, let's say that an unlevered business obtains a return of 7% on both current and incremental invested capital, and that we can purchase this business equal to its stated equity on the balance sheet. In today's market environment, when the return on a long-term taxable corporate bond is around 4%, the opportunity to obtain a favorable three-percentage-point premium through a reinvestment of funds in our business may be deemed a "fair deal" if the business is predictable and protected. If long-term bonds spike from 4% to 8%, however, a reallocation of money into our business does not look as desirable. Taking this one step further: If the market encountered long-term bond yields of around 10%, the 7% business return would be deemed a terrible deal. Shareholders would rightly request that management distribute all capital back to owners to enable them to place these funds in businesses that fetch higher returns.

On the opposite side of the coin: We cited a well-entrenched, non-capital-intensive business that tends to gush cash (for example: Coke's manufacturing of syrup, which does not materially change over time). A beverage manufacturer that can achieve a consistent 20% return on employed capital has difficulty reinvesting 100% of its earnings, since doubling this global business every four years or so would be difficult—every $1 of shareholder funds retained would turn into more than $6 in 10 years. If this investment dream could come true, however, owners would request that management retain all capital possible to cumulatively and exponentially increase returns. Understandably, most businesses that generate returns of 20 cents on every $1 of employed capital would find it very difficult to reinvest all their earnings on a continual basis to achieve a return of 20% per annum. Thus, these excellent businesses generate a large amount of unrestricted earnings that, in principle, should be distributed to shareholders through dividends and/or prudent share repurchases.

As a result of this initial analysis, we can see that it is advantageous for investors to seek out businesses that are positioned to produce high returns on capital over time, since these entities tend to produce large amounts of cash that can be distributed to owners. Taking this one step further: The investor must determine whether a high-return, cash-generating business can sustain its advantage in the future. A significant question to ask: How are managers building the company to create a long-term competitive advantage and expand the economic moat around their business castle? (This is a Warren Buffett metaphor.) The point: The expansion of a company's business is highly correlated to its business model.

This led us to a discussion in the 2011 letter about how to identify well-defined business models along with strategies that provide an investor confidence that the economic value created by a business is sustainable. Since this has become ultra-important since 2011, we will revisit this discussion.

A Step Back

A business model is normally defined as the business strategies and tactics executed by an organization to generate revenue and profits from its operation. The model includes the components and functions of the business—sales, marketing, operations, human resources, administration, R&D, finance, etc.—and how these functions interact to make money. Our definition is a little simpler: *A business model reflects how a business makes its money.*

Underlying this simple definition, however, is some complexity. We think that investors should focus on defining the *type* of business model a company uses to make money. We categorized well-defined business models and strategies into four broad areas:

1. Controlling the Middle
2. Segregation and Integration
3. Mechanistic and Organic
4. Purpose and Focus

Controlling the Middle

"Controlling the middle" in business is analogous to chess. In chess, controlling the center of the board is a key strategy to winning the game. This strategy entails "uniting" pieces to attack the central four squares of the board, giving the executing player control over the game. Controlling the center of the chess board is important because tactical skirmishes often take place around the center squares, from which pieces can access most of the board. This concept also applies to business.

A little history: Companies have applied "tying" and "control the middle" strategies for centuries. Ben Franklin expanded his publishing business through special access to the postal service (he served as the postmaster of Philadelphia from 1737 to 1753 and as joint postmaster of the U.S. colonies from 1753 to 1774). At the time, newspaper publishers often served as postmasters, an arrangement that helped them to gather and distribute news. Postmasters decided which newspapers could travel at no charge in the mail—or even be distributed through the mail at all. The postal service served as the "middle" between the publisher and the consumer, allowing Ben to deliver his newspaper to households as he constructed a profitable postal system throughout the colonies. The postmaster's control over this central delivery source ensured a scalable distribution source as well as circulation bragging rights to attract advertising—creating a large competitive advantage.

The most famous "control the middle" business strategy was used by John D. Rockefeller to gain control over the oil industry. Rather than build his company, Standard Oil, through oil exploration or through retail outlets that sold kerosene and oil to consumers, Rockefeller decided to build and purchase oil refineries, which occupied the middle between oil exploration and production on one side, and the consumer on the other. Standard Oil, which had its roots in Cleveland, Ohio, competed fiercely in the refining business. During a six-week period in 1872, Standard Oil gobbled up 22 of 26 competitors in the Cleveland area. Of course, Standard Oil did not stop in Ohio, gradually combining most of the refiners in the U.S. until it controlled 90% of the daily capacity of the American petroleum industry by 1879. During this time, as Rockefeller gained control of the refining business, he set his sights on tying up the transportation of oil from areas of exploration to their refineries, and eventually to the consumer. Standard Oil set up exclusive cartel agreements with railroads and purchased various rail tank car manufacturers to form the Union Tank Car Company, which made the oil tankers that transported oil. By controlling and expanding the middle of the oil business system, Rockefeller eventually extended his reach into exploration and consumer sales. By 1911, Standard Oil's monopoly commanded a ~65% market share and the Supreme Court ruled that the company should be broken up into 34 different companies. (We have a large position in one of the original Standard Oil companies—Chevron—along with Union Tank Car, which is part of The Marmon Group, which is majority-owned by Berkshire Hathaway.)

Controlling the middle (think Microsoft's initial control over the computer operating system, or Google's control over internet searching) is a powerful business model that can generate tremendous returns to a corporation and value to owners. Investors in companies that use this model must continuously evaluate the movement of the middle in a changing industry, potential anti-trust violations if the strategy is abused, and the company's ability to anticipate and respond to market forces that threaten to break its hold of the middle.

Segregation and Integration

In our view, the segregation and integration model echoes a flexible version of another business strategy—vertical and/or horizontal integration. Understanding the segregation and integration business model requires an understanding of its roots. Again, a little history:

Vertical integration occurs when a business owns/invests in its upstream suppliers and/or its downstream buyers. For example, a company engages in *backward vertical integration* when it controls subsidiaries that produce parts used in the production of its products. An automobile company may own a spring manufacturing business, a battery company, and a seat manufacturer. In theory, controlling these subsidiaries creates a stable supply of parts and provides consistency in quality. Conversely, a company engages in *forward vertical integration* when it owns/invests in distribution centers and retailers that sell its products to consumers.

Henry Ford—the pioneer of the assembly line—used a vertical integration approach effectively. While serving as head of the Ford Motor company during the early decades of the 1900s, Ford believed that the cost of manufacturing automobiles began the second that raw materials were obtained through the time that the finished product was sold to the customer. Based on this thinking, he set out to control every aspect of

manufacturing a car. Henry Ford built a manufacturing complex near Dearborn, Michigan called the Ford Rouge—a compound along the Rouge River that was a mile-and-a-half wide and more than a mile long. He consolidated Ford Motor's entire business there in 1928. Touring the Rouge complex, a visitor could watch iron ore and coal unloaded from a Ford-owned railroad with 100 miles of track make its way into ovens to manufacture coke and steel. In another part of the facility, one could watch glass being made, car panels being stamped, and engines being assembled. At the end of the Rouge complex, a visitor could literally witness all the pieces coming together and watch the car drive away. Vertical integration became the main business approach of Ford as well as other automobile companies seeking to minimize costs by centralizing production.

Horizontal integration occurs when companies that produce similar products or services decide to merge. The purpose of consolidating similar businesses can be obvious: The combined company has the ability to obtain economies of scale, leverage its position in the marketplace, and increase market share.

Horizontal integration usually takes place in industries that are fragmented or fast-changing. For example, many mergers and acquisitions have taken place in the media industry over recent decades, with the emergence of conglomerates that control publishing, movies, television, and radio. Combining companies has enabled several media enterprises to become virtual tollgates between advertisers and consumers—in effect, they set the toll price. (Note that the media & telecommunications industries are experiencing disintermediation again due to the advent of streaming content directly to consumers. This disruption is causing participating media and telecommunications companies to attempt vertical integration to control advertising dollars.)

Success stories about vertical and horizontal integration abound, but investors should be aware of several issues associated with these models. For example, many companies applying these strategies end up with large and inflexible legacy businesses that are difficult to alter in a changing industry. The vertically integrated automobile company that owns a unionized tire manufacturer may find it difficult to compete if an independent tire manufacturer develops new patented tire technology or lowers labor costs through efficiencies. In addition, the targeted benefits of horizontal integration could prove elusive. A modern example is Hewlett Packard, a company that initially focused on manufacturing printers. HP expanded into the computer hardware and software businesses with a strategy of developing sales synergies to increase its corporate customer market base. Unfortunately, these businesses proved difficult to combine and manage, and the company lost value and was eventually broken up.

To summarize: A company that uses a vertical or horizontal business model may compromise its flexibility in responding to emerging opportunities in a fast-paced business environment. This inability to quickly pivot to take advantage of new opportunities can lead to a deterioration in market position as the company becomes increasingly mired in its "concrete" business structure. This stalemate can eventually lead to destruction of long-term business value.

A more favorable modern strategy is what we call the "segregation and integration business model," which freely mixes into the business structure the best opportunities available under both vertical and horizontal integration. Several companies have learned the special art of segregating and integrating business functions to master their industries.

A model story: In 1899, Asa Candler, the founder of Coca-Cola, was finding it difficult to quickly scale the company and its products. He wanted to deliver them throughout the U.S. without having to raise a vast sum of money (Coca-Cola did not go public until 1919). His solution was to sell the bottling rights for $1.00, thinking the future profitability of the business was in soda fountains. Obviously, he was somewhat mistaken, but the 370 bottling franchisees that existed by 1910 invested vast sums of money into bottling and distributing Coke's products throughout the U.S. This so-called "mistake" by Mr. Candler created tremendous scale for Coca-Cola. By developing a segregated system of bottlers, the company quickly covered the country with its products. Any competitor who hesitated to set up a similar business system during this short time frame was crushed. (There were more than 150 imitating competitors by 1916, which forced Coke to further differentiate itself by introducing and patenting the famous "hobble skirt" bottle that became an American icon.)

Only PepsiCo was able to develop a similar business system—and the industry literally became a duopoly. Once Coke had learned the advantages of segregating and integrating functions within its distribution system (and lowering its capital-intensity), the company repeated this concept elsewhere. Coke segregated and integrated various marketing functions between the company and bottlers—Coke manages large advertising

campaigns, while bottlers focus on point-of-sale penetration within stores. The company also segregates and integrates financial and supply-chain functions. For example, Coke purchases all cans and bottles at the company level on behalf of its bottlers to maximize purchasing leverage, passing these supplies to bottlers to fill and distribute products. Over the past 10 years, both Coke and PepsiCo have integrated their bottlers in the U.S. to gain greater control over the complexity of delivering many diverse beverage brands. However, Coke is now refranchising and segregating the bottling function once again in the U.S.

Looking at the history of these two companies, we can see how the delicate balance established through the proper segregation and integration of business functions can create significant value—and be *very* difficult to duplicate. Mastering a "segregation and integration" business model can create a tremendous competitive advantage, and investors who notice a business successfully applying this model should take an interest in purchasing the business (at the right price).

Mechanistic and Organic

A mechanistic business structure specializes, centralizes, and standardizes all business functions (such as manufacturing, operations, marketing, and distribution) under one roof to gain full control over the process of production through delivery to the customer.

An organic business structure is the opposite: Non-specialized, decentralized, and non-standard. Contemporary "virtual" companies such as Apple and Nike—in which 80% or more of business functions are outsourced and managed through a central headquarters—are based on the organic business model. Virtual companies tend to be R&D and marketing entities.

Purpose and Focus

During the first year of an MBA program, students are usually introduced to Harvard Professor Michael Porter's framework for business analysis that models a company being impacted through five forces of competition. Analyzing the following five forces, a company can theoretically shape business strategy to gain a favorable competitive position within its industry:

1. Existing competitive rivalry
2. Threat of new market entrants
3. Bargaining power of buyers
4. Bargaining power of suppliers
5. Threat of substitute products (including technology change)

A quick synopsis of this model:

1. *Existing competitive rivalry:* When competitive rivalry is extremely intense (think airline industry), industry participants act in kamikaze fashion, fiercely competing for customer favor and, in the process, sabotaging any ability to obtain a profit.

2. *Threat of new market entrants:* In the case of a monopoly, when competitive rivalry is absent, the barriers to entry may be high, and profitability can be exorbitant because the sole business can dictate price. Conversely, if there are low barriers to enter an industry (due to minimal capital requirements or little brand awareness), new market entrants will emerge until profits either normalize or become nonexistent. For example, if a particular type of restaurant is very successful in a town, similar restaurants seem to emerge until patronage to this type of eating establishment is normalized. If there are high barriers to entry—in the example of our restaurant, due to zoning restrictions—competitors are deterred, and profits can remain high because customer choice is limited and there is little threat of new market entrants.

3. *Bargaining power of buyers:* The bargaining power of buyers prevails where customers can walk into an establishment and leverage the salesperson through price negotiation. In these situations, the business has minimal ability to obtain a large profit (a typical car dealership or furniture store may fall into this category). Since we do not have the option to negotiate price when purchasing a pack of gum, the bargaining power of the consumer in this case is low—allowing the manufacturer greater pricing flexibility to obtain a profit.

4. *Bargaining power of suppliers:* If the bargaining power of suppliers is very high, the business has little ability to purchase products at a large discount and, in turn, attain a large markup when selling to consumers. Cable companies provide an example of the bargaining power of suppliers. A local cable operator has very little competition, and networks seeking to have their channels viewed by subscribers to the cable company have little choice but to accept the cable company's price—otherwise, the cable company will not carry them. (This is changing.)
5. *Threat of substitute products (including technology change):* The threat of substitute products can lower industry profits, especially in a commodity-type business. If a sugar substitute comes along that tastes exactly like the real thing but is cheaper or healthier for consumers, you would not want to be a sugar cane farmer.

In summary, an investor applying Professor Porter's model can identify an industry as unattractive if the combination of these competitive forces is likely to drive down overall profitability. Conversely, if the effect of these forces on a company add up to an outlook of favorable competitive advantage, that business may be promising for investment.

With this background on analyzing competitive forces to guide business strategy, an astute investor seeking to measure potential business ability will ask, "What business actions need to be taken to blunt these competitive forces and deliver a business advantage?" In essence, what can a company do to create competitive advantage?

We believe that a business can maximize its competitive position by focusing on four broad values:

1. Operational Excellence
2. Product / Service Differentiation and Innovation
3. Employee Development
4. Customer and Supplier Intimacy

When a company pursues *operational excellence*, it is not necessarily attempting to be the lowest-cost provider. For the product the company manufactures or the service it delivers, the company is attempting to excel in every part of its operation, including sourcing suppliers, manufacturing, distribution, etc. When a business executes a strategy focused on operational excellence, it embarks on a never-ending mission to become operationally better. This "continuous improvement" concept has spawned well-known business initiatives such as "Total Quality Management" and "Six Sigma."

McDonald's is a company that built a competitive advantage through operational excellence. The company's founder, Ray Kroc, anchored his strategy on the operating system. His relentless focus on developing a standard and efficient operation led to a focused menu, integrated supplier relationships, and a strong environment for training and monitoring franchisees. Fred Turner, one of Ray Kroc's original managers, developed a 750-page manual in 1957 that outlined, in detail, how to grill hamburgers, fry potatoes, and make milkshakes. This extreme focus on operational excellence has been an enormous factor in McDonald's ability to create a competitive advantage that is difficult to duplicate in the fast-food restaurant business and continues to this day.

Product / service differentiation and innovation can also lead to a competitive advantage. A business that pursues this focus continually seeks to offer a different and unmatchable customer experience. Apple is a company that immediately comes to mind. Through Steve Jobs' tireless quest to deliver a different and unmatchable technology experience, consumers have remained extremely loyal to products such as the iPod, iPhone, and iPad over the years.

A focus on *employee development* is often overlooked by companies that seek a competitive advantage, perhaps due to an inability to quantify return on this investment or to the transient nature of employees. Nevertheless, an emphasis on employee development can lead to a powerful long-term competitive advantage. In most businesses today, knowledge capital is the cornerstone of building value. Businesses that create an environment for sharing and building knowledge capital from one management generation to the next can develop a tremendous advantage by passing on "institutional memory" and reinforcing a strong culture of partnership in the organization that becomes difficult to duplicate. Google is a good example of a contemporary knowledge / learning organization.

Customer and supplier intimacy is an area in which many companies lose focus. Large companies, in particular, tend to "look inward," distracted by their size and organizational complexity. Organizations that become insular almost always suffer erosion of competitive market position. On the other hand, companies that actively focus on customers and supplier intimacy continue to succeed as they work to meet evolving customer and supplier needs. In essence, they are always looking to embrace the customer and supplier, getting as close as possible to understanding what they want and providing it to them, with a focus that goes well beyond offering the lowest price. Amazon is an example of a contemporary company focused on customer and supplier intimacy.

Many companies attempt to use one or several of these models and strategies to develop a durable competitive advantage. Given the increased complexity due to interconnected business structures that exist today, and the nuances surrounding the accounting for business activity, identifying a sustainable competitive advantage needs to be even further clarified. Accountants have traditionally viewed the assets and liabilities of a company as the foundation for evaluating the capital structure for a business. This is still correct, but is now incomplete. The more important assets and liabilities no longer reside on the balance sheet and should be considered wearing the financier's top hat and management executive's fedora. Given this fact, the business analyst must look beyond the traditional make-up of a company's financial structure and, as an adjunct, evaluate a company's business model and total business structure.

Evaluating Business Assets

The first thing to evaluate are a company's assets—or "sustainable properties." The economic resources (i.e., business input) that lead to value creation include standard assets such as property, plant, and equipment but should also encompass resources of value such as patents, branding, supplier and distribution networks, key employees, customer loyalty and "stickiness," and any unique business processes (such as Google's unique search algorithms). Although economic resources can be difficult to pin down, we recognize these advantages when we see them. We believe that management should provide information about the sustainable properties of their companies and inform investors of their characteristics, value to the business, and related attributes that contribute to the company's business model. Management should also communicate future plans regarding capital allocation to these areas with the goal of widening their competitive advantage.

Evaluating Business Liabilities

Management should also clearly present the liabilities a company faces, both near- and long-term, and highlight the most threatening liabilities that are most likely to disrupt or impact the company's ability to achieve its goals. Disintermediation and disruption are occurring at a rapid pace in most industries, and businesses need to plan for these inevitable interferences by developing and monitoring an ongoing risk management plan. Companies that don't adapt to a fast-paced and changing competitive landscape join the business graveyard. Many iconic companies that believed they'd be around for another hundred years have been blindsided and devastated in recent years—Sears, J.C. Penney, Kodak, and Western Union are but a few examples. We see many businesses today falling victim to juggernauts like Amazon, whose distribution and logistics machine is causing havoc among industries. Other once-impenetrable companies currently facing disintermediation and disruption include IBM and General Electric. In summary, companies in the 21st century need to be ultrasensitive (almost paranoid) to possible disruption in their business and should develop continuing offensive and defensive measures to thwart competition that could impact their survival.

Business culture has become important for survival (think Google and Facebook) based on management's need to build strategic adaptability and flexibility into their organizations, to enable them to "move the business on a dime." Questions to determine whether a company's business culture will enable it to thrive:

- **What is the nature of the company's culture?** How well does management respect its employees? Is failure and experimentation treated as a learning experience and opportunity for future success? How are employees encouraged to think (strategically and differently?) and act (with honesty and integrity?). How well does the organization's staff work together to execute its plans?
- **How is leadership viewed in the company?** Would employees describe leaders as integrated (working on behalf of them), or segregated (working for their own self-interest)?

- **Is the company a "learning organization" or complacent and set in its ways?** How curious and passionate are its employees? Do managers and employees seek questions or answers when faced with challenges? Is there an emphasis on employee training and development?
- **Where is the customer in the organization's priorities—at the center or at the periphery?** How well does the organization listen to the customer? Does the organization display empathy and act to please customers? How well does the company recognize and adapt to changing customer needs?
- **Does the company view itself as interdependent (developing partnerships) or independent from those with which it interacts—suppliers, community, etc.?** Do employees care deeply for suppliers and the community that interface with the organization? How respectful is the organization to cultural differences? How sensitive are employees and management to changing societal values and needs?

Determining whether these types of values underlie the strategic resources of every company is difficult to pinpoint. Furthermore, these simple concepts do not automatically translate into results, as very few organizations can claim to possess all these qualities. We have pointed out in the past that instilling these intrinsic values is difficult to teach as well as implement. Why? Because these concepts are a behavioral choice—one that managers and employees individually and collectively make each day. A series of "right behavioral choices" needs to be ingrained or inherent in the corporate culture to create long-term intrinsic value.

What Counts When Investing?

In past letters, we discussed the most important concept in investment: Estimating the approximate worth of a business. A quick review:

The intrinsic value of a business is equal to the discounted value of the cash that can be taken out of a business over its remaining life—without affecting its need for capital to grow. Readers may remember various formulas and methods we have provided for figuring intrinsic business value, as well as our attempt to illustrate this well-known concept using straightforward calculations.

We surmised that, regardless of the formula an investor applies, a hard-and-fast rule of investing is to figure out an approximate fair-value range for the company that is being purchased. Pay too much, and returns will be lower. Purchase at a discount, and ultimate returns will be higher. Looking at it this way, price is what you pay, and value is what you receive. As noted in the 2011 letter, a business can be viewed like a goose that lays an ever-increasing number of golden eggs, and the investor's job is two-pronged: To evaluate the goose's ability to continue producing golden eggs, and to predict the number of eggs that goose will produce many years out. The objective to investing is to correctly figure out today's value of the golden eggs produced over the life of the goose—and then acquiring the goose at a discounted price when compared to the value of the golden eggs that it will yield. In similar fashion, savvy investors try to pick up a security at a discount to its intrinsic value.

The thought of assessing the intrinsic value of a business is not new, and we have emphasized (and re-emphasized) this many times over the years. Yet, so many investors are falling short when applying this concept today as they ignore the cardinal rule, falling victim to purchasing a stock based on a prediction of a rising price.

Passive Investment Vehicles

Before we answer the question about "what counts when investing," it's worth discussing the numerous passive investment vehicles that have proliferated over this past decade. Index-based funds and ETFs (Exchange-Traded Funds) were designed to meet basic investors' appetite to lower investment costs, diversify their portfolios, and—over the long-term—move in and out of securities with minimal tax implications. This was a good idea. Since the introduction of passive investment vehicles, however, investors are now moving around like bees from flower to flower, seeking to pollinate their portfolios with excessive returns. Since passive investing is in vogue, we should address this phenomenon in greater depth.

According to a May 2017 Bloomberg article, there are now more than 5,000 index-based funds (including ETFs)—this is more than the number of U.S. stocks.

These days, the advice of many investment advisors is to place client money in various index-based funds that seem certain to outperform any active money manager. The argument from these types of investment advisors is that active money management fees are too high and produce lower returns, portfolio turnover is too high and tax-inefficient, and active managers are not always fully diversified. As a result, the opposite approach, known as "passive index-based investing," has become an industrywide craze and has been thoroughly endorsed by famous investors. The trend of passive investing requires one to step back and ask some questions:

- How often does the "index-based client portfolio" trade at the client level and within the purchased index?
- What are the actual underlying fees?
- What are the "real returns?"
- How diversified are client's funds?

Most of today's individual investors have superficial knowledge about the benefits of investing in passive investment vehicles. With the proliferation of various index-based funds, however, this is worth discussing.

- The first consideration is that many index-based funds are not passive; rather, they are actively traded index funds called "dynamic index funds." The way this works: Wall Street now provides (for a higher fee) an opportunity for financial advisors and individuals to invest in index-based funds that trade securities within the fund itself. In fact, these dynamic, index-based funds charge an annual fee up to .75% of the assets under management—this is on top of the annual fee charged by the financial advisor, which is approximately another 1% (we are not including the frictional costs of trading securities inside the index fund).
- The next step is to evaluate how long the average financial advisor (or individual) holds a dynamic index-based fund. In examining several index-based funds that fall into this category, the turnover rate is approximately 155%—indicating that investors hold a dynamic index-based fund for a little longer than 160 trading days. So, in these cases, we see dynamic index-based funds that turn over securities inside the fund at a rapid pace, coupled with investors that turn over the index-based fund every eight or so months. This is hardly passive investing.

Some may point out that dynamic index funds are an extreme example, and that other index funds are less expensive and not traded as often. This is a fair point, so we went to the other extreme and looked at the widely prescribed passive index fund—the SPY, which is represented by the top 500 stocks (i.e., the S&P 500). At first blush, this qualifies as a passive investment vehicle, since the stocks within the fund are not traded often and the fees are de minimis—only 4% turnover per year, with a .10% annual fee. Surprisingly, the average investor holds this passive index fund approximately 32 days. Yes, the annual turnover of the widely invested SPY—a dormant index—is approximately 785%! We would classify this as "active trading." (Note that the father of index investing, John Bogle, expressed concern about the proliferation of many index-based funds—especially ETFs—because these investment vehicles have encouraged individuals who should be long-term investors to become active traders. In a December 2016 op-ed published in the *Financial Times* entitled, "The Lessons We Must Take from ETFs," he stated, "The implications of this rapid trading—call it speculation—have yet to be fully examined.")

Investment advisors and individual investors do not normally place all their money into one index-based fund or ETF. Instead, they actively "sprinkle" money among many index-based funds—the U.S. stock market, industry and sector, foreign market, currency, commodity, derivative, style (growth, value, etc.), multifactor, inverse, leveraged, artificial intelligence, etc. Take your pick of an index-based fund! The end result: Investor portfolios are heavily traded, contain layered fees, achieve poor aggregate returns, and are overdiversified with too many index-based funds. And the multiple index-based fund's owner really has no idea where their money is invested—forget attempting to value these investment vehicles, which is the first rule of true investing.

Mae West said, "Too much of a good thing can be wonderful." Except for investing, where too much of a good thing can be treacherous. Wall Street has outdone itself by offering so many passive investment vehicles that the line between speculation and investment has become murky for investors. It seems that all groups—money managers, financial advisors, and individual investors are "actively managing money"—and there is really no

such thing as passive investing. Thus, the average investor is now speculating—trading at excessive levels, achieving lower-than-average returns, paying a high price for investments via layered advice and transaction fees, and is so diversified that their money is difficult to track.

This brings us to Founders' "Seven Rules that Count When Investing," whether one is choosing a money manager or financial advisor, or investing in a group of stocks, bonds, index-based funds, etc.

- **Rule #1: Understand intrinsic value.** The intrinsic value of all investment assets should be measured—whether the asset is real estate, a single stock and/or bond, or group of stocks and/or bonds.
- **Rule #2: Keep it simple.** If an investor is hard-pressed to create layered complexity in his portfolio, whether by his financial advisor or his own mindset, it is likely to underperform over the long term.
- **Rule #3: The more you trade, the more returns fade.** Too much activity leads to frictional costs, including paying excess taxes, that can reduce true annual portfolio returns by as much as 30% over the long term. For example, let's say the S&P 500 achieves a 14% annual rate of return over the next 10 years. Let's also compare two investors: Investor A places money in a portfolio that achieves a 13.5% annual return over the same 10 years without any turnover, and Investor B places the same amount of money in a portfolio that achieves a market-beating 15% return per annum, but turns over the portfolio 100% each year. Which investor will have a greater net return on investment in a decade? Answer: Investor A. Even though Investor A fell short of market-beating returns by 50 basis points per year—and paid 25% total long-term capital gains taxes at the end of 10 years—her annual net return would be higher than Investor B, who traded his portfolio each year. Investor A would have achieved an approximate 11.25% annual net return compared to Investor B's approximate annual net return of 10.25% [assuming that combined federal and state short-term capital gains taxes (at ordinary income) were 33% each year]. Many investors fail to understand the importance of obtaining returns that are "tax efficient" and get caught up in relative versus relevant performance. This is another reason to keep absolute long-term returns in mind—there seems to be a natural tendency to want to chase what is popular. Discipline requires an investor to establish a set of principles, and to ensure those values remain sacrosanct. So, if you decide to invest based on fundamental analysis, such as emphasizing the importance of placing a value on all securities purchased, then it is important to remain steadfast if the rest of the crowd ignores these investment tenets and opts to speculate by chasing what is going up in price.
- **Rule #5: Be patient.** In the investment business price and value converge over time, however, not immediately. It is common for investors to feel that once they place their money in a stock it should go up—as if the company knew they owned it. Unfortunately, the opposite usually happens. Most investors experience a drop in price after a stock is purchased, and their patience is quickly tested. It is important for investors to focus on the intrinsic value of the company, and to question whether their initial assessment remains intact. If so, a price drop provides an opportunity for an investor to ignore short-term sentiment and purchase more stock.
- **Rule #6: Assess and Manage Risk.** Investors should develop an "insurance mind" when allocating capital. For example, an insurance underwriter initially looks at the risk of loss surrounding a policy. Their first thought is not, "how much money are we going to make?" An insurance mindset also necessitates an understanding that risk and randomness are normal parts of everyday life, and an aggregate analysis of various scenarios—including remote loss—is essential for properly pricing policies and obtaining a long-term profit. In other words, an investor should look at investing in probabilistic versus absolute terms and accept risks that they can suitably appraise. It is also essential to ensure aggregation risk is diligently monitored and managed in a portfolio. For example, if an insurer accepts an over-weighted number of policies written from different agents for automobile, home and commercial property along the Eastern coast of Florida, a hurricane can have a domino impact on company profitability. Similarly, if an investor places all their eggs in a basket of similar stocks (i.e. financial enterprises), a market shock such as a lasting jump in interest rates could have a permanent impact on the portfolio value—even if returns were stellar over the previous years.
- **Rule #7: Diversify, and Keep Your Options Open.** Just as an insurance company employs the concept of diversification—as well as maintaining adequate liquidity to meet its obligations—investors should pay equal attention to adequate diversification and to developing "optionality" in capital allocation

programs. This means diversifying the portfolio to allow for noncorrelation to various events and maintaining the flexibility to invest in the event of panic. In other words, be prepared to invest opportunistically.

These seven precepts have little to do with *where* individuals invest but everything to do with *how* they invest. To ensure survival, it pays to step back and evaluate one's approach to investing. As the four-time Indianapolis 500 winner Rick Mears (Rocket Rick) stated, "To finish first, you must first finish."

What Counts in Understanding Human Behavior?

Much has been written about human behavior and psychology in recent years, including behavioral economics. Nobel laureates such as Daniel Kahneman and Richard Thaler published *Thinking, Fast and Slow* and *Misbehaving* (respectively). Michael Lewis also wrote a popular book, *The Undoing Project*, about the complex relationship between Daniel Kahneman and Amos Tversky and their famous research on the psychology of judgment and decision-making. The empirical collective research outlined in these books challenges the assumption that human rationality prevails in modern economic theory. Of course, the findings explain the sometimes-irrational behavior of the stock market.

To summarize the modern theories of behavior economics and finance: Human beings have a natural, built-in cognitive basis for error that arises from heuristics (well-established rules of thumb) and ingrained biases that include:

- *Anchoring:* Tendency to rely too heavily, or "anchor," on one trait or piece of information when making decisions (usually the first piece of information acquired on that subject)
- *Automation:* Tendency to depend on automated systems that leads to erroneous automated information overriding correct decisions
- *Hindsight Bias:* "I-knew-it-all-along"—the tendency to see past events as being predictable at the time those events happened. Related to the Availability Heuristic—the tendency to overestimate the likelihood of events with greater "availability" in memory, which can be influenced by how recent the memories are
- *Bandwagon Effect:* Tendency to do (or believe) things because many other people do (or believe) the same
- *Confirmation Bias:* Tendency to search for, interpret, focus on, and remember information in a way that confirms one's preconceptions
- *Endowment Effect:* Tendency for people to demand much more to give up an object than they would be willing to pay to acquire it
- *Gambler's Fallacy:* Tendency to think that future probabilities are altered by past events, when in reality they are unchanged. The fallacy arises from an erroneous conceptualization of the law of large numbers, "I've flipped heads with this coin five times consecutively, so the chance of tails coming out on the sixth flip is much greater than heads."
- *Illusion of Control:* Tendency to overestimate one's degree of influence over other external events
- *Loss Aversion Effect:* Disutility of giving up an object is greater than the utility associated with acquiring it. Related to Sunk Cost Effects—cost that has already been incurred and cannot be recovered (think sticking with losing stocks until they recover)
- *Overconfidence Bias:* Excessive confidence in one's own answers to questions

And our favorite …

- *Blind Spot Bias:* Tendency to see oneself as less biased than others, or to identify more cognitive biases in others than in oneself

These are just a few of the biases identified from the research of Nobel laureates focused on human behavior and economics. Understanding this, should we all make a checklist of our behavioral tendencies to circumvent

our natural built-in biases? Would we then become so aware of our natural tendency for biases that we become subject to Blind Spot Bias? If so, what counts when understanding human behavior?

The worst kind of patient is a doctor who is overly aware of various symptoms and constantly applying self-diagnoses. Becoming a "bias hypochondriac" increases, versus decreases, the likelihood of poor decision-making. For example, we have all been in a situation where we have had to decide whether to accept a first-time invitation to a large event. Our initial inclination is to decline the invitation, looking back on similar instances where we entered a crowd and did not know anyone in the room (*hindsight bias)*. In declining this invitation, we should not feel bad because "everyone" presented with this first-time invitation also says no, believing that attending an event like this will be a waste of time (*bandwagon bias)*. If we feel guilty and our thought weighs toward accepting the invitation, we think of the commuter traffic and difficulty in parking if the event is right after work; we may also think about being nervous and possibly unable to find the person who invited us at the event (*confirmation bias)*. If we decide to accept the invitation, upon entering the event, our natural human behavior tendencies are at their most sensitive, and here is what can happen: We are "on guard," looking around the room for an opportunity to talk with someone, not wanting to look alone. We may spot an opportunity to introduce ourselves, only to make superficial conversation—waiting for the discussion to end before it even starts. After several attempts, we feel inadequate, judged, and humiliated and can't wait to exit the event (*sensitivity and response bias)*. In this case, because we are well aware of our biases beforehand, we attempt to control them. In the process, our human ability to be genuine and engaging becomes impaired due to bias awareness, and this ultimately creates a desire for "flight" under stressful circumstances.

We believe that what really counts in understanding human behavior is focusing on our natural strengths as opposed to our inherent weaknesses. In other words, just as the best prescription for health is eating healthy foods and exercising (body and mind), the same holds true with understanding human behavior. We are focused on leveraging the following naturally strong characteristics of human behavior to maximize our investment decision-making:

1. *Adaptability:* The human being is an amazingly adaptable organism, and awareness of this strength creates an opportunity for quicker adaptation to a changing environment. Flexibility in our decision-making permits alternative-based thinking and surfaces options—and optionality is ultra-important in effectively dealing with our natural tendency toward negative human behaviors. In our event example, adaptable thinking would enable us to see other individuals accepting this invitation as being in the same boat and facing the same challenge as we decide whether or not to attend.

2. *Acceptance:* We all have the strength of acceptance based on an instinct to survive. As the saying goes, "Grant me the serenity to accept the things that I cannot change, the courage to change the things I can, and the wisdom to know the difference." Accepting our human frailties allows us to become more aware of them and creates an opportunity for us to humbly evaluate a decision. Regarding our hesitation about attending a first-time event, we should accept this as a natural human reaction and humbly accept the invitation, knowing that it was extended to us because our presence is desired—we have something to offer.

3. *Resilience*: Every human being encounters failure and, in fact, it can be argued that the more failure we experience, the greater success we will achieve. Success only occurs, however, if we "get back on the horse." Resilience is more than just brushing ourselves off when we trip and then moving on. It is also about learning—creating an environment to become a learning machine that allows pattern recognition to play a part in our decision process. If we decide to attend the event, we should expect that certain conversations are going to be superficial while others may have greater depth. If the conversation is cordial, that's okay. We should learn from this and be resilient, moving on to the next interaction that may provide a different circumstance.

4. *Generosity:* At their core, most human beings have a desire to be generous—and not of money, but of spirit. Time and money are finite, but there are three things that we are all capable of providing in infinite amounts—love, knowledge, and hate. A willingness to be generous with the spirit of love and knowledge creates an environment for better collective decision-making. In our event case, if we have a natural desire to share our love and knowledge, as well as to receive love and knowledge, then our

interactions with others are likely to be deeper and longer-lasting. The decision to attend the event becomes a no-brainer.

Adaptability, acceptance, resilience, and generosity are natural human qualities that allow each of us to maximize our intelligence and make connections with others, as opposed to looking for faults and weaknesses, attempting to "force" enhanced intelligence, and ending up feeling alone. Adaptability, acceptance, resilience and generosity make each of us better parents, grandparents, teachers, colleagues, and friends. Cultivating these natural strengths and abilities also increases our genuineness as human beings and increases our ability to make better decisions in life.

At Founders, our behaviors are simple. We hold on tightly to our value investing philosophy, and we seek to invest where intrinsic value strengthens over time. We always act with honesty and integrity—there is no other way. Although we are unable to provide an exact answer to questions about any market's near-term direction, the mixed emotional display surrounding the equity and fixed-income markets today continues to compel us to remain agnostic to any market's short-term movements. Instead, we will keep our eyes open for opportunities that emerge in an uncertain environment—and thus, we will remain patient. Given the more speculative behavior taking place in markets, however, we are strongly adhering to one of our favorite quotes:

> **"The less prudence with which others conduct their affairs, the greater the prudence with which we should conduct our own affairs."**
>
> **–Warren Buffett**

We are also mindful of future tax implications on our portfolio as laws change and are investing with our eyes wide open. We place continued emphasis on our confidence that we have acquired a collection of securities at prices that will provide a fair return over time (despite gyrating markets and higher-than-normal speculation). This includes our investments in *selected* fixed-income instruments that offer a commensurate risk/reward relationship, as well as acquiring interests in strong individual companies through the equity market that are very profitable and possess a wide competitive moat. Our investment activity in all market conditions reminds us of another Warren Buffett quote:

> **"We will continue to price, rather than time, our purchases. In our view, it is folly to forego buying shares in an outstanding business whose long-term future is predictable, because of short-term worries about an economy or a stock market that we know to be unpredictable. Why scrap an informed decision because of an uninformed guess?"**
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> **–Warren Buffett**

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Equity Holdings: 2017 Highlights

The intrinsic value of our aggregate equity holdings increased during 2017. We remain positive about our capital allocations, including expected returns over the next 10 years—despite any short-term economic and political challenges that may arise.

Given uncertain market circumstances, we'd like to reiterate the following points about our core holdings:

- **We are confident in the high character displayed by the leadership of the companies in our portfolio** and believe that the companies are managed in a flexible manner that allows them to adapt in changing times.
- **We believe that we are business partners in actual companies that are focused on increasing long-term profitability,** as opposed to being members of a group of shareholders that are interested only in a rising stock price that is divorced from a commensurate movement in business value.
- **We believe that we own a collection of business that fall into the "valuable" and "invaluable" categories and that their increasing intrinsic business value will be realized over time.**
- **Our invested companies possess business models that are durable, support a long-term competitive advantage in their respective industries, and have earnings capabilities that are predictable and sustainable over the foreseeable future.**

As long-term investors, we wake up each morning knowing that the wonderful businesses we own—PepsiCo, Coca-Cola, Adidas, CSX, United Technologies, Johnson & Johnson, McKesson, Google, Microsoft, Intel, Walgreens, Home Depot, Disney, AT&T, Berkshire Hathaway, American Express, and our other holdings—continue to strengthen their long-term enterprises independent of any short-term gyrations in their stock prices.

Following is a summary of business highlights from our portfolio companies during 2017, along with our expectations for 2018.

CONSUMER GROUP

Our primary consumer holdings—PepsiCo and Coca-Cola—continued to grow their global franchises during 2017. Each of these entities reported adjusted organic growth in global sales due to the continued development of their respective franchises. Principally, aggregate reported profits for these combined entities increased around 1.6% in 2017 and is projected to accelerate to a 4.75% increase during 2018. Although all consumer related businesses are facing challenging economic and competitive conditions, we are pleased with our consumer group business performance and expect positive results in the future as these entities cultivate their presence in emerging markets throughout the world.

Why are we optimistic about the long-term prospects of our global consumer franchises—specifically, Coca-Cola and PepsiCo?

1. An estimated 60 billion servings of non-water beverages are served each and every day around the globe. Coca-Cola and PepsiCo supply approximately 2.6 billion (4.3%) of these beverage servings, and their volume grows at ~2-3% per year over time. Although the total consumption of Coca-Cola and Pepsi beverage products equates to around 125 annual servings per person on earth, there is a lot more room for grabbing market share. It is our opinion that these big companies can become much larger in the future as gigantic markets like China and India continue to develop.
2. Coca-Cola and PepsiCo are not "just carbonated beverage companies." Between the two companies, hundreds of well-known beverage brands are served in more than 200 countries—including water; ready-to-drink tea; and coffee, fruit, vegetable, and sports drinks. If the world desires a new type of drink (such as health-conscious beverages), it is likely that one or both of these companies will offer it—in many

varieties. In addition, PepsiCo is the largest snack-food company in the world, with a global product offering that exceeds its beverage counterpart.

3. Both Coca-Cola and PepsiCo possess vast, impenetrable supplier and distribution networks. For example, Coca-Cola's $50+ billion supply-chain network, established between the company and its principally segregated bottling system, is one of the largest and most complex of any organization on earth. Coke and its 250+ partner bottlers use well over 500,000 vehicles to distribute their beverage products through 16+ million outlets every day (PepsiCo's beverage and snack delivery system shares a similar complexity). These juggernauts' supplier and distribution components may be their most important hidden competitive advantage. When Coca-Cola or PepsiCo introduce a new product, or acquire a complementary brand, they can immediately put this merchandise through their tremendous distribution networks and introduce them throughout the world.

Coca-Cola and PepsiCo occupy our "extremely valuable" business category—enterprises that can grow far into the future and stand the test of time. Their consistent brand development, product diversity, global distribution strength, and cultural depth provide investors the ability to forecast the future with a relatively high degree of probability. It is highly likely that each business will substantially penetrate developing markets over the next 10 to 30 years, and the accumulated potential growth of these businesses cannot be fully identified using traditional valuation models—in other words, each of these businesses possesses superior intrinsic value, underscored by their long-term value-creation potential.

Coca-Cola

In 2017, The Coca-Cola Company remained a large holding in our portfolio, and one that we have held since Founders Capital Management was formed. Although Founders is a relatively small holder of Coke's overall stock, we are among the top 500 reported shareholders of this great company—currently at 496th. Our ownership profile has grown over the years due not to adding to our position, but rather because of the company's ongoing share repurchase program—net share repurchases were around $2.1 billion in 2017. We point this out to showcase the "hidden" ownership impact of share repurchase programs and how we continue to obtain a slightly increased share of the earnings of this great company every year.

During 2017, The Coca-Cola Company's overall case volume growth was flat. Over the past four years, case volume increases have remained slower than the annual 4%-5% annual growth achieved prior to 2013. Much of this is due to negative news regarding a consumer movement away from sugary, carbonated drinks. This remains a short-term challenge for Coca-Cola, considering its market dominance in the soda category. However, we believe the future is still very bright for this company as a "total beverage business" that possesses a small market share of global beverage consumption. Another short-term impact on Coca-Cola is revenue growth, which continues to be temporarily obstructed by a negative 1% currency headwind and acquisition, divestitures, and structural impact of 18%. As a result, Coca-Cola's total revenue declined around 15.75% in 2017, to approximately $35.2 billion. When stripping away the negative currency headwinds and one-time charges, however, Coke's adjusted organic revenue increased approximately 3% this past year.

Coke's continuing revenue declines over the past few years make it important to reiterate the dynamics behind the company's reported sales, which also explains the complexity of this business. Ten years ago, Coca-Cola began working with its bottling partners to develop a business model that served the changing consumer landscape. As consumers' beverage preferences were moving from carbonated drinks to noncarbonated drinks, Coke faced requests from bottling and distribution partners to invest vast sums in their businesses to bottle both types of beverages. (Since the water temperature requirement for producing each beverage is different, additional machinery was needed for developing noncarbonated drinks.)

In 2010, it made sense for The Coca-Cola Company to better control the production and distribution of both types of beverage products to manage the consumer taste evolution. As such, Coca-Cola decided to acquire the North American territories of Coca-Cola Enterprises (the North American bottler and distributor for Coca-Cola products) and make the necessary capital investment to deliver the beverage choices consumers demanded. The upside of consolidating bottling and distribution for all Coca-Cola products in North America was the flexibility Coke gained over the production and delivery systems required for a changing beverage industry. The downside to the consolidation of bottling and distribution was the increased capital intensity of Coca-

Cola's beverage business—which has impacted cash returns, even though Coke applied vast sums of debt to support this acquisition. The result: Revenues increased exponentially with this transaction, but profits stayed relatively the same.

Fast forward to today: Coke's bottling system, customer service, and product supply chain has developed a common technology platform. Now that the required changes to the bottling and distribution business have been completed to meet consumers' diverse and changing tastes, Coca-Cola has decided to restructure its business model and sell back the controlled North American bottling and distribution system to bottling partners through refranchising arrangements. This "reverse move" lowers revenues as deconsolidation takes place but increases the company's financial flexibility by reducing capital intensity. As of the end of the third quarter of 2017, Coke had reached definitive agreements or signed letters of intent to refranchise territories that account for approximately 80% of total U.S. bottler-delivered distribution volume.

The repositioning of Coca-Cola allows the company to evolve from a primarily carbonated-beverage company to a "total beverage" company that serves all consumer tastes. Few people realize that The Coca-Cola Company controls almost half of all non-alcoholic brands worldwide that generate more than $1 billion in annual revenue. In addition, the company sells more than 1,000 varieties of juice drinks including Simply™, Minute Maid®, Fruitopia®, Hi-C®, Fuze®, and Odwalla®. Coca-Cola also still sells beverage brands such as Glacéau Vitaminwater®, Dasani® water, Honest Tea®, and Powerade®.

In summary, Coke's currency headwinds, along with its ongoing refranchising program, have temporarily stalled the company's earnings growth. The company will report approximately $1.89 per share in adjusted earnings in 2017, a decline of 1% from 2016. Although per-share earnings have been static since 2011, we expect Coca-Cola to report growth in per-share earnings in the future.

Despite the slower volume growth of the past several years, coupled with currency headwinds and a reset of the company's distribution system, we continue to believe in Coca-Cola's long-term growth prospects. Coca-Cola's sustainable properties and economic resources are among the best in the consumer goods industry, if not the best. For example, the business inputs that create value for Coke's shareholders include the strategic placement of property, plant, and equipment around the globe; patents and brands that are virtually impossible to duplicate; supplier and distribution bottling networks that are balanced in a way to maximize customer reach and profitability; a consumer connection that creates loyalty and "stickiness;" and unique business processes—specifically, the segregation and integration of business assets and functions—that provide a sustainable competitive advantage. These represent "the real things" at Coca-Cola.

We believe that Coca-Cola is on track to take advantage of the more than 1.5 billion people around the world that are projected to be added to the middle class by 2030, and that the initiatives Coke is executing will renew the company's volume and revenue growth in the future, while further increasing its intrinsic business value.

We anticipate that The Coca-Cola Company will produce approximately $7.5 billion of cash for shareholders in 2017 and that owner cash production will remain static in 2018 as the company continues to reposition itself for future growth. Coke currently pays an annual dividend of $1.48 per share, which represents an approximately 3.2% yield, and we believe that the company will increase its dividend approximately 5% in 2018—to around $1.55 per share. Coca-Cola will slow down its share repurchase program during the next 12 months as the company allocates capital to digitizing its enterprise. However, the forward dividend currently provides shareholders an approximately 3.4% pass-through yield and owner-earnings yield of 3.85% at Coke's year-end price, compared to a 2.4% yield on a 10-year U.S. Treasury Bond. The higher yields offered by Coca-Cola, as well as future growth projections, provide us an opportunity to achieve long-term returns on an investment in this company.

NOTES: (1) "Pass-through earnings/yield and "owner- earnings/yield" should be evaluated by the investor. "Pass-through earnings/yield" are determined via actual cash distributed to shareholders, whereas "owner-earnings/yield" is cash earnings available for distribution to shareholders. Companies may choose to "pass through" extra money to shareholders beyond their cash earnings by issuing additional debt and/or by selling off assets—or they may decide not to pass through all cash earnings, opting instead to allocate a portion of these funds for future investment or to pay down debt. (2) all projected cash flows and earnings for companies

in 2018 do not take into consideration the lowered tax rate enacted at the end of 2017—given this fact, cash flows and earnings for discussed companies will likely be higher next year.

PepsiCo

We have stated in the past that while PepsiCo may be Coca-Cola's greatest competitor in the beverage space, this company does not have the same business attributes as Coke. Like Coke, PepsiCo owns a stable of diverse brands, but PepsiCo uses a different distribution system and has a different global footprint (PepsiCo has a lower international presence compared to Coke, with 58% of its sales produced in the U.S.) Let's further clarify the differences between these two businesses:

1. PepsiCo's product line is not a mirror image of Coke's—PepsiCo is much more than a pure beverage company, with a dominant share of the snack-food industry. Its mainstay global food and snack business, which represents approximately 52% of revenues, generates more than 60% of the company's operating profits. PepsiCo's snack-food business has an estimated *tenfold* relative global market share advantage compared to its closest competitor, with prospects for long-term future global growth.
2. Due to its more diverse product line, PepsiCo's requires a different retail distribution system and supplier network than Coke's For example, PepsiCo uses direct store delivery (DSD) to deliver beverage and snack products to retail stores, where products are merchandised by both employees and bottlers that "dual-display" snacks and beverages for maximum visibility and appeal. For products that are less fragile and perishable and have lower turnover, PepsiCo delivers directly from manufacturing facilities and warehouses to customer warehouses and retail outlets. In addition, PepsiCo leverages synergies when food service and vending sales forces can work jointly to deliver food, snacks, and beverages to third-party food service and vending distributors. As for its supplier network, PepsiCo provides farmers in emerging markets (such as India and China) with a variety of seeds for contract farming that provides farmers access to a ready market for agricultural products such as potatoes and corn, technological application, farm credit, and crop insurance. The contract farming agreements between farmers and PepsiCo for the production and supply of agricultural products (at a pre-agreed price and certain quantity) creates a supplier network that is loyal, growing, and difficult to duplicate. These are valuable assets that are not obvious from looking at PepsiCo's financial statements.

We point out these differences to defuse any notion that there is a large overlap between our investments in Coca-Cola and PepsiCo. In fact, we expect to see these differences widen, and we look for PepsiCo to build on its snack-food stronghold.

Given the global challenges consumer goods businesses faced in 2017, PepsiCo's organic volume growth slowed to 2.3% in 2017 (from 4% in 2016). Nevertheless, operating profits increased by approximately 6%, primarily due to increased profit margins associated with ongoing productivity improvements.

PepsiCo continues to increase its return to shareholders, raising the annual dividend approximately 7% in 2017, from $3.01 per share to $3.22 per share. We expect PepsiCo to raise its dividend to approximately $3.40 per share in 2018, which implies an approximate forward dividend yield of 2.85% at the year-end stock price. In addition, we anticipate that the company will repurchase an additional $2 billion of stock during the next 12 months. This action adds another 1.2% return to shareholders, reflecting a 4.0% forward pass-through yield. In 2018, we expect PepsiCo to earn around $5.60 per share, representing an approximate 7.25% increase from 2017.

In summary, we like the long-term potential and economics of the beverage and snacks business and think there is a multi-decade growth opportunity for dominant companies in this industry. PepsiCo has a large and growing position in these business segments and will remain a long-term holding in our portfolio.

INDUSTRIAL GROUP

Our primary industrial and transportation holdings—CSX and United Technologies Corporation (UTC)—are unique businesses that we believe will grow as economies develop around the globe. These businesses are somewhat capital-intensive and sensitive to the economic cycle, however, which subjects them to setbacks when tougher economic conditions emerge from time to time. This has happened over the past few years, as a

slowdown in the global economy negatively impacted our transportation and industrial group results. We are encouraged as the global economy recovers, however, along with a renewed commitment to U.S. infrastructure investment that will help these businesses gain traction in upcoming years. In addition, an improvement in the European and Asian economies, followed by support for anticipated overseas infrastructure investment, should allow these businesses to make further advances over the next decade.

Our industrial group is composed mostly of highly networked, infrastructure-related businesses that are focused on product innovation. Each of our infrastructure businesses offers high-end products and/or services that are extremely expensive to produce and have a slow replacement rate—attributes that normally would be detrimental to a business' profitability. An industrial company such as UTC initially contracts to sell its products at a low profit margin and then strikes high profit-margin contracts to service the products over their long lifespans. Today, strong industrial companies such as UTC are taking their networking capability one step further by providing software that consistently monitors their installed products, which increases customer productivity and efficiency (and loyalty). These tie-in arrangements cement the customer relationship and make it nearly impossible for a new competitor to enter the market. As a result, oligopolies have become the norm in these industries, where two to three competitors tend to dominate. As globalization continues, the consolidation of purchased infrastructure goods is a natural development, with the result that fewer companies are positioned to provide the breadth of products and services customers demand. Thus, the trend is for these industrial companies to become ever more entrenched, expanding their competitive advantage—and profitability.

Our railroad investments have comparable advantages. It has taken nearly two centuries to build the U.S. railroad infrastructure, and it would take an extraordinary amount of time and capital to create a business transportation system that competes with railroads such as CSX, Union Pacific, and Burlington Northern (which is owned by Berkshire Hathaway). Although the railroad business is very capital-intensive, certain attributes make this type of investment attractive in any economic environment. In today's rapidly changing distribution and logistics environment, companies seek to run more efficiently. Moving greater amounts of goods over a fixed-rail infrastructure instead of via higher-cost trucking enables companies to lower costs and achieve large gains in productivity. Since rail transportation is approximately three to five times more fuel-efficient than truck transportation, it is likely that railroads will play a larger role in the transportation of goods throughout the U.S. in the future. The growing use of rail, along with the expansion of railroad services via "double track" (vs. single track) and "double stacking" of containers, will continue to drive an increase in railroad use, revenues, and profits.

CSX Railroad

CSX is one of the nation's oldest railroads, with roots in the nation's first common carrier—the Baltimore & Ohio (B&O) Railroad, which was chartered in 1827. As one of two major north/south railroads, CSX provides an important link to the transportation supply chain through its approximately 21,000 route miles of track that serves major population centers in 23 states east of the Mississippi River, the District of Columbia, and the Canadian provinces of Ontario and Quebec. The company is large, with 4,400 locomotives and more than 83,000 freight and container cars that provide access to more than 70 ocean, river, and lake port terminals along the Atlantic and Gulf coasts, the Mississippi River, the Great Lakes, and the St. Lawrence Seaway. CSX also has an intermodal business that links customers to railroads via trucks and terminals.

In 2017, CSX generated approximately $11.3 billion in revenue—4.5% more than 2016. As a result of the revenue increase, CSX's adjusted operating income and net profit rose by approximately 7%. With its profit rebound this past year, we remain very positive about our ownership position in this on-of-a-kind railroad. We believe that CSX will significantly grow per-share earnings (+20%) during 2018 as the economic recovery accelerates. In addition, CSX's ongoing share repurchase activity is pushing us up the shareholder ladder—we are now among the top 175 reported shareholders of this great railroad (from number 225 at our initial purchase in 2013). Ultimately, we own a greater portion of the company's earnings today compared to five years ago, and we expect our share of this company's earnings to increase over time—we have no plans to reduce our holding in CSX. A few highlights from CSX in 2017:

- CSX continued to develop the Virginia Avenue Tunnel project in the Washington, D.C. area. The completion of the first phase of this tunnel at the end of 2016 cleared the way for trains to transport

double-stacked intermodal freight between the mid-Atlantic seaports and the Midwest on CSX's rail network. Since the first tunnel was completed, 95% of CSX intermodal freight moves in double-stack service. This is significant, as double-stacking intermodal containers allows for greater revenue to flow over CSX's fixed-rail network. This type of strategic asset is not fully realized on CSX's balance sheet. Imagine having to replace all the fixed assets at CSX—purchasing land (plus the cost of obtaining rights), laying track, building bridges and tunnels, etc. The replacement costs would likely be astronomical and far exceed the approximately $31 billion value designated for net property, plant, and equipment on CSX's balance sheet. Thus, we believe that the true economic value of CSX's strategic assets is not fully reflected in the company's financial statements.

- Last year, we noted the expectation that CSX's declining coal business would bottom out in 2016 and forecasted coal volumes and pricing to stabilize in 2017. CSX's coal business did rebound in 2017, as volume and revenue increased 5% and 22%, respectively. Although coal will never be the major energy source it was in the past, it is encouraging to see this turnaround in volume and revenue. Looking ahead, we still expect coal to remain a strong category for CSX as the company continues to transport domestic coal to electricity-generating power plants, steel manufacturers, and industrial plants over a great part of the U.S. and around the world.
- As the economic rebound took place around the world, CSX's intermodal and other business experienced a volume and revenue increase of 3% and 10%, respectively, in 2017. This positive result follows a year-over-year 3% decrease of intermodal business in 2016—we are also happy with this turnaround. Intermodal and other business now accounts for approximately 44% of volume and 19.4% of revenue for CSX. We expect that the intermodal line of business will grow in 2018 as the global economy continues to recover.

During 2017, CSX passed approximately $2.2 billion of cash over to shareholders in the form of dividends (around $700 million) and share repurchases (another $1.5 billion). In 2018, we expect CSX to distribute an additional $2.1 billion to shareholders through a combined dividend and stock repurchase program. This provides shareholders an approximate 4.25% forward pass-through yield at CSX's year-end price, and we believe that this yield will grow over time as freight traffic increases over CSX's fixed-rail network.

In summary, we think our investment in CSX is an opportunity to participate in the growth of the U.S. economy, which may accelerate in the next few years due to infrastructure investment, and that the growth in CSX's freight volume will endure over the upcoming decade and may increase more than many analysts expect. Furthermore, we expect CSX to continue to execute an aggressive plan to lower the company's expenses, increase revenues and improve its operating ratio. (The operating ratio is an important measurement in the railroad industry, representing the percentage of revenue used to operate the railroad—the lower, the better.) The projected recovery and growth in freight volume and strong pricing, coupled with lower expenses, will leverage CSX's income and cash available for shareholders. We remain excited long-term owners of CSX, which occupies an important position in our portfolio.

United Technologies

United Technologies Corporation (UTC) produces products such as Otis elevators, Carrier air conditioners, and Pratt & Whitney jet engines. Each one of UTC's subsidiary companies has achieved leadership and powerful market entrenchment in its respective area of expertise. The company also has tremendous global reach in each of its business units, and their products are highly complementary.

We highlight UTC's long-term future that is driven by major trends:

1. An urbanization trend is resulting in the significant growth of large cities around the world, along with an expanding middle class. The urban population is projected to increase by one billion individuals by 2030, and the middle class is expected to double over this same time frame—representing nearly 60% of the global population. These trends drive housing, office-building, and mass transportation needs around the globe.

2. The dramatic growth in commercial air travel positions UTC's Pratt & Whitney subsidiary to benefit from increased airplane engine demand—the number of aircraft in service is expected to grow from 27,000 today to 47,000 by 2030.

The competitive moat surrounding each of UTC's businesses is vast, as this company focuses on the development and installation of large, complex infrastructure products, and then derives much of the company's future revenue from servicing agreements. Aftermarket services currently generate more than 45% of the company's $59.5 billion in revenue. In addition, these services are always in high demand because UTC's products are extremely expensive and are used in critical, heavy-wear applications (one cannot have elevators, security systems, building air-conditioning units, or jet engines failing).

Although the slowing global economy has hampered UTC's growth over the past several years, the company resumed growth and posted an approximately 4% increase in sales during 2017. We expect UTC's growth to accelerate in 2018 with a projected 6% growth in revenues. As such, we remain optimistic that per-share earnings will also grow over the long term, given the cash annuity stream associated with UTC's long-term customer servicing agreements. In 2018, we expect UTC to earn an adjusted $6.83 per share in profit—a 3% increase from 2017. When comparing the forward owner's cash stream of $6.50 per share to the company's year-end stock price of $127.57 per share, investors are receiving an entry owner-earnings yield of 5.1% on their UTC investment—and we expect the per-share cash stream to grow over the next decade, especially with the company's ongoing share repurchase plan. We remain very enthusiastic owners of UTC and believe we are receiving a very good return on our ongoing investment in this fantastic company.

HEALTHCARE GROUP

The healthcare industry remains a lightning rod for government intervention due to ongoing uncertainties about the stability of the Affordable Care Act (ACA) and ongoing wrangling between government and industry parties over drug pricing and the long-term impact of increasing healthcare costs.

Where do we stand on this today? Despite the ambiguity plaguing healthcare reform, our view remains pragmatic: We believe in balance, and a complete repeal or unwinding of the ACA healthcare reforms seems overly aggressive as well as difficult to execute. Three crucial legs support the ACA stool:

1. Tax subsidies that make insurance affordable
2. Prohibition on insurance companies from denying coverage or raising premiums based on a preexisting condition
3. The "individual mandate" requirement that Americans maintain health coverage or pay a fine

The third leg is the least popular of the healthcare reform stool and is currently under attack. We explained in our 2017 letter the need for modifications to this part of the healthcare law:

Many young adults are opting to pay the penalty for not enrolling in a healthcare plan as opposed to paying more money for a health insurance plan they believe they likely would not need (what 25-year-old believe she is going to get an illness that requires comprehensive healthcare coverage?). Unfortunately, this "opt-out" by young adults upsets the ACA calculation: Healthcare insurance is a pooling mechanism that requires individuals who have a lower probability of getting sick to contribute to the pool of funds that will cover the burden of older individuals that are more likely to need coverage. If younger people don't participate in the program, the system becomes heavily weighted with older individuals who need more extensive healthcare coverage but don't contribute enough to cover the cost of their healthcare needs. The lack of youthful participation results in an underfunded pool. If the penalty for nonparticipation is removed, it is likely that even more youth will choose not to be covered by healthcare insurance. This will further exacerbate the issue for older individuals, with many having to face even higher costs to cover their healthcare coverage needs. If this part of the ACA is repealed, the nonpartisan Congressional Budget Office (CBO) forecasts that 13 million more Americans will be without health insurance by 2025—five million fewer people on Medicaid, five million fewer people in the health insurance exchanges, and 3 million fewer people receiving health insurance coverage from their employers. These numbers are misleading, however; the CBO states that the actions would be voluntary, and people would not "be forced" to give up their insurance. According to the CBO forecast, the

opt-out by healthy individuals will change the structure of the insurance risk pool, resulting in average insurance premiums rising 10% or more. Clearly, flaws in the healthcare system need to be remedied, including the need to alleviate the rising cost of healthcare associated with an aging U.S. population.

We are at the precipice of delivering the greatest medical miracles in human history. New drugs will manage or eradicate debilitating diseases such as cancer, diabetes, and Alzheimer's and reduce human suffering. The cost of ongoing research and development required to push these drugs forward is enormous, as is the cost of patient care for those inflicted with intractable diseases. In many cases, the high cost of curing these diseases is surpassed by the even higher cost burden associated with chronic patient care. Unfortunately, the continued global decline in R&D productivity is one of the most important challenges the healthcare industry is facing. Blockbuster therapies have become increasingly rare, and many drugs continue to face reimbursement challenges in key markets, resulting in declining revenues for companies. Government barriers to developments in this area of healthcare presents a crucial problem that must also be addressed.

On the other side of the coin, we also know that people have a natural desire to monitor their health and are willing to adjust their lifestyle to remain healthy—hence, the success of "wearables" such as Apple Watch® and Fitbit®. We expect to see continuous "passive" health monitoring become the norm in the near future, a development that will eventually benefit the healthcare industry's skyrocketing costs as "high tech" health consciousness capabilities begin to improve long-term health. Just imagine the day when any alteration to your body's normal biological function is immediately detected. Then add personal genomic data to the mix. As artificial intelligence grows from advanced data analytics and monitoring, and we gain a better understanding of real-time body function, drugs and medical devices will be developed that are tailored to individual patients and their specific health conditions, addressing the intractable health challenges of today. Healthcare companies will evolve from reactive to proactive entities that provide opportunities for early detection of diseases, along with interventions that improve patient outcomes and how healthcare is delivered.

In addition, healthcare companies that serve as intermediaries and focus on value-based reimbursement are positioned to become dominant entities over the next ten years. Value-based reimbursement, where Accountable Care Organizations (ACOs) share financial risk in delivering savings in patient care, will accelerate the introduction of new care models and bring new capabilities to the healthcare system. The more the system moves to value-based reimbursement and risk-based models, the faster solutions will be deployed to more effectively manage patient populations in new and different ways. In other words, the patient and the healthcare provider will all be rewarded for improving care through effective monitoring and efficient intervention.

With all the churn occurring in the healthcare space due to the implementation of the ACA, new drug development, and advances in population healthcare and technology, it has become increasingly difficult to predict the future of companies involved in healthcare-related fields. Thus, we continue to emphasize great care when selecting companies in which to invest in this sector of fast-developing information, moving parts, and rapid transformation. We believe that the uncertainty that characterizes the industry provides opportunity to own the "right" healthcare companies that do not carry the typical high risks associated with this sector but are positioned to provide many of the solutions we mentioned, and contribute to healthcare cost reduction. Johnson & Johnson and McKesson are two companies that fit our long-term healthcare investment criteria: Each company is adapting to healthcare disruption and is positioning for the future in this dynamic industry.

Johnson & Johnson

Johnson & Johnson (J&J) is a large healthcare organization with more than 250 operating companies located in 60 countries. J&J is also product-diverse, generating sales in various healthcare segments—46% of sales from pharmaceuticals, 35% from medical devices, and the remaining 19% from consumer brands that we are all familiar with: BAND-AID®, Tylenol®, Neutrogena®, Listerine®, and Johnson's® Baby Shampoo, to name a few. J&J's products touch the lives of nearly 14% of the world's population every single day.

Despite its large size, J&J maintains a decentralized organizational structure that allows each business to operate as an entrepreneurial company. The strength of a diverse organization can sometimes lead to complex management challenges—but under an entrepreneurial structure, each J&J business puts a heavy emphasis on growth. Most important, the company is focused on the patient and its core customer base (hospitals and

physicians)—with the belief that the company's purpose is to deliver the best, most cost-effective healthcare around the globe. Shareholder returns are mentioned last in the "J&J Credo"—the company believes that it will be profitable as long as it pays attention to patients, healthcare professionals, employees, and the community first. This value system has been hardwired into J&J's DNA since the company's founding.

A rigorous focus on research and development, maintaining reasonable prices, supplying prompt service, creating a network of distributors and suppliers that make a fair profit, respecting the dignity of employees, and ethical management has made J&J the largest and most valuable healthcare company in the world. Given the unprecedented aging rate of the world's population, coupled with a growing global middle class, we believe J&J has a tremendous future, despite its large size.

We look at J&J on a rolling 10-year basis. Over the past decade, through economically and politically challenging times for healthcare companies, J&J increased sales by approximately 25% and adjusted profitability by approximately 70%—from $11.7 billion to $19.9 billion. Due to share repurchases, J&J's adjusted earnings per share has increased 75% over this same time frame. Historically, about half of J&J's growth has come from mergers and acquisitions, while the remainder has come from internal development. Because of its disciplined capital allocation program, J&J returns approximately 70% of its free cash flow to shareholders in the form of dividends and share repurchases. The company expects this trend to continue in the future.

In 2017, J&J will earn adjusted earnings of approximately $7.28 and should grow adjusted core earnings per share at 8% in 2018, to $7.84. The company generated around $17.5 billion of adjusted owner earnings in 2017 and returned a large portion of this cash to stockholders through 6.7 billion of share repurchases and $8.9 billion of dividends (an approximate 2.4% dividend yield at the year-end stock price). J&J will remain a core position in our portfolio due to its consistent performance and premier status in the global healthcare market.

McKesson

The wholesale drug distribution business is the central node connecting pharmaceutical and medical manufacturers, healthcare providers, retail pharmacies, and healthcare system providers such as hospitals and medical centers. The wholesale drug distribution business is largely consolidated among three major competitors—McKesson, Cardinal Health, and Amerisource Bergen, each serving the healthcare marketplace.

During the past year, we made a commitment to McKesson, the largest drug distributor in the world that has been in existence since 1833. McKesson is in the business of delivering pharmaceutical and medical products and business services to retail pharmacies and institutional providers such as hospitals and health systems throughout North America and internationally. The company also provides specialty pharmaceutical solutions for biotechnology and pharmaceutical manufacturers as well as practice management, technology, and clinical support to oncology and other specialty practices. In addition, McKesson delivers a comprehensive offering of healthcare products, technology, equipment, and related services to the non-hospital market, including physician offices, surgery centers, long-term care facilities, and home healthcare businesses.

To get an idea of the size of McKesson's business:

- One-third of all pharmaceuticals used each day in North America is delivered by McKesson
- 200,000 physicians use McKesson's technology and services
- 76% of hospitals with more than 200 beds are McKesson customers
- More than 4,700 retail pharmacies are members of McKesson's Health Mart franchise system, a retail pharmacy network that makes up one of the largest pharmacy chains and offers technology and services to local pharmacies that allow them to compete against industry retail juggernauts such as Walgreens and CVS

Clearly, over the past 184 years, McKesson has built a large, complex network to deliver goods and services across the healthcare industry. So why have we purchased McKesson?

This past year, there have been strong rumors of Amazon using its distribution knowledge to enter the drug distribution and retail business. Due to this imminent likely threat, drug wholesale industry stock prices have fallen 25% to 35% over the past 36 months as investors anticipate wholesalers succumbing to the business

weapon of mass disruption—Amazon. Analysts predict that up to 10% of pharmacy industry profits would be impacted with Amazon's entrance into the drug distribution and retail space. In the meantime, over the past two years, McKesson has increased its sales and earnings by 10% and has reduced the number of shares outstanding by 10%. The increase of McKesson's per-share intrinsic value, combined with a decline in stock price, has created an opportunity to buy this company at a discount to its true value. There is an old Wall Street saying, "Buy the rumor, sell the news." In this case the saying applies, but we will not sell when Amazon announces its entry into the drug business. Unquestionably, the competitive threat facing the wholesale drug industry from being "Amazoned" is real, but we believe that this is not an easy industry to crack given its consolidation, already low margins, and complex network. Amazon will continue to find a way into this industry—as Walmart attempted—but we believe the threat is exaggerated and that McKesson will continue to thrive as a player in the global drug distribution market.

McKesson will earn approximately $12.08 of adjusted earnings per share in calendar 2017 and distribute approximately $1.65 billion ($7.90 per share) to shareholders through $240 million in dividends and $1.4 billion of stock repurchases. At McKesson's year-end stock price of $155.95, this represents an 7.75% earnings yield, and pass-through yield of 5.0% in 2017. During 2018, McKesson is expected to grow per-share earnings approximately 4.5%, to $12.65, and produce more than $2.5 billion of owner earnings. At these metrics, we think McKesson represents an opportunity to purchase a high-quality company at a very fair price.

TECHNOLOGY GROUP

Each year we reiterate the opportunities presented by the information technology area, along with the difficulty of choosing the right companies to invest in over the long term. Business disruption is the norm in this sector and, therefore, companies and their investors can't rest on past success. During 2017, the technology sector experienced additional change at breakneck speed as device miniaturization continued, cloud computing flourished, and software enhancements allowed artificial intelligence to gain further traction in the technology marketplace.

The inherent disorder and warp-speed change of the IT sector continues to make it extremely difficult to determine which companies will succeed or fail. Ten years ago, Steve Jobs introduced the iPhone® to the world, and this single device allowed Apple to become a primary technology disrupter. That technology cycle has passed, with "copycat" Apple products being developed by competitors hungry for market share. Disruption is now taking hold as more innovative devices enter both the consumer and commercial markets. In addition, exponential growth in cloud-based services continues in both consumer and commercial markets. Amazon is now leading technology disruption with its cloud service business, Amazon Web Services (AWS), which is used by companies such as Netflix to manage and stream content. Netflix is one of the world's largest online media streaming providers and delivers nearly 30 billion hours of video streaming to 50 million customers in 60 countries each year.

Computer miniaturization and the emergence of the "Big Data era" are driving a new generation of products and services that empower individuals to interconnect, be entertained, and stay informed 24/7 via cloud computing. Technological advances have yielded powerful computers that fit into the palm of one's hand or on one's wrist, with the ability to track activity and fitness at every step and the power to capture health data in the cloud. The new types of devices, high-speed connectivity, and fast-changing information services remain a challenge for old-fashioned computer companies that rely primarily on sales of previously popular hardware devices such as PCs. The "new space" companies competing to provide personal interconnectivity, cloud-based networking technologies, and advanced interface and mobile technologies include Arista, Veeva Systems, EPAM Systems, Synaptics, and Synchronoss Technologies. Apple, Fitbit, Samsung, Facebook, Twitter, Amazon.com, Salesforce.com, IBM, Google, Cisco, Oracle, and Microsoft are also in the fray, remolding their organizations to keep pace with the new technology ecosystem.

Which companies gain competitive control in the emerging new IT ecosystem continues to be anyone's guess. But we remain committed to watching for and responding to investment opportunities as they arise in this fast-moving sector. Our goal is to identify the difference between price and value with certain technology companies that we believe occupy a strong competitive position in the developing technology landscape. Even

so, we are unable to point to any one company in this industry that could be placed in the “guaranteed invaluable business basket”—there is too much disruption, which makes it difficult to call.

With this perspective, we are invested in what we believe to be technology companies that provide core technology that all individual and commercial customers need. Our large technology holdings include Microsoft, Google, and Intel. We are now emphasizing Google over IBM, reflected in a large commitment we made to Google during 2017.

Microsoft

We have mentioned in previous letters how, five years ago, Microsoft was struggling with its primary product—Windows—in a changing technology landscape. This resulted in the company's decision to become “more like Apple” and led to the purchase of Nokia’s phone business for $7.2 billion in late 2013—a highly competitive arena that included Apple, Samsung, LG, and many others. Microsoft’s pursuit of a consumer-centric business model was ill-conceived, and the company’s business and leadership stumbled.

Just as Microsoft’s ill-adapted business model seemed to threaten the very livelihood of the company, Microsoft’s board, influenced by Bill Gates, made a crucial decision to make a management change. In early 2014, Microsoft’s board of directors chose Satya Nadella to lead the company. Applying his background in cloud and enterprise computing, within 48 months, Mr. Nadella led Microsoft back to the forefront of technology change. The organization had turned on a dime and successfully shifted its primary focus away from Windows and devices to providing enterprise applications and cloud-based services to small, medium and large businesses.

Over the past few years, we have been emphasizing the emergence of cloud computing, which is the delivery of computing as a service instead of as a product. Using cloud computing, customers share resources, software, and information that are provided to personal computers and other devices as a metered service over the Internet. Cloud computing is analogous to an electric utility, whereby the power station delivers power to the electrical grid, and consumers draw down on that power as they need it—and are charged based on their usage. The infrastructure that supports cloud computing comprises large data centers (i.e., server farms) that are owned and operated by companies such as Microsoft, Google, IBM, Rackspace, and Amazon. Obviously, cloud computing offers businesses an opportunity to reorganize their IT infrastructure and decrease their reliance on corporate servers—resulting in overall savings in their IT spending budgets.

This is an area of the technology industry that is “sticky” because corporate customers are not as fickle as retail consumers, who change products at a heartbeat. The “utilitization” of the enterprise cloud segment of the business is very attractive, as well as potentially very profitable, due to its tentacle-reaching and long-term annuity-like attributes. Organizations such as Boeing, CarMax, Coca-Cola, and others are using Microsoft’s data management, machine-learning analytics, and cognitive services to infuse intelligence into their business applications. The far-reaching applications of Microsoft’s “intelligent” cloud business include cognitive applications such as vision, speech, text, as well as facial and emotion detection. We can see that this business has unlimited future potential, and Mr. Nadella is committed to staying at the forefront of this technological revolution.

Microsoft had exciting business results in 2017, and we are equally enthusiastic about the company’s prospects in 2018. Microsoft’s adjusted calendar earnings are expected to be $3.18 per share, outpacing our expected $2.85 earnings per share at the beginning of 2017. This puts Microsoft on pace to reach earnings of approximately $4.00 per share by year-end 2019. During 2018, Microsoft will generate approximately $29 billion of owner earnings and will return a large amount of this cash to shareholders through net share repurchases of approximately $13 billion and around $13 billion of dividends (an approximate 3.95% pass-through yield at the year-end stock price). With a consistent return of cash to owners of this company and an excellent position in the technology industry, Microsoft will remain a long-term position in our portfolio.

Alphabet (Google)

During 2017, we made a large investment in Alphabet (Google), transitioning our emphasis from IBM. Why are we now emphasizing Google over IBM? And why did we not invest in Google in the past?

These are fair questions, and should be fully answered. Our original allocation to IBM was based on investing in the advent of artificial intelligence, which we had determined would be the next wave of computing once information was consolidated in the cloud.

In previous annual letters, we traced how IBM's past management successfully navigated the company through industry disruption, and the way the organization aggressively adapted to technology change—even destroying its past businesses in the process. IBM has recently been facing a challenge to its current business, and its very survival has been on the line. Rather than stand still and continue selling traditional hardware and software, or "evolving to the next wave of computing," IBM has chosen to repeat the company's past approach to major industry disruption, i.e., destroying its previous business, "betting the company," and rapidly moving to the next level of technological breakthrough—cloud computing, data analytics, and artificial intelligence. The advent of IBM's artificial intelligence platform, Watson, was a leading indicator of where the industry was heading. As you may recall, Watson gained popularity as a learning computer by winning the gameshow, "Jeopardy," on national television in 2011. Because of IBM's edge in artificial intelligence research, we determined that enterprise computing (where IBM was a leader), coupled with the company's leadership in cognitive computing, would position IBM to take a dominant position in the future technology sector.

Over the past five years, the technology industry landscape has drastically changed, allowing for the emergence and application of artificial intelligence. With the rise in cloud computing, massive amounts of information (i.e., "Big Data") is now housed on interconnected computers around the world, and companies seek to turn this information into useful knowledge using various applications and data analytics capabilities. The emergence of "edge and fog computing" is even allowing intelligence to be distributed to individual devices—think phones and computer tablets. In addition, computer utilitization is truly coming of age through a new way of writing software that has emerged in recent years. "Serverless computing" is a cloud-based computing utilization model in which the cloud provider dynamically manages the allocation of machine resources. It is a form of utility computing, with pricing based on the actual amount of resources consumed by an application, rather than on pre-purchased units of capacity. The term "serverless" is a misnomer, since this computing still requires servers; the term "serverless computing" reflects server management and capacity-planning decisions that are completely hidden from the developer or operator. This environment requires far less work from programmers and gets dramatically greater results. In the end, serverless software-writing makes it easier for programmers to use cloud computing in general but can also weaken a programmer's brand loyalty to any one cloud computing organization.

Cloud, fog, and serverless computing capabilities are especially robust in the enterprise and hybrid computing environments, where massive amounts of crucial government and corporate information is gathered, stored, and combined with public information. The need to transform massive storehouses of data into working knowledge has led to the emergence of cognitive computing—the simulation of human thought processes in computerized models—whereby computers actually learn, and even teach. Today's digital intelligence is based on massive data-gathering and analysis, but artificial intelligence is definitely on the horizon.

This brings us up to date. Computer giants such as Amazon, Google, Microsoft, and IBM are all working diligently to make advanced computer learning a reality in this new environment. While we viewed IBM as the uncontested leader in developing learning computerization five years ago, other major players such as Amazon, Google, and Microsoft have more than caught up and are playing a major role in this area. Given the ultracompetitive nature of the technology industry, IBM's business transition to this fast-moving segment has become more difficult. It is difficult to destroy one technology business and then face multiple competitors while adapting to another technology business. Understanding this fact required us to evaluate other companies that are emerging as leaders in the artificial intelligence space and to pivot where necessary. Our research over the past 18 months has led us to conclude that Google is emerging as a clear leader in this space. We still believe that IBM will do well in the future but have become less certain about its position.

Alphabet is the parent company of Google's growing portfolio of businesses that span several industries including technology, life sciences, investment capital, and research. Alphabet's largest business is the Google subsidiary. Google focuses on Internet-related products and services that include internet search, online advertising technologies, cloud computing, and software and hardware development. The company's meteoric growth since its founding in 1998 has triggered a number of products, acquisitions, and partnerships beyond Google's core search engine. Google offers services designed for work and productivity (Google Docs), email

(Gmail), scheduling and time management (Google Calendar), cloud storage (Google Drive), language translation (Google Translate), mapping and navigation (Google Maps/Waze), video sharing (YouTube), and a multitude of other products. The company also developed the Android mobile operating system, the Google Chrome web browser, and Chrome OS, a lightweight operating system based on the Chrome browser.

So why Google? The pervasive use of Google's search engine is allowing Alphabet to gather, manipulate, and understand our individual and collective behaviors in complex ways, giving the company an edge in developing artificial intelligence. Google itself is a learning machine that adapts each day based on the intelligence it gathers from internet searches. This growing knowledge is allowing Alphabet to develop offshoot businesses as the company learns, and to populate these companies with intelligence to compete in emerging markets, such as self-driving vehicles (Waymo), data science and healthcare (Verily), and the application of artificial intelligence (DeepMind).

Why has Founders not invested in Google in the past? Hmmm... As I (Pat Terrion) pondered this question, I preferred to get back to everyone with a better answer than "missed opportunity." But since this was my decision (thus, the use of "I" in this section), it deserves an explanation:

Five years ago, I viewed Google as a tremendous company that was involved in internet search as well as digital advertising based on knowledge obtained from individual search habits. This is a pervasive and lucrative business, but I was not sure about how "real" it would prove to be over time. Competing entities such as Facebook were also attracting vast sums of advertising dollars. Of course, in studying this business, I extrapolated the worldwide advertising spend (around $550 billion in 2017), its growth over time, and how much of the revenue and profits could be gained by digital participants such as Google. (Note that Google only obtains a portion of industry advertising dollars, and a large amount goes to other industry participants such as advertising agencies, media companies, etc.) My conception of Google as a search and digital advertising placement company was myopic, and I didn't notice the company's ongoing evolution until about 24 months ago. After getting up to speed, I began to look at Google differently—as a learning machine versus search and digital advertising business. Once this dawned on me (and I have read Google's annual report every year since the company went public in 2004), a clear picture emerged that Google was based on a pervasive business model of gathering information, turning it into intelligence and useful knowledge, and creating new businesses in the process. Perhaps our investment in Google should have been made a little sooner, but I needed to become comfortable with the new way of looking at its business, and it took some time to digest the future of this enterprise. Obviously, (back to we) we think the company has a tremendous future, and even though Google's business is big, it is still very scalable and could become much larger.

Google is extremely profitable and produced adjusted earnings of $28.5 billion in 2017, or $43.20 per share. In 2018, Google is expected to grow its per-share earnings to $50 and produce owner earnings of approximately $32 billion. This will add to Google's $100+ billion cash hoard on its balance sheet, with minimal debt. With a total market capitalization of $729 billion and removing cash of more than $100 billion, a buyer of Google is obtaining a 5.0% owner earnings yield that is growing at approximately 12% to 15% per year. We think that at the current price, Alphabet provides us an opportunity to own a great collection of promising enterprises that will become even greater in the future.

Intel

Intel is a leading designer and manufacturer of advanced integrated digital technology platforms. An Intel platform consists of a microprocessor and chipset that may be enhanced by additional hardware, software, and services. Intel sells technology platforms primarily to original equipment manufacturers (OEMs), original design manufacturers (ODMs), and industrial and communications equipment manufacturers in the computing and communications industries across the computing continuum—in servers; in desktop, laptop, tablet, and mobile phone devices; and in the Internet of Things. (The Internet of Things is the concept of a network of Internet-connected entities such as electronic devices, vehicles, buildings, kitchen appliances, etc. that are able to collect and exchange data using embedded sensors, empowering real-time computing in digital surveillance, new in-vehicle experiences, advancements in industrial and office automation, solutions for retail and medical industries, etc.).

Intel holds a dominant market share in many of its product categories. Despite this dominance, however, technology disruption is impacting even Intel as consumers rapidly transition from primarily using desktop and laptop computers to smaller tablet and mobile devices. On top of the shift from midsize to smaller devices, the growth of cloud-based computing based in large data centers is replacing the need for people to acquire and maintain "home-based" personal computing capabilities. Because of this double-whammy technology shift, Intel's mainstay platform sales to the midsize, local computing segment (i.e., PCs) is declining. Thus, Intel is facing a challenging period, and the company is adjusting its business model to meet the growing demand for integrated digital devices and cloud computing products.

So, why are we maintaining a large position in Intel, especially as the company encounters a disruptive period that creates additional business uncertainty?

We believe that Intel has embarked on a promising strategy (encompassing both hardware and software) to solidify its position in a new era in which computing is interconnected and distributed across a variety of platforms. The company offers enhanced energy-efficient performance and connectivity and provides platform solutions that now span the computing continuum—from high-performance computing systems running trillions of operations per second to embedded applications consuming milliwatts of power.

As the boundaries of computing expand, with billions of devices connected to the Internet and to one another, Intel is focused on the following areas:

- accelerating the company's growth in data centers
- extending the company's growth in the Internet of Things
- developing memory and programmable solutions

Intel's emphasis on these areas is driving the company to develop complete and connected platform solutions that will maximize the computer user experience. These focus areas are also driving synergistic business organization and growth among Intel's business groups: Data Center Group, Internet of Things Group, and Non-Volatile Memory Solutions Group.

Intel's microprocessors form the backbone of the Internet and cloud-based computing. Data Center Map (a web service that serves as a liaison between providers and buyers of data center services) states that approximately 4,161 co-located datacenters in 119 countries (40% located in the U.S.) make up what we can call the "global computing platform." These datacenters collectively contain more than 65 million computer servers, most of which are running on Intel products.

We are witnessing Intel transform and broaden its scope as the Internet of Things develops. As more devices become smart and connected, demand will grow for data centers to not only connect these devices but to capture and analyze the data they create. In addition, improvements in memory technology are enabling faster and more efficient microprocessors. Intel calls the cycle of growth that results from the synergistic interaction of these three market segments the "Virtuous Cycle of Growth." As the company executes its networked, integrated product strategy, these market segments will continue to have greater impact on the company's results and further widen its competitive advantage.

In summary, Intel is managing the current technology disruption well, and the company is positioning itself for the next generation of computing. We believe Intel will play an important role in the utilization of computing and will obtain a terrific revenue and profit annuity stream in future years through its multi-product offering in both high-end and low-end computerization.

Intel will earn approximately $2.93 of earnings per share in 2017 and is projected to grow its adjusted earnings per share 4% in 2018, to $3.05 per share. We expect the company to continue its growth in future years as it further penetrates the data center sector and works toward developing a profitable foothold in new business segments such as the Internet of Things. In 2018, we expect Intel to generate approximately $13 billion of owner earnings and return approximately $10 billion of cash to shareholders through dividends of $5 billion and share repurchases of approximately $5 billion, respectively—Intel's dividend yield is approximately 2.4% at the year-end stock price, and the forward pass-through yield is approximately 4.6% when including share repurchases. We still consider Intel a well-positioned technology company and a good investment given its optimistic future.

FINANCIAL SERVICES GROUP

Berkshire Hathaway

Berkshire Hathaway remains our largest financial services holding as well as our largest overall position. Berkshire Hathaway experienced an approximate 23% growth in per-share book value during 2017, largely due to the lower corporate tax rate that benefited Berkshire (explained later). This was an increase from the 11% growth in per-share book value achieved in 2016. This year's per-share book value growth has also been positively impacted by the growth in Berkshire's equity portfolio, especially the 46% growth in Apple's share price (Berkshire is Apple's 5th largest shareholder, representing an approximate 2.7% ownership position in the company). Other large holdings that did well include Bank of America (up 33.6%) and American Express (up 34%). These high-performing positions were offset by the lackluster performance of other large positions, including Kraft/Heinz (down 10.9%— Berkshire owns 26.7% of this company) and Wells Fargo (up 10%). We estimate that Berkshire's overall equity portfolio was up around 21% in 2017—slightly below the market. More important, Berkshire's wholly owned companies continue to perform well and add to book value as the U.S. economy reestablishes growth. We expect Berkshire's businesses to perform well in the future, given the possible increase in infrastructure spending in the U.S. that would have a positive impact on Berkshire's industrial holdings, including Burlington Northern railroad, Precision Castparts, and Lubrizol.

Given our historical use of Berkshire's growth in per-share book value as a measurement of its growth in intrinsic value, we should revisit last year's discussion about not placing too much weight on this metric as an accurate reflection of Berkshire's true increase in value—especially with the newly enacted tax law, which will lower the corporate tax rate. Warren Buffett explains the ever-increasing difference between Berkshire's book value and intrinsic value in the company's 2015 annual report:

> *Over the last 51 years (that is, since present management took over), per-share book value has grown from $19 to $155,501, a rate of 19.2% compounded annually.*
>
> *During the first half of those years, Berkshire's net worth* ***(book value)*** *was roughly equal to the number that really counts: the intrinsic value of the business. The similarity of the two figures existed then because most of our resources were deployed in marketable securities that were regularly revalued to their quoted prices (less the tax that would be incurred if they were to be sold). In Wall Street parlance, our balance sheet was then in very large part "marked to market."*
>
> *By the early 1990s, however, our focus had changed to the outright ownership of businesses, a shift that diminished the relevance of balance-sheet figures. That disconnect occurred because the accounting rules that apply to controlled companies are materially different from those used in valuing marketable securities. The carrying value of the "losers" we own is written down, but "winners" are never revalued upwards.*
>
> *We've had experience with both outcomes: I've made some dumb purchases, and the amount I paid for the economic goodwill of those companies was later written off, a move that reduced Berkshire's book value. We've also had some winners—a few of them very big—but have not written those up by a penny.*
>
> *Over time, this asymmetrical accounting treatment (with which we agree) necessarily widens the gap between intrinsic value and book value. Today, the large—and growing—unrecorded gains at our "winners" make it clear that Berkshire's intrinsic value far exceeds its book value.*

This explanation highlights how the value of many of the businesses Berkshire has purchased over the years has increased enormously, but accounting for those 100%-owned entities does not allow for these businesses to be marked up to reflect their increase in value on Berkshire's balance sheet. For example, Berkshire purchased Burlington Northern Santa Fe railroad (BNSF) in early 2010 at an equity value of approximately $34 billion (a note to finance aficionados: This acquisition added around $14.8 billion of goodwill to Berkshire's balance sheet). Around eight years later, however, the equity value of BNSF on Berkshire's balance sheet is likely in the range of $95 billion, or ~ $82 billion after a tax adjustment if it remained a public company. The approximately $48 billion hypothetical increase in BNSF's equity value is not currently reflected on Berkshire's balance sheet because the company is no longer a marketable security that trades on the exchange; rather, BNSF is now a wholly owned subsidiary of Berkshire. Standard accounting practice does not permit

Berkshire to mark-up BNSF to reflect its increasing value in Berkshire's balance sheet, however, which has contributed to a widening of Berkshire's book value vs. intrinsic value over time. This is also the case for Berkshire's other wholly owned companies Berkshire has acquired over the years—as these companies have grown in value over time, the disparity between book value and intrinsic value increases. This anomaly will continue into the future (and likely continue to widen) as Berkshire's wholly owned businesses grow in value and Warren Buffett makes outright purchases of new businesses, adding them to the company fold.

Adding insult to injury on the book-to-market value measurement of Berkshire's worth, the enacted reduction in the corporate tax rate adds to Berkshire's net worth with just a stroke of the pen. In our 2012 annual letter, we cited one accounting entry that contributes to the difference between Berkshire's book value and intrinsic value: A deferred tax liability on its balance sheet that is recognized as a liability but, in fact, a portion could theoretically be considered an asset. A reminder: A deferred tax liability occurs when taxes are owed but have not yet been paid. In Berkshire's circumstance, a considerable amount of the company's approximately $90 billion deferred tax liability is represented by capital gains embedded in securities owned by the company, that Berkshire will eventually have to pay taxes on when sold. In Berkshire's case, however, a large share of this deferred tax liability is associated with stock gains on companies such as Coca-Cola, American Express, Wells Fargo, and Apple. It is highly unlikely that Berkshire will ever sell its position in most of these companies—arguably making the percentage of the deferred tax liability an asset. Because a deferred tax liability represents anticipated payments to government entities in the event of a sale of these securities, the change to the U.S. tax law that lowers the corporate tax rate reduces the deferred tax liability represented on Berkshire's balance sheet. As the corporate tax rate is lowered from the current 35% to 21%, an accounting adjustment will be made that lowers the deferred tax liability on Berkshire's balance sheet by more than $25 billion—raising the book value of Berkshire by the same amount.

An obvious question: Would this accounting change that results from a reduced corporate tax rate increase the value of Berkshire's holdings in Coca-Cola, American Express, and Wells Fargo if Berkshire never intended to sell those securities? The technical accounting answer is "yes," but in reality, this accounting adjustment would not have an impact on Berkshire's intrinsic value if the company never intended to sell those positions. (Note that lowering the corporate tax rate would increase the intrinsic value of Berkshire, because a lesser portion of its future earnings would be subjected to taxes, increasing both earnings and cash flow for owners.)

Ultimately, book value serves as a fair proxy for Berkshire's value creation but is losing its luster as time progresses and the company pursues full ownership of businesses. At the year-end 2017 stock price, Berkshire's market value is approximately 1.6 times its book value. However, with the deferred tax adjustment and resulting increase in equity, Berkshires year-end adjusted market value to book value was lowered to ~ 1.4x. We estimate that trading at approximately 1.4 times the company's liquidation value (without allowing for any adjustments for wholly owned companies that have increased in value), Berkshire's intrinsic worth is greater than its current market price.

Berkshire keeps growing and effectively allocating capital that is creating greater intrinsic value for shareholders. Berkshire continues to flex its financial muscle, producing long-term value from a well-established financial business that consistently generates a low cost of borrowed customer funds (less than zero over time). The float produced by Berkshire's insurance subsidiaries "sticks" within the company for many years—i.e., Berkshire gets to maintain premiums paid by insurance customers for years prior to paying out claims. Berkshire primarily generates its float by providing insurance directly to individuals (through GEICO) as well as by providing coverage to other insurance companies against very large catastrophic-loss events, such as hurricanes and earthquakes (this is called "reinsurance").

With the long length of time Berkshire holds customer funds, the company benefits from investing "float" that has a long-term horizon—to obtain a highly probable rate of return on this money. Berkshire invests the funds in understandable assets and, in many cases, in wholly owned businesses that will remain a part of Berkshire indefinitely.

In summary, Berkshire's business model pivots on making investments in and/or buying good companies at attractive valuations with low-cost insurance funding. Mr. Buffett is continually buying businesses that generate very high levels of cash flow that accumulates over time—and then effectively reallocates this cash to

ever-increasing opportunities. We remain enthusiastic owners of this valuable company, and we look forward to Warren Buffett's future allocation decisions as he continues to build this great business.

American Express (Don't Leave Home Without It)

Our second-largest financial services investment is American Express (Amex). We began purchasing Amex in 2015 and completed our investment in this company with additional purchases during 2016. Since American Express has become a larger part of our portfolio, it is worth revisiting this company's underlying business strategy.

Most people have heard of American Express but may not be fully aware of its business. For example, many know that the American Express Company's principal products and services include charge and credit payment card products as well as travel-related services offered to consumers and businesses around the world. The company's full range of products and services go well beyond charge and credit payment card products and include network services; merchant acquisition and processing, servicing, and settlement; marketing and information products and services for merchants; fee services, including fraud prevention services and the design and operation of customer loyalty and rewards programs; expense management products and services; merchant financing products; travel-related services (including traveler's checks); and stored-value/prepaid products. American Express products and services are sold to diverse customer groups that include consumers, small businesses, mid-size companies, and large corporations.

American Express is truly a one-of-a-kind company that enjoys a unique credit and charge business based on a "closed-loop system." The simplest way to explain Amex's closed-loop system is to describe its opposite—i.e., an "open-loop system," which is how Visa and MasterCard operate. Visa and MasterCard clients are primarily banks and financial institutions, known as issuers, which issue cards to their customers bearing the Visa or MasterCard logo and bear all risks associated with extending credit. When a cardholder uses a Visa card to purchase goods or services from a merchant—let's say a store—information is sent via Visa's network to the merchant's bank, known as an acquiring bank. The customer's card-issuing bank pays the merchant's bank through the network, which then pays the merchant. The card-issuing bank then sends a monthly statement to its customer for all charges incurred during the period and may earn interest from the cardholder on any outstanding balance the customer does not pay immediately. The issuing bank may also charge the customer a fee for the use of its credit card. In addition, the issuing bank earns an interchange reimbursement fee from the merchant's bank, which charges a merchant discount fee for handling the merchant transaction. Visa participates in this network exchange by charging data processing fees and service fees to its financial clients but is not involved in lending money. Thus, unlike an issuing bank, Visa is not exposed to any credit risk and earns revenue on the volume of transactions carried out through its associated cards. Leaving aside all this transaction complexity, all we need to remember about the open-loop system business model is that it involves five separate parties that all receive a portion of the financial benefit for each transaction.

In contrast, using a closed-loop system, American Express acts as both the issuer and the acquirer by issuing its own cards through its banking subsidiaries. The company's primary source of revenue is the discount fee it charges merchants that accept the American Express card (Amex's merchant fees are usually higher than other financial institutions, and we will explain why later). These fees are charged as a percentage of the charge amount processed for the merchant and account for approximately 60% of the company's total revenues. American Express may also generate revenue from interest earned on loans that are issued to cardholders, from cardholder membership fees, and from travel services. Unlike the Visa and MasterCard model, the American Express revenue model does not depend on the volume of transactions processed but focuses on the total amount spent by each customer. Thus, American Express employs a "spend-centric" business model, attracting affluent customers who are likely to spend more than average (the average per-transaction payment for an American Express card is approximately $100 more than Visa's.)

The American Express Competitive Advantage

In addition to its use of a single closed-loop system, American Express processes a dominant market share of the travel and entertainment expenditures of major corporations. This requires explanation and demonstrates how the closed-loop system plays a crucial role.

Large corporations like United Technologies bid out the management of their travel and entertainment budgets to travel management companies, and American Express is by far the largest in the world. Amex supplies travel and entertainment management systems to its large corporate customers that include travel planning software as well as travel and entertainment payments, including expense reporting. As part of its travel policy, United Technologies employees are required to charge all their business-related travel and entertainment expenses on their corporate-issued American Express cards. Because American Express has a dominant market share of travel management systems used by major corporations, travel and entertainment entities that wish to serve corporate clients—including restaurants, hotels, car rental companies, and airlines—must accept the American Express card. Imagine a UTC salesperson taking prospective customers out for dinner and presenting a corporate-issued American Express card for a large bill—and being told that the restaurant doesn't accept the American Express card. For obvious reasons, this scenario is a rarity. American Express leverages this advantage by charging merchants more for accepting the American Express card. This issue is a longstanding "bone of contention" between merchants and American Express—and a difficult one for merchants to negotiate, since American Express dominates the corporate travel industry.

American Express developed the closed-loop system to optimally serve its base of corporate clients that require effective management of large corporate travel and entertainment budgets. The American Express travel and entertainment expense management system collects all travel and entertainment information and allows American Express and its corporate customers to jointly negotiate discounts for airfares, hotel and car rental rates, etc.

In summary, American Express' competitive advantage lies in the company's unique ability to assist the corporate customer segment with a travel and entertainment expense management system that is unmatchable. The company's wide-ranging closed-loop network in this area is unique and will continue to provide a competitive advantage as social media evolves and targeted advertising to corporate customers in a mobile world becomes more prevalent. This one-of-a-kind business model will continue to serve a broad-based platform for consumers, merchants, and future partnerships like no other product.

The benefits of Amex's closed-loop system are not limited to providing major corporations exceptional management of travel and entertainment expenses. This special business system also serves small and midsize companies by providing a different and unmatchable supply-chain management-expense control system. The American Express OPEN product leverages the closed-loop system to tie in a company's suppliers (for inventory and payables) as well as its customers (for receivables). The way it works: American Express has an extended merchant network that includes many different suppliers and small businesses that purchase from each other, which then sell to large corporations that already are part of the Amex network. Deploying emerging data analytics and artificial intelligence technology, American Express is able to provide a unique capability that matches suppliers to corporations and assists in inventory management as well as cash management—offering additional terms, as well as benefits, to suppliers and corporate customers. Amex can also leverage the knowledge/information generated by its extended network to negotiate discounted rates on various supplies that small companies may not be able to achieve on their own.

It is our opinion that American Express is not (and never has been) just a "card company" that serves the masses. The chase for low-producing, price- and credit-sensitive consumers will likely be left to banks that are not brand-sensitive but have a desire to create scale primarily by lending to lower-quality, fickle consumers (most consumers in this segment seem to trade credit cards like we used to trade baseball cards).

We believe that American Express has an ongoing opportunity to cross-sell and increase its share of customer wallet through additional cards issued in the growing high-end consumer segment. This niche opportunity will continue to develop for many decades as the percentage of "wealthy consumers" grows globally.

During 2017, American Express produced around $5.1 billion of earnings, or $5.85 per share. More important, the company distributed 100% of its earnings through dividends of $1.2 billion and share repurchases of nearly $4.0 billion—representing a pass-through yield of 6% at the year-end stock price. In 2018, we expect American Express to increase its earnings per share 11%—to $6.50. With American Express' tremendous future in a global marketplace where cash sales are diminishing, higher-income consumers are growing, and corporate productivity pressures are mounting, we are enthusiastic owners of this great franchise.

RETAIL GROUP

Our major retail holdings—Home Depot and Walgreens Boots Alliance—enjoyed another year of expansion in 2017, with retail purchases growing slightly at both specialty businesses. Year-over-year sales increased by approximately 1% for these combined entities in 2017, and our expectations are that their combined sales growth will exceed 7% in 2018. The expanding intrinsic business value of Home Depot was reflected in its stock price this past year; however, Walgreens Boots Alliance's stock price was negatively impacted by Amazon's rumored entry into the drug retail space. We will discuss the possible Amazon impact on drug retailers in the Walgreens Boots Alliance section. We remain fervent owners of these two great businesses, and we are confident that the growth of intrinsic value will be reflected as these organizations continue to execute the four essential elements of retail success:

1. **Excellent customer service:** If individuals walk into your store and get a whiff of poor customer service, they will likely turn around and shop elsewhere. Customer service is paramount in the retail business, and not something any retailer can compromise on.
2. **Product selection and superiority:** A retailer must constantly ensure that it is offering the right selection of products at the best possible price. You can provide a great service to your customer with attentive associates and a wonderful retail atmosphere, and then deliver a disservice by stocking the right products at the wrong price, the wrong products at the right price, or—worse yet—the wrong products at the wrong price.
3. **Value creation:** It is tough—perhaps very tough—to make money in retail. A robust understanding of product turnover, day-to-day revenue and expense management, and long-term capital allocation decisions all play into successful value creation.
4. **How to blend one's so-called "bricks and mortar" offering with the new "online channel:"** Interconnected retail continues to be a growing dimension of this industry. Successfully integrating the in-store and online customer experience is essential to creating customer and company value.

We have stated several times in the past how retailing has many moving variables that require tending each and every day. Inattention to any of these details leads to self-destruction—for example, Sears and J.C. Penney continue to struggle in one or more of these areas, resulting in sales and profitability challenges.

Our interest is in large, industry-specific retailers that gain economic value as their industries consolidate over the long term—Home Depot and Walgreens Boots Alliance continue to fit our perfect retail description. These retailers are adding value as their specialty segments continue to undergo consolidation and small competitors fall by the wayside, a dynamic that seems to be accelerating in both the home improvement and drug retail spaces. The retail areas in which we are invested focus on a couple of two-horse races—between Home Depot and Lowe's in the home improvement market, and between Walgreens Boots Alliance and CVS in the retail pharmacy market—with the possibility of a heavyweight third competitor (Amazon) entering drug retail in the near future. These retailers continue to gain ground in the difficult retail spaces in which they participate and will likely gain additional ground in upcoming years—worldwide. We have not changed our view: Our retail enterprises are extremely valuable, and it is very difficult for new competitors to gain a foothold in these specialized retail segments that require substantial infrastructure and real estate development.

Home Depot

Home Depot had another fantastic year as the company's 2,283 stores increased sales per square foot approximately 6%, with gross margins hovering around 34.1%—higher sales coupled with a high profit margin in this space leads to maximizing shareholder value. In 2017, Home Depot's sales of "big ticket" items such as appliances, lumber, and flooring increased—the average ticket sale was around $62.78, compared with $60.26 last year, representing a 5.1% increase for each customer transaction. This is an indication that customers continue to invest in their homes throughout the U.S. As a result, Home Depot is thriving and will continue to prosper as the company relentlessly focuses on providing the best of the four "great retailer" legs outlined in our industry introduction.

Home Depot's customer experience initiative remains anchored on the principle of "customers first." During 2017, the company continued to invest in digital platforms including content, website improvements, and the

customer mobile experience. This digital strategy provides a frictionless interconnected experience online, while also remaining focused on improving the interconnected customer experience in the store. In 2017, sales from Home Depot's online channels increased 21.6% compared to the same period last year and currently represents 6.5% of total net sales. This is likely to grow in the future.

Home Depot is also focused on product authority, facilitated by the company's merchandising transformation and portfolio strategy, which is focused on delivering product innovation, assortment, and value. Home Depot is dedicated to being the leader in product authority, connecting products and services to the needs of customers. During 2017, the company continued to collaborate with suppliers to introduce a wide range of innovative new products for its do-it-yourself, do-it-for-me, and professional customers while remaining focused on offering everyday values in stores and online.

In 2017, Home Depot also focused on productivity and efficiency. The company is driving productivity and efficiency through ongoing operational improvement in its stores and supply chain. Furthermore, Home Depot has a disciplined capital allocation program that builds shareholder value through higher returns on invested capital and total value returned to shareholders in the form of dividends and share repurchases.

We expect Home Depot to earn approximately $7.35 per share in calendar 2017 (up 15% from 2016) and to increase earnings another 12% in calendar 2018—to approximately $8.22 per share. By staying focused on the four-legged stool of retail success, Home Depot continues to produce significant amounts of cash that is being distributed to shareholders. The company will generate nearly $9.6 billion of owner earnings in 2018 and will return this cash to stockholders through share repurchases of approximately $5.5 billion and $4.1 billion of dividends (~ 4.3% forward pass-through yield at the year-end stock price). We remain delighted with the company's ongoing focus on customers and shareholders and plan to remain long-term owners of this one-of-a-kind specialty retailer that is sidestepping the retail disruption of online-focused e-tailers such as Amazon.com.

Walgreens Boots Alliance

Walgreens Boots Alliance is another one-of-a-kind specialty retail firm that is focused on the healthcare segment—and Walgreens continues to gain strength as the company increases its domestic and global market share. Walgreens has put the pedal to the metal on growth with new acquisitions following the company's 2015 acquisition of Alliance Boots, the leading pharmacy-led health and beauty group in Europe. During 2017, the company announced the acquisition of 1,932 Rite Aid stores for $4.375 billion. Ownership of the Rite Aid stores is expected to be transferred in phases, with a goal to complete the store transfers to Walgreens by Spring 2018. In addition, on December 6th, 2017 Walgreens Boots Alliance announced that it had reached an agreement with China National Accord Medicines Corporation Ltd. to become an investor in its subsidiary, Sinopharm Holding Guoda Drugstores Co., which operates and franchises retail pharmacies across China. Walgreens Boots Alliance acquired a 40% minority stake in GuoDa through a capital investment of $416 million. GuoDa is a leading retail pharmacy chain in China that operates more than 3,500 retail pharmacies across around 70 cities and employs close to 20,000 people.

Walgreens also owns 56,854,867 of AmerisourceBergen common shares, representing approximately 26% of the outstanding AmerisourceBergen common stock. In addition, Walgreens can acquire up to an additional 8,398,752 AmerisourceBergen shares in the open market. This is a strategic investment that provides Walgreens an opportunity to vertically integrate its business via a future option to purchase one of the largest drug wholesalers in the industry (the other two are McKesson and Cardinal Health).

Under the leadership of Stefano Pessina, Walgreens management team is successfully integrating and transforming the traditional drugstore and creating a company platform for selling and distributing healthcare products to well over one billion people located in 12 countries, through 18,000 owned and affiliated stores and more than 300 distribution centers (over 130 owned). Walgreens Boots Alliance has an integrated, global drug distribution platform that is unmatched—providing this company a "first mover global advantage." The combined company is one of the largest purchasers of prescription drugs in the world, giving it more leverage in negotiating with drug suppliers to lower costs on the annual purchase of hundreds of millions of prescriptions.

Regarding the potential threat of Amazon entering the drug retail and/or wholesale space: As we stated earlier, we believe this is likely to occur in the near future. Walmart and Target attempted to enter this industry but ultimately failed to make an impact. Why? The drug wholesale and retail businesses are very difficult to enter, and at the same time make large strides in quickly scaling the business. Regulation is extensive, the industry is consolidated among a few players at the wholesale and retail level, the networks are extensive, and the profit margins are already very thin. In other words, entering this industry is not the same as entering a fragmented retail industry (think Sears, J. C. Penney, and Macy's), purchasing goods from manufacturers at low prices, and then creating a venue to sell items at a discount through the Internet. The drug retail and distribution business already offers similar opportunities for individuals and organizations to purchase drugs. We believe that Walgreens will do better than survive and will continue to thrive as a leader in the complex, global healthcare market.

We expect Walgreens Boots Alliance to continue increasing in value as the company takes advantage of ongoing industry consolidation while maximizing productivity and efficiencies and emphasizing unmatched customer and patient healthcare services. The combined global entity will continue to expand product selection at affordable prices and interconnect the global in-store and online retail experience to create a specialty healthcare business that is different and unmatchable. We believe that the Walgreens Boots Alliance of the future is shaping up to be much more than a typical retail pharmacy. The company's planned evolution to offer global consumers a more integrated package of healthcare services promises to create significant value for shareholders.

Walgreens Boots Alliance produced positive results in 2017, with U.S. retail comparable store sales and pharmacy sales growing by approximately 2.8% and 4.7%, respectively. The company had adjusted earnings of $5.10 per share in its fiscal year-end, August 2017 (an increase of 11% year-over-year), and should grow adjusted earnings at approximately 10% in fiscal 2018, to $5.60 per share. We continue to be excited owners of this emerging global healthcare franchise and expect terrific results in the future.

MEDIA & COMMUNICATIONS GROUP

The media and communications businesses continues to be a challenging investment area—the industry remains extremely competitive and dynamic due to its reliance on changing technology infrastructure, including internet and cable. Due to the vast and growing number of channels available for content distribution and the multiple mediums through which consumers can access entertainment, it is paramount that media companies create and distribute "great content" to attract customers and advertisers. We know of no other business in which a customer or advertiser can switch loyalty as quickly as in the media business. And a migration in advertising revenues to new emerging media companies continues to accelerate due to the disruption of "streaming content" in this industry—e.g., Amazon Prime, Netflix, Hulu, etc. As a result, several legacy content providers that mostly rely on advertising revenues to drive profitability continued to struggle with static revenue and earnings in 2017. Clearly, it is important to choose media companies that have a special grip on the marketplace by producing exceptional content that attracts various advertisers despite the disruption created by services such as Netflix and Amazon Prime. In this category, we continue to hold what we consider to be the best media business in the industry: Disney.

Walt Disney Company

Disney is the one business that we continue to place in the "invaluable" category due to its unique franchise. The invaluable nature of Disney is based on its different and unmatched content (films, characters, etc.) that is analogous to an oil well that keeps producing indefinitely after incurring an initial development expense. Each time the company develops an animated or iconic film, much of the film development is expensed at the time of its introduction. In future years, when the company re-launches these classic films in updated formats (DVD, 3D, and soon: virtual reality), Disney attains additional revenues and profits without incurring the original development expense. We refer to these re-launches from the company's film library as "accessing the Disney vault." That the content of this vault consists of gooses rather than golden eggs is an important investment point—the magic gooses keep laying golden eggs—e.g., *Snow White and the Seven Dwarfs, Pinocchio, Bambi, Cinderella, Alice in Wonderland, Peter Pan, The Little Mermaid, Beauty and the Beast, The Lion King, Aladdin, 101 Dalmatians, Frozen, Finding Nemo, Finding Dory, Moana,* and the company's latest

animated production: *Coco.* We can envision our grandchildren's grandchildren watching many of these classic Disney films in the new millennium, no matter what future medium the content is delivered on. The value of the Disney vault is incalculable because of the 100-year annuity associated with placing new iconic films in this facility, as well as reissuing previous Disney films as novel delivery mediums emerge, and new generations of children—future viewers of these movies—are born each day.

Disney's current CEO, Bob Iger, and his management team continue to do a remarkable job creating shareholder value. Mr. Iger has maintained the company's culture and focus while expanding Disney's invaluable library of content, broadening its distribution network, and embracing new technologies that complement and enhance the Disney experience. In addition, under his leadership, new film franchises (i.e., golden gooses) are being added to the Disney vault through the company's creative team, which is unmatched in both animated and unanimated film. At the end of 2017, Disney launched *Star Wars: The Last Jedi*, which is another billion-dollar-plus blockbuster. In the upcoming year, Disney is scheduled to debut *A Wrinkle in Time* starring Oprah Winfrey, *Incredibles 2*, a live-action film version of *Mulan,* and *Mary Poppins Returns*. We expect these films to do very well at the box office in 2018.

We believe that Disney has stronger long-term growth prospects than most investors realize due to the company's highly competitive position in the media and entertainment industry. Disney's brand strength is so strong that the company is planning to introduce its own streaming service to compete against Netflix and Amazon Prime. We believe that Disney's broad range of content and growing international presence will allow the company to extend its global reach for many years to come.

Disney earned $5.69 per share in its fiscal year-end September 29, 2017, a slight decrease from fiscal 2016. The company is expected to grow earnings at approximately 10% in the next fiscal year, to $6.25 per share. Disney will generate around $9 billion of owner earnings and is expected to return a large portion of this cash to stockholders through share repurchases of approximately $6.5 billion and dividends of $2.5 billion. We remain enthusiastic owners of Disney, as the company continues to expand its global franchise, adding value for shareholders.

AT&T

Over the past four years, we built a rather large position in AT&T. A lot has happened at AT&T this past decade as the company reinvents itself as a global Internet Protocol (IP) networking provider dedicated to delivering powerful networks, applications, and capabilities to business, government, and consumers. Far from its old days of offering phone service, today's AT&T provides sophisticated communication services, including wireless technology, broadband, and Voice over Internet Protocol (VoIP) for consumers and businesses. And AT&T continues to evolve at a rapid pace in the disrupted media and communications industry, attempting to vertically move into content through its pending purchase of Time Warner.

In 2015, AT&T expanded its communication capabilities by completing a $48.5 billion acquisition of DirecTV. DirecTV is a leading satellite broadcast provider of digital television entertainment in the U.S. and Latin America. Satellite broadcasting is an alternative to cable service. During 2016, the combination of AT&T and DirecTV has enabled these companies to leverage their unique capabilities to exploit a global communications opportunity. AT&T's expertise and offerings in networking, wireless, broadband, and IP, coupled with DirecTV's satellite broadcasting network, has created a powerful platform for AT&T to develop globally—and that expansion is taking place.

AT&T and Time Warner have entered into a definitive agreement under which AT&T will acquire Time Warner in a stock-and-cash transaction valued at approximately $85.4 billion. This deal brings AT&T into the world of content. Time Warner is a global leader in media and entertainment with a terrific portfolio of content creation and aggregation that includes iconic brands spanning video programming and TV/film production. Each of Time Warner's three divisions is an industry leader:

- HBO, which consists of domestic and international premium pay television and streaming services
- Warner Bros. Entertainment, which consists of television, feature film, home video, and distribution (the Warner Bros. film franchises include Harry Potter and DC Comics, and its produced TV series include "Big Bang Theory" and "Gotham")

- Turner broadcasting, which consists of U.S. and international basic cable networks including TNT, TBS, CNN, and Cartoon Network.

Regulatory hurdles have delayed the consummation of this acquisition—the Department of Justice has filed a lawsuit to block AT&T's Time Warner takeover based on the assertion that this combination creates an entity that will lead to higher prices for rival distributors and pay-TV subscribers, while hampering the growth of online video. AT&T has decided to go to court and make the case that vertical integration of content and distribution is consumer-friendly and ultimately lowers subscriber costs. The trial is due to start on March 19, 2018—we shall see what happens.

We believe that the opportunity to create a different and unmatchable company is worth AT&T's pursuit of Time Warner. By combining Time Warner's vast library of content through HBO, Turner Broadcasting, and Warner Brothers, the new AT&T has the ability to create new premium content that connects with audiences around the world through its their extensive customer relationships, world's largest pay-TV subscriber base, and leading scale in TV, mobile, and broadband distribution.

In summary, AT&T is a valuable company with growing global reach that offers customers a combination of data and video on all devices—and, possibly, content in the future. We believe that AT&T is a dynamic enterprise that is creating incremental intrinsic value for shareholders. In 2018, AT&T is expected to produce around $18 billion of profits, and the company's approximately 5.1% year-end dividend yield is among the highest of large companies. We remain excited owners of AT&T and believe that this evolving franchise is adapting to disruption taking place in the media and communications industry and represents a fantastic investment today, along with an opportunity for growth in the global media and communications market.

COMMODITY-BASED HOLDINGS

Our commodity-based investment is primarily in Chevron, a position we have now held for around 13 years. At the time of our initial purchase, we were concerned that higher oil prices might occur as a result of the possible deterioration of worldwide currencies, given governments' historical propensity to print money to stem the impact of any financial crisis in their countries. Of course, a financial crisis did occur in 2007-2008. Since then, we have been facing an ongoing financial predicament as governments work themselves out of the global financial quagmire.

Although oil climbed from around $45 per barrel from our initial purchase to more than $145 in mid-2008, our thesis for higher oil prices has not panned out over the past few years. Since the financial crisis, the per-barrel price of oil has plummeted to the point that we can consider this commodity to have crashed. From December 2013 to December 2015, the price of West Texas Intermediate (WTI) crude oil nose-dived from approximately $100 per barrel to $37 per barrel. Today, the price per barrel of WTI crude oil is hovering around $60. Clearly, the price of oil is volatile and difficult to predict.

Forecasting the future price of oil seems silly to us, since many variables continue to impact the short-term price of oil, including short-term imbalanced trends in supply and demand, a fluctuating dollar (oil trades largely in U.S. dollars), shifts of distillate processing from one region to another, and "controlled production measures" that are now being employed by OPEC's 13-member countries as well as non-OPEC nations such as Russia.

More important than focusing on the oil price decline (or recent increase) of the past few years is the need to evaluate the domino impact that continued low oil prices can have on the global economy, which can reverberate through the global financial system:

- Reduced revenue greatly impacts deficits and currencies for countries that are reliant on oil sales, such as Russia and Saudi Arabia—this was a reason to agree on controlled production
- Reduced investment in oil drilling has had an impact on U.S. oil company earnings and energy employment. However, with controlled production announced by OPEC and non-OPEC nations resulting in recent higher oil prices, U.S. oil production is likely to continue increasing in 2018
- Inexpensive gasoline is increasing fuel consumption and could lead to purchases of larger automobiles, delaying the demand for a more energy-efficient transportation infrastructure

When rationally considering the current global supply/demand equation, the EIA measurement of worldwide oil consumption is around 98.75 million barrels per day at the end of 2017—representing an approximately 1% year-over-year increase—and forecasts a growth of another 1.75% in 2018, to 100.5 million barrels per day. Oil production has kept pace with the increase in oil demand, rising to 98.75 million barrels per day by the end of 2017, and is expected to grow to 100.5 barrels per day at the end of 2018. We can see that the global oil supply remains equal to demand, and we are witnessing a balance between current oil supply and demand.

We continue to believe that a long-term imbalance continues to grow between the current "easy" oil supply and global demand. We also believe that "safe" worldwide oil production capabilities are about equal to current demand. We believe that the future oil needed to meet rising demand is going to be "less easy" and more expensive to get out of the ground—although drilling technology keeps improving. The future oil supply to meet growing demand will come from further fracking in the U.S., tapping oil sands in Canada, deep-water drilling in the Gulf of Mexico, and oil development projects located in remote places around the world. The effects of low oil prices on companies such as Chevron and other large oil companies are causing an ongoing reduction in capital expenditures, placing future expensive oil production projects on hold. The impact of a delay in future oil exploration and production is yet to be determined—the length of time these complex projects take to reinstate is not widely appreciated. We stated in the past that surprises in the energy industry are the norm, and that mothballing complex projects that are needed to produce future oil to meet energy demand could eventually have a domino impact that we may not expect—such as a long period of higher oil prices as rising demand becomes more difficult to fill. This is not a forecast, just a thought. We also realize that improving technologies for oil exploration and production and the movement to natural gas play a part in the complex energy sector. Chevron is ahead of the curve in these areas as well.

Chevron continues to produce cash for shareholders—the average dividend being paid by this energy company is approximately 3.45%. Given the higher-than-normal rate of return received through shareholder dividends on Chevron, we can afford to remain patient and wait for higher oil prices brought about by the mix of increasing global demand and higher-cost oil production from difficult-to-produce oil fields.

FIXED-INCOME INVESTMENTS

The Barclay's U.S. Aggregate Bond Index, which represents the broad debt market, experienced a 3.54% gain in 2017. We have emphasized in the past few years that the heyday for high fixed-income returns has passed and that investors pouring money into bond funds since the financial crisis of 2007-2008 were likely to be disappointed. Unfortunately, many individuals missed the current opportunity for financial gain in equities, opting instead for the perceived safety of chasing elusive returns in the credit market. We feel as strongly—and perhaps more so—today as we did when we first wrote about this: Investor complacency in the fixed-income market has lingered for a longer period of time than we had anticipated (though this phenomenon is not unusual).

When evaluating the current fixed-income market, we believe people would still be *far* better off taking a business approach to their investing. We reiterate: If people stepped back and looked at their fixed-income investments in a similar manner to an investment in a business, they would become skeptical about their future returns.

Let's say that a business with zero debt is able to produce a steady 10% return on equity. If management elects to retain the annual earnings of this business and plow the funds back into the company, investors can expect to see their "equity bond" double in a little more than seven years.

Now let's look at a bond in a similar business light. If you purchase a bond at par that produces a 10% tax-exempt coupon and choose to retain the annual earnings from this bond and reinvest the money into the same bond at par each year, you will also double your money in a little more than seven years—producing a similar result to our business example.

Based on this example, it is our opinion that people purchasing bonds today are still not apply a business perspective, despite the steadfast low interest rate environment. For example, putting aside tax implications, if we purchased a 30-year U.S. Treasury bond on December 30th at a 2.74% yield and chose to reinvest the coupon payments into those same bonds at par, it would take over 25 years to double our money. If we

presented our clients with a similar arrangement to invest in a business that produces a 2.74% return on equity and retains all the proceeds to repeat this poor return, our judgment would be severely questioned, regardless of whether the business was assured survival. Unluckily, today's absolute abysmal return of 2.74% on a 30-year U.S. Treasury Bond is guaranteed to lose money against inflation that averages 3% over the next 30 years (we will once again stay away from any forecasting). Nevertheless, many financial managers continue to place a greater-than-average portion of their clients' assets in *un*businesslike opportunities. (This does not mean that bond prices will never rise—investor panic and/or deflationary pressures can attract additional money to fixed-income investments in the future, even at low yields.)

We continue to emphasize several points that concern us about fixed-income instruments: Besides the ongoing poor returns being generated in this area, looming risks associated with this "secure investment vehicle" include ongoing rising interest rates (which are on the table for 2018) and even greater chances of default. We remain concerned about low long-term market interest rates, which are destined to move upward as the Federal Reserve changes direction on maintaining a low interest rate environment. As the economy continues to improve, the Federal Reserve has announced its intention to raise short-term interest rates during 2018, at .25% per decision—we shall see how this plan develops. Ultimately, the Fed's action to raise interest rates will put pressure on the value of fixed-income instruments as well as other interest-sensitive assets. Although many predict that fast-rising interest rates are in the distance, our experience with other prophecies should illustrate that the crowd is often wrong. Market interest rates could unexpectedly move upward at a faster rate than intended, which would place tremendous pressure on low-yielding fixed-income investments.

In 2018, we have ongoing tranches of municipal and corporate bonds coming due as we have elected to invest in shorter-term fixed-income instruments. We will continue to maintain a businesslike attitude about our fixed-income investments, carefully allocating money to securities that offer a fair risk and return over the duration of the holding.

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WHAT COUNTS AT FOUNDERS?

Since this letter's theme is "Knowing What Counts," we would like to share with you what counts at Founders.

At Founders, we care deeply about the money that individuals have entrusted to our stewardship. We view our clients as partners and our investment activity as interdependent. As such, it is important to our relationships that we share the Founders philosophy and values.

What Counts at Founders:

- **Act as business owners for the long haul,** as opposed to looking at investments as "paper to be flipped."
- **Practice "mindful investing,"** fully understanding where our money is invested. We take complete responsibility for allocating capital and do not abdicate money management and research to others.
- **Understand the value of our held assets,** both directly held and any investment with underlying assets.
- **Care for clients and for each other**—collectively, we are Founders' greatest assets.
- **Place partner money with client money,** ensuring that we "eat our own cooking." This values client money as if it were our own.
- **Seek spread, safety, and certainty in our investments**—we do not speculate.
- **Always remember security:** purchase what is dependable / defendable and predictable / protected. Analyze the potential loss before gain, and focus on scenarios that can go wrong with an investment.
- **Focus on absolute over relative returns:** The investment world is full of illusive short-term comparisons that ultimately lead to permanent loss. Be risk-adverse, and abhor losing money under any circumstance.
- **Seek industry and business insight** versus making macro predictions on the economy or market, which are certain to be wrong.
- **Maintain a human growth orientation**—for individuals and clients over revenues and profits. Size does not matter, but growing knowledge and embracing quality does.
- **Seek and generate ideas, and learn from mistakes**—because mistakes are bound to happen.
- **Learn to learn—think differently and unmatchable**. Think in questions versus answers, as insightful questions lead to greater intelligence.

Our ethos will always be to value your money as if it is our own, and this is why we philosophically invest alongside our clients. This ensures that we are all in the same boat and that the intrinsic value of our businesses, our clients' well-being, and our own well-being are interdependent.

Each of us at Founders Capital Management remains grateful for your business and faith in our stewardship. We can't thank you enough for the opportunity to serve you and for your continued trust. We look forward to working on your behalf during 2018.

The examples and descriptions of investments in this client letter do not represent all of the investments purchased, sold, or recommended by Founders and instead represent:

1. *the 10 largest equity positions held by Founders' clients;*
2. *the two largest equity positions in each industry group to which Founders has allocated capital; and*
3. *all equity positions that account for 3% or more of the total funds allocated by Founders to equity holdings.*

The performance of these investments was not a criterion in determining the representative list. It should not be assumed that the investments identified and discussed were or will be profitable.

The views expressed in this report represent the opinion and analysis of Founders Capital Management based on data available from public sources at the time of writing. This report is not intended to provide any recommendations with respect to the purchase and/or sale of any specific security. It is recommended that individuals conduct their own research or consult with an investment advisor prior to making any investment decisions.

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Investing for the Long Term. Every Day.