



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. GardenSM investments are small positions in the early part of their profit cycle that may warrant more sizeable allocations as their profit cycle accelerates. CropSM investments are positions that are being increased to a full weight because they are moving through the strongest part of their profit cycles. HarvestSM 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



Craigh A. Cepukenas, CFA
Portfolio Manager (Lead)



James D. Hamel, CFA
Portfolio Manager



Matthew H. Kamm, CFA
Portfolio Manager



Jason L. White, CFA
Portfolio Manager

Investment Results (%)

As of 31 December 2018	Average Annual Total Returns						
	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	Inception ¹
Composite — Gross	-19.62	3.54	3.54	12.41	7.70	17.05	10.25
Composite — Net	-19.84	2.51	2.51	11.30	6.63	15.90	9.18
Russell 2000 [®] Growth Index	-21.65	-9.31	-9.31	7.23	5.13	13.51	7.19
Russell 2000 [®] Index	-20.20	-11.01	-11.01	7.36	4.41	11.97	8.61

Annual Returns (%) 12 months ended 31 December

	2014	2015	2016	2017	2018
Composite — Gross	0.36	1.61	6.90	28.38	3.54

Source: Artisan Partners/Russell. Returns for periods less than one year are not annualized. ¹Composite inception: 1 April 1995.

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.

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

Despite a sharp, three-month selloff which resulted in negative absolute performance, our portfolio outperformed the Russell 2000® Growth and the Russell 2000® Indices in Q4 and concluded the year nicely ahead. Though we are never pleased when absolute performance is sharply negative, as long-term investors, we recognize these events tend to be short-term, and we believe the market will ultimately reward solid fundamentals such as those of the high-quality franchises we hold in our portfolio.

At the sector level, relative strength was heavily concentrated in Q4 among our information technology and health care holdings, which were negative on an absolute basis but held up better than index

peers. Technology and health care were also stand-out sectors for the year overall. Among our technology holdings, profit cycles have generally remained robust despite negative headlines. Within health care, our below-benchmark exposure to biotechnology stocks has been beneficial, as has our stock selection.

Additionally, part of our outperformance in Q4 can be attributed to what we had less exposure to against a more volatile macro backdrop, including financials, energy and materials—sectors which were particularly hard-hit and in which our selective holdings generally held up better than index peers.

Among our top individual contributors in Q4 were Benefitfocus, Tableau Software and Cree. Benefitfocus is a cloud-based supplier of benefits software. We believe it is a good example of why finding profit cycles is critical to our process, especially amid heightened volatility and uncertainty. Under new management, Benefitfocus has improved its sales execution while containing costs. Its recently launched BenefitsPlace™ platform, which connects employers, brokers and insurance carriers on a single platform, should meaningfully broaden the growth runway—which we believe the market has yet to fully appreciate in the share price.

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.

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.

Conversely, relative weakness in Q4 was primarily concentrated 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, Teledyne Technologies and John Bean Technologies were among our bottom contributors in Q4—though each for slightly different reasons. 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.

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.

In contrast to both BWX Technologies and Teledyne, John Bean Technologies (JBT), a leading provider of technology solutions for the food-processing and air-transportation industries, was directly impacted by ratcheting global tariffs—which increased input costs and aggravated supply chain issues more than anticipated. Further, non-US-based customers are increasingly pushing out purchasing decisions given heightened global macro uncertainty.

We believe all three of these industrials remain high-quality franchises with ample profit-cycle potential ahead, despite ongoing uncertainty surrounding trade, global growth and other macro concerns. We are consequently remaining patient while we await some clarity on the likely future direction of trade and monetary policy and global growth.

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 harvest Ellie Mae and redeploy that capital into HubSpot. We have held Ellie Mae, a SaaS-based provider of automated marketing software for the US mortgage industry, for its attractive exposure to several secular trends, including the shift of mortgage lending away from large banks to new platforms and the need for lenders to cost-effectively meet ever-increasing and shifting regulatory obligations. Over the course of our campaign, the company grew its user base, in turn driving solid revenue growth, while launching additional products and services. However, as the US mortgage market has slowed against a backdrop of rising interest rates, Ellie Mae has struggled to offset that with strength among its product sales. We consequently concluded our campaign in favor of increasing our exposure to HubSpot.

HubSpot offers a flexible, cloud-based software platform to assist customers with digital marketing efforts. It is expanding its footprint with added applications—most recently into sales and customer service tools. Further, it is increasingly attracting larger clients, who tend to be longer-term and stickier. As marketing and sales efforts continue shifting to online outlets, we believe the growth runway ahead of HubSpot remains sizeable. Profit-taking in Q4 provided an attractive opportunity to increase our exposure to this high-quality CropSM position at an attractive valuation.

We also added to Tabula Rasa and Argenx in Q4. Tabula Rasa is a medication risk-mitigation provider, serving primarily Provider for All-Inclusive Care for the Elderly (PACE) markets. Tabula Rasa's proprietary software helps these PACE organizations, which serve patients who prefer care in their own homes over a care facility, to address adverse drug events, lowering overall costs for patients with complex medical needs. We initiated our campaign in Q3 as we saw a compelling opportunity for Tabula Rasa, which is already the market-share leader, to drive an attractive profit cycle. Since then, the combination of thesis-affirming results plus the general market selloff, which took shares of Tabula Rasa down with it, provided an opportunity to increase our exposure to a high-quality franchise that we believe has a meaningful growth runway ahead of it.

Argenx is a Dutch biotechnology company developing antibody-based therapies for autoimmune diseases and cancer. Its aim is to create a discovery platform that exploits unique characteristics of the llama immune system. Once immunized with a human antigen, the llama's immune system produces a high number of diverse antibodies that bind to all geometric nooks and crannies of the human antigen with high affinity. This platform generates a diversity of antibodies that cannot be replicated with synthetic libraries. Argenx then removes the binding domain of the llama antibody and stitches it together with a human antibody. Capitalizing on this platform, its first antibody (ARGX-113) could effectively become a pipeline within a drug for several autoimmune diseases. As its early products have been de-risked in recent quarters, we have increased our exposure to what we believe could be a long profit cycle.

We also introduced several new holdings to the GardenSM in Q4, including LivePerson, The Trade Desk and Coupa. LivePerson is a leading provider of mobile and online messaging solutions. As customer service and sales centers increasingly seek to trim costs, we believe they will increasingly move from voice to digital communications. We further believe the ongoing secular trend toward artificial intelligence and automation in an increasing number of applications will drive increasing demand for LivePerson's services. Helmed by a capable management team, including a chief technology officer who previously headed up Amazon's Alexa unit, we believe the company is well-positioned to provide technologies to augment the customer experience by engaging with them via mobile messaging and other digital channels.

The Trade Desk (TTD) is the largest independent demand-side platform (DSP) for ad buyers. As supply increases across digital

channels (display, video, audio, native, social and connected TV), we anticipate real-time bidding (RTB) programmatic ad spending will grow at an accelerating clip, as it is more efficient and the ecosystem that enables it is improving. As the leading DSP, TTD is poised to benefit from both the structural growth in the market as well as market-share gains as advertisers continue consolidating in a few dominant global DSPs. We anticipate connected TVs will similarly increasingly shift toward programmatic ad spending—which would broaden the growth runway for TTD. Volatility in Q4 gave us an opportunity to introduce TTD to the GardenSM at an attractive valuation.

Coupa is the leading provider of unified, cloud-based spend-management software. Since its initial public offering in 2016, the company has notched significant customer wins, including Caterpillar, Unilever and Airbus, among others—though its penetration among Fortune 500 companies remains small, implying a long growth runway ahead. Its network effect is also growing, with over two million connected global suppliers. The company is launching new products aimed at early payment discounts, virtual credit cards and batch payment-processing—all of which broaden the opportunity. Given its recurring revenue-based business model and the sizeable opportunity ahead, we believe Coupa is well-positioned in front of a meaningful secular trend.

Conversely, we trimmed our exposure to Ollie's Bargain Outlet in accordance with our valuation discipline, while concluding our campaigns in Burlington, Delphi Technologies and BlackBerry. Ollie's Bargain Outlet is a closeout retailer of branded merchandise known for its attractive assortment of discounted products. The company is successfully expanding into new geographies—increasing its scale and in turn improving its product availability. We believe the profit cycle and fundamentals remain intact. However, as its valuation has approached our estimate of private market value, we have pared our exposure.

We exited Burlington, a leading off-price retailer, which we had also been harvesting on valuation. Over the course of our campaign, Burlington defied a challenging retail backdrop, which led many to question whether the company's business model could withstand the age of Amazon. Nonetheless, Burlington increased its store presence while driving sales growth across various categories, including underpenetrated categories such as home goods—all while capturing higher margins. With that thesis largely priced into shares, we concluded our campaign in Q4.

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 than we anticipated to show up in Delphi's earnings. We consequently chose to exit Delphi in favor of better opportunities elsewhere.

We first purchased BlackBerry early in Q3 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.

Portfolio Statistics

As of December 31, we held 63 positions with a median market cap of \$3.4 billion. Our portfolio had a 3-5 year forecasted weighted average earnings growth rate of 27% and our holdings were selling at a weighted harmonic average P/E (excluding negative earnings) of 27X FY1 earnings and 25X FY2 earnings.

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 Tabula Rasa, HubSpot and Argenx.

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.

For more information: Visit www.artisanpartners.com

Investment Risks: International investments involve special risks, including currency fluctuation, lower liquidity, different accounting methods and economic and political systems, and higher transaction costs. These risks typically are greater in emerging markets. Securities of small- and medium-sized companies tend to have a shorter history of operations, be more volatile and less liquid and may have underperformed securities of large companies during some periods. Growth securities may underperform other asset types during a given period. These risks, among others, are further described in Artisan Partners Form ADV, which is available upon request.

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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.

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Our capital allocation process is designed to build position size according to our conviction. Portfolio holdings develop through three stages: GardenSM, CropSM and HarvestSM. GardenSM 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. CropSM investments are holdings where we have gained conviction in the company's profit cycle, so positions are larger. HarvestSM investments are holdings that have exceeded our estimate of intrinsic value or holdings where there is a deceleration in the company's profit cycle. HarvestSM investments are generally being reduced or sold from the portfolios.

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Artisan U.S. Small-Cap Growth Strategy

Quarterly Contribution to Return (%)

As of 31 December 2018

Top Contributors	Average Weight	Contribution to Return	Ending Weight
Virtu Financial Inc	1.43	0.29	1.66
Benefitfocus Inc	1.96	0.20	2.33
Tableau Software Inc	2.81	0.19	3.29
Cree Inc	1.61	0.16	1.85
Argenx SE	0.97	0.14	1.28
World Wrestling Entertainment Inc	0.24	0.09	0.71
Burlington Stores Inc	0.62	0.03	0.00
Zynga Inc	1.53	0.02	1.90
Chegg Inc	2.17	0.02	2.53
Coupa Software Inc	0.09	0.01	0.42
Cash Holdings	1.50	0.01	0.93
First Solar Inc	0.06	-0.00	0.27
Eventbrite Inc	0.00	-0.01	0.00
The Trade Desk Inc	0.27	-0.03	0.55
Radius Health Inc	0.45	-0.03	0.49
ACI Worldwide Inc	2.34	-0.04	2.61
Antero Midstream GP LP	0.26	-0.05	0.00
Sage Therapeutics Inc	0.13	-0.06	0.21
Ambarella Inc	0.63	-0.06	0.68
LivePerson Inc	0.34	-0.07	0.63
The New York Times Co	1.11	-0.07	1.06
Ascendis Pharma A/S	0.64	-0.07	0.93
Agios Pharmaceuticals Inc	0.10	-0.08	0.19
Monolithic Power Systems Inc	1.65	-0.09	1.86
Zuora Inc	0.50	-0.10	0.51
Floor & Decor Holdings Inc	0.67	-0.10	0.65
Bright Horizons Family Solutions Inc	2.11	-0.11	2.01
NeoGenomics Inc	0.85	-0.13	0.79
Tabula Rasa HealthCare Inc	0.79	-0.13	1.06
Novanta Inc	1.94	-0.15	2.06
SiteOne Landscape Supply Inc	0.54	-0.15	0.53
MRC Global Inc	0.29	-0.15	0.00
Insulet Corp	0.74	-0.16	0.96
Tactile Systems Technology Inc	0.51	-0.19	0.50
Delphi Technologies PLC	0.15	-0.20	0.00

Bottom Contributors	Average Weight	Contribution to Return	Ending Weight
John Bean Technologies Corp	2.40	-1.09	2.12
BWX Technologies Inc	2.47	-1.08	2.07
Canada Goose Holdings Inc	2.81	-1.00	2.40
Neurocrine Biosciences Inc	1.67	-0.80	1.36
Veeva Systems Inc	4.39	-0.72	4.68
Visteon Corp	1.89	-0.72	1.64
Donaldson Co Inc	2.64	-0.71	2.39
Guidewire Software Inc	3.31	-0.70	3.30
HealthEquity Inc	1.74	-0.68	1.54
Teledyne Technologies Inc	4.20	-0.65	4.31
Gardner Denver Holdings Inc	2.18	-0.63	2.13
Proofpoint Inc	2.02	-0.60	1.60
Ollie's Bargain Outlet Holdings Inc	2.06	-0.55	1.57
Q2 Holdings Inc	3.40	-0.55	3.58
Blackline Inc	2.03	-0.54	2.28
Tyler Technologies Inc	2.20	-0.53	2.25
Curtiss-Wright Corp	1.85	-0.51	1.84
Webster Financial Corp	2.93	-0.51	2.77
Callon Petroleum Co	0.91	-0.50	0.67
DexCom Inc	3.34	-0.50	3.44
Teladoc Health Inc	1.06	-0.48	1.12
Ellie Mae Inc	0.47	-0.48	0.00
Cision Ltd	1.27	-0.41	1.18
Rogers Corp	1.08	-0.39	0.97
Box Inc	1.12	-0.36	1.12
HubSpot Inc	2.07	-0.30	2.41
Cubic Corp	1.04	-0.29	1.06
Glaukos Corp	1.87	-0.28	1.97
HEICO Corp	1.70	-0.28	1.41
Cognex Corp	0.79	-0.27	0.77
Coherent Inc	0.59	-0.27	0.53
Roku Inc	0.38	-0.26	0.50
Halozyme Therapeutics Inc	1.26	-0.25	1.26
Ingevity Corp	1.38	-0.23	1.42
Accelaron Pharma Inc	0.94	-0.23	0.89
BlackBerry Ltd	0.55	-0.21	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.