JANUARY 2020

# Quarterly Newsletter

## IN THIS ISSUE



## EVENTS

Epoch's Co-Chief Investment Officers Bill Priest and David Pearl lead our quarterly webinar where they discuss:

- **U.S. Outlook for 2020:** Fading concerns, modest returns
- **Get Brexit Done:** The transition negotiations now begin in earnest
- **Globalization in Reverse:** Implications for margins and sectors

**Wednesday, January 22, 2020**
Replay and presentation available on
*www.eipny.com*


## Spotlight — *Investment Data in Emerging Markets*

*A conversation with Lilian Quah, CFA — Managing Director, Portfolio Manager and Head of Quantitative Research*

**QUESTION.** *How has the availability of data on emerging market companies changed over the years?*

**ANSWER.** Contrary to popular belief, the availability of financial statement data for emerging market companies is quite good and has been for some time. In fact, 20 years of high-quality reported financial data for companies in our emerging market investable universe is readily available. For Epoch specifically the majority of the measures used in our Core Model (our proprietary stock selection model) have coverage of around 80% to 90% throughout this period.

*Article continued on page 3*

## Quarterly Investment Update — *2020 Outlook: Fading Concerns, Modest Returns*

*By William W. Priest, CFA — CEO, Co-CIO and Portfolio Manager*

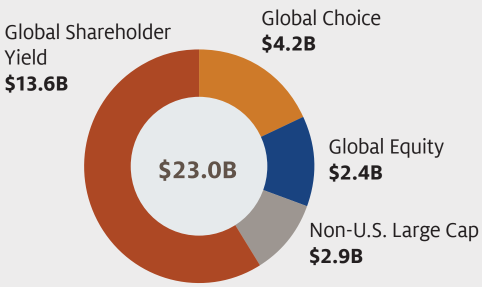
Last year the S&P 500 rose by a stellar 28.9%, with the lion's share of this return being directly attributable to the Powell pivot (which included three late-cycle rate cuts and a dramatic increase in the size of the Fed's balance sheet). Moreover, the two darkest clouds hanging over markets at the beginning of 2019 now appear less foreboding. Fears of the trade war escalating were at least partially assuaged by the Phase 1 deal, while the risk of a hard Brexit was greatly reduced when PM Boris Johnson led his Conservatives to a sizable majority in the December election.

*Article continued on page 4*

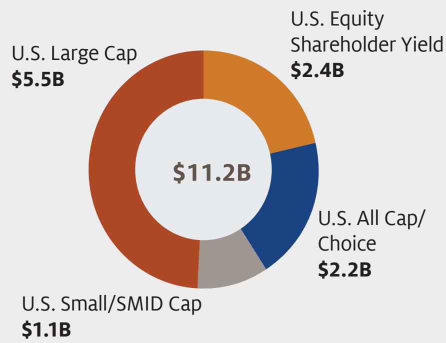
# Firm Update

## ASSETS UNDER MANAGEMENT $34.2B *As of December 31, 2019 in U.S. Dollars*

### GLOBAL STRATEGIES




### U.S. STRATEGIES




*Totals may not add due to rounding.*

## HAVE YOU HEARD?

Actively Speaking

In 2019, Epoch launched its Actively Speaking podcast where we discuss a broad range of investment-related topics. The podcast is the latest step in our commitment to generating and sharing thought leadership with our clients and partners. Among the topics covered by host Steve Bleiberg and his guests in 2019 were:

***Actively Speaking* is available on:**

Apple Podcast
Click to Listen

Google Play
Click to Listen

Spotify
Click to Listen

Epoch's Website
Click to Listen

### *Cold War 2.0*

While the recent trade negotiations between the U.S. and China produced a welcomed truce, it should be quite apparent that this is so much more than a trade war.

*With CEO and Co-CIO Bill Priest*

### *The State of ESG*

ESG factor consideration has grown substantially over the past decade. We discuss ESG's growing influence on investing and the various hurdles it faces in achieving market standardization.

*With Head of Sustainable Investment Richard Watt*

### *The Role of a CIO*

What does a chief investment officer actually do? What's the difference between a portfolio manager and a CIO?

*With TD Asset Management CEO (and former CIO) Bruce Cooper*

### *Cutting the Cord*

As more people say goodbye to their cable company, established players and big, new entrants are looking to transform how we consume media.

*With Co-CIO and Portfolio Manager David Pearl*

### *Behavioral Finance*

From anchoring to mental accounting, host Steve Bleiberg does a deep dive into some of the behavioral biases investors should be aware of.

### *Negative Interest Rates*

Negative interest rates have been a distinguishing feature of the Japanese economy and many European economies for some years now, but how did we get here? Who would buy a bond with a negative yield?

*With Senior Research Analyst Nikolay Petrakov*

### *What Do We Mean When We Talk About Value?*

Dividing the market up into "value stocks" and "growth stocks" has long been common practice in the investment world. But what do these labels really mean? What is value?

### *An Active Manager's Report Card*

We explore the fundamentals of the Sharpe ratio, information ratio and active share how to use them when evaluating active managers.

*With Product Manager Wayne Lin*

### *Blitzscale and Hope*

The current hype about two-sided digital platforms has caused a surge in IPO listings. We look at their share class structures and the potential for regulation in the tech sector.

*With Global Strategist Kevin Hebner*

### *The Future of Autonomous Vehicles*

Who are the likely winners in the space and what are the externalities this revolutionary technology could have on other industries and infrastructure?

*With Research Analyst Jérôme Van Der Ghinst*

### *The Limits of Theory*

Modern Portfolio Theory (MPT) dominates investment thinking today, but the pre-MPT view of the world still holds valuable insights. Steve Bleiberg discusses the limits of MPT in aiding successful investing.

### *Winning at Active Management*

We discuss the essential roles that culture, philosophy and technology play in active investment management.

*With CEO and Co-CIO Bill Priest*

Measures which rely on forward-looking estimates — e.g., broker forecasts of cash flows one year out or revisions to earnings estimates — are a bit more difficult to obtain, at least relative to most developed market companies. Over the last 10 years, this data is available for about half of the companies in our emerging markets universe; better than coverage for Japanese companies, but worse than that for European companies.

**QUESTION.** *Has the reliability of the data improved over time?*

**ANSWER.** Yes, over the past two decades, accounting standards in emerging market countries have converged toward International Financial Reporting Standards (IFRS), improving both the reliability and comparability of accounting data in these markets. Of course, there is still room for improvement. For example, fair value measurements of assets may be more difficult if there are few competent and reputable professional valuers and accountants in a country. Over time, we believe these challenges will get resolved as financial markets — and the institutional structures supporting them — deepen in these countries.

It is difficult to put a number on just how much better financial data has become over time, but I think we can assume that a purely systematic approach that relies on good quality data is easier to implement today than it would have been 25 years ago. Of course, we believe in thoroughly validating the data and complementing the reported numbers with deep fundamental research. This is why we use a hybrid approach to manage the strategy, an approach that blends the best aspects of our quantitative and fundamental research capabilities.

**QUESTION.** *Is the data interpreted or treated differently in distinct countries?*

**ANSWER.** I personally do not believe so. As mentioned, international accounting standards have converged over time, making it much easier to compare companies across countries. In addition, investor expectations for what constitutes corporate success and good corporate governance seem to be converging to developed market norms. This effect is likely driven by the expansion and globalization of the investor base for emerging market companies. Global institutional investors tend to bring a similar lens through which they view companies. They also tend to demand — through their proxy votes and/or direct interactions with company management teams — a certain level of disclosure and accountability.

**QUESTION.** *Emerging market companies typically have less sell-side analyst coverage. Does this impact the availability of data?*

**ANSWER.** Many publicly listed, emerging market companies are actually quite large — Chinese internet giant Alibaba is among the largest companies in the world and four of the top-10 largest banks in the world are Chinese — so not all companies lack sell-side coverage. There are, however, some companies that have insufficient or simply no sell-side analyst coverage. For those companies, you are not going to get very good consensus forecasts of earnings and cash flows. Practically, this means that we cannot use measures that rely on broker forecasts.

On the bright side, the lack of sell-side coverage suggests that a company may be less well-understood and potentially under-appreciated by the market. Active management is more likely to add value in these situations.

**QUESTION.** *Do asset managers need different data models to evaluate emerging market countries than they do for DM countries?*

**ANSWER.** The models don't necessarily have to differ, but comparisons should. For consistency and simplicity, we have chosen to use the same framework to evaluate all companies in our global all-cap, all-country investable universe. This does not mean that we are comparing apples to oranges, however. Each company in our universe is evaluated versus its relevant peer group, which is typically the set of companies within its industry group and region (or in the case of globalized industries, such as energy and semiconductors, the set of companies within its industry group). Narrowing the comparison set to companies in the same region means that emerging market companies are considered separately from developed market companies. For example, Brazilian oil company Petrobras is compared to other emerging market energy companies, such as Saudi Aramco and China Petrochem, but not to developed market energy players, such as Royal Dutch Shell and Exxon.

I believe the more critical differences between companies stem from issues with the accounting treatment of certain economic activities and to sector differences. We have spent a considerable amount of time, thought and effort to address these differences in our Core Model. However, this is a topic for another conversation.

**QUESTION.** *As you enter your strategy's third year, what excites you about the data coming from the emerging markets?*

**ANSWER.** The short answer is that there is more and more of it. The amount of data being generated today is rather mind-boggling and not limited to developed markets. Moreover, it takes a lot of skill and expertise to extract high-quality insights from these new data sources. To me, this is both a challenge and an opportunity. I believe a key driver of success as an active manager is the ability to efficiently process and extract value from data. Data-driven decisions tend be higher quality, more repeatable and more successful. We are working hard to evolve our infrastructure, tools and skills to make sure that we are well-positioned to take advantage of this trend.

*Lilian is a portfolio manager, the head of quantitative research, and a member of the Quantitative Research and Risk Management team. Prior to joining Epoch in 2013, she spent five years at AllianceBernstein, where she was a senior quantitative analyst in the Value Equities Group. Before Bernstein, Lilian was a senior consultant in the finance practice at the ERS Group, an economics consulting firm. Lilian has a BA in Economics from Wellesley College and a Masters in Economics from Stanford University. Lilian is a CFA charterholder.*

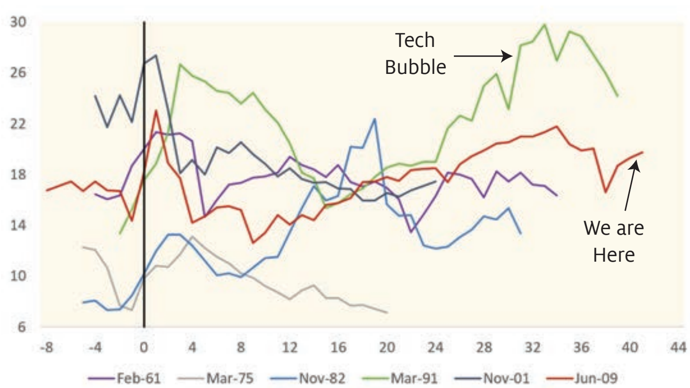
Fading concerns are certainly good news for equity markets. However, global policy uncertainty remains close to a record high, signaling there is still plenty to fret about. Recently, November's election has moved to the top of investors' list of worries. A second risk is the record levels of corporate debt (as a percentage of GDP), which is especially troublesome given that BBB bond spreads are close to all-time tights, at that same time that economy wide (NIPA) profits have scarcely grown over the last five years. Also top-of-mind is the massive buildup of leverage that is occurring in China; although our confidence interval regarding when this particular bubble is most likely to finally pop is extremely wide.

Where does that leave our return expectations for 2020? We believe moderate returns are most likely, a view that is predicated on two assumptions. First, margins are unlikely to increase this year, reflecting deglobalization and rising labor costs. This means a mid-single-digit increase in earnings, in the 4% to 6% range, roughly in line with top-line growth. As usual, EPS will be a bit stronger, reflecting a buyback yield of 2.5% to 3.0%.

Second, we expect PE multiples will be flat to slightly up (although we believe the balance of risks lie to the downside). Last year's outsized equity gains were almost entirely due to multiple expansion, reflecting the Powell pivot, historically low 10-year yields and the dissipation of the market's two main concerns. However, the PE multiple is already the highest seen during any cycle except the late-1990s (Figure 1) and, moreover, the S&P's free-cash-flow yield is already at its lowest level since early 2008. For these reasons, we believe further multiple expansion seems unlikely. Given that, plus a probable dividend yield of just under 2%, produces an expected total return on the S&P in the high single digits.

**FIGURE 1: S&P 500 T12M PE(X)**

*Equity multiples were higher once, during the late-1990s tech bubble, and are unlikely to expand much further in 2020.*

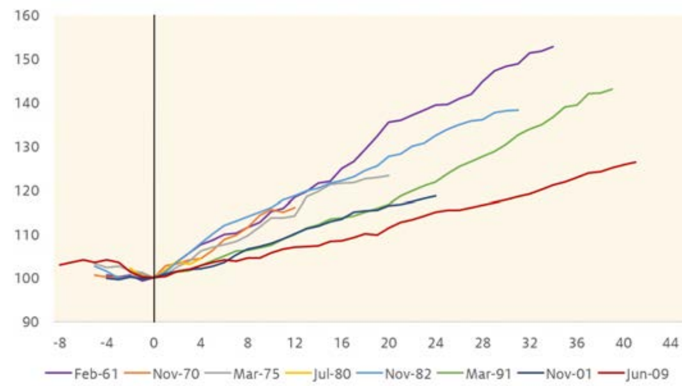



*Source: Epoch Investment Partners, Bloomberg. Note: This chart shows SPX T12M PE (x) for six of the last eight expansions. Date 0 denotes the beginning of recovery, with time measured in quarters*

That explains our base-case view, but what about tail risks, particularly the possibility of a recession? Many investors argue a recession seems long overdue, emphasizing that this is the longest recovery ever experienced in the U.S., and the 2010s was the first decade in history that was not blighted by a recession (Figure 2).

**FIGURE 2: U.S. REAL GDP**

*This is the longest, flattest, recovery ever. Late cycle doesn't necessarily mean end of cycle — recoveries don't just die of old age.*




*Source: Epoch Investment Partners, Bloomberg. Note: This chart shows the last eight expansions, with date 0 denoting the beginning of recovery, indexed to 100, with time measured in quarters*

While we have a lot of sympathy with this view, it does suffer from one key flaw. Monetary policy is currently extremely loose, while all seven recessions that have occurred since 1960 featured tighter monetary policy. This is true whether the underlying cause was a bubble bursting (tech in the 1990s, housing in 2000s), an exogenous shock (OPEC in 1973) or rising inflation (as in the other four instances). Today, not only is policy not being tightened, but the Fed cut rates three times last year and in September commenced with what looks an awful lot like QE4.

Relative to economic conditions, one can reasonably argue that today's is the most dovish Fed ever (Figure 3). Moreover, rate hikes for the remainder of 2020 seem improbable, both because downside risks still prevail (by the Fed's own admission) and because inflation is unlikely to become an issue. Additionally, if there is no serious inflation threat and the Fed is actively debating the opportunity to "make up" for past low inflation by tolerating higher inflation for a while, then raising rates this year doesn't make much sense. This logic suggests that the liquidity tightening that has always preceded recessions is simply not in the cards for 2020 (and possibly well beyond).

## FIGURE 3: FEDERAL RESERVE FUNDS RATE (%)

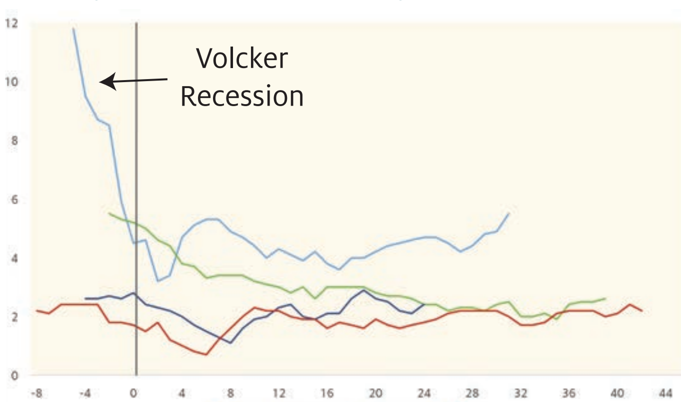
*The most dovish Fed ever. Rate cuts late cycle are unusual enough, but the Fed has never before cut when the unemployment rate is 3.5%.*


*Source: Epoch Investment Partners, Bloomberg. Note: This chart shows the FFR (%) for six of the last eight expansions. Date 0 denotes the beginning of recovery, with time measured in quarters*

What has allowed the Fed to adopt such a relaxed policy stance when we're already into the late innings of this game? The key factor is that inflation has been so well-behaved (Figure 4), even as the output gap has closed and the unemployment rate has plummeted to its lowest level since the '60s. We believe inflation has remained benign due to three structural shifts: first, the impact of the early-1980s Volcker recession on Fed credibility and stable inflation expectations; second, the deflationary impact of bits versus atoms in the digital economy; and finally, the pickup in globalization, best represented by China joining the WTO in 2001. While deglobalization, unfortunately, is a new reality, the first two factors remain firmly in place, leaving us confident that U.S. inflation will remain well-moored even as the economy continues to chug along.

## FIGURE 4: CORE CPI (YOY, %)

*Unlearning ECO 101. Inflation has been MIA since the 1990s, coinciding with the acceleration in both globalization and tech.*




*Source: Epoch Investment Partners, Bloomberg. Note: This chart shows core CPI (yoy, %) for the last four expansions. Date 0 denotes the beginning of recovery, with time measured in quarters*

Given this backdrop, we believe investors will continue to face a world of yield starvation. While bond yields have been driven lower by demographic challenges and hyper aggressive central banks, dividends and buybacks remain robust, partially reflecting a capital-lite world. Consequently, the yield available from equities can be far superior to that available in fixed income markets.

Finally, as a result of the above points, we believe it is ever more important to favor companies with a demonstrated ability to produce free cash flow and allocate that cash flow wisely between return of capital options and reinvestment/acquisition opportunities.

# Epoch and Its Employees Are Proud to Support:

Throughout the year, Epoch's Charitable Giving Committee coordinates opportunities for our employees to volunteer their time and money to give back to our community.

**Gift Drive**

sanctuaryforfamilies.org

Sanctuary for Families is dedicated to the safety, healing and self-determination of victims of domestic violence and related forms of gender violence. Epoch employees donated gift cards and other small gifts for survivors of domestic violence, sex trafficking and gender violence in need during the holidays.

**Coat Drive**

newyorkcares.org

New York Cares, the largest volunteer organization in New York, meets pressing community needs by mobilizing caring New Yorkers in volunteer service. Epoch employees participated in the organization's annual coat drive, which aims to collect over 100,000 coats each year and distribute them to New Yorkers who need them most in the colder months.

**Operation Backpack**

voa-gny.org

Volunteers of America is dedicated to helping individuals and families in need through social service programs. Epoch employees participated in Operation Backpack, which provides new, top-quality backpacks filled with grade-specific supplies to any child living in a New York City homeless or domestic violence shelter who needs one.

**Matching Gift Program**

Epoch matches employee donations to eligible organizations of their choice. These organizations can include nonprofit charitable health care, educational, civic and cultural organizations.

## Epoch is honored to make additional donations to:

| | | |
|---|---|---|
| **Chosen by the Charitable Giving Committee** | The New York Times Neediest Cases Fund | Each year, the Neediest Cases Fund holds a fundraising campaign during the holiday season, with stories in The New York Times describing the travails of families and individuals in distress. The Neediest Cases Fund then distributes the funds from the campaign to eight organizations that serve New York and beyond. www.nytimes.com/column/neediest-cases |
| **Chosen by Vote of Epoch's Employees** | City Harvest | The world's first food rescue organization, dedicated to feeding the city's hungry men, women and children. City Harvest collects excess food from all segments of the food industry and delivers it free of charge to some 400 community food programs throughout New York City, helping feed more than one million New Yorkers that face hunger each year. https://www.cityharvest.org/ |
| | Sanctuary for Families | Dedicated to the safety, healing and self-determination of victims of domestic violence and related forms of gender violence. Through comprehensive services for their clients and their clients' children, and through outreach, education and advocacy, we strive to create a world in which freedom from gender violence is a basic human right. www.sanctuaryforfamilies.org |
| | Partnership with Children | Works to strengthen the emotional, social and academic skills of at-risk children to help them succeed in school, society and life. Partnership with Children provides trauma-informed counseling, crisis intervention, schoolwide services, and family and community outreach to New York City's public school students who are at the highest risk of academic failure and dropout. www.partnershipwithchildren.org |
| | charity: water | Nonprofit organization that provides drinking water to people in developing nations. Through organizations with years of experience in building sustainable, community-owned water projects, it funds water programs in 28 countries in Africa, Asia and Central and South America. www.charitywater.org/ |

# Epoch in the News: 2019 Year in Review

## DECEMBER


***Barron's***
Bill Priest discussed how, while the trade truce between the U.S. and China is welcomed, the conflict is bigger than trade. Read

## NOVEMBER

***Reuters***
Kera Van Valen discussed the importance of renewable energy in utilities at the Reuters Global Investment 2019 Outlook Summit. Read

## OCTOBER

***Bloomberg Surveillance***
David Pearl detailed why equities remain attractive relative to fixed income. Watch

## SEPTEMBER


***Funds Europe***
Bill Priest explored the value of subscription economy companies through a free-cash-flow lens. Read

## AUGUST


***Investment Week***
Kevin Hebner delved into the surge in IPOs, particularly unicorns, and the fear of repeating the excesses of the dot-com bubble. Read

## JULY

***Barron's***
Bill priest discussed topics from a looming cold war with China, to his outlook on the health care and global gaming industries.

## JUNE

***Money Talk***
Bill Priest spoke about trade tension and its impact on the economy, plus how tech is contributing to the IPO boom. Part I | Part II

## MAY

***Business Insider***
Kera Van Valen detailed her approach to finding companies with the greatest cash-generating potential. Read

## APRIL

***Money Talk***
John Tobin explored the risks to be mindful of during earnings season and the importance of free cash flow. Watch

## MARCH

***Bloomberg Surveillance***
David Pearl discussed why growth is the secret to free cash flow and the impact of Brexit. Watch

## JANUARY

***Pensions & Investments***
Bill Booth discussed his outlook for equities in 2019. Read

***Barron's***
Bill Priest participated in the Barron's Roundtable, speaking about market quantitative tightening, trade wars, excessive debt and changes for liberal democracies.

# Epoch Insights: 2019 Year in Review


EPOCH

Cold War 2.0:
The Platform, the Players,
and the Stakes

DECEMBER

### Cold War 2.0

The dispute between the U.S. and China is clearly not just about trade, or even technology. At stake are the values that will determine the architecture and governance of the global world order. Read More


EPOCH

The Role of Responsible Investing
in Active Equity Management

OCTOBER

### The Role of Responsible Investing in Active Equity Management

We discuss why Epoch believes that ESG are a useful adjunct to our traditional fundamental research and portfolio construction practices, and a valuable tool for investors generally.
Read More


EPOCH

Blitzscale and Hope:
Unicorns, IPOs and the Fear
of Repeating the Late 1990s

JUNE

### Blitzscale and Hope: Unicorns, IPOs and the Fear of Repeating the Late 1990s

The current hype about two-sided digital platforms, blitzscaling and winner-takes-most markets has fueled a surge in IPO listings and produced stratospheric valuations that are difficult to reconcile with free-cash-flow (FCF) fundamentals. The big question is, are we repeating the excesses of the dot-com boom? In this paper, we look at the reasoning used by those who think history is repeating itself, including IPO supply, profitability and VC funding. We also look at the weaknesses in those arguments and why some believe that the current situation is different from the dot-com bubble, such as median age of tech IPOs and sales growth. Finally, we explore how investors can look at these companies through a free-cash-flow lens. Read More


EPOCH

The P/E Ratio:
A User's Manual

JUNE

### The P/E Ratio: A User's Manual

Does a stock's price and its P/E ratio tell you how much a company is worth? Conventional wisdom says yes, but we think otherwise. In this paper we explore the theory behind the discounted cash flow (DCF) valuation model and the underappreciated role that ROIC plays in the model. We also look at the P/E ratio and find that it does not tell us what most people think it does, nor does its offshoot, the P/E to growth (PEG) ratio. Finally, we discuss how we can use what we have learned about the DCF model to deconstruct P/E ratios in the real world to better understand what they do tell us. Read More


EPOCH

The Size Paradox

JANUARY

### The Size Paradox

There has long been a pervasive belief in the investment world that smaller companies perform better than larger companies and there is a certain logic to the idea. There is one problem, however. Over the 40 years since the inception of the Russell Indices the large-cap index has outperformed the small-cap index. We explore the reasons for this and the implications for investors. Read More

***For our latest Insights, follow Epoch on social media***

**www.linkedin.com/company/epochinvest**

**@epochinvest**

# Epoch's Reading List

Epoch aspires to be a thought leader in the global investment industry and share knowledge with our clients. Our employees read an array of books and publications on a variety of subjects while developing our views. Below are some selected titles we read in 2019.

## POLITICS, TRADE & POLICY

- ***China's Great Wall of Debt: Shadow Banks, Ghost Cities, Massive Loans, and the End of the Chinese Miracle***
by Dinny McMahon
- ***Clashing over Commerce: A History of US Trade Policy***
by Douglas A. Irwin
- ***The Narrow Corridor: States, Societies, and the Fate of Liberty***
by Daron Acemoglu and James A. Robinson
- ***The State Strikes Back: The End of Economic Reform in China?***
by Nicholas R. Lardy
- ***Stealth War: How China Took Over While America's Elite Slept***
by Robert Spalding
- ***Straight Talk on Trade: Ideas for a Sane World Economy***
by Dani Rodrik

## BUSINESS, TECHNOLOGY AND ORGANIZATIONAL THINKING

- ***Alchemy: The Dark Art and Curious Science of Creating Magic in Brands, Business, and Life***
by Rory Sutherland
- ***Big Business: A Love Letter to an American Anti-Hero***
by Tyler Cowen
- ***The Business of Platforms: Strategy in the Age of Digital Competition, Innovation, and Power***
by Michael A. Cusumano, Annabelle Gawer and David B. Yoffie
- ***Range: Why Generalists Triumph in a Specialized World***
by David Epstein
- ***Team of Teams: New Rules of Engagement for a Complex World***
by Gen. Stanley McChrystal with Tantum Collins, David Silverman and Chris Fussell
- ***The Technology Trap: Capital, Labor, and Power in the Age of Automation***
by Carl Benedikt Frey

## ECONOMICS AND FINANCE

- ***Advances in Financial Machine Learning***
by Marcos Lopez de Prado
- ***The Future of Investment Management***
by Ronald H. Kahn
- ***Narrative Economics: How Stories Go Viral and Drive Major Economic Events***
by Robert J. Shiller

## EPOCH LIBRARY

- ***The Financial Reality of Pension Funding Under ERISA***
by Jack L. Treynor, Patrick J. Regan & William W. Priest, CFA
- ***Free Cash Flow and Shareholder Yield: New Priorities for the Global Investor***
by William W. Priest, CFA & Lindsay H. McClelland
- ***Winning at Active Management: The Essential Roles of Culture, Philosophy, and Technology***
by William W. Priest, CFA, Steven D. Bleiberg & Michael A. Welhoelter, CFA, with John Keefe

# Strategy Performance as of December 31, 2019

| U.S. STRATEGIES IN USD | | Annualized Returns | | | | | | | Risk Statistics — Since Inception | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | QTR | YTD | 1 Year | 3 Years | 5 Years | 10 Years | Since Incept. | *Std Dev.* | *Sharpe Ratio* | *Inform. Ratio* | *Alpha* | *Beta* | *$R^2$* |
| **U.S. VALUE** *Inception date:* 7/31/2001 | **Epoch Gross Return** | **9.08** | **32.67** | **32.67** | **13.45** | **9.31** | **12.03** | **8.85** | ***13.67%*** | ***0.55*** | | | | |
| | **Epoch Net Return** | **8.99** | **32.27** | **32.27** | **13.10** | **8.97** | **11.67** | **8.36** | | | | | | |
| | Russell 1000 | 9.04 | 31.43 | 31.43 | 15.05 | 11.48 | 13.54 | 7.83 | *14.32%* | *0.45* | ***0.24*** | ***1.62*** | ***0.91*** | ***0.91*** |
| | Russell 1000 Value | 7.41 | 26.54 | 26.54 | 9.68 | 8.29 | 11.80 | 7.35 | *14.49%* | *0.41* | ***0.28*** | ***2.29*** | ***0.88*** | ***0.87*** |
| | S&P 500 | 9.07 | 31.49 | 31.49 | 15.27 | 11.70 | 13.56 | 7.61 | *14.15%* | *0.44* | ***0.28*** | ***1.79*** | ***0.92*** | ***0.90*** |
| **U.S. ALL CAP VALUE** *Inception date:* 7/31/1994 | **Epoch Gross Return** | **8.07** | **32.65** | **32.65** | **13.91** | **9.83** | **12.83** | **11.91** | ***13.44%*** | ***0.71*** | | | | |
| | **Epoch Net Return** | **7.93** | **31.95** | **31.95** | **13.31** | **9.26** | **12.26** | **11.15** | | | | | | |
| | Russell 3000 | 9.10 | 31.02 | 31.02 | 14.57 | 11.24 | 13.42 | 10.11 | *14.75%* | *0.52* | ***0.28*** | ***3.45*** | ***0.82*** | ***0.81*** |
| | Russell 3000 Value | 7.48 | 26.26 | 26.26 | 9.32 | 8.20 | 11.71 | *9.78* | *14.40%* | *0.51* | ***0.32*** | ***3.61*** | ***0.83*** | ***0.80*** |
| **U.S. SMALL CAP VALUE** *Inception date:* 12/31/2002 | **Epoch Gross Return** | **8.15** | **24.72** | **24.72** | **7.39** | **7.16** | **11.64** | **10.30** | ***16.41%*** | ***0.55*** | | | | |
| | **Epoch Net Return** | **8.08** | **24.33** | **24.33** | **7.01** | **6.76** | **11.20** | **9.67** | | | | | | |
| | Russell 2000 | 9.94 | 25.52 | 25.52 | 8.59 | 8.23 | 11.83 | *10.51* | *18.23%* | *0.50* | ***-0.04*** | ***1.13*** | ***0.86*** | ***0.92*** |
| | Russell 2000 Value | 8.49 | 22.39 | 22.39 | 4.77 | 6.99 | 10.56 | *9.76* | *18.12%* | *0.47* | ***0.09*** | ***1.84*** | ***0.85*** | ***0.89*** |
| **U.S. SMID CAP VALUE** *Inception date:* 8/31/2006 | **Epoch Gross Return** | **7.78** | **25.51** | **25.51** | **7.35** | **7.06** | **11.51** | **8.53** | ***17.26%*** | ***0.43*** | | | | |
| | **Epoch Net Return** | **7.69** | **25.10** | **25.10** | **6.95** | **6.65** | **11.08** | **8.07** | | | | | | |
| | Russell 2500 | 8.54 | 27.77 | 27.77 | 10.33 | 8.93 | 12.58 | *8.85* | *17.85%* | *0.44* | ***-0.09*** | ***0.14*** | ***0.95*** | ***0.96*** |
| | Russell 2500 Value | 7.07 | 23.56 | 23.56 | 6.12 | 7.18 | 11.25 | 7.36 | *17.69%* | *0.36* | ***0.24*** | ***1.56*** | ***0.94*** | ***0.93*** |
| **U.S. CHOICE** *Inception date:* 4/30/2005 | **Epoch Gross Return** | **9.13** | **31.89** | **31.89** | **13.33** | **8.75** | **12.61** | **9.84** | ***15.05%*** | ***0.57*** | | | | |
| | **Epoch Net Return** | **9.08** | **31.62** | **31.62** | **12.98** | **8.37** | **12.23** | **9.39** | | | | | | |
| | Russell 3000 | 9.10 | 31.02 | 31.02 | 14.57 | 11.24 | 13.42 | 9.58 | *14.34%* | *0.58* | ***0.07*** | ***0.22*** | ***1.01*** | ***0.93*** |
| **U.S. EQUITY SHAREHOLDER YIELD** *Inception date:* 6/30/2012 | **Epoch Gross Return** | **4.78** | **25.04** | **25.04** | **12.00** | **9.89** | **-** | **13.20** | ***9.15%*** | ***1.36*** | | | | |
| | **Epoch Net Return** | **4.68** | **24.64** | **24.64** | **11.65** | **9.57** | **-** | **12.84** | | | | | | |
| | Russell 1000 Value | 7.41 | 26.54 | 26.54 | 9.68 | 8.29 | - | 12.51 | *10.90%* | *1.08* | ***0.14*** | ***3.62*** | ***0.75*** | ***0.80*** |
| **U.S. EQUITY CAPITAL REINVESTMENT** *Inception date:* 1/1/2018 | **Epoch Gross Return** | **8.74** | **33.91** | **33.91** | **-** | **-** | **-** | **12.69** | ***15.68%*** | ***0.68*** | | | | |
| | **Epoch Net Return** | **8.58** | **33.11** | **33.11** | **-** | **-** | **-** | **12.02** | | | | | | |
| | Russell 3000 | 9.10 | 31.02 | 31.02 | - | - | - | 11.42 | *14.67%* | *0.64* | ***0.49*** | ***0.64*** | ***1.06*** | ***0.98*** |

## GLOBAL & INTERNATIONAL STRATEGIES IN USD

| Strategy | | QTD | YTD | 1 Year | 3 Years | 5 Years | 10 Years | Since Incept. | Std Dev. | Sharpe Ratio | Inform. Ratio | Alpha | Beta | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Annualized Returns | | | | | | | Risk Statistics — Since Inception | | | | | |
| **GLOBAL EQUITY SHAREHOLDER YIELD** *Inception date:* 12/31/2005 | **Epoch Gross Return** | **6.41** | **21.94** | **21.94** | **9.51** | **6.37** | **9.49** | **8.06** | ***12.09%*** | ***0.57*** | | | | |
| | **Epoch Net Return** | **6.30** | **21.46** | **21.46** | **9.08** | **5.95** | **9.07** | **7.58** | | | | | | |
| | MSCI World (Net) | 8.56 | 27.67 | 27.67 | 12.57 | 8.74 | 9.47 | 6.74 | *14.99%* | *0.37* | ***0.23*** | ***2.76*** | ***0.75*** | ***0.87*** |
| **GLOBAL CHOICE** *Inception date:* 9/30/2005 | **Epoch Gross Return** | **9.03** | **27.45** | **27.45** | **14.96** | **8.62** | **9.79** | **9.50** | ***14.10%*** | ***0.59*** | | | | |
| | **Epoch Net Return** | **8.86** | **26.68** | **26.68** | **14.27** | **7.97** | **9.19** | **8.78** | | | | | | |
| | MSCI World (Net) | 8.56 | 27.67 | 27.67 | 12.57 | 8.74 | 9.47 | 6.85 | *14.90%* | *0.38* | ***0.51*** | ***3.28*** | ***0.89*** | ***0.88*** |
| **GLOBAL EQUITY CAPITAL REINVESTMENT** *Inception date:* 6/30/2013 | **Epoch Gross Return** | **7.77** | **29.63** | **29.63** | **15.25** | **10.46** | **-** | **11.39** | ***11.27%*** | ***0.94*** | | | | |
| | **Epoch Net Return** | **7.64** | **29.09** | **29.09** | **14.78** | **9.92** | **-** | **10.75** | | | | | | |
| | MSCI World (Net) | 8.56 | 27.67 | 27.67 | 12.57 | 8.74 | - | 10.05 | *11.08%* | *0.83* | ***0.45*** | ***1.44*** | ***0.98*** | ***0.93*** |
| **GLOBAL ABSOLUTE RETURN** *Inception date:* 12/31/2001 | **Epoch Gross Return** | **6.27** | **19.99** | **19.99** | **14.67** | **6.64** | **8.81** | **10.10** | ***12.01%*** | ***0.73*** | | | | |
| | **Epoch Net Return** | **6.02** | **18.90** | **18.90** | **13.53** | **5.46** | **7.52** | **8.71** | | | | | | |
| | MSCI World (Net) | 8.56 | 27.67 | 27.67 | 12.57 | 8.74 | 9.47 | 6.93 | *14.64%* | *0.38* | ***0.42*** | ***5.00*** | ***0.70*** | ***0.74*** |
| | BarCap U.S. Aggregate | 0.18 | 8.72 | 8.72 | 4.03 | 3.05 | 3.75 | 4.49 | *3.38%* | *0.94* | ***0.44*** | ***11.73*** | ***-0.17*** | ***0.00*** |
| **EMERGING MARKETS** *Inception date:* 12/31/2017 | **Epoch Gross Return** | **12.94** | **24.13** | **-** | **-** | **-** | **-** | **4.22** | ***15.73%*** | ***0.14*** | | | | |
| | **Epoch Net Return** | **12.80** | **23.59** | **-** | **-** | **-** | **-** | **3.76** | | | | | | |
| | MSCI EM Index (Net) | 11.84 | 18.42 | - | - | - | - | 0.58 | *16.00%* | *-0.09* | ***1.54*** | ***3.63*** | ***0.97*** | ***0.98*** |
| **NON-U.S. EQUITY CHOICE** *Inception date:* 10/1/2015 | **Epoch Gross Return** | **10.16** | **24.85** | **24.85** | **10.92** | **-** | **-** | **8.44** | **12.74%** | **0.57** | | | | |
| | **Epoch Net Return** | 10.05 | 24.34 | 24.34 | 10.45 | - | - | 7.99 | | | | | | |
| | MSCI EAFE (Net) | 8.17 | 22.01 | 22.01 | 9.56 | - | - | 8.07 | 11.68% | 0.59 | **0.11** | **0.00** | **1.06** | **0.93** |



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DISCLOSURES

*1. Presentation of the Firm — Epoch Investment Partners, Inc. is a wholly owned subsidiary of The Toronto Dominion Bank. Epoch Investment Partners, Inc. ("Epoch") became a registered investment adviser under the Investment Advisers Act of 1940 in June 2004. Performance from April 2001 through May 2004 is for Epoch's investment team and accounts while at a prior firm. Performance from July 1994 through March 2001 is for Bill Priest and the accounts while at a different prior firm. For both time periods, Bill or the investment team were the only individuals responsible for selecting the securities to buy and sell. Epoch has the books and records supporting the performance of this track record and will provide these records upon request. Epoch Investment Partners, Inc. claims compliance with the Global Investment Performance Standards (GIPS®)*

*2. Epoch's composites include all tax-exempt and taxable portfolios above $500,000 in size and are generally managed relative to an applicable market index. Results are based on fully discretionary accounts under management, including those accounts no longer with the firm. Where indicated, the changes to benchmarks or composites, noted below, were made to present a more representative and insightful comparison to the investment strategies. Also noted below, are the composite descriptions for each strategy offered at Epoch Investment Partners, Inc.*

| COMPOSITE | CREATION DATE | CURRENT BENCHMARK | COMPOSITE DESCRIPTION |
|---|---|---|---|
| U.S. Value | June 2004 | Russell 1000; Russell 1000 Value; S&P 500 | U.S. Value pursues long-term capital appreciation by investing in 40-60 large capitalization U.S. companies. As fundamental investors with a long-term orientation, we select companies based on their ability to generate free cash flow and allocate it intelligently for the benefit of shareholders. Our bottom-up security selection process is balanced with diversification and risk control measures that should result in below-average portfolio volatility. |
| U.S. All Cap Value | June 2004 | Russell 3000; Russell 3000 Value | U.S. All Cap Value pursues long-term capital appreciation by investing in a portfolio of 50-60 stocks across a broad range of market capitalizations. As fundamental investors with a long-term orientation, we select companies based on their ability to generate free cash flow and allocate it intelligently for the benefit of shareholders. Our bottom-up security selection process is balanced with diversification and risk control measures that should result in below-average portfolio volatility. Effective 7/1/06, the U.S. All Cap Value Composite has been redefined to reflect only those discretionary accounts managed by the All Cap Value Team and following the respective All Cap Value model. As a result, all accounts which are not managed by the All Cap Value Team and have specified client risk preferences have been removed. |
| U.S. Small Cap Value | June 2004 | Russell 2000; Russell 2000 Value | U.S. Small Cap Value pursues long-term capital appreciation by investing in a portfolio of 60-90 small-capitalization U.S. companies. As fundamental investors with a long-term orientation, we select companies based on their ability to generate free cash flow and allocate it intelligently for the benefit of shareholders. Our bottom-up security selection process balances investing in our convictions with diversification and rigorous risk control. We limit the market capitalization of the securities in the portfolio to that of the Russell 2000 Index at time of purchase. |
| U.S. SMID Cap Value | September 2006 | Russell 2500; Russell 2500 Value | U.S. SMID Cap Value pursues long-term capital appreciation by investing in a portfolio of 60-90 small- and mid-capitalization U.S. companies. As fundamental investors with a long-term orientation, we select companies based on their ability to generate free cash flow and allocate it intelligently for the benefit of shareholders. Our bottom-up security selection process is balanced with diversification and risk control measures that should result in below-average portfolio volatility. We limit the market capitalization of the securities in the portfolio to that of the Russell 2500 Index at time of purchase. |
| U.S. Choice | May 2005 | Russell 3000 | U.S. Choice pursues long-term capital appreciation by investing in a concentrated portfolio of leading U.S. companies we believe have superior risk-reward profiles. Our bottom-up security selection and risk management process leads to a portfolio of 20-35 stocks. The portfolio reflects the highest-conviction ideas of our investment team as appropriate for a concentrated portfolio. Companies are selected based on their ability to generate free cash flow and allocate it intelligently to benefit shareholders. |
| U.S. Equity Shareholder Yield | July 2012 | Russell 1000 Value | U.S. Equity Shareholder Yield pursues attractive total returns with an above-average level of income by investing in a diversified portfolio of U.S. companies with strong and growing free cash flow. Companies in the portfolio possess managements that focus on creating value for shareholders through consistent and rational capital allocation policies with an emphasis on cash dividends, share repurchases and debt reduction — the key components of shareholder yield. The portfolio generally holds between 75 and 120 stocks, with risk controls to diversify the sources of shareholder yield and minimize volatility. |
| U.S. Equity Capital Reinvestment | December 2017 | Russell 3000 | U.S. Equity Capital Reinvestment focuses on companies that reinvest in their businesses to grow free cash flow. We seek companies that are good capital allocators, and that use capital effectively to fund internal projects or to make acquisitions. Our research indicates that companies that make investments, internally or externally, that generate a marginal return on invested capital that exceeds their marginal cost of capital will increase in value. U.S. Equity Capital Reinvestment pursues attractive total returns by investing in a diversified portfolio of these companies with persistent, high return on invested capital (ROIC) which is achieved through their allocation to the growth-oriented uses of free cash flow, namely investment in internal projects and acquisitions. The portfolio generally holds between 90 and 130 stocks, with risk controls to diversify the sources of growth and reduce volatility. |
| Non-U.S. Equity Choice | January 2017 | MSCI EAFE Index (Net) | Non-U.S. Equity Choice pursues long-term capital appreciation by investing in a concentrated portfolio of 30-50 stocks outside the U.S. that possess superior risk-return profiles. Companies are selected for their ability to generate free cash flow and allocate it intelligently to benefit shareholders. The strategy employs a portfolio construction process designed to reduce the volatility of returns. The portfolio management team has latitude to invest across geographies and market capitalizations regardless of the composition of its benchmark, the MSCI EAFE Index. |
| Global Equity Capital Reinvestment | June 2013 | MSCI World Index (Net) | Global Equity Capital Reinvestment focuses on companies that reinvest in their businesses to grow free cash flow. We seek companies that are good capital allocators, and that use capital effectively to fund internal projects or to make acquisitions. Our research indicates that companies that make investments, internally or externally, that generate a marginal return on invested capital that exceeds their marginal cost of capital will increase in value. Global Equity Capital Reinvestment pursues attractive total returns by investing in a diversified portfolio of these companies with persistent, high return on invested capital (ROIC) which is achieved through their allocation to the growth-oriented uses of free cash flow, namely investment in internal projects and acquisitions. The portfolio generally holds between 90 and 130 stocks from equity markets worldwide, with risk controls to diversify the sources of growth and reduce volatility. |
| Emerging Markets Equity | December 2017 | MSCI EM (Emerging Markets) (Net) | Global Select Composite is a concentrated portfolio of global equity securities across the market capitalization spectrum. The portfolio consists of approximately 3 - 10 securities. The product is prohibited from purchasing securities involved with tobacco, alcohol, or gambling. The 10 security limitation is increased to 15 holdings for account balances between $100 million and $150 million and to 20 holdings for account balances between $150 million and $200 million. The minimum account size for this composite is $500 thousand. |

| COMPOSITE | CREATION DATE | CURRENT BENCHMARK | PREVIOUS BENCHMARK HISTORY | COMPOSITE DESCRIPTION |
|---|---|---|---|---|
| Global Equity Shareholder Yield | January 2006 | MSCI World (Net) | Effective 7/1/2009, performance information for these composites is shown comparative to the MSCI World (Net) indices, respectively, on a current and retrospective basis. The benchmark previous to 7/1/2009 was the S&P Developed BMI Index. | Global Equity Shareholder Yield pursues attractive total returns with an above-average level of income by investing in a diversified portfolio of global companies with strong and growing free cash flow. Companies in the portfolio possess managements that focus on creating value for shareholders through consistent and rational capital allocation policies with an emphasis on cash dividends, share repurchases and debt reduction — the key components of shareholder yield. The portfolio generally holds between 90 and 120 stocks from equity markets worldwide, with risk controls to diversify the sources of shareholder yield and minimize volatility. |
| Global Choice | October 2005 | MSCI World (Net) | Effective 1/2009, the benchmark was changed for the Global Absolute Return and Global Choice composites from the MSCI World (Gross) Index to the MSCI World (Net) Index because it is more representative of the firm's accounting methodology with regards to foreign withholding tax treatment. | Global Choice pursues long-term capital appreciation by investing in a concentrated portfolio of global businesses we believe have superior risk-reward profiles. Our bottom-up security selection and risk management process leads to a portfolio of 25-35 stocks. The portfolio reflects the highest-conviction ideas of our investment team as appropriate for a concentrated portfolio. Companies are selected based on their ability to generate free cash flow and allocate it intelligently to benefit shareholders. |
| Global Absolute Return | June 2004 | Barclays Capital U.S. Aggregrate and MSCI World (Net) | Effective 5/2015, the S&P 500 Index has been removed as a benchmark as it is no longer being used for comparative purposes. Effective 1/2009, the benchmark was changed for the Global Absolute Return and Global Choice composites from the MSCI World (Gross) Index to the MSCI World (Net) Index because it is more representative of the firm's accounting methodology with regards to foreign withholding tax treatment. | Global Absolute Return targets attractive returns over time without assuming a high degree of capital risk by constructing a concentrated portfolio of global businesses we believe have superior risk-reward profiles. The portfolio consists of 25-35 securities reflecting the highest-conviction ideas of our investment team as appropriate for a concentrated portfolio. Companies are selected based on their ability to generate free cash flow and allocate it intelligently to benefit shareholders. Portfolio risk exposure is managed through the ability to allocate to cash using quantitative and qualitative asset allocation inputs to lessen the likelihood of loss of capital. |

*3. Risk Statistics Source — The composite dispersion presented is an asset-weighted standard deviation calculated for the accounts in the composite the entire period. Sharpe ratio is a measure of absolute risk adjusted return developed by Professor William Sharpe. It divides the excess return of an account above cash returns by the Standard Deviation of the excess return to determine the reward per unit of risk. Information Ratio is a measure of relative risk-adjusted return. It is determined by dividing excess return by Tracking Error. Alpha is a measurement of the expected residual return adjusted for the account Beta. Beta is a quantitative measure of the volatility of the account relative to the account benchmark. R-squared is a measure of how closely an account's performance correlates with the performance of the account benchmark, ranging from 0, indicating no correlation, to 1, indicating perfect correlation. Composite-level risk statistics are calculated using monthly rates-of-return. Statistics calculated using a sample of less than 36 months can be considered a less reliable estimate of the characteristic's true value.*

*4. Benchmark Source — Russell Investments; MSCI Inc.; Standard & Poor's; and Barclays Capital are the source and owners of the index data contained herein (and all trademarks related thereto), which may not be redistributed. Reference to an index does not imply that the portfolio will achieve returns, volatility or other results similar to the index. The composition of the indices are provided for your information only and may not reflect the manner in which a portfolio is constructed in relation to expected or achieved returns, portfolio guidelines, restrictions, sectors, correlations, concentrations, volatility or tracking error targets, all of which are subject to change over time. Indices are unmanaged. The figures for each index reflects the reinvestment of dividends but do not reflect the deduction of any fees or expenses which would reduce returns except for the MSCI (Net) indices where net total return indices reinvest dividends after the deduction of withholding taxes, using (for international indices) a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties. Investors cannot invest directly in indices.*

*5. Total Return Methodology — Valuations are computed and performance is reported in U.S. dollars. Composite returns are presented gross and net of management fees and include the reinvestment of all income. Gross-of-fees returns are presented before management fees but after all trading expenses. Net performance reflects the gross-of-fees return reduced by the investment management fee and performance-based fee (where applicable) incurred. Effective 1/2008, net performance is calculated by deducting the actual investment management fee incurred by each portfolio in the composite. Prior to 1/2008, net-of-fee returns reflect the deduction of the highest annual management fee, calculated on a monthly basis. Returns include the effect of foreign currency exchange rates. Composite and benchmark (international indices) returns are presented net of non-reclaimable withholding taxes. Periods over one year are annualized. Internal dispersion is calculated using an asset-weighted standard deviation of annual gross returns of those accounts that were included in the composite for the entire year. Internal dispersion figures that are not meaningful due to the limited number of accounts in the composite are annotated by N/A. The three-year annualized standard deviation measures the variability of the composite and the benchmark returns over the preceding 36-month period. Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request. Past performance is not indicative of future results. An account could incur losses as well as gains.*

*6. Significant Cash Flow Policy — Effective January 1, 2008, Epoch does not apply a significant cash flow policy as all accounts are valued daily. From January 1, 2006 to December 31, 2007, Epoch defined a significant cash flow as one in excess of 25% of the portfolio market value. Prior to January 1, 2006 Epoch's policy required the temporary removal of any portfolio incurring a client initiated significant cash flow of 10% or greater of portfolio market value. Additional information regarding the Epoch's historical treatment of significant cash flows is available upon request.*

*7. To receive a complete list and description of Epoch's composites, GIPS® firm-wide verification or composite examination reports by ACA Compliance Group from June 21, 2004 through September 30, 2019 and/or other presentations that adhere to the GIPS® standards, contact us at 212-303-7200, write to Epoch Investment Partners Inc., 399 Park Avenue, New York, NY 10022, or send an email to info@eipny.com.*