Quarterly Portfolio Report –Fourth Quarter 2018

(Vol. XV, No. 2)

Dear Valued Clients:

We are pleased to provide you with the Fourth Quarter 2018 Report for Pennsylvania Trust's Multi-Cap Value Strategy.[1] In what was a very rough fourth quarter for stocks, the Multi-Cap Value Strategy declined 11.57%, net of fees, versus a 13.52% loss by the S&P 500 Index, our performance benchmark, which reports results without accounting for fees. For the full year the Multi-Cap Value Strategy essentially broke even, with net decline of 0.12, which bested the S&P 500's 4.38% loss. Below are the strategy's results and equity-only results for 2018 and since inception (May 2004), net of fees, versus the benchmark:

	YTD (12/31/18)		Cumulative Since Inception		Annualized	
	Gross	Net	Gross	Net	Gross	Net
MCV Strategy	0.52%	-0.12%	212.92%.	179.58%	8.14%	7.30%
MCV Strategy Equity Only	0.34%		237.03%		8.69%	
S&P 500	-4.38%		202.66%		8.01%	

Past performance is no guarantee of future results. (Sources of index performance: Bloomberg; WSJ Market Data Group)

The strategy typically holds some cash to: (i) help cushion it during market declines; and (ii) provide flexibility to purchase new securities and/or add to existing holdings when prices are attractive. Cash comprised, on average, about 11.0% of the strategy's assets in the quarter.

Investors had very little to cheer about in 2018. January's strong start turned out to be the high point for many U.S. equities. After a 10% correction in February, the stock market drifted higher before worries over tighter financial conditions and flagging growth became too great for investors to ignore in the fourth quarter. What began as a fairly ordinary pullback from equities in October had become a mass exodus by December. That month's 9.03% loss was the second-worst December going back to 1931 and would have been worse but for a roughly 4.0% mini-rally to finish the year. (Source: Ned Davis Research) Adding to the already heavy pressure on share prices was a toxic mix of year-end tax loss selling, computer-driven sell programs, and thin holiday trading. The sheer ferocity of the downturn at times brought back flashbacks to the financial crisis. No matter that there are today few traces of the myriad financial imbalances that existed back then. At one point, the NASDAQ briefly entered bear-market territory (down more than 20% from its peak), though the declines in the S&P 500 and Dow Jones Industrials stopped just short of that threshold. All in all, it amounted to a massive vote of no confidence in the Federal Reserve's hawkish stance on interest rates amid mounting signs of economic trouble.

This past year, stock markets across the globe, as well as most individual stocks, logged their worst annual results since 2008. In the U.S., not only the S&P 500, but every other equity benchmark, including the NASDAQ (-3.88%), Dow Jones Industrials (-5.63%), Russell 2000 (-12.18%), mid-cap S&P 400 (-11.51%), and small-cap S&P 600 (-8.87%), finished in the red in 2018. (Source: Dow Jones Market Data) Yet the

---

[1] The commentary herein reflects our opinions and is not intended to be a forecast of future events, a guarantee of future results, or investment advice. All commentary concerning portfolio performance and specific portfolio holdings refers to the PTC Multi-Cap Value Composite and the Model Portfolio, respectively, and not to specific client accounts. See Addendum to Quarterly Portfolio Report attached hereto for additional important disclosures.

declines in the indexes masked even greater damage beneath the surface. Shares of more than half of the S&P 500 companies, for example, suffered losses greater than 20%. (Source: Strategas) Even so, America was a relative bright spot compared to the rest of the world. The MSCI EAFE index, which tracks developed markets in Europe, Australasia, and the Far East, and the MSCI Emerging Markets index declined by 13.8% and 14.2%, respectively. (Source: MSCI) It was the same for major equity benchmarks in Europe (Stoxx Europe 600 -13.24%), China (Shanghai Composite: -24.59%), Hong Kong (Hang Seng -13.61%), and Japan (Nikkei 225 -12.08%). (Source: Dow Jones Market Data) The spate of negative returns also came with a hefty dose of volatility, which stood in sharp contrast to the unusually calm conditions that characterized the market rally in 2017.

What made 2018 unusual was the dearth of safe places for investors to hide. For the first time since at least 1972, not one of the eight major asset classes rose at least five percent. Only the Bloomberg Barclays U.S. Aggregate Bond Index posted a gain -- and that was a measly 0.01%. (Source; Ned Davis Research) Unlike in past years when stocks have stumbled, most bonds also lost value, though the losses were modest by comparison. Long-dated U.S. Treasuries, inflation-protected Treasuries, and U.S. corporate and high-yield debt all saw low single-digit declines. Alternative assets, such as gold (-2.01%), hedge funds (-4.07%), and commodities (-15.4%), did not offer any relief either. (Sources: Dow Jones Market Data; Hedge Fund Research; Standard & Poor's).

Few would have imagined such a sour outcome 12 months ago. And perhaps that was part of the problem. Financial markets got mostly everything they hoped for in 2018: strong corporate profits, benign inflation, low unemployment, robust consumer spending, continued deregulation, etc. But a series of unwelcome surprises as the year went on, from weaker global growth to widening protectionism to a flattening yield curve to falling prices, all helped stoke fears of recession. Nor did investors expect that the Fed would so readily dismiss these legitimate concerns in favor of more rate tightening.[2] Based on the nearly 20% drop from its highs, the stock market is now pricing in a high likelihood of an economic contraction and a sharp slump in company earnings. We think this is much too gloomy a forecast under the circumstances.

The U.S. economy has, to be sure, cooled off in recent months. Many leading economic indicators are currently flashing yellow. The steady rise in interest rates has begun to curtail Americans' appetite for purchasing homes, autos, and other big-ticket items. At the same time, slower growth in the rest of the world is, as expected, also having an impact here. The weakness has been especially pronounced in the eurozone and China, which are two of America's largest trading partners. While China has so far suffered much more than the U.S. from their ongoing trade battle, corporate America is now feeling the pain as well. For proof, look no further than the recent warning from Apple, which blamed a huge ($7.5 billion) anticipated shortfall in quarterly sales almost entirely on weak demand from China. It was the latest in a growing number of similar shortfalls announced by U.S. firms in recent months.[3]

---

[2] It's fair to say that the U.S. central bank's record of recognizing economic slowdowns in advance has been spotty. See, most recently, its inexplicably slow response to the financial crisis.

[3] We still think the odds are high that the U.S. and China will reach some sort of trade agreement in 2019. Both sides have a great incentive to do so. For China, a deal would help bolster its sagging economy and reduce credit pressure. It would also help the U.S. economy and very likely give a big boost to share prices, something sure to please a White House that cares about stock-market performance.

Still, there is a big difference between a deceleration in U.S. growth (which still implies an increase) and a recession (commonly defined as two consecutive quarters of negative growth). Right now profits at S&P 500 companies are forecast to rise at a mid-single digit clip over the next 12 months, with results anticipated to get stronger as the year goes on. While this would mark quite a comedown from 20% growth in 2018, investors' expectations are also much lower now than before. The silver lining in the fourth quarter swoon is that it shaved nearly five points from the stock market's P/E ratio. Today, the S&P 500 trades at 15 times forward earnings estimates, a relatively undemanding valuation that is about in line with its historical average. We think this can serve as a sturdy launching pad for stocks in 2019 -- so long as interest rates don't rise much more from here and the economy doesn't slip into recession.

Whether or not this happens depends largely on the Fed. Historically, most recessions have been caused by errors in monetary policy. The rationale for raising rates is to quell inflation caused by an overheating economy. Often that decision is pretty straightforward. Much tougher are choices over the appropriate number of hikes and how quickly to implement them. When policymakers push up the cost of borrowing too far and too fast, it invariably leads to a contraction in economic activity and a fall in company profits. Avoiding a misstep sounds easy, but it is a lot harder in practice. Because the effects of a rate increase aren't felt by the economy until many months later, mistakes often become clear only in hindsight. Moreover, for central bankers the temptation is always to overshoot, rather than run the risk that inflation gets out of control. And there was an added twist to the process this time around, because the period of monetary accommodation that preceded it was both extremely generous and very long.

Since December 2015, when the current tightening cycle began, the Fed has raised rates nine times, including four times in 2018. The last increase came at the final meeting of the Federal Open Market Committee in mid-December. To tighten while the stock market is in the throes of a nasty correction was, to say the least, unusual. Indeed, it had happened only twice going back to 1980, most recently in 1994, or nearly a quarter century ago. (Source: "*Fed Rate Hikes Are Extremely Rare When Stocks Are This Beat Up*," Bloomberg, December 17, 2018) The urgency to hike again is hard to fathom. Core inflation remains below target and inflation expectations are falling. Repeated predictions that low unemployment would trigger inflationary pressures simply haven't come to pass. That a very flat yield curve, which is getting uncomfortably close to an inversion, received such short shrift from Fed policymakers was especially worrisome.[4] Nothing has been more accurate in forecasting recessions than an inverted yield curve. No wonder, then, that the selloff shifted into a higher gear after the Fed followed up its December rate increase with a forecast for two more in 2019. It seemed to confirm the damaging impression that monetary policy had been put on autopilot and would remain blissfully ignorant of the bevy of distress signals coming from the economy and financial markets.

There was, then, a collective sigh of relief after the Fed did an about face early in the new year. In public remarks, the Fed chairman acknowledged that inflation was "muted," affording policymakers the flexibility to be "patient" on rates. He emphasized that the central bank will "watch and see how the economy evolves," and listen "sensitively to the message the markets are sending" about risk. (Source: American Economic Association Annual Meeting, January 4, 2019) Within 48 hours, several other Fed members had publicly voiced similar views. It was an important sign the Fed appreciates that the damage to economic growth from a collapse in asset prices could be substantial. It was also a tacit admission that it cannot afford to lose the confidence of financial markets if it hopes to engineer a soft landing for the

[4] An inverted yield curve happens when yields on short-term bonds rise above those on longer-dated bonds.

economy. Perhaps most importantly, it suggests that investors may no longer have to fight the Fed in the future, something they did without knowing it in 2018. The result, as they know now, wasn't pretty.

* * * * *

While market corrections can happen at any time -- indeed, they are the major reason why stocks offer the potential for higher returns than less volatile asset classes -- we will admit that the speed and severity of this one caught us a little off guard. We have long advocated that one of the keys to superior investment performance is to avoid large capital losses during these tough periods in the stock market. An investor who spends less time trying to recover lost ground will, almost by definition, have more time to spend compounding positive returns. In this case, having a bit of cash also helped us, as it never loses its nominal value. But we believe it helps us even more to invest in financially-strong companies with long track records of compounding shareholder capital at high rates of return. To achieve such stellar operational results, these companies benefit most often from certain competitive advantages, such as a unique product or service, a leading market position, sizable barriers to entry from new competition, and/or a superior business model, that are hard to replicate. While their shares are certainly not immune from declines, they tend to fall less and bounce back more quickly because of these strengths. By this standard, in a year of across-the-board equity losses, we were relatively pleased with the Model Portfolio's essentially flat result in 2018.

In a dismal quarter for stocks, the Model Portfolio had only two holdings that increased in value, though it helped from a performance standpoint that they were our largest and fourth-largest positions, respectively. The best performers after that suffered modest declines. In contrast, there were five portfolio holdings that dropped more than 20%. The losses in share price far exceeded, in our opinion, any potential reduction in the intrinsic values of these companies.

Top 5 Performers – 4th Quarter Returns

1. *American Tower* (ticker: AMT) +8.87%
2. *Atrion* (ATRI) +6.66%.
3. *Comcast* (CMCSA) -3.84%
4. *Berkshire Hathaway Class B* (BRKB) -4.64%
5. *Aon Plc* (AON) -5.48%

Bottom 5 Performers – 4th Quarter Returns

1. *National Beverage* (FIZZ) -38.46%
2. *Balchem* (BCPC) -30.10%
3. *Tyler Technologies* (TYL) -24.17%
4. *Vail Resorts* (MTN) -23.18%
5. *Watsco* (WSO) -21.88%

Full-year results for the Model Portfolio were more evenly balanced, with 10 advancers versus 12 decliners.

Top 5 Performers – 2018 Returns

1. *Adobe* (ADBE) +29.10%
2. *Mastercard* (MA) +24.64%
3. *HEICO Class A* (HEIA) +24.53%
4. *Atrion* +17.52%
5. *Visa (V)* +15.72%

Bottom 5 Performers – 2018 Returns

1. *Cantel Medical* (CMD) -27.63%
2. *National Beverage* -26.34%
3. *Watsco* -18.17%
4. *Comcast* -14.98%
5. *First Citizens Bancshares* (FCNCA) -6.44%

Trading activity in the fourth quarter was much greater than usual. We sold several stocks at a loss to help offset capital gains realized earlier in the year. Several of these stocks we expect to repurchase

in the future consistent with applicable tax law. Other holdings were sold to fund the purchase of new stakes in more attractive companies we have long coveted (see below), as well as to add to our highest-conviction existing holdings at lower prices. As always, our objective is to increase the portfolio's long-term expected returns, reduce downside risk, and enhance tax efficiency.

When adding a new security to the Model Portfolio, we typically start with a partial position (i.e., a weighting between 1.50% and 2.50%). We try to avoid taking full positions too quickly, and typically increase the size of our stake on market pullbacks. As we see it, the more shares of a high-quality company that we can buy at lower prices, the better our odds of achieving a superior long-term return and the lower our risk of a poor outcome. In the fourth quarter, we purchased three new positions at prices that we believe are substantially below their long-term intrinsic values:

1) *Moody's Corp.* (MCO), a large-cap ($28.5 billion) global provider of credit ratings and research and risk management software and services. Founded in 1900, the company's proprietary data and services have long been considered essential to the efficient functioning of global financial markets. *Moody's* has two reporting segments. Moody's Investors Service (65% of revenue), which provides credit ratings and risk analysis on debt securities, issuers of securities, and other credit instruments, remains the company's bread and butter. While smaller, Moody's Analytics (35% of revenue), which provides credit and economic analysis subscriptions, risk analytics, financial and regulatory compliance tools, and certification services, is the faster growing segment. The ratings business enjoys superior pricing power and high margins, owing to limited competition, high barriers to entry, and minimal capital outlays to grow. As the size of debt markets increase, so, too, does demand for credit ratings. The economic benefit to bond issuers is undeniable. Bonds issued with a *Moody's* rating pay lower interest rates than those without a rating, with the savings to the issuer far exceeding the cost of the rating. Compared to the ratings business, annual sales in the analytics segment are mostly subscription-based and, therefore, more recurring in nature. *Moody's* generates exceptionally strong cash flows year in and year out, much of which has been deployed for shareholders' benefit. Over the past decade, management has more than quadrupled the dividend and reduced total share count by almost 20%. We took advantage of the market downdraft to start a position in *Moody's*, and later add to it, at attractive prices. Our purchase puts us in good company. *Berkshire Hathaway* is *Moody*'s largest shareholder with an ownership stake of almost 13%.

2) *Ansys, Inc.* (ANSS), a mid-cap ($12.8 billion) developer of engineering simulation and analysis software used in a variety of industries, including aerospace and defense, automotive, energy, healthcare, electronics, and consumer goods. Founded in 1970, *Ansys* is the global leader (~24% market share) in simulation-driven technology, which allows mechanical and electrical engineers to learn how something will perform before it is built. About 80% of investment in product development is incurred early in the design phase. When businesses have the power to simulate this step entirely by computer, they can turn their concepts into successful products more quickly and at lower cost. Embedded in the company's suite of simulation tools is a sophisticated set of physics equations that models the effects of multiple real-world forces on product design from the standpoint of multiphysics, electromagnetics, fluid dynamics, structural mechanics, and more. The software allows multiple users to use more than one simulation tool at a time to test different aspects of the same thing simultaneously. Already no one comes close to the large installed base of engineers that use *Ansys* products. But the firm's newest software offering, "Ansys Discovery Live," appears likely to widen the gap even more. This simulation program runs on a $1,500 laptop instead of the high-performance computers (which can cost $25,000 or more) ordinarily required to perform physics modeling.

Ansys competes in a fragmented market populated by many small privately-held companies. The U.S. is its largest market (38.1% of sales), followed by Japan (11.5%), Germany (9.9%), South Korea (5.8%), France (4.9%), and the U.K. (2.6%). We see a long runway for future growth. The market for the company's software is growing between 8.0% to 9.0% annually and expected to reach $7.8 billion in 2021. Many businesses have yet to adopt software-based simulation, while most current *Ansys* customers still use it only on a limited basis. Since usage typically rises over time as customers get more comfortable with the technology, there's a natural and steady tailwind for growth. Management believes that sales penetration rates among its largest customers currently stand at less than 20% and are closer to the low single digits across the entire installed userbase. Customer relationships tend to be very sticky, owing to the considerable cost and time required for engineers to achieve proficiency with the software. Almost 60% of annual revenues come from software licenses (with system maintenance and service making up the rest). License renewal rates in the mid-90% have historically translated to high operating margins and annual recurring revenue exceeding 75%. Over the past decade profits have advanced at a 17.5% annual rate, driven by 12.5% growth in yearly sales. The company has a debt-free balance sheet, with cash ($700 million) equal to more than 5.5% of its market value.

3) *Roper Technologies* (ROP), a large-cap ($28.2 billion) company that manages a diversified portfolio of businesses that supply software and engineered products and solutions in global niche markets. In a little more than 15 years, *Roper* has transformed itself from a stodgy industrial conglomerate into an asset-light, decentralized technology company. A product line that was once dominated by low-margin fluid handling pumps, leak testing equipment, and the like has now been largely replaced by much more lucrative radio-frequency software and medical software and services. Today, *Roper* gets more than 70% of sales and almost 90% of profits from software-related businesses. But what really sets *Roper* apart from other industrial firms is a highly-disciplined capital allocation strategy. The company invests only in well-established businesses, operating in niche markets with limited competition and high margins. These businesses throw off a lot of cash and have a high percentage of recurring revenues, which adds to the stability and predictability of results. Because of the low cost of running and maintaining its operations, *Roper* uses most of its excess cash for growth, whether through internal reinvestment or outside acquisition. Since 2003, when the current management team took over, profitability has skyrocketed. Operating cash flow grew from $71 million to $1.23 billion over this period, while free cash flow has exceeded net income for 20 consecutive years. Last year, *Roper*'s free cash flow comprised 26% of sales, the highest margin among major U.S. industrial companies and up from 15% in 2003. As one would expect from this glowing track record, *Roper* shares ordinarily trade at a hefty premium to the market. We took advantage of the recent downdraft to establish a sizable position at a far more reasonable price.

We typically choose to sell a holding in the Model Portfolio for one or more of the following reasons: 1) our original basis for investment has been undermined; 2) the security trades at such a large premium to our estimate of intrinsic value that is likely to impair its expected long-term returns; 3) we have lost confidence in management's ability to manage the company successfully and/or its willingness to act in the best interest of outside minority shareholders; and 4) a superior investment alternative becomes available. In the fourth quarter, we sold the following positions:

Sales	**Avg. Realized Gain/Loss***	**Reason for Sale**
Altria	+10.8% Short Term	Greater than expected government regulation and competitive pressure on core business.
Arista Networks	-3.9% Short Term	Replaced with a more attractive investment.
Copart	-9.4% Short Term	Replaced with a more attractive investment.
Cognex	-15.6% Short Term	Replaced with a more attractive investment.
BWX Technologies	-28.6% Short Term	Lost confidence in management after several operational missteps.
Mohawk Industries	-33.4% Short Term	Impact of higher input costs and trade protectionism on profitability much greater than expected.

*Includes payment of any dividends over the holding period

We took advantage of the lower prices in the quarter to add to our existing positions in *Visa*, *HEICO Class A*, *Watsco*, *Vail Resorts*, *Comcast*, and *Moody's* at prices that we believe are substantially below their intrinsic values. And we realized substantial long-term capital gains in *MasterCard* and *Adobe* after trimming the size of our large positions just ahead of the market pullback.

We are grateful for the opportunity to manage your assets and will continue doing everything we can to merit your continued confidence and support. As always, if you have any questions about the information in this report and/or your investment portfolio, please do not hesitate to contact us at (610) 975-4300, or toll-free at (800) 975-4316.

Sincerely,

Gilpin W. Bartels
Senior Vice President
Pennsylvania Trust Multi-Cap Value Portfolio Manager

January 18, 2019

Addendum to Quarterly Portfolio Report

Cautionary Statement

This report has been prepared for the benefit of our clients and friends. It is issued without regard to the specific investment objectives, financial situation, or needs of any individual recipient. The information in this report regarding portfolio holdings and activity is based upon the Pennsylvania Trust Multi-Cap Value Model Portfolio. Such information is presented only to illustrate the application of our multi-cap value investment philosophy and/or the achievement of portfolio objectives and should not be considered recommendations by us. Not all portfolio holdings cited in this report may have been purchased for and/or sold from all client portfolios. Although every effort is made to achieve uniformity with the Model Portfolio, there are often differences in holdings between individual client accounts and the Model Portfolio. Such differences are the result of our strict adherence to our value-based investment philosophy (see below) and each client's specific financial requirements.

Our views and opinions regarding the investment prospects of particular portfolio holdings and our Model Portfolio as a whole are "forward-looking statements," which may or may not be accurate over the long term. You can identify forward-looking statements by words like "believe," "expect," "anticipate," or similar expressions when discussing prospects for particular Portfolio holdings and/or the Portfolio as a whole. You should not place undue reliance on forward-looking statements, which speak only as to the date of this report. We disclaim any obligation to update or alter any forward-looking statements, whether because of new information, future events, or otherwise. While we believe we have a reasonable basis for our views, and we have confidence in our opinions, actual results may differ materially from those we anticipate. Information contained in this report has been obtained from sources we believe to be reliable, but which cannot be guaranteed. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness, or correctness of the information and opinions expressed herein. Such information and opinions should not be considered a recommendation to purchase or sell a particular security. The opinions and other information provided are subject to change without notice.

Investment Philosophy and Achievement of Portfolio Objectives

Our primary investment objectives are to generate long-term positive returns and simultaneously manage portfolio risk. We select stocks for client portfolios one at a time using a bottom-up selection process. We invest in the common stocks of companies of all sizes that we believe are undervalued and have been mispriced by the market. Whenever the expected extra return that stocks should provide over lower-risk investments (the risk premium) does not, in our opinion, adequately compensate stock owners for bearing the extra risk, we may add a high-quality bond component to client portfolios. When there are few or no investments that meet our requirements, we may hold cash in anticipation of future opportunities.

Our investment philosophy is risk averse and highly dependent on determining an optimal price before investing. As the share price of a successful investment rises significantly, typically so does the risk assumed by new purchasers at the higher price. Whenever we believe that a holding in the Model Portfolio would not be attractive to us *as a new purchaser* at the prevailing price, we will not purchase it for an incoming new client. Whenever possible, we will attempt to purchase an omitted holding(s) at a more attractive price in the future. But we will not sacrifice our value-based investment discipline -- and thereby increase the portfolio risk to newer clients -- simply to achieve uniformity among client portfolios. We would never manage our personal and family portfolios that way.

Achievement of our investment objectives requires the ability to avoid material risk during certain market conditions. Since no consideration is given to benchmark allocations or weightings, client portfolios often do not closely track broad market movements over extended periods. We recommend that clients have a time horizon for their investments of at least three to five years.

Multi-Cap Value Composite Performance Summary

December 31, 2018

	Gross Composite Return (%)	Net Composite Return (%)	S&P 500 (%)*	DJIA (%)*	NASDAQ (%)*	Russell 3000 (%)*
Year Ending 12-31-2018	0.52	-0.12	-4.38	-3.48	-2.84	-5.24
Year Ending 12-31-2017	14.18	13.31	21.83	28.11	29.64	21.13
Year Ending 12-31-2016	-1.76	-2.55	11.96	16.50	8.87	12.74
Year Ending 12-31-2015	4.53	3.76	1.38	0.21	6.96	0.48
Year Ending 12-31-2014	8.15	7.35	13.65	10.02	14.80	12.55
Year Ending 12-31-2013	36.39	35.47	32.36	29.65	40.15	33.55
Year Ending 12-31-2012	7.35	6.55	15.98	10.23	17.73	16.42
Year Ending 12-31-2011	-1.60	-2.44	2.09	8.34	-0.79	1.02
Year Ending 12-31-2010	17.15	16.19	15.06	14.06	18.14	16.92
Year Ending 12-31-2009	24.20	23.24	26.45	22.70	45.34	28.35
Year Ending 12-31-2008	-24.23	-24.81	-36.99	-31.92	-39.98	-37.31
Year Ending 12-31-2007	9.96	9.12	5.56	8.87	10.67	5.15
Year Ending 12-31-2006	12.87	12.00	15.77	19.03	10.87	15.71
Year Ending 12-31-2005	7.02	6.04	4.91	1.72	2.11	6.10
06-01-2004 through 12-31-2004	16.36	15.84	9.25	7.13	11.01	10.21

Annualized Returns

As of December 31, 2018	Gross Composite Return (%)	Net Composite Return (%)	S&P 500 (%)*	DJIA (%)*	NASDAQ (%)*	Russell 3000 (%)*
1 Year	0.52	-0.12	-4.38	-3.48	-2.84	-5.24
2 Year	7.13	6.38	7.93	11.20	12.23	7.14
3 Year	4.07	3.31	9.26	12.94	11.10	8.97
4 Year	4.19	3.42	7.23	9.61	10.05	6.78
5 Year	4.97	4.20	8.49	9.70	10.97	7.91
6 Year	9.65	8.85	12.15	12.80	15.32	11.82
7 Year	9.32	8.52	12.70	12.43	15.66	12.46
8 Year	7.89	7.09	11.32	11.91	13.47	10.96
9 Year	8.89	8.06	11.73	12.15	13.98	11.61
10 Year	10.33	9.49	13.12	13.16	16.80	13.18
Since Inception†	8.14	7.30	7.89	8.56	9.74	8.01

Composite Accounts and Market Value

	Number of Accounts	Market Value ($mil)	Total Firm Assets ($mil)**	% of Firm Assets**	Composite Dispersion (%)
December 31, 2018	56	99.7	3,089.5	3.2	0.53
December 31, 2017	63	112.0	3,107.8	3.6	0.60
December 31, 2016	82	123.4	2,712.7	4.5	0.45
December 31, 2015	82	124.1	2,625.5	4.7	0.39
December 31, 2014	91	143.8	2,324.1	6.2	0.57
December 31, 2013	79	129.1	2,069.3	6.2	1.10
December 31, 2012	81	98.9	1,708.5	5.8	0.54
December 31, 2011	105	140.6	176.0	79.9	0.35
December 31, 2010	94	120.5	153.1	78.7	0.72
December 31, 2009	72	90.9	129.5	70.2	0.96
December 31, 2008	45	49.1	103.6	47.4	1.22
December 31, 2007	49	64.4	95.8	67.2	0.60
December 31, 2006	41	42.1	91.8	45.9	0.71
December 31, 2005	29	29.0	79.4	36.5	0.72
December 31, 2004	21	9.0	41.4	21.7	N/A

*The index returns are derived from published sources and have not been examined.
**For periods ending on or before 12-31-2011, total firm assets are those of Spartan Capital Management, LLC.
N/A - Data is not applicable for the time period.
† Inception date: 05/31/2004
See accompanying Composite Performance Disclosure

Composite Performance Disclosure

Organization

The Pennsylvania Trust Company (the "Firm") provides investment management and trust administration, tax, estate, and related account services to high net worth individuals and institutions. The Firm provides a broad range of investment services for clients through separately managed portfolios representing a variety of investment styles. Certain of the Firm's principals are investors along with the Firm's clients.

On February 1, 2012, Spartan Capital Management, LLC joined the Firm. Substantially all of the investment decision makers transferred from Spartan Capital Management, LLC to the Firm and the decision making process remains unchanged. As a result, the composite performance record included herein from June 1, 2004 through January 31, 2012 is that of Spartan Capital Management, LLC and has been linked to the performance included herein.

Composite Description

The Multi-Cap Value Composite (the "Composite") includes all discretionary, fee paying portfolios invested in the Firm's Multi-Cap Value Strategy (the "Strategy").The Strategy employs a value-based approach that incorporates principles of behavioral finance to build a portfolio with relatively low correlation to market indices. The Strategy seeks superior long-term capital growth for its clients with below average market risk. The Strategy is typically comprised of equity securities of companies of all sizes that the firm believes are undervalued and mispriced by the market; portfolios generally hold between 20 and 35 securities. From May 31, 2004 through August 31, 2004 all discretionary portfolios were included in the composite after the first full month of being invested. From September 1, 2004 through December 31, 2015 all discretionary portfolios were included in the composite after the first full quarter of being invested through the last full quarter prior to termination. Effective January 1, 2016, portfolios are included in the composite beginning with the first full month of performance through the end of the last full calendar month prior to termination. Portfolios that have a significant cash flow, defined as a contribution or withdrawal of 20% or greater of the beginning market value of that month(effective January 1, 2016)/quarter (prior to January 1, 2016), are excluded from the composite for the month (effective January 1, 2016)/quarter (prior to January 1, 2016) in which the flow occurs.

The indices are presented for comparison purposes only; one cannot invest directly in an index. The indices are provided to represent the investment environment existing during the time periods presented. The Standard & Poor's 500 Index (S&P500) is a market value weighted index, which broadly measures the performance of U.S. large capitalization stocks. The Russell 3000 Index measures the performance of the largest 3,000 U.S. companies, representing approximately 98% of the investable U.S. Equity market. The Dow Jones Industrial Average (DJIA) is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry. The Nasdaq Composite Index is a broad-based capitalization-weighted index of stocks listed on Nasdaq. Performance results for indices are reported on a gross basis and do not assume any advisory, brokerage, or custody fees.

Performance Calculations

Performance results are calculated on a total return basis and include all realized and unrealized capital gains and losses as well as dividends and interest. Portfolio performance calculations are time-weighted to account for periodic contributions and withdrawals. The Composite returns consist of size-weighted portfolio returns using beginning of period values to weight portfolio returns. Gross of fees returns reflect the deduction of transaction costs. Net of fees returns reflect the deduction of actual transaction costs, custody and investment management fees. Portfolios in the Composite presented record transactions based on trade dates. All of the Composite's valuations, returns, and disclosures are computed and stated in U.S. dollars.

Prior to July 1, 2012, monthly returns are calculated using the Modified Dietz Method assuming cash flows occurred at the end of the day. Monthly linking of interim performance results is used to calculate annual returns. Portfolios are valued on a monthly basis or when a large flow occurs. The Firm defines "large flows" was those over 10% of the beginning market value for that month. The Firm calculates performance for interim sub-periods between all "large flows" using the Modified Dietz Method and geometrically links the performance to calculate periodic returns. The Modified Dietz Method is as follows:

$$r_t^{MD} = \frac{V_t^E - V_t^B - \sum_{i=1}^{I} CF_{i,t}}{V_t^B + \sum_{i=1}^{I}(CF_{i,t} \times w_{i,t})}$$

where

r_t^{MD} = the Modified Dietz return for the portfolio for period t
V_t^E = the ending value of the portfolio for period t
V_t^B = the beginning value of the portfolio for period t
i = the number of external cash flows $(1, 2, 3 \ldots I)$ in period t
$CF_{i,t}$ = the value of cash flow i in period t
$w_{i,t}$ = the weight of cash flow i in period t, as calculated according to the following formula:

$$w_{i,t} = \frac{D_t - D_{i,t}}{D_t}$$

where

$w_{i,t}$ = the weight of cash flow i in period t
D_t = the total number of calendar days in period t
$D_{i,t}$ = the number of calendar days from the beginning of period t to cash flow i

Beginning July 1, 2012, portfolios are valued and returns are calculated daily. The daily calculation utilizes the formula described above. For the period July 1, 2012 to July 31, 2015, all flows are assumed to occur at the end of the day where the weight of the cash flow is zero. Beginning August 1, 2015, all cash flows are assumed to occur at the beginning of the day where the weight of the cash flow is one. In instances where securities are transferred in or out of an account, mid-day weighting is utilized. For these transactions, the weight of this flow is equal to 0.5. The daily returns are geometrically linked to generate monthly performance. Monthly linking of interim performance results is used to calculate annual returns.

Investment Management Fees

The fee schedule is as follows as of December 31, 2018: 1.25% on the first $1million; 1.00% the next $1million; 0.75% on the next $3million; 0.50% on the balance.
The minimum annual fee is $12,500.

Composite Minimum

Effective January 1, 2005 a Composite minimum was established at $500,000. Accounts within the Composite that decrease in value below $400,000 at the beginning of a calendar month (effective January 1, 2016)/quarter (prior to January 1, 2016) are removed from the Composite for the calendar month(effective January 1, 2016)/quarter (prior to January 1, 2016) in which they are below the minimum. Accounts are added back to the Composite once they have reached the composite minimum as of the beginning of a calendar month (effective January 1, 2016)/quarter (prior to January 1, 2016).

Composite Dispersion

Composite dispersion measures the consistency of the Composite performance results with respect to the individual portfolio returns within the Composite. Composite dispersion is calculated using the asset-weighted standard deviation method for all portfolios that were included in the Composite for the entire period.

Examination & Future Performance

The Multi- Cap Value Composite has been independently examined for the periods July 1, 2011 through June 30, 2018. The historical rates of return should not be relied on as indicative of future results. Investors should be aware that other performance calculation methods may produce different results and that comparison of investment results should consider qualitative circumstances and should be made only for portfolios with generally similar investment objectives.

This material is for illustrative/informational purposes only. This material is not intended to constitute legal, tax or investment advice. The information contained herein may not be applicable to or appropriate for every investor and should only be used after consultation with professionals who have re-viewed your specific situation. Views and security holdings are subject to change at any time based on market or other conditions. Past performance is no guarantee of future results. Indexes shown are for informational purposes only. It is not possible to invest directly in an index. This material shall not be redistributed without the express permission of The Pennsylvania Trust Company. The information is intended only to provide general information and is not, nor may it be considered legal advice or tax advice and cannot be used by any taxpayer for the purpose of avoiding penalties.