



### Investment Process

We seek to invest in companies that possess franchise characteristics, are benefiting from an accelerating profit cycle and are trading at a discount to our estimate of private market value. Our investment process focuses on two distinct elements—security selection and capital allocation. We overlay our investment process with broad knowledge of the global economy.

#### Security Selection

We seek to identify companies that have franchise characteristics (e.g. low cost production capability, possession of a proprietary asset, dominant market share or a defensible brand name), are benefiting from an accelerating profit cycle and are trading at a discount to our estimate of private market value. We look for companies that are well positioned for long-term growth, which is driven by demand for their products and services, at an early enough stage in their profit cycle to benefit from the increased cash flows produced by the emerging profit cycle.

#### Capital Allocation

Based on our fundamental analysis of a company's profit cycle, we divide the portfolio into three parts. Garden<sup>SM</sup> investments are small positions in the early part of their profit cycle that may warrant more sizeable allocations as their profit cycle accelerates. Crop<sup>SM</sup> investments are positions that are being increased to a full weight because they are moving through the strongest part of their profit cycles. Harvest<sup>SM</sup> investments are positions that are being reduced as they near our estimates of full valuation or their profit cycles begin to decelerate.

#### Broad Knowledge

We overlay the security selection and capital allocation elements of our investment process with a desire to invest opportunistically across the entire global economy. We seek broad knowledge of the global economy in order to find growth wherever it occurs.

### Team Overview

We believe deep industry expertise, broad investment knowledge, a highly collaborative decision-making process and individual accountability are a powerful combination. Since the inception of the team, we have been committed to building a team of growth investors that retains these attributes and is solely dedicated to our process and approach.

### Portfolio Management



Jason L. White, CFA  
Portfolio Manager (Lead)



James D. Hamel, CFA  
Portfolio Manager



Matthew H. Kamm, CFA  
Portfolio Manager



Craig A. Cepukenas, CFA  
Portfolio Manager

### Investment Results (%)

As of 31 December 2018	Average Annual Total Returns						Inception <sup>1</sup>
	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	
<b>Composite — Gross</b>	<b>-16.15</b>	<b>-1.93</b>	<b>-1.93</b>	—	—	—	<b>2.94</b>
<b>Composite — Net</b>	<b>-16.37</b>	<b>-2.89</b>	<b>-2.89</b>	—	—	—	<b>1.94</b>
MSCI All Country World Index	-12.75	-9.41	-9.41	—	—	—	-1.78

### Annual Returns (%) 12 months ended 31 December

	2014	2015	2016	2017	2018
<b>Composite — Gross</b>	—	—	—	—	<b>-1.93</b>

Source: Artisan Partners/MSCI. Returns for periods less than one year are not annualized.

<sup>1</sup>Composite inception: 1 September 2017.

Past performance does not guarantee and is not a reliable indicator of future results. Current performance may be lower or higher than the performance shown. Composite performance has been presented in both gross and net of investment management fees. The Strategy's investments in initial public offerings (IPOs) made a material contribution to performance. IPO investments may contribute significantly to a small portfolio's return, an effect that will generally decrease as assets grow. IPO investments may be unavailable in the future.

**Investment Risks:** Investments will rise and fall with market fluctuations and investor capital is at risk. Investors investing in strategies denominated in non-local currency should be aware of the risk of currency exchange fluctuations that may cause a loss of principal. These risks, among others, are further described on the second to last page, which should be read in conjunction with this material.



### Investing Environment

Consistent investor concerns—namely, ratcheting trade tensions, particularly between the US and China; major developed-world central banks' apparent shift to a moderately tighter policy stance; and the potential for slower growth, especially in China and Europe—contributed to persistent heightened volatility throughout 2018. Most major indices closed in negative territory for Q4 and the year. After a rockier start, emerging markets held up better than their developed-world counterparts in Q4 but still trailed for 2018 overall. The US was among the bottom-performing indices in Q4 but led most major indices for the year—despite being the S&P 500® Index's worst since the global financial crisis's conclusion.

On the monetary policy front, the Fed lifted rates 25bps as expected in December. Investors divined a more dovish tone from the board's 2019 projections, but markets remained volatile through the end of the year. Globally, most developed-world central banks have begun moving toward modestly tighter stances—including the ECB, which formally announced the end of its bond-buying program in December, concluding a roughly €2.6tn program. Across the channel, the BOE has raised rates twice since the country's Brexit referendum in June 2016 but has recently indicated it was prepared to pivot as necessary once the formal exit takes place in early 2019. The Bank of Japan has long been in its own monetary policy lane, remaining by far the most accommodative of the major global central banks.

Emerging markets central banks have meanwhile faced their own travails—primarily centered around the security of central bank independence, particularly in Turkey and India. For now, the question in both countries seems to be largely settled in favor of independence—a positive for markets—but as is often the case in EM, that doesn't preclude the issue's resurfacing down the road.

At the sector level, energy and technology were the notable laggards in Q4, though materials, financials and industrials led the way down in 2018. Only utilities and health care concluded the year in the black as investors shunned more cyclically oriented names—especially in Q4. Value stocks also generally declined less than growth in Q4—though they trailed for the year. From a size perspective, larger companies tended to hold up better in Q4 and 2018 overall as volatility likely swayed investors' preference toward larger stocks.

### Performance Discussion

Against the backdrop of a sharp, three-month selloff, our portfolio trailed the MSCI AC World Index in Q4 but outperformed for the year. In deep bear markets, our approach has historically offered relative downside protection given our focus on high-quality franchises with positive profit cycles and reasonable valuations. But in sharp and fast corrections, our experience is typically more varied. In Q4, we witnessed some "sell the winner" dynamics that punished a number of our holdings whose fundamentals were among the strongest for the year.

At the sector level, relative weakness in Q4 was concentrated primarily among our industrials holdings, which were particularly pressured as

investors watched tensions between the US and China escalate to real, retaliatory tariffs with the potential for another step-up in tariff rates in 2019. Compounding these concerns were slowing economic momentum in China and similar signs in Europe. Along with other macro considerations—including the possibility the Fed overtightens and plunging crude oil prices—this combination led many exposed companies to rein in spending and earnings expectations for 2019. While we recognize these concerns, we simultaneously see the possibility for circumstances to play out otherwise—which could pave the way for positive earnings revisions in 2019.

Against this backdrop, several industrials holdings, including BWX Technologies and Teledyne Technologies were among our bottom contributors in Q4. BWX Technologies is the dominant provider of nuclear reactors to the US Navy and a leading supplier of components and services to the commercial nuclear power industry. BWX Technologies reported several meaningful setbacks in Q4, including production challenges with missile tubes for the US Navy which are proving costlier than anticipated. The company has also pushed back its planned entry into the medical isotope business as it has encountered manufacturing complications. In the face of these headwinds, we pared our exposure in the quarter.

Teledyne Technologies, which supplies ultra-sensitive components and sensors to various end markets, was largely caught up amid investor concerns about the outlook for industrials against a backdrop of increasing global trade concerns, combined with signs of economic slowing in China and Europe. However, Teledyne has executed well—with organic growth recently notching its highest rate in a decade—and we maintain our conviction in its profit-cycle potential.

Among our top individual contributors in Q4 were Cree, Tableau and Notre Dame Intermedica Participacoes. Cree's silicon-carbide (SiC) business—which we think is well-positioned for a future with electric vehicles—has expanded its manufacturing capacity and customer contracts. The company's LED and lighting fixtures businesses have faced recent macro pressures, including trade-related headwinds, though their slow-down last quarter was insufficient to entirely offset the growth in Cree's SiC business. We are mindful these legacy businesses could be a source of volatility in coming quarters—however, we anticipate growth in Cree's SiC business should ultimately outpace a slowdown elsewhere. Volatility in Q4 gave us an opportunity to increase our exposure to this high-quality franchise at an attractive valuation.

Tableau is benefiting from strong demand for data-analytics tools—a secular trend we believe remains firmly in motion. Under the leadership of its new CEO, the company is effectively transitioning toward a cloud- and subscription-based business model. Meanwhile, the pace of product enhancements is picking up, making Tableau's analytical tools easier to use for employees across organizations, which should contribute to higher adoption rates. While we believe amply runway remains ahead of the company, we pared our exposure in Q4 in accordance with our valuation discipline.

Notre Dame Intermedica Participacoes is one of the largest health plan and hospital groups in Brazil focused on providing quality health care at affordable prices to corporations and small and medium enterprises (SMEs) in São Paulo and Rio de Janeiro. As the country has faced rapid health care cost inflation, Intermedica has successfully vertically integrated into hospital services to bend the cost curve down and improve quality. This business-model transition has resulted in accelerating market-share gains. Since Brazil allowed foreign investment in hospitals in 2015, this combination of factors has resulted in industry consolidation, with Intermedica buying several small health plans and hospitals in a widening radius around metropolitan São Paulo and Rio de Janeiro. As Brazil's macro environment improves and unemployment stabilizes, if not falls, we believe Intermedica is well-positioned to grow organically. We added to our position in Q4 on the strength of our conviction in the profit cycle ahead.

### Portfolio Activity

The year's relative volatility allowed us to be more active in the portfolio than in prior years. Consistent with our process, we were diligent in upgrading our capital where it made sense in Q4—paring our exposure to or exiting altogether campaigns which have become relatively less attractive, in favor of introducing new or adding to high-quality franchises trading at what we find to be compelling valuations. One example was our decision to exit Delphi Technologies and BlackBerry and redeploy that capital into some of the portfolio's highest-quality franchises, including the aforementioned Cree and Intermedica, as well as IMCD.

We have owned Delphi Technologies for its exposure to the ongoing shift toward electric vehicles (EVs). However, our timing has proven early—auto sales are slowing, particularly in China, while the benefits of EVs will take more time than we anticipated to show up in Delphi's earnings. We consequently chose to exit Delphi in Q4.

We first purchased BlackBerry in early 2018 on signs it was successfully transforming under the leadership of a proven CEO from a legacy handset business into a platform of network, operating system, communications and applications software. However, the company's recent announcement that it would acquire Cylance—a provider of cybersecurity products and services—was outside the scope of our thesis, and we consequently chose to exit.

In contrast, we increased our exposure to IMCD in Q4. IMCD, based in the Netherlands, is the leading international specialty chemicals distributor focused on Europe and Asia Pacific, with growing operations in North America. IMCD primarily services end markets including pharmaceuticals, personal care, coatings, food and nutrition, lubricants and others. As a result, leading chemical companies, including BASF, Dow and DuPont, outsource their sales efforts to IMCD to capitalize on its expertise and global customer base. Since initiating our campaign in 2017, IMCD has executed well, reporting strong organic growth in both its newer as well as its more mature markets. We believe IMCD remains in the early innings of a profit cycle as it opportunistically consolidates a highly fragmented

specialty chemicals distribution market and capitalized on the recent volatility to increase our exposure.

We introduced several new holdings to the Garden<sup>SM</sup> in Q4, including Atlassian, Cognex and Burberry. Atlassian is a leading provider of innovative, customizable team-collaboration software tools for enterprises. Companies of all sizes are adopting Atlassian's team-collaboration software tools as it continues expanding its product offerings into increasingly enterprise-wide solutions. For example, the company's largest product, Jira, is one of the core apps used by software developers to collaborate. Building on Jira's success, Atlassian recently launched Jira Ops, which can be used to manage the operation of software developed using Jira in the cloud. As it continues developing new, enterprise-wide solutions, we believe the runway ahead of Atlassian remains sizeable and consequently initiated a position in Q4.

Cognex is an innovative manufacturer of machine vision systems that enable computers to identify, measure, locate and/or ensure quality in a production process. Over the last several years, the company has experienced impressive growth as demand for vision technology has rapidly increased. Shares were pressured in 2018 as smartphone-related capital expenditures slowed. However, recent results show stabilizing trends in smartphones, and Cognex is the leader in machine vision. With ample catalysts still ahead, we capitalized on recent weakness to initiate a Garden<sup>SM</sup> position.

Burberry is a leading global luxury brand with deep British heritage. Though the company benefits from strong global brand awareness, its design offerings had stagnated over the last several years. In an effort to revitalize the brand—particularly among millennial customers—Burberry recently brought in a new CEO and creative designer. The company has also taken steps to begin restoring some of its exclusivity—limiting recent product drops to a small number of stores and eliminating its presence altogether in others. Though it's early to say whether these efforts will bear fruit, we believe there is potential under a new designer and management team for the brand to reconnect with consumers, driving an improved top and bottom line as well as an attractive level of margin growth.

### Portfolio Statistics

As of December 31, the portfolio had a median market cap of \$7.5 billion and a 3-5 year forecasted weighted average earnings growth rate of 21%. Our holdings were selling at a weighted harmonic average P/E (excluding negative earnings) of 22X FY1 earnings and 19X FY2 earnings. As of quarter end, we held 55 positions. Our top 20 holdings accounted for roughly 56% of portfolio assets as of quarter end. Our top 30 holdings represented about 72% of portfolio assets.

### Perspective

After nearly 10 years of a solid, if grinding, bull market, the combination of a number of macro influences has tested demand for growth equities. The simultaneous impact of heightened global trade tensions, rising interest rates and political instability has created

something of a toxic mix. The ongoing US government shutdown (as of this writing) only exacerbates the negative sentiment that's characterized year end.

Taken individually, none of these factors seems particularly catastrophic. Global interest rates aren't especially high by historical standards. Trade tensions are undoubtedly a concern, but they seem contained and remain largely on the margin for now. And the US government has shut down over 20 times since 1976 with negligible long-term impacts on either the economy or markets. However, the combination has introduced fears of a near-term recession—an event which we acknowledge has a non-zero probability. That said, there are other possible outcomes as well, including a continuation of low, slow global growth for a longer period. We profess no unique insight into which of these outcomes (or a myriad of others) is likeliest. Rather, our focus is on concentrating our capital in companies we believe will be able to grow in various economic environments.

What's more, valuations—which had been a concern earlier in the year—are now certainly much more favorable as we enter 2019. If anything, the premium of secular growth companies to more cyclically oriented businesses has expanded during this downturn. But given our confidence in these companies' ability to compound profits in a reasonably wide range of economic scenarios, we have been capitalizing on the recent selloff to upgrade into our highest conviction holdings—including the aforementioned Cree, Intermedica and IMCD.

Stated otherwise, we believe there remain ample compelling investing opportunities globally, despite rising uncertainty and volatility. Today these stocks are trading at valuations we find particularly attractive given the sizeable opportunities ahead of them. Regardless of markets' future course, we will maintain our disciplined approach, which has historically served us well against a wide variety of investing backdrops.

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Unless otherwise indicated, the Artisan Strategy characteristics relate to that of an investment composite or a representative account managed within a composite. It is intended to provide a general illustration of the investment strategy and considerations used by Artisan Partners in managing that strategy. Individual accounts may differ, at times significantly, from the reference data shown due to varying account restrictions, fees and expenses, and since-inception time periods, among others. Where applicable, this information is supplemental to, and not to be construed with, a current or prospective client's investment account information.

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Attribution is used to evaluate the investment management decisions which affected the portfolio's performance when compared to a benchmark index. Attribution is not exact, but should be considered an approximation of the relative contribution of each of the factors considered.

Net-of-fees composite returns were calculated using the highest model investment advisory fees applicable to portfolios within the composite. Fees may be higher for certain pooled vehicles and the composite may include accounts with performance-based fees. All performance results are net of commissions and transaction costs, and have been presented gross and net of investment advisory fees. Dividend income is recorded net of foreign withholding taxes on ex-dividend date or as soon after the ex-dividend date as the information becomes available to Artisan Partners. Interest income is recorded on the accrual basis. Performance results for the Index include reinvested dividends and are presented net of foreign withholding taxes but, unlike the portfolio's returns, do not reflect the payment of sales commissions or other expenses incurred in the purchase or sale of the securities included in the indices.

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This summary represents the views of the portfolio manager as of 31 Dec 2018. Those views and portfolio holdings are subject to change and Artisan Partners disclaims any obligation to advise investors of such changes. The discussion of portfolio holdings does not constitute a recommendation of any individual security. For a complete list of holdings by contribution to the strategy, refer to the Contributors to Return chart.

Portfolio statistics are intended to provide a general view of the entire portfolio, or Index, at a certain point in time. Statistics are calculated using information obtained from various data sources. Artisan Partners excludes outliers when calculating portfolio characteristics. If information is unavailable for a particular security Artisan Partners may use data from a related security to calculate portfolio statistics. **Market Cap** is the aggregate value of all of a company's outstanding equity securities. **Weighted Average** is the average of values weighted to the data set's composition. **Weighted Harmonic Average** is a calculation of weighted average commonly used for rates or ratios. **Earnings Growth Rate** is the annual rate at which a company's earnings are expected to grow. **Price-to-Earnings (P/E)** is a valuation ratio of a company's current share price compared to its per-share earnings. **Private Market Value** is an estimate of the value of a company if divisions were each independent and established their own market stock prices.

Our capital allocation process is designed to build position size according to our conviction. Portfolio holdings develop through three stages: Garden<sup>SM</sup>, Crop<sup>SM</sup> and Harvest<sup>SM</sup>. Garden<sup>SM</sup> investments are situations where we believe we are right, but there is not clear evidence that the profit cycle has taken hold, so positions are small. Crop<sup>SM</sup> investments are holdings where we have gained conviction in the company's profit cycle, so positions are larger. Harvest<sup>SM</sup> investments are holdings that have exceeded our estimate of intrinsic value or holdings where there is a deceleration in the company's profit cycle. Harvest<sup>SM</sup> investments are generally being reduced or sold from the portfolios.

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# Artisan Global Discovery Strategy

Quarterly Contribution to Return (%)

As of 31 December 2018

Top Contributors	Average Weight	Contribution to Return	Ending Weight
Tableau Software Inc	3.03	0.26	2.56
HDFC Bank Ltd	1.98	0.21	2.32
Atlassian Corp PLC	0.69	0.21	1.14
Cree Inc	1.73	0.21	1.97
Notre Dame Intermedica Participacoes SA	1.44	0.18	1.68
Genmab A/S	1.60	0.11	1.96
Takeaway.com NV	0.89	0.08	1.10
WellCare Health Plans Inc	0.07	0.05	0.85
Cash Holdings	4.85	0.03	5.93
Eicher Motors Ltd	0.56	0.01	0.65
Lonza Group AG	0.01	0.00	0.50
Burberry Group PLC	0.30	-0.01	0.99
Zynga Inc	1.31	-0.01	1.47
Puma SE	1.17	-0.01	1.28
London Stock Exchange Group PLC	0.63	-0.03	0.79
Fortive Corp	0.15	-0.03	0.75
Eurofins Scientific SE	0.19	-0.05	0.68
Standard Chartered PLC	0.52	-0.06	0.00
Adyen NV	0.07	-0.08	0.00
The New York Times Co	1.35	-0.08	1.36
Vivendi SA	1.69	-0.08	1.79
TD Ameritrade Holding Corp	1.42	-0.09	1.45
Cognex Corp	0.33	-0.09	0.55
Novanta Inc	1.32	-0.10	1.39
Halma PLC	1.06	-0.11	0.52
Take-Two Interactive Software Inc	0.71	-0.11	1.30
Varta AG	1.26	-0.17	1.25
Temenos AG	0.50	-0.18	0.00
Kingdee International Software Group Co Ltd	0.23	-0.18	0.00
Cintas Corp	1.36	-0.18	1.37
Orpea	0.92	-0.19	0.93
Farfetch Ltd	0.12	-0.21	0.00

Bottom Contributors	Average Weight	Contribution to Return	Ending Weight
BWX Technologies Inc	2.98	-1.37	2.12
Global Payments Inc	4.75	-0.89	4.74
Teledyne Technologies Inc	5.46	-0.86	5.52
Guidewire Software Inc	3.67	-0.77	3.12
Techtronic Industries Co Ltd	3.31	-0.63	3.44
Gardner Denver Holdings Inc	2.13	-0.62	1.90
FLIR Systems Inc	1.74	-0.58	1.71
Nintendo Co Ltd	1.88	-0.56	1.73
B&M European Value Retail SA	1.85	-0.55	1.53
Webster Financial Corp	3.15	-0.55	2.92
Fevertree Drinks PLC	1.12	-0.53	1.14
Alexion Pharmaceuticals Inc	1.50	-0.51	1.41
Diamondback Energy Inc	1.43	-0.50	1.27
IMCD NV	2.86	-0.50	3.00
Amadeus IT Group SA	1.77	-0.48	1.71
Canada Goose Holdings Inc	1.46	-0.46	1.28
The Progressive Corp	2.60	-0.42	2.76
Veeva Systems Inc	2.37	-0.37	2.61
ASML Holding NV	2.27	-0.37	2.08
Visteon Corp	0.96	-0.37	0.81
Wabtec Corp	0.94	-0.36	0.80
Treasury Wine Estates Ltd	1.83	-0.34	1.87
Pagseguro Digital Ltd	0.93	-0.34	0.50
IHS Markit Ltd	2.97	-0.33	2.98
Noble Energy Inc	0.87	-0.32	0.00
Boston Scientific Corp	3.48	-0.28	3.63
BlackBerry Ltd	0.72	-0.26	0.00
First Republic Bank	2.74	-0.24	2.80
Cision Ltd	0.72	-0.23	0.73
Sartorius AG	0.98	-0.23	0.97
Coherent Inc	0.48	-0.22	0.42
Delphi Technologies PLC	0.16	-0.22	0.00
Shiseido Co Ltd	0.48	-0.22	0.00

Source: Artisan Partners/FactSet. Performance is historical and is not a reliable indicator of future results. As of 31 Dec 2018. These investments made the greatest contribution to, or detracted most from, performance during the period based on a representative account within the strategy Composite. Upon request, Artisan will provide: (i) the calculation methodology and/or (ii) a list showing the contribution of each holding to overall performance during the measurement period. Securities of the same issuer are aggregated to determine the weight in the portfolio. % Contribution to Return is calculated by FactSet by multiplying a security's weight in the portfolio by its in portfolio return for the period referenced and does not take into account expenses of the portfolio. Purchases/sales are accounted for by using end of the day prices, which may or may not reflect the actual purchase/sale price realized by the portfolio.