In 2013, worldwide spending on prescription drugs exceeded $717 billion, with the top 10 best-selling drugs accounting for $75 billion. The Pharma industry is an important driver of the global economy, and we believe we have identified several companies within this industry that are particularly attractive investment opportunities over our investment horizon. We will discuss: 1) the investment process we used to establish overweight positions in the Pharma industry across the Dodge & Cox equity funds; 2) the pillars of our current Pharma investment thesis, and; 3) our valuation framework for analyzing such companies.

**EXECUTIVE SUMMARY**

The Pharmaceutical (Pharma) industry has long been a significant engine of the global economy. Throughout the 1990s, Pharma industry valuations were high due to expected industry growth, robust profitability, and overall optimism about scientific advancements. However, by the turn of the millennium, positive sentiment was decreasing in light of tougher FDA approval standards, health care cost scrutiny, and reduced research and development (R&D) productivity. By 2009, valuations plummeted to historically low levels as investors appeared to be questioning the viability of the traditional “Large Pharma” business model.

Through our bottom-up research process, we started to build conviction that this out-of-favor industry was going through a difficult cycle as opposed to a terminal decline. We performed extensive due diligence and identified several Pharma companies that we believed were undervalued. By 2012, we had accumulated a significant overweight position in the industry across the Dodge & Cox equity funds.\(^{(a)}\)

While we reduced the Funds’ relative weightings recently in light of higher valuations, they remain overweight the industry compared to their respective benchmarks. Looking ahead, we believe the Funds’ Pharma holdings stand to benefit from three key investment drivers—increased R&D productivity, growth opportunities in emerging markets, and durable business franchises—over our three- to five-year investment horizon. At current valuations, we remain enthusiastic long-term shareholders of companies in this industry.

In 2013, worldwide spending on prescription drugs exceeded $717 billion, with the top 10 best-selling drugs accounting for $75 billion. The Pharma industry is an important driver of the global economy, and we believe we have identified several companies within this industry that are particularly attractive investment opportunities over our investment horizon. We will discuss: 1) the investment process we used to establish overweight positions in the Pharma industry across the Dodge & Cox equity funds; 2) the pillars of our current Pharma investment thesis, and; 3) our valuation framework for analyzing such companies.

**OVERVIEW OF DODGE & COX’S INVESTMENT APPROACH**

Dodge & Cox has operated with the same investment philosophy for over 80 years: we seek to identify well-established companies that have attractive long-term earnings and cash flow prospects not reflected in the current valuation. To select investments, we employ a consistent and disciplined approach that focuses on intensive bottom-up research, a long-term investment horizon, and a strict price discipline. Our valuation framework (discussed later) is an essential element of our investment strategy.

Investment risks and opportunities are evaluated on a company-by-company basis with each Fund’s sector and industry positioning a result of our individual security selection. As part of our decision-making process, we also consider external factors, such as industry trends, regulations, and geopolitical risk. To a greater extent than in many industries, such outside influences have an impact on Pharma companies’ results and long-term prospects.

**PHARMA INDUSTRY EVOLUTION & OUR POSITIONING**

During the 1990s, Pharma industry valuations were high, reflecting significant optimism about the industry’s growth prospects. While the supply of capital for R&D projects was scarce, there was an abundance of R&D projects for companies to invest in, given the substantial unmet medical needs in primary care settings (e.g., high cholesterol, hypertension, depression, heartburn). Such favorable supply and demand dynamics yielded high returns for Pharma companies, which led them to expand discretionary investment in R&D. High valuations reflected the market’s optimism about advances in basic science and the persistence of high returns on R&D. Given these lofty expectations and valuations, the Dodge & Cox portfolios had little exposure to the industry.

\(^{(a)}\)The Dodge & Cox equity funds include the Stock Fund, International Stock Fund, and Global Stock Fund.
Starting in 2000, consensus growth expectations for the overall industry began to decrease in light of tougher FDA approval standards, greater scrutiny of health care costs, and declines in R&D productivity. Industry concerns accelerated in 2004 due to the recall of Vioxx and the looming “patent cliff”—the potential for sharp declines in sales and profits when blockbuster drugs go off patent. The patent expiry of old drugs and R&D’s inability to produce new drugs led to lower valuations as investors became more pessimistic about Pharma companies’ future profits. The consensus appeared to be questioning the viability of the “Large Pharma” business model.

Through our bottom-up research process, we started to build conviction that this out-of-favor industry was going through a difficult cycle, not a terminal decline. To understand the downside risk, we performed extensive due diligence, including multiple trips to Washington, DC to better understand health care reform, meetings with commercial payers about reimbursement, and interviews with scientists, doctors, and consultants to understand R&D productivity and the FDA approval process. Since emerging markets were growing in importance, we also traveled to various developing countries to assess the expanding opportunities as well as risks, including pricing erosion and intellectual property theft. Throughout this process, we were seeking to ascertain whether valuations were likely to go lower.

After investigating the risks, we analyzed each company’s stock valuation in relation to its expected cash flows. While great uncertainty surrounds what individual drugs can be worth, we knew how long current drugs had until patent expiration and performed a discounted cash flow analysis to determine what we were implicitly paying for future cash flow. With starting valuations of 8 to 10 times forward earnings, we believed the Funds were not paying for future growth.

We concluded that long-term investors would likely be rewarded, as these companies were using their considerable cash flows for dividends and buybacks. As is sometimes the case when we invest in companies under duress, we began investing before the trough. R&D spending continued to climb, productivity continued to decline, and valuations continued to fall. As prices trended lower, we asked ourselves, “Are the long-term fundamentals intact, or has something significantly changed?” Convinced that our fundamental thesis was still intact, we slowly increased our investments in the industry. By 2012, we had accumulated a significant overweight position—for example, 17% of the Dodge & Cox Stock Fund in Pharma versus 6% of the S&P 500.

Our Current Pharma Positioning
Pharma R&D spending has since leveled off and, more recently, many of the aforementioned industry-wide concerns have been addressed. While valuations have recovered from historic lows, relative free cash flow yields are still attractive, and the Funds are invested in Pharma companies with pipelines that are moderately priced relative to the capital invested. While we reduced the Funds’ relative weightings recently in light of higher valuations, the Dodge & Cox equity funds remain overweight(b) the Pharma industry compared to their respective benchmarks:

![Fund & Index Pharma Weights as of September 30, 2014](image-url)

Source: Dodge & Cox, MSCI, Standard & Poor’s.

(b) Unless otherwise specified, all weightings and characteristics are as of September 30, 2014.
KEY PILLARS OF OUR PHARMA INVESTMENT THESIS

Looking ahead, we believe the Funds’ Pharma holdings stand to benefit from increased R&D productivity, growth opportunities in emerging markets, and the strength of their durable business franchises.

Pillar 1: Increased R&D Productivity

Driven by scientific advances and a better understanding of underlying disease biology, overall industry R&D pipelines have become larger, starting first with early stage Phase I R&D assets, and more recently, the later-stage Phase III pipeline drugs. New drug approvals, which had declined significantly during the last decade, are also on the upswing. Perhaps more importantly, based on our discussions with scientists and physicians, we believe R&D pipelines also have become more innovative, building on the scientific advances of the past two decades. There have been breakthroughs in drug development across multiple disease areas—cancer and hepatitis C being two of the most prominent.

As pipelines have grown and approvals have increased, the level of R&D investment has flattened over the past few years after a long period of rapid growth. In combination, these two industry trends have yielded an overall improvement in R&D productivity. While investors often view Pharma company stocks as "defensive" because demand for their products is stable, we believe the possibility of incremental returns from R&D success gives investors a much greater potential upside than is typically found in “defensive” investments. As a result of our bottom-up research process, the Funds are invested in individual Pharma companies that have moderate valuations and pipelines with attractive growth prospects.

Novartis has steadily invested in R&D to build a high-quality business with robust growth prospects. Its research team has been successful due to its stable leadership, steady funding, innovative “follow-the-disease pathway” philosophy, and close academic ties. While the company continues to face headwinds from patent expirations, Novartis has a less severe patent cliff than many of its peers. We believe the company can cushion patent losses with growth from recently approved products and those that are expected to be approved over the next five years. The company’s current pipeline offers promising opportunities to increase the business’ earnings and cash flow generation potential over our investment horizon. In our opinion, these factors—combined with Novartis’ financial strength, diverse cash flows, and reasonable valuation—make the company an attractive investment opportunity.

The use of specific examples does not imply that they are more attractive investments than other holdings in the Dodge & Cox equity funds.
**Pillar 2: Emerging Market Growth Opportunities**

Within the developing world, consumers' growing purchasing power and governments' rising support of health care are giving many individuals access to Western-style medicines for the first time. The correlation between per capita drug spending and per capita GDP is quite strong, as consumers and governments have demonstrated a tendency to spend more on health care as consumer purchasing power increases. In fact, as GDP growth leads to higher disposable incomes and personal wealth, expenditures on health care and drugs tend to increase at a disproportionately higher rate.

Per capita spending on drugs has grown recently across emerging markets, but is still low compared to developed markets. Many Pharma companies have invested in distributing to emerging market countries with large and growing middle-class populations (e.g., China, Brazil, India, Mexico, South Korea). For Pharma companies with sales exposure to the developing world, we believe there is strong potential for above-average revenue growth over the next decade. This pool of patients could present a meaningful opportunity for the Pharma companies held by the Dodge & Cox equity funds as our holdings derive approximately 20 to 40 percent of their revenues from emerging markets. These businesses also have attractive profit margins and high returns on capital.

**Healthcare Spending as a % of GDP vs. GDP per Capita**

Sanofi, a French multinational firm, has operations in over 100 countries and is the largest Pharma company serving emerging markets, with approximately $15 billion in 2013 sales (33% of total company sales) coming from this high growth area. Within the developing world, Sanofi strategically offers a diversified product portfolio (adapted to local needs) with enhanced offerings of generics and consumer healthcare products. While investing in emerging markets has risks (that may include a lack of effective intellectual property protection or enforcement, and unfavorable movements in local exchange rates), we believe the opportunities—coupled with Sanofi's financial strength, valuation, and diversified product portfolio—outweigh the risks.

**Pillar 3: Durable Business Franchises**

There are a limited number of companies around the globe that can integrate three core competencies—the funding of early-stage drug assets, the development of drugs, and the global commercialization of drugs. This integration creates significant barriers to entry. Their capabilities are built on the foundation of tremendous financial strength and a specialized skill set. In addition, these companies have strong balance sheets and generate high cash flow. Their considerable financial strength enables them to fund drug development on a large scale, an undertaking that is capital intensive, lengthy, and uncertain, yet can generate high returns on capital. We believe these fundamental characteristics create durable business franchises.

Every investment has risks; we believe the industry's prominent challenges include potential regulatory changes, the risk of value-destructive M&A activity, and increased pricing pressures from both private payers in the United States and government payers outside the United States. In addition, drug development is a long cycle business, so it may take longer than our three- to five-year investment horizon for these companies to earn returns on current R&D investment. To stay...
**OUR VALUATION FRAMEWORK FOR EVALUATING PHARMA COMPANIES**

At Dodge & Cox, we constantly weigh what we are buying (company fundamentals) against what we are paying (current valuation) for each investment opportunity. Price discipline is critical because investment returns hinge on the initial purchase price. A “good” company is not always a good investment if the current valuation is too high. We seek to invest in companies where the current valuation reflects concerns about future earnings and cash flow prospects, while our analysis reveals the possibility of more positive developments. The companies we invest in typically trade at average to below-average valuations on a variety of measures, including price-to-earnings, price-to-sales, and multiples of cash flow, asset value, and book value. We do not rely on any one measure, but instead consider various measures and their relevance to each investment opportunity.

As a component of our individual security analysis, we assess each company’s financial staying power, growth potential, management team (strength and depth), operational capabilities, and corporate governance structure to attempt to identify potential risks to its business model and our financial projections. In particular, we spend considerable time seeking to understand each company’s earning power over our long-term investment horizon.

**Our Methodology**

Pharma companies routinely face patent expirations. To mitigate this threat, companies have a portfolio of products and seek to develop innovative new drugs; yet, the size and timing of any R&D pipeline successes are difficult to predict. Therefore, we view pharmaceuticals as a business with recurring revenues and profits from existing products, coupled with uncertain growth from new drug development. Accordingly, in addition to using standard valuation metrics, we also incorporate discounted cash flow analysis into our Pharma valuation framework. We look beyond each company’s reported profits to understand the firm’s profits before discretionary investment.

In a typical Pharma company (Pharma Co), investors essentially own a liquidation portfolio (Old Co) and a venture capital portfolio (New Co). Old Co harvests the cash from historical discoveries and generates abundant cash flow, while New Co takes some portion of those proceeds from old discoveries and invests them in what will hopefully be the next generation of products and growth for the company. Due to this high level of discretionary investment, Pharma Co generates less current profit than Old Co. At the Pharma Co level, the Funds’ Pharma holdings have moderate valuations after absorbing the costs of New Co.

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**Merck**

The second-largest U.S. Pharma company based on 2013 sales, is an example of a financially strong franchise that has a long track record of attracting top scientific talent and delivering best-in-class drugs. Over the next five years, growth from the company’s core products (e.g., Januvia, Gardasil) and late-stage pipeline assets is expected to largely offset losses from the patent expiries of Zetia and Vytorin. Management has restructured to enhance profitability, and we believe there are additional cost reduction opportunities that could further boost earnings. Merck trades at a moderate valuation relative to its cash flow generation, and has an attractive risk/reward profile.
**CASE STUDY: ROCHE HOLDINGS**

**An Example of Patience and Persistence**

A Swiss-domiciled Pharma company focused on biologics and diagnostics, Roche was valued at a premium to its peers and the overall market for most of the past 20 years. The company's first mover advantage and meaningful exposure to the oncology drug market—with its superior growth, payers' reduced price sensitivity, and heterogeneity of disease—has helped Roche grow sales at an above-average rate. While Roche was a great company, its valuation kept us from thinking it was a great investment before 2009. Between January 2007 and April 2009, Roche's share price declined from CHF 240 to CHF 150 and its valuation fell from five times sales to three times, and we began to view Roche as a strong investment opportunity.

When Roche decided to purchase the remaining outstanding shares of Genentech in February 2009, investors questioned the valuation, timing, and potential loss of R&D acumen at Genentech. We thought Roche's prodigious cash flows could service the increased debt load, and the R&D disruption was likely to be lower than expected because of Roche's long-standing control of Genentech. We also saw potential benefits, including cost savings from the merger and sales force leverage. While Roche's valuation was at a small premium to the Funds' other Pharma holdings, it was still quite reasonable in light of the quality of the franchise, and we started a position in April 2009.

After our initial purchase, Roche's valuation declined further as investors grew increasingly concerned about industry patent cliffs, R&D spending, and Genentech's contribution to Roche's growth. We reassessed our investment thesis and decided to add to the position. We were encouraged by Roche's productive R&D effort, which was enhanced by Genentech's prowess and culture, and believed the possibility of growth through innovation remained strong. Management also embarked on a significant cost-cutting program, which drove meaningful earnings growth. Moreover, cash flows proved to be robust, and Roche reduced its debt at a rapid pace.

Despite its initial decline, Roche's share price has significantly increased since our original investment, contributing to long-term investment returns for each of the Dodge & Cox equity funds. We continue to believe Roche is an attractive investment opportunity due to its reasonable valuation using our framework. We think the company's fundamentals are solid due to its strong R&D pipeline that appears to be well-balanced between potential new products and additional indications for existing products, limited patent exposure, financial strength, and management team. In addition, we believe there is a case for upside potential, including margin expansion from sales growth on a fixed cost base and new product development.

However, Roche's dependence on the oncology market is a risk worth noting: approximately two thirds of Roche's drug revenues come from oncology products, and technological innovation or changes to insurance reimbursement in this field could negatively impact the company's revenues. In addition, competition for biologic drugs from generic companies could be more severe than currently anticipated. We believe the opportunities outweigh the risks, and thus Roche was one of the ten largest holdings in the Stock Fund, Global Stock Fund, and International Stock Fund as of September 30, 2014.

**IN CLOSING**

Each Fund's overweight position in the Pharma industry is a result of our individual stock selection process. Over our three- to five-year investment horizon, we believe the Funds' Pharma holdings stand to benefit from increased R&D productivity, emerging market growth opportunities, and durable business franchises. At current valuations, we remain enthusiastic long-term shareholders in this area of the market.

October 31, 2014

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**Steven Voorhis joined Dodge & Cox in 1996. He is a member of both the Investment Policy Committee and the Global Stock Investment Policy Committee, the Head of the Health Care & Consumer Sector Committee, and a Global Industry Analyst. Mr. Voorhis received his B.A. and M.A. degrees from Stanford University in 1992 and his M.B.A from the Harvard Business School in 1996. He is a Vice President and shareholder of the firm.**

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