



### Investment Process

We seek long-term investments in high-quality businesses exposed to structural growth themes that can be acquired at sensible valuations in a contrarian fashion and are led by excellent management teams.

### Investing with Tailwinds

We identify structural themes at the intersection of growth and change with the objective of investing in companies having meaningful exposure to these trends. Themes can be identified from both bottom-up and top-down perspectives.

### High-Quality Businesses

We seek future leaders with attractive growth characteristics that we can own for the long term. Our fundamental analysis focuses on those companies exhibiting unique and defensible business models, high barriers to entry, proven management teams, favorable positions within their industry value chains and high or improving returns on capital. In short, we look to invest in small companies that have potential to become large.

### A Contrarian Approach to Valuation

We seek to invest in high-quality businesses in a contrarian fashion. Mismatches between stock price and long-term business value are created by market dislocations, temporary slowdowns in individual businesses or misperceptions in the investment community. We also examine business transformation brought about by management change or restructuring.

### Manage Unique Risks of International Small- and Mid-Cap Equities

International small- and mid-cap equities are exposed to unique investment risks that require managing. We define risk as permanent loss of capital, not share price volatility. We manage this risk by having a long-term ownership focus, understanding the direct and indirect security risks for each business, constructing the portfolio on a well-diversified basis and sizing positions according to individual risk characteristics.

### Team Overview

Our team is intellectually curious about the world and how it is changing. Each team member is passionate about small company investing and discovering businesses with meaningful and open-ended growth opportunities.

### Portfolio Management



Rezo Kanovich  
Portfolio Manager

### Investment Results (% USD)

As of 31 December 2019	Average Annual Total Returns						
	QTD	YTD	1 Yr	3 Yr	5 Yr	10 Yr	Inception <sup>1</sup>
<b>Composite — Gross</b>	<b>13.55</b>	<b>38.37</b>	<b>38.37</b>	—	—	—	<b>38.37</b>
<b>Composite — Net</b>	<b>13.26</b>	<b>36.96</b>	<b>36.96</b>	—	—	—	<b>36.96</b>
MSCI All Country World ex USA SMID Index	10.27	22.36	22.36	—	—	—	22.36
MSCI All Country World ex USA Small Cap Index	11.01	22.42	22.42	—	—	—	22.42

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

	2015	2016	2017	2018	2019
<b>Composite — Gross</b>	—	—	—	—	<b>38.37</b>

Source: Artisan Partners/MSCI. Returns for periods less than one year are not annualized. <sup>1</sup>Composite inception: 1 January 2019.

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 near the back of this document, which should be read in conjunction with this material.



### Investing Environment

Q4 2019 capped off one of global equities' strongest years in recent history. Markets rallied for both policy and sentiment reasons, particularly in the last quarter, and acted in sharp contrast to 2018's decline. The natural question to ask is what changed, and frankly we don't see the fundamental economic backdrop as particularly different. From our perspective, we have been operating in an environment of sluggish economic growth, quiescent inflation, and low interest rates for quite some time now.

Independent of the environment our approach remains firmly focused on finding long-term structural winners around the world and aims to create a portfolio of small and mid-sized companies that have the potential to become meaningfully larger over time. As we reflect on our first completed year managing this portfolio, we are pleased to have outperformed the benchmark and peer group by a meaningful margin, but more importantly are enthusiastic about what we have built. We believe we have created a diversified portfolio of high-quality businesses with meaningful exposure to structural growth trends, led by strong management teams. These structural growth trends include the adoption of e-commerce, a revolution in the automotive industry, radical advances in life sciences, industrial automation and the increasing role of technology throughout the economy. In parallel, we continue to seek businesses occupying "high-value bottlenecks" in their respective industries, leading consumer brands, innovative retail models and enablers of global logistics networks.

Our research process remains active as we pursue new ideas. We are traveling the world to have interesting conversations and are excited about some of the opportunities we have found. Impactful additions to the portfolio as a result of recent research trips, to name a few, include a UK video game company, a prominent pharmaceuticals company in Spain, a revolutionary printing business in Israel, and a unique food retailer in Japan. These opportunities don't come easily and are rarely obvious; in 2019 alone, it required research meetings in over a dozen countries.

We are also excited by our ability to once again access the lower-end of the market-cap universe and have made a number of investments in the small-cap space. In Q4 alone, we made half a dozen or so new purchases including smaller market-cap companies that are off the beaten path. Throughout the portfolio our best opportunities continue to be diverse by geography and industry, and their success or failure should be a function of idiosyncratic factors, such as managements and technologies, rather than the cyclical market backdrop. Our recent additions are no different, and we look forward to communicating on these holdings in due course, as the positions are properly built.

Lastly, over the course of 2019 we also took advantage of temporary market dislocations, such as the short-term impacts of tariffs and market fears about Brexit, to initiate or grow positions in businesses where we expect to compound high returns on capital for years

ahead. As you've heard me say, highly attractive businesses are rarely available at interesting prices, so one has to maintain a focus on long-term fundamentals and a willingness to take a contrarian stance. While this opportunistic activity can add value on the margin, our long-term orientation is evident in our low portfolio turnover.

### Performance Discussion

Our portfolio outperformed the MSCI ACWI ex USA SMID Index in Q4, expanding its strong absolute and relative performance results for the full year. As is our intention, outperformance for Q4 was broad based by contributor and idiosyncratically driven, spanning a variety of industries and geographies. Full-year results echoed much of these same characteristics. Our companies largely appreciated in value due to strong earnings results, realizing value through M&A and/or generating new valuable intellectual property or clinical data.

In Q4, among our top contributors were Japanese food retailer Kobe Bussan, cloud software company AVEVA Group and HVAC actuator manufacturer Belimo Holding. Kobe Bussan is a discount retailer based in Japan with an interesting high return-on-capital business model that is comparable to leading successful global discount retailers such as Aldi. The company generates high returns by focusing on private-label products across a limited range of products, which allows the company to offer customers high-quality items at lower prices. This is a particularly new concept in Japan—a historically premium-oriented market. Yet there is a massive bifurcation in income levels, with a sizable population of older people on fixed incomes and many household budgets pressured by consumption taxes. The company has been successfully growing its market share, driven by its dominant price competitiveness and franchise store growth nationally.

AVEVA, a leading provider of industrial design software, is continuing to benefit from digitization of energy infrastructure and successful conversion of its business from traditional licensed software to a subscription model. Relative to licensed software, we believe a subscription model offers a greater customer lifetime value, higher operating margins and a greater mix of recurring revenue. AVEVA's combination with Schneider Software has expanded the business to become an end-to-end industrial design and build player. As manufacturing for industrial businesses continues to benefit from a structural tailwind of digitalization, we believe AVEVA has a long runway for growth and margin leverage.

Belimo is a Swiss engineering company that makes actuators, control valves and sensors for HVAC, fire and safety systems. The company primarily supplies the non-residential market (~95% of company sales) consisting of commercial, governmental and industrial buildings. The company is known as an industry-leading innovator in the areas of smart buildings, including remote monitoring, temperature control, power efficiency and data monitoring to optimally run building systems. Our interest in the company stems from its technological leadership, strong brand and pricing power.

This company also occupies a high-value bottleneck position in its industry, benefiting from pricing power due to its products comprising a relatively small but critical part of building automation systems. Recent top-line growth has been better than underlying economic growth due in part to growth initiatives and product innovation, while free cash flow generation has been strong despite investments in R&D and rising input costs.

On the down side, detractors during Q4 included SG Holdings, Cellavision and Cree. SG Holdings is a Japanese provider of logistics and delivery services. Earnings growth has slowed due to weak domestic delivery volumes growth, increased labor costs and spending on its delivery network. Additionally, there has been multiple compression in the stock price due to concerns about Amazon's entry into the Japanese market. On the one hand, this can be viewed negatively given the additional competition; however, we think it also speaks to the attractiveness of the Japanese delivery market. It is highly difficult, both time consuming and costly, to create an efficient delivery network from scratch. We believe the risk is overstated and SG's competitive advantages are underappreciated. From a thematic standpoint, SG Holdings is benefiting from e-commerce growth and meaningful tailwinds for logistics companies due to demand for optimizing corporate supply chains. Further, the company has an opportunity to increase profitability as technological advancements in robotics and software enable the company to charge higher prices and earn better margins as it moves up the value chain. We continue to be enthusiastic owners.

Cellavision is a leading developer of digital cell morphology solutions for medical microscopy in hematology. The stock pulled back due to softer-than-expected earnings growth as R&D investments picked up. Our investment case is based on digital solutions continuing to take share from manual analysis. Rather than have a human perform the analysis, a computer is used to detect cancer cells. Cellavision has a leading solution with no current competition. The company's digital solution is now the standard in the US and Canada, and we believe Cellavision machines should become the global standard over the next decade. Valuation sensitivity expressed throughout the year was proven right in this circumstance, as today we own half the position size of a year prior. We will continue to be patient to optimize our cost basis, but we remain excited about its long-term prospects.

Cree, a holding in our next-generation auto theme, produces next-generation power semiconductors used in electric car batteries. Shares have been pressured by trade-related issues tied to the US ban on sales to Huawei, a Chinese multinational technology and telecommunications company, that represents about 4-5% of annual revenue. Additionally, trade uncertainty had slowed LED sales. Notwithstanding these near-term headwinds, the company's competitive position is strong. Cree is one of only a handful of companies with the intellectual property and process know-how to manufacture the silicon carbide wafers from which the next generation of power semiconductors used in electric vehicles is produced.

Moving on to full-year relative performance, again company-specific drivers underpinned the outsized gains of our holdings. Among our top contributors in 2019 were SolarEdge Technologies, ACADIA Pharmaceuticals and OBIC. SolarEdge is an Israel-based producer of solar photovoltaic systems. After a few quarters of weak gross margins due to higher manufacturing costs and customer support expenses and concerns that the trade war would cause the cost and pricing for inverters to increase materially and dampen demand for solar power, shares rallied on a rebound in margins and continued strong top-line growth. We took the view that over the long run, solar power as a cleaner source of energy is structurally going to grow—on par with other power sources. Moreover, SolarEdge fundamentally has a more efficiently designed product, evidenced by its ability to go from having effectively no share in the US residential market five years ago to the #1 player today. So, although trade war headlines sounded ominous, our analysis led us to remain confident in our original thesis focused on better technology and a structurally growing end market. The cost of solar, which is already on par with coal, is continuing to come down. We also expect that due to its expertise in power optimization, which is relevant in other fields (e.g., utility-scale solar, charging stations for electric vehicles), the company can develop into a broader electrical power company, while benefiting from the platform nature of its technology.

ACADIA is a biopharmaceutical company and maker of Nuplazid® (pimavanserin), the only approved treatment for Parkinson's disease psychosis. The company's late stage trial for pimavanserin in dementia-related psychosis—for which there are currently no approved products—achieved its primary endpoint with respect to time of relapse. The positive trial outcome moves up the timeline for regulatory approval and reinforces our investment thesis centered on the potential for label expansion as ACADIA is engaged in multiple late-stage programs to broaden pimavanserin's clinical use beyond Parkinson's disease psychosis. We continue to believe this option value is not appropriately reflected in ACADIA's stock price.

OBIC is a leading provider of enterprise resource planning software in Japan. The company is capitalizing on the evolution of the software industry in Japan from customized solutions to packaged software, as well as the long-term transition from traditional licensed software to cloud computing. Like AVEVA, which was discussed above, the shift from licensed to subscription software provides a greater customer lifetime value, higher operating margins and a greater mix of recurring revenue. Though still early, the company's cloud conversion is showing strong momentum.

Drags on the portfolio during the full-year timeframe included SG Holdings, Aston Martin Lagonda Global and Teva Pharmaceutical Industries. SG Holdings was discussed previously in our Q4 performance review. Regarding Aston Martin, a luxury sports car maker, shares fell after the company lowered its sales forecast for the year on weakness in the UK and Europe. Investors were also concerned about the company's financial position given a large debt

load and negative cash flow due partly to a planned inventory build and heavy investment in new products. Our interest in the company is based on the growth potential from a model line expansion, including the launch of its new DBX sports utility vehicle, a strategy that has led to very positive results for Ferrari's business. Yet Aston Martin is contending with a tougher macro backdrop for large luxury purchases and has a weaker balance sheet. Unless it can reduce its cash burn, the company may look to raise capital, possibly via a debt offering. If the DBX SUV is successful, there is tremendous operating leverage potential. If it doesn't work out, we would anticipate the sale of the business to a larger auto manufacturer with greater scale. The stock is a small position in the portfolio.

Teva shares came under pressure in the first half of 2019 due to a two-pronged legal battle, including concerns about liability surrounding the opioid epidemic and allegations of drug-pricing collusion between Teva and other generic manufacturers. These issues have been in the headlines on and off the past few years, so we were aware they could resurface. While Teva has been investigated for price fixing by the DOJ since 2016, according to the company, it had not been contacted by the DOJ since these latest reports. This is an issue we are monitoring, but in our view, the more important legal controversy is the one related to the opioid epidemic. Teva and other health care companies, including distributors, have been sued by states under the nuisance law, alleging the companies contributed to the opioid epidemic in the US. There are different estimates of Teva's total liability for a potential global settlement, but we think the financial risk should be manageable and is largely priced into the stock. While these legal matters are ongoing, our investment case remains centered on a turnaround in Teva's business under new leadership, a consolidation of its operating infrastructure and the emergence of a promising pipeline of assets in development. We continue to monitor the company's legal strategy and maintain regular dialogue with Teva's management.

### Outlook and Positioning

After a strong run in the market, it's important to revisit and reiterate our valuation discipline. While we invest at the intersection of growth and change, we are also risk-aware and highly valuation-sensitive. However, rather than the false precision of setting near-term price targets, our approach to assessing valuation is grounded in understanding the normalized cash flow generation power of companies, which we continually evaluate with a three- to five-year view. If we believe an investment thesis has played out or that valuation has run ahead of earnings power, we will be disciplined sellers. Cellavision, discussed above, is one example of this exercise. Another is our experience with Megaport, an innovator in the world of data center connectivity. Megaport first entered our portfolio in early 2019 and exited in Q4 following a nearly three-fold price appreciation. Its valuation, at the moment, appears far ahead of fundamentals. It is rare that we own a business we believe in for such a short period, but a benefit of our vast investment universe is an ample opportunity set offering no shortage of new ideas. We will continue to be thoughtful and with a contrarian bend, around managing position sizes, with a

keen eye toward the risk/reward proposition. In other words, we are continuing to do sensible things at sensible valuations, and we look forward to elaborating on this in future letters.

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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.

MSCI All Country World ex USA SMID Index measures the performance of small- and mid-cap companies in developed and emerging markets excluding the US. MSCI All Country World Small Cap Index measures the performance of small-cap companies in developed and emerging markets. The index(es) are unmanaged; include net reinvested dividends; do not reflect fees or expenses; and are not available for direct investment.

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**Return on Capital (ROC)** is a measure of how effectively a company uses the money (borrowed or owned) invested in its operations. **Free Cash Flow** is a measure of financial performance calculated as operating cash flow minus capital expenditures.

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# Artisan Non-U.S. Small-Mid Growth Strategy

Quarterly Contribution to Return (% USD)

As of 31 December 2019

Top Contributors	Average Weight	Contribution to Return	Ending Weight
Belimo Holding AG	1.42	0.48	1.48
Kobe Bussan Co Ltd	1.18	0.45	1.09
AVEVA Group PLC	1.28	0.43	1.18
Argenx SE	1.01	0.39	1.16
Jeol Ltd	1.31	0.35	1.33
MorphoSys AG	1.26	0.34	2.15
Tecan Group AG	2.04	0.34	2.05
Obic Co Ltd	1.76	0.34	1.64
Gardner Denver Holdings Inc	1.15	0.32	1.15
Heron Therapeutics Inc	1.10	0.32	1.07
ACADIA Pharmaceuticals Inc	1.24	0.31	0.91
Howden Joinery Group PLC	1.10	0.31	1.13
Intersect ENT Inc	0.62	0.27	0.88
Yamaha Corp	1.13	0.27	1.11
Nice Ltd	2.89	0.26	2.95
Hypoport AG	0.63	0.24	0.64
Codemasters Group Holdings PLC	0.63	0.24	0.79
Fujitec Co Ltd	0.84	0.23	0.93
Notre Dame Intermedica Participacoes SA	0.81	0.23	0.84
ConvaTec Group PLC	0.93	0.20	0.98
boohoo Group PLC	0.98	0.20	1.05
Teva Pharmaceutical Industries Ltd	0.52	0.20	0.50
The Medicines Co	0.19	0.19	0.00
SolarEdge Technologies Inc	1.38	0.19	1.16
IMCD NV	1.04	0.19	1.01
NuFlare Technology Inc	0.19	0.19	0.00
YouGov PLC	0.66	0.19	0.76
SimCorp A/S	0.66	0.18	0.66
OBIC Business Consultants Co Ltd	1.10	0.18	1.10
Beijer Ref AB	0.61	0.18	0.51
B&M European Value Retail SA	1.04	0.17	1.03
JD Sports Fashion PLC	0.86	0.17	0.80
Electrocomponents PLC	1.17	0.17	1.10
DSV PANALPINA A/S	0.83	0.17	0.83
Model N Inc	0.60	0.17	0.82
Auto Trader Group PLC	0.67	0.16	0.67
St James's Place PLC	0.59	0.16	0.59
Thule Group AB	0.66	0.15	0.64
ASOS PLC	0.36	0.15	0.35
SSP Group PLC	1.07	0.15	0.99
Vaisala Oyj	0.53	0.15	0.59
Abcam PLC	0.54	0.14	0.54
New Work SE	0.71	0.14	0.66
SCSK Corp	1.04	0.13	0.76
Spirax-Sarco Engineering PLC	0.59	0.13	0.58
Jenoptik AG	0.70	0.12	0.58
Koninklijke DSM NV	1.46	0.12	1.37
Azbil Corp	1.64	0.12	1.48
Carl Zeiss Meditec AG	1.07	0.12	1.02
NanoString Technologies Inc	0.41	0.11	0.41
Basler AG	0.36	0.11	0.36
HomeServe PLC	0.74	0.11	0.72
BlackBerry Ltd	0.52	0.11	0.54

Bottom Contributors	Average Weight	Contribution to Return	Ending Weight
SG Holdings Co Ltd	1.82	-0.14	1.68
Cellavision AB	0.56	-0.12	0.50
Cree Inc	1.62	-0.11	1.50
Treasury Wine Estates Ltd	1.02	-0.09	0.77
Fuji Soft Inc	1.11	-0.09	0.94
BK Brasil Operacao e Assessoria a Restaurantes SA	0.58	-0.09	0.51
Almirall SA	1.51	-0.08	1.36
Fluidigm Corp	0.06	-0.06	0.00
Altus Group Ltd	1.06	-0.05	0.97
Biocartis NV	0.23	-0.04	0.34
Moneysupermarket.com Group PLC	0.53	-0.04	0.46
AIXTRON SE	0.61	-0.04	0.67
Ariake Japan Co Ltd	0.67	-0.03	0.55
Yokogawa Electric Corp	0.70	-0.03	0.57
Joule Group PLC	0.17	-0.02	0.00
Valneva SE	0.16	-0.02	0.08
Blue Prism Group PLC	0.08	-0.01	0.00
Morinaga & Co Ltd	1.31	-0.00	1.24
Carlsberg A/S	1.14	0.00	1.04
BELLUS Health Inc	0.05	0.01	0.00
Henнге KK	0.01	0.01	0.12
Elekta AB	0.69	0.01	0.76
Ambu A/S	0.69	0.01	0.71
Aston Martin Lagonda Global Holdings PLC	0.22	0.01	0.20
MonotaRO Co Ltd	0.24	0.01	0.19
Baloise Holding AG	1.18	0.01	1.14
Orchard Therapeutics plc	0.11	0.02	0.10
IPG Photonics Corp	0.23	0.02	0.20
Morneau Shepell Inc	0.79	0.02	0.00
Future PLC	0.04	0.02	0.39
Davide Campari-Milano SpA	1.14	0.02	1.15
Ossur HF	1.13	0.02	1.07
LivaNova PLC	0.57	0.02	0.49
Temairazu Inc	0.02	0.02	0.28
Cash Holdings	3.81	0.02	5.99
Ypsomed Holding AG	0.28	0.02	0.23
Fortnox AB	0.32	0.02	0.29
Linx SA	0.20	0.02	0.18
Biotage AB	0.18	0.02	0.00
DBV Technologies SA	0.15	0.03	0.17
Applied Therapeutics Inc	0.02	0.03	0.22
Odonate Therapeutics Inc	0.12	0.03	0.11
Hookipa Pharma Inc	0.06	0.03	0.07
Kinaxis Inc	0.31	0.03	0.47
Galapagos NV	0.09	0.03	0.09
Salvatore Ferragamo SpA	0.25	0.03	0.23
Britvic PLC	1.25	0.03	1.08
The Descartes Systems Group Inc	0.61	0.03	0.57
Megaport Ltd	0.09	0.04	0.00
JCR Pharmaceuticals Co Ltd	0.55	0.04	0.51
Nippon Shinyaku Co Ltd	0.93	0.04	0.83
Gerresheimer AG	0.47	0.04	0.41
Burckhardt Compression Holding AG	0.55	0.04	0.54

Continued on next page.

# Artisan Non-U.S. Small-Mid Growth Strategy

Quarterly Contribution to Return (% USD)

As of 31 December 2019

Top Contributors (continued)	Average Weight	Contribution to Return	Ending Weight
MIPS AB	0.50	0.11	0.53
Petrobras Distribuidora SA	0.79	0.11	0.78
Quotient Ltd	0.45	0.11	0.52
Rakus Co Ltd	0.62	0.10	0.50
Flexion Therapeutics Inc	0.25	0.10	0.76
Vestas Wind Systems A/S	0.36	0.10	0.35
Metso Oyj	1.24	0.09	1.43
Kornit Digital Ltd	0.79	0.09	0.75
Genmab A/S	0.85	0.09	0.78
Rohm Co Ltd	1.20	0.08	1.08
eSOL Co Ltd	0.25	0.08	0.30
Rumo SA	0.92	0.08	0.90
Rohto Pharmaceutical Co Ltd	0.61	0.08	0.54
Rotork PLC	0.52	0.08	0.50
Lonza Group AG	1.05	0.08	1.00
Lectra	0.28	0.07	0.26

Bottom Contributors (continued)	Average Weight	Contribution to Return	Ending Weight
Oxford Biomedica PLC	0.17	0.04	0.16
ViewRay Inc	0.13	0.05	0.15
CAE Inc	1.25	0.06	1.15
BASE Inc	0.14	0.06	0.29
Radware Ltd	0.94	0.06	1.14
Grupo Catalana Occidente SA	0.47	0.06	0.41
Aprea Therapeutics Inc	0.06	0.06	0.36
Amarin Corp PLC	0.16	0.06	0.15
Harmonic Drive Systems Inc	0.56	0.06	0.54
Tel Aviv Stock Exchange Ltd	0.55	0.06	0.52
SailPoint Technologies Holding Inc	0.16	0.06	0.00
ALK-Abello A/S	0.33	0.07	0.31
Cognex Corp	0.52	0.07	0.49
Vericel Corp	0.45	0.07	0.40
Sagami Rubber Industries Co Ltd	0.32	0.07	0.33
Symrise AG	1.02	0.07	0.99

Source: Artisan Partners/FactSet. Performance is historical and is not a reliable indicator of future results. As of 31 Dec 2019. 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.

# Artisan Non-U.S. Small-Mid Growth Strategy

1 Year Contribution to Return (% USD)

As of 31 December 2019

Top 20 Contributors	Average Weight	Contribution to Return	Ending Weight
SolarEdge Technologies Inc	1.26	1.51	1.16
ACADIA Pharmaceuticals Inc	1.09	1.36	0.91
Nice Ltd	2.85	1.20	2.95
Obic Co Ltd	1.75	1.17	1.64
Belimo Holding AG	1.34	1.01	1.48
AVEVA Group PLC	1.24	1.00	1.18
Tecan Group AG	2.17	0.93	2.05
Jeol Ltd	1.15	0.92	1.33
Kobe Bussan Co Ltd	0.94	0.90	1.09
Koninklijke DSM NV	1.53	0.90	1.37
Rakus Co Ltd	0.80	0.81	0.50
Gardner Denver Holdings Inc	1.18	0.78	1.15
Azbil Corp	1.58	0.73	1.48
boohoo Group PLC	0.89	0.69	1.05
Notre Dame Intermedica Participacoes SA	0.70	0.68	0.84
Metso Oyj	1.24	0.68	1.43
Howden Joinery Group PLC	1.08	0.64	1.13
Carl Zeiss Meditec AG	1.10	0.62	1.02
B&M European Value Retail SA	1.11	0.61	1.03
Cellavision AB	0.81	0.60	0.50

Bottom 20 Contributors	Average Weight	Contribution to Return	Ending Weight
Aston Martin Lagonda Global Holdings PLC	0.44	-0.41	0.20
Teva Pharmaceutical Industries Ltd	0.79	-0.39	0.50
Fluidigm Corp	0.19	-0.23	0.00
Metro Bank PLC	0.08	-0.21	0.00
AC Immune SA	0.06	-0.18	0.00
InflaRx NV	0.10	-0.18	0.00
SG Holdings Co Ltd	2.00	-0.18	1.68
LivaNova PLC	0.65	-0.14	0.49
BK Brasil Operacao e Assessoria a Restaurantes SA	0.77	-0.11	0.51
Boozt AB	0.12	-0.09	0.00
Orchard Therapeutics plc	0.11	-0.08	0.10
Joules Group PLC	0.20	-0.08	0.00
Valneva SE	0.14	-0.07	0.08
Biotage AB	0.55	-0.07	0.00
Vericel Corp	0.39	-0.07	0.40
BlackBerry Ltd	0.58	-0.05	0.54
Wirecard AG	0.03	-0.04	0.00
Biocartis NV	0.06	-0.04	0.34
Hookipa Pharma Inc	0.05	-0.04	0.07
Oxford Biomedica PLC	0.22	-0.03	0.16

Source: Artisan Partners/FactSet. Performance is historical and is not a reliable indicator of future results. As of 31 Dec 2019. 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.