Denali Advisors

Quarter II, 2019 Performance Review

Denali Network Value Large

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Economy and Markets

Healthy growth continued in the American economy in the second quarter of 2019. Annualized growth in GDP for the first quarter over Q4 was reported at a much higher than forecast 3.1%. Private investment was once again the strongest driver of growth, with consumer spending growth taking a bit of a breather. Exports grew significantly faster than expected, while imports actually declined. The slowdown in growth that had been forecast for the first quarter is now thought to have occurred in Q2, with second quarter growth estimated at 1.8% annualized over Q1. This would bring growth over the prior year to 2.6%, after three straight quarters of year-over-year growth above 3%.

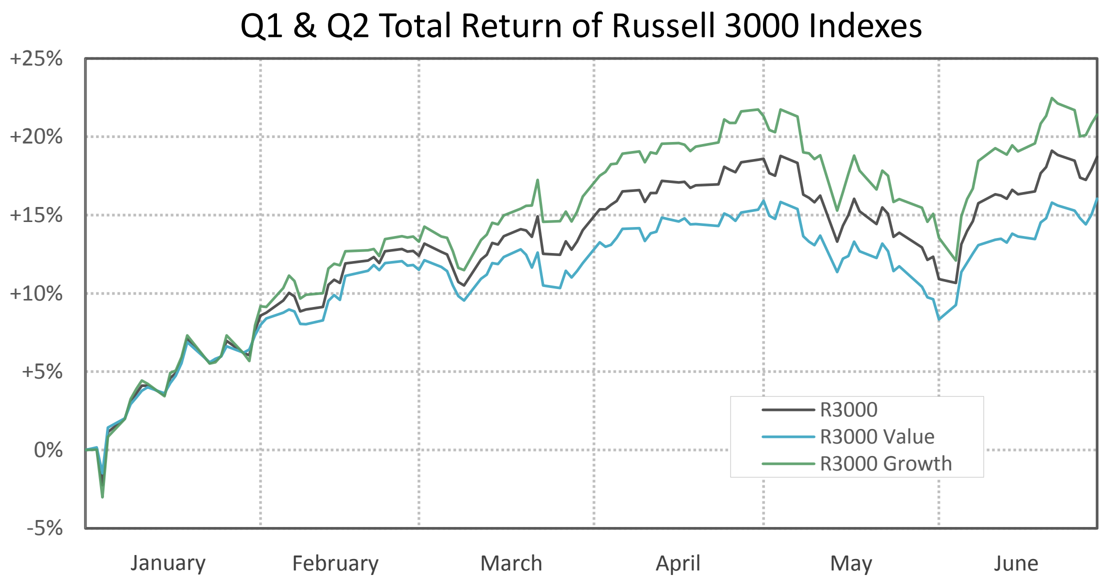
The growing economy generated more than 200,000 payroll jobs in Q2, pushing the unemployment rate down to 3.6%, the lowest since 1969. Workers' average earnings grew by 3.1% over the prior year, 1.2% faster than the estimated Consumer Price Index. Corporate profits are being pressured by the increased labor costs and other expenses. S&P 500 earnings for the first quarter barely grew relative to the prior year, and forecast earnings for the second quarter reflect a 6% decline from Q2 of 2018 (*source: Bloomberg*), but growth is expected to resume in the current quarter.

Driven by slowing growth and monetary stimulus overseas along with lowered inflation expectations, the remarkable decline in U.S. long-term interest rates continued, with the ten-year Treasury yield falling by 40 bp in the quarter to 2.0%, down more than 120 bp since November. Shorter-term rates also fell, but the yield curve remained partly inverted. The FOMC made no changes to its short-term target rate at its meetings in May and June, but the focus of Federal Reserve officials' comments and investor speculation shifted to when the Fed might lower rather than raise rates later this year. Rates also fell in all major foreign bond markets, with the German 10-year yield reaching an all-time low of -33 bp.

Oil prices fluctuated across a wide range between $51 and $67 per barrel of U.S. benchmark crude as global trade and demand concerns, as well as tensions with Iran, waxed and waned, finishing down 3% for the quarter at $58. The U.S. dollar's foreign exchange rate remained fairly stable and ended the quarter almost unchanged for 2019.

The U.S. equity market began the quarter continuing the strong appreciation from Q1. In a possible sign of concern over the potential for further gains, some very high profile IPOs entered the market but failed to rise above their offering prices. Stock prices plunged in May as prospects for resolution of the trade dispute with China seemed to recede, worries that intensified with the threat of possible tariffs on imports from Mexico to induce cooperation on reducing the flow of migrants to the southern border. However, a quick resolution of the

Mexico risk, at least in the short term, along with Fed officials communicating that they would consider rate cuts in response to economic weakening from trade disputes, sent prices sharply back higher in early June, setting historic highs once again. From our southern California perspective, we would liken May and June to an aftershock from the Q4 plunge and Q1 rebound. The market ended the quarter with a 4.1% return for the broad Russell 3000 index, bringing the return for 2019 to 18.7%.

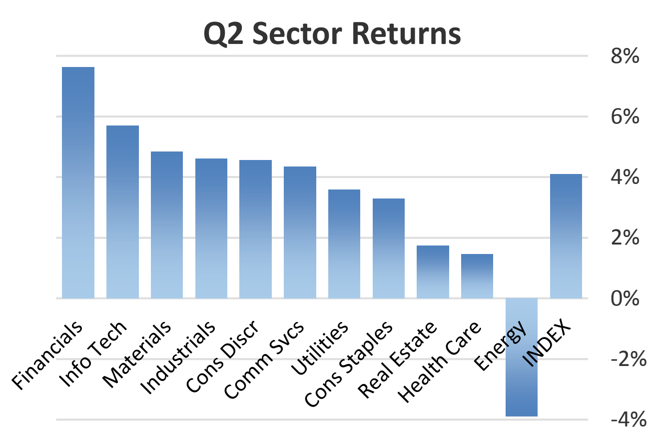


An aftershock

The cyclical sectors again outperformed the more defensive sectors this quarter, consistent with continued expectations for robust growth. Utilities and Real Estate underperformed despite the large decline in long-term interest rates. One notable effect of the fall in rates was to boost Insurance companies (which tend to have large bond holdings); this was the strongest industry group for the quarter with an 11.4% return, pushing the Financials ahead of other sectors by a wide margin. Energy was the only sector to suffer a loss in the quarter. Growth style indexes led Value in all market cap ranges except microcap, while larger caps outperformed smaller cap stocks monotonically.

Russell Index Returns, Q2 2019

Index	All	Growth	Value
Russell 3000	4.10%	4.50%	3.68%
Russell 1000	4.25%	4.64%	3.84%
Russell Midcap	4.13%	5.40%	3.19%
Russell 2000	2.10%	2.75%	1.38%
Russell Microcap	0.92%	0.43%	1.41%



Denali Performance Review

Against the background of continued underperformance for Value stocks, and low P/E stocks in particular, most of Denali's value-oriented strategies trailed their benchmarks in Q2, although our Network Value Mid strategy did again modestly outperform its benchmark. Over the past year, the Network Value Mid, Small and Micro portfolios all generated good excess returns against their benchmark indexes, but NV Large had significant underperformance. All of our strategies remain significantly ahead of benchmark for the period since the inception of the Network Value based process.

	Q2 2019			One Year			Since Network Value inception			
Strategy	Gross	Net	Bench	Gross	Net	Bench	Gross	Net	Bench	mo's
Network Value Large	2.19%	2.12%	3.84%	2.57%	2.27%	8.46%	12.37%	12.01%	11.52%	81
Network Value Large Core	2.34%	2.28%	4.25%				1.55%	1.37%	2.42%	9
Network Value Mid	3.35%	3.24%	3.19%	7.46%	7.02%	3.68%	13.87%	13.45%	11.88%	81
Network Value Small	0.83%	0.72%	1.38%	-2.87%	-3.71%	-6.24%	11.02%	9.97%	7.88%	73
Network Value Micro	0.45%	0.13%	1.41%	-7.34%	-8.52%	-10.91%	8.07%	6.74%	6.04%	66

Returns for Denali's Network Value Large, Mid, Small and Micro composites are presented gross and net of management fees. Please refer to disclosures at the end of this commentary.

Q2 Performance Analysis

The **Network Value Large** composite returned 2.19% in the second quarter before fees, against 3.84% for the Russell 1000 Value benchmark. One of the most important effects on our active return for the quarter was once again that stocks with less expensive valuations relative to earnings among large caps were broadly outperformed by those priced at higher multiples, although this spread was not as wide or monotonic as in Q1. Lower long-term rates again played a part in this, since they theoretically increase the relative value of stocks whose price is based more on earnings further in the future (growth stocks), and tend to have lower current earnings/price ratios. Since our portfolios are concentrated in stocks with higher E/P ratios, this presented a fundamental headwind to our performance.

Our **Network Value Index*** returned 4.04% in the second quarter, modestly ahead of the benchmark. As for the last two quarters, the NV index return was about midway between the Russell 1000 Index return and the 1000 Value. Thus, while stocks with higher earnings relative to price generally underperformed, stocks with the combination of higher earnings and lower liquidity emphasized in our NV index did better.

Our composite portfolio's return was lower than the Network Value Index and the benchmark return. Our analysis below finds that this resulted more from the particular behavior of our individual holdings than from the general performance of our forecasting process or our exposures to systematic influences.

Our investment process combines two long-horizon return forecast models based on fundamental effects that tend to work in the same direction over time, with two short-horizon models that take account of trending or cyclical effects which might impact returns in the short-term. The overall predictive performance of the combined model was slightly positive for the quarter.

Long term:

- The cross-sectional performance of the **Network Value Alpha** forecast model was modestly positive among large and mid cap stocks in the quarter, even though the NV Index slightly trailed the cap-weighted index.

*Please refer to NV Index disclosures at the end of this commentary.

- The predictive performance of our **intrinsic value** forecast was also somewhat positive in Q2 despite general Value underperformance, reflecting the positive influence of higher long-term growth estimates on this model.

Short term:

- Our **detailed estimate revision** forecast had neutral results in Q2 among large caps.
- Our **Characteristics Trend** model produced mixed to slightly negative performance in Q2. With four major market reversals in the past 9 months, there was more reversion than continuity in factor return trends.

Denali Network Value Large Portfolio Characteristics

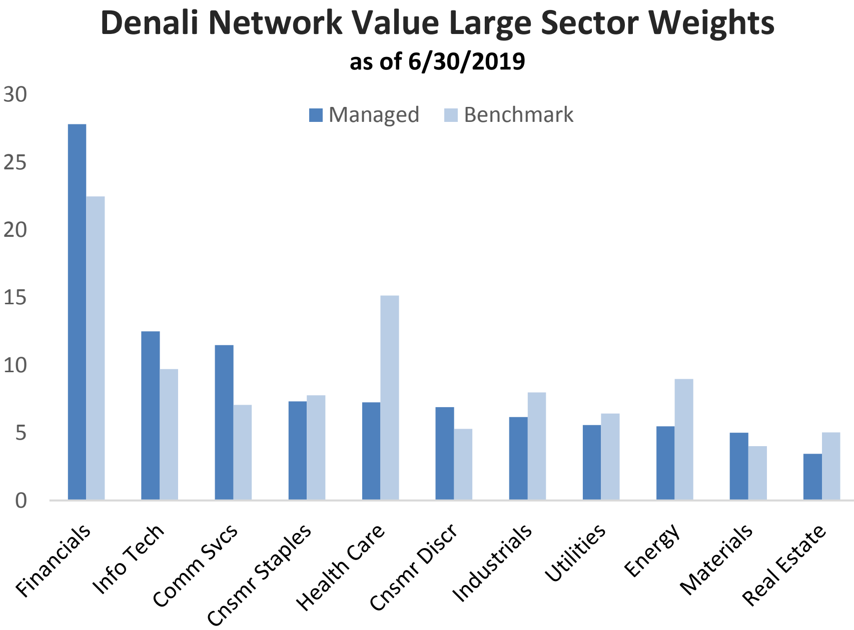
as of 6/30/2019

Characteristics:	NV Large	R1000V	Relative
Wgt Avg Mkt Cap (Mil $)	62,935	120,592	-48%
30 Day Wgtd Dollar Volume (Mil $)	9,709	14,312	-32%
P/E trailing 12m	11.9	16.6	-28%
P/E forward 12m	11.3	14.6	-23%
# Names	58	761	-92%

Characteristic Trend Model Factors:

- The sector momentum portion of the model was the most helpful, as forecasts of underperformance for Energy and Health Care proved correct. The model moved from forecasting underperformance to outperformance for Financials.
- Higher sales/assets exposure (“efficiency”) had the most negative factor impact in Q2. This was the most positive factor exposure in Q1, and had been persistently positive in recent quarters.
- Our exposures to stocks with lower momentum and higher price volatility were the next most negative impacts.
- One trend that had been very persistent was the negative effect of exposure to stocks with higher sales-to-price ratios, which was the biggest negative impact in the last quarter and in four of the past five. But this quarter our model showed that it was *growth* in the S/P ratio rather than the level which had a negative effect.
- Our higher cash flow/price exposure had the most negative impact among valuation ratios in the quarter.
- Interestingly, our exposure to higher forecast E/P ratios was the most positive factor impact in the quarter.
- Our lower average volatility of earnings was the next most significant benefit for the quarter.

Attribution analysis with the Barra model shows that our higher earnings yield again had by far the most negative systematic effect. Our higher average volatility and lower momentum were also negative, in agreement with our Characteristics Trend analysis. Our smaller average market cap size had the most positive systematic effect on our performance. Higher exposure to leverage was also a positive, and our lower liquidity was beneficial. In the Barra framework our overall exposures to industry factors was a significant benefit, but specific asset selection was seen as more important than net systematic effects, accounting all of our active return shortfall.



Our active positions in GICS sectors benefited active performance by around 85 bp this quarter, but this was outweighed by adverse individual stock selection within sectors. We benefited principally from underweighting Energy and overweighting Financials, positions which had detracted from Q1 performance. We had successful stock selection results in Staples, but notably negative outcomes in Health Care, Utilities, Industrials and Discretionary stocks, with seletion also unsuccessful in Communications and Financials.

- In the **Staples** sector, our position in the meat production industry produced the biggest individual contribution to performance.
- In **Communications** we were slowed by overweighting large telecomm providers and underweighting media and entertainment stocks.
- In the **Financials**, we benefited from overweighting insurance and financial services firms. However, our largest bank holding significantly underperformed its peers.

Outlook

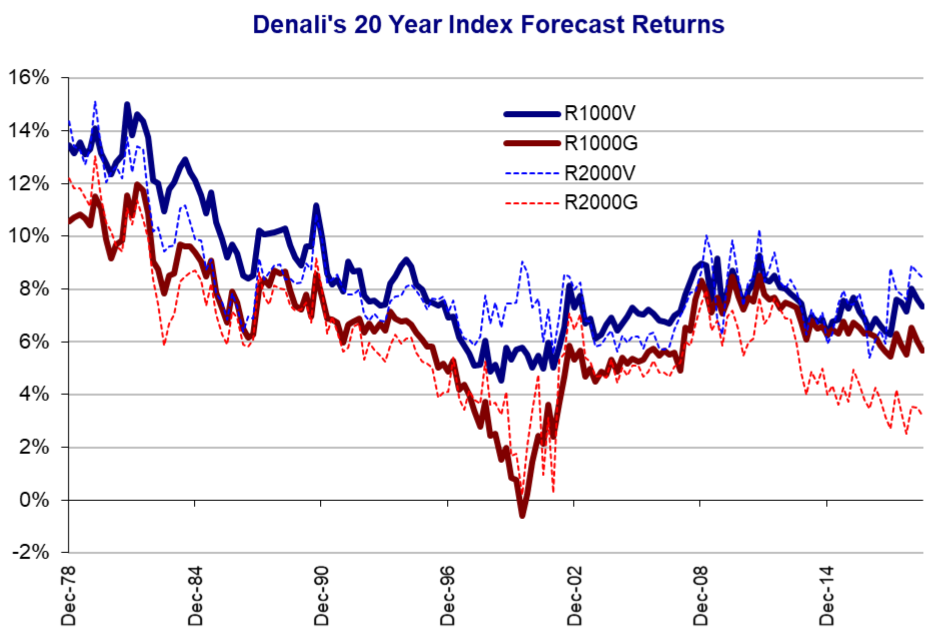
The main incremental changes to our outlook this quarter are for somewhat slower growth overseas and "lower for longer" interest rates in the U.S. We still see fairly steady growth in the US, supported by strong consumption. The consensus of economists' forecasts for 2019 has ticked back up above 2.5%, and these estimates have tended to be conservative in recent quarters. U.S. growth will continue to exceed that in most of the developed world, and perhaps by a larger margin as European growth wilts and China's trends down. Further market aftershocks are certainly possible as the trade wrangling continues between the U.S. and China. However, we think some resolution will be forthcoming before too long; China's trade with the U.S. has actually begun to contract, and the idea that the Chinese can just wait it out seems unrealistic. A prompt resolution of Brexit uncertainty could provide a much needed impetus for investment on both sides of the English Channel. In sum, scenarios for improvements in currently weak overseas economies are fairly visible.

Domestically, unemployment is expected to remain near the current very low levels in the coming year, with average real wages rising steadily. Wage growth will put some pressure on corporate profit margins, but earnings should be able to grow. S&P 500 profits are projected to return to growth in the current quarter, and are estimated to rise around 9% for this year over 2018. Inflation remains quite low. However, the Fed is now widely expected to cut short term rates within the next few months. Given this, we don't foresee a recovery in long term yields in the near future, especially since the spreads over other developed markets are very wide. However, it seems likely that long term rates will not fall as much as the Fed cuts short term rates, which would steepen the yield curve and aid the financial sector.

Given the strong link between interest rates and the theoretical valuations of Growth stocks, it was not surprising that the big fall in rates this year should drive Growth outperformance. But we would be surprised to see that driver continue to operate. We are encouraged to see the Growth-Value spread narrowing, and our Characteristics Trend model showing exposure to cheaper valuations becoming less toxic. With some rate stability, we anticipate an environment with earnings growth, equity returns and volatility levels all more in line with historically typical levels -- and a normalizing environment is generally friendly to strategies based on relative valuations. Denali's constant focus on stocks with valuations solidly supported by earnings and the potential for increased liquidity should be well-suited.

Long term view:

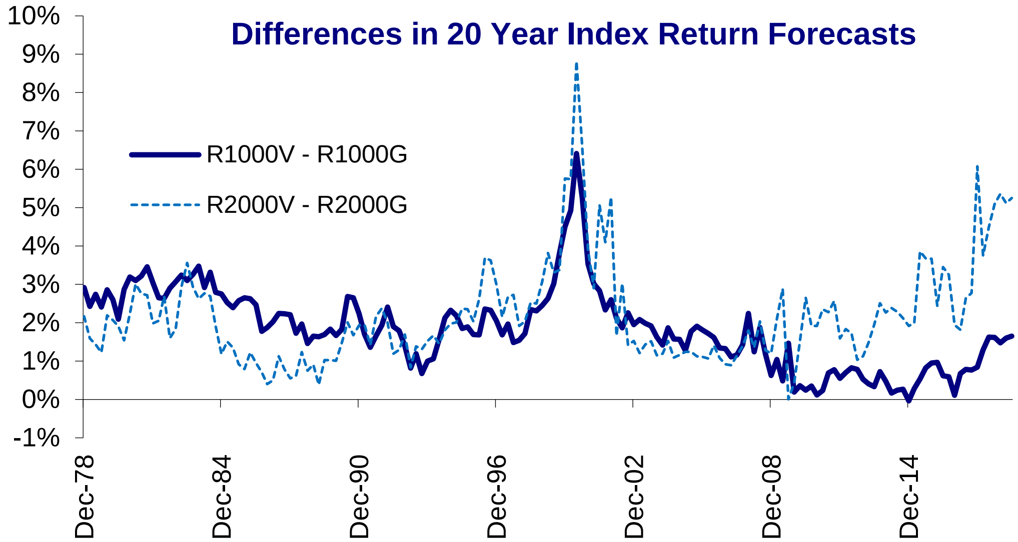
In 2000, Denali partners published an article saying there was a "Great Growth Bubble." We made a simple valuation model that forecasts long run stock returns based on earnings. Earnings are important in Denali's process and lately, they have received short shrift. That has hurt our performance for most of our strategies. Below we update and show the forecast returns from that same model.[1] The solid lines show the forecast returns for Large Value and Large Growth Stocks (Russell 1000V and 1000G indexes). The dotted lines show the forecasts for Small Value and Small Growth (R2000V and R2000G). One can see the spread between small value and small growth has grown very wide in recent years.



If we look at the differences in these return forecasts (see the graph below) we see several things. First, at Denali we favor value stocks because we believe they have a return premium

[1] Note that these forecast returns come from an aggregate index return forecast model, which differs from our stock level model. Both heavily rely on earnings.

related to these companies' higher earnings; this is what makes the average difference in the below graph greater than zero. Second, the forecast return for Large Value over Growth has risen to its highest in a decade – because Growth stocks have gotten progressively more expensive – but is only now at its longer term average. Third, the Small Value relative to Growth valuation is pronounced. The difference has not been this high since the extreme period of the Great Growth Bubble of 1998-2000. That is, Small Value stocks are a bargain. Many investors use past return history to make tactical allocation decisions, which research shows[2] is a poor way to allocate. Valuation spreads are a much better way to make allocation decisions than returns. (Rob Arnott argues this is true for factors as well as asset classes.) Valuation spreads are showing that Small Value is very attractive relative to Small Growth, or Small Cap broadly. We believe investors will experience higher returns in Value going forward.



Recently, a friend of the firm sent an argument posted on CNBC titled: *Is value investing dead? It might be and here's what killed it…*[3] The reasons listed were "the long period of low interest rates" and "technology has disrupted industries in a way that may permanently destroy 'moats' that used to exist around certain industries." Both points are incorrect.

As to interest rates and value – it's changes in rates that matter, not levels. Financials and Value stocks can have profits even with negative rates. When rates *fall* the discounted value of future earnings is discounted less, which helps long duration assets like Growth stocks. If rates fall more from where they are now (as of July 1 the 10 year yield is 2.03%) that could help Growth stocks. If rates rise it helps Value stocks outperform Growth. If rates stay the same it doesn't matter. Value stocks are able to do fine with low rates.

As to "moats," their argument for old-line company moats being eaten by technology is actually an implicit acknowledgement of well-known growth companies' own moats.[4] Will these growth companies be able to protect their own moats? Moats are less of a hindrance than everyone expects. That's the crux of the behavioral argument for a Value premium. And further, academic research hasn't shown that moats matter much. A recent Institutional

[2] Frazzini, Andrea, and Owen A. Lamont. "Dumb money: Mutual fund flows and the cross-section of stock returns." Journal of financial economics 88, no. 2 (2008): 299-322.
[3] https://www.cnbc.com/2019/06/21/is-value-investing-dead-it-might-be-and-heres-what-killed-it.html
[4] Which we for compliance reasons we don't name.

Investor article, which cites such research, attacks the entire moat way of thinking about corporate strategy and investing.[5]

This CNBC article reminds us of the infamous and ill-timed 1979 *Business Week* issue "The Death of Equities." If anything, this CNBC article makes us even more confident that Value is alive, and earnings will matter.

[5] https://www.institutionalinvestor.com/article/b15jm11km848qm/the-gospel-according-to-michael-porter

Disclosures

Data sourced from S&P CapitalIQ, Bloomberg, and FTSE Russell. Returns are presented gross and net of management fees and include the reinvestment of all income. Past performance is not indicative of future results. Results are based on fully discretionary accounts under management, including those accounts no longer with the firm. Denali was established in 2001 and manages equity and alternative assets for primarily institutional clients. The U.S. dollar is the currency used to express performance. Leverage is not used in these products.

Denali Network Value Mid: Composite consists of fully discretionary mid cap value portfolios, measured against the Russell Mid Cap Value Index, and intends to outperform that benchmark while maintaining similar sector, industry and security characteristics. The Denali Network Value Mid Composite was created October 1, 2005. As of January 07, 2014, the Denali Mid Cap Russell Composite was renamed the Denali NV Mid Composite., and then on July 17, 2014 was renamed the NV Mid Composite. As of October 18, 2017 the NV Mid Composite has been renamed Denali Network Value Mid. In September 2012, the investment process changed to select stocks using Denali's proprietary Network Value forecast model that ranks stocks by earnings and illiquidity in addition to the other factors that were previously being used to rank stocks. There were no changes to the investment objective. The sector and industry characteristics of the NV Model are still similar to the Russell Mid Cap Value Index. The management fee schedule is as follows: First $25 million 0.75%, next $25 million 0.70%, balance 0.65%. Client returns will be reduced by advisory and other expenses the client may incur. There is a marketing minimum of $5 million.

Denali Network Value Large: Composite consists of fully discretionary large cap value portfolios measured against the Russell 1000 Value Index benchmark and intends to outperform that benchmark while maintaining similar sector, industry and security characteristics. The Denali Network Value Large Composite was created September 30, 2012. As of July 17, 2014, the Denali NV Hi Concentrated Composite was renamed the NV Large Composite. As of October 18, 2017 the NV Large Composite has been renamed Denali Network Value Large. As of February 18, 2016, the secondary benchmark S&P 500 was removed as it is no longer representative of the strategy. The Denali Network Large portfolio construction was based on the analysis of earnings and liquidity of selected companies from the Russell 3000 index combined with a factor forecast applied to stocks in this same universe. The management fee schedule was as follows: First $25 million 0.55%, next $25M 0.50%, next $50 million 0.45%, balance 0.40%. Client returns will be reduced by advisory and other expenses the client may incur. There is a marketing minimum of $5 million.

Denali Network Value Small: Composite consists of fully discretionary small cap portfolios. Results are compared against the Russell 2000 Value and intend to outperform that benchmark while maintaining similar sector, industry and security characteristics. The Denali Network Value Small Composite was created May 31, 2013. As of July 17, 2014, the Denali NV Small Composite was renamed the NV Small Composite. As of October 18, 2017 the NV Small Composite has been renamed Denali Network Value Small. As of February 18, 2016, the secondary benchmark Russell 2000 was removed as it is no longer representative of the strategy. The NV Small portfolio construction is based on the analysis of earnings, liquidity and other characteristics of selected companies from the Russell 2000 index. Net returns have been calculated by reducing gross returns by a model management fee of 1%. The management fee for this product is 1.00%. Client returns will be reduced by advisory and other expenses the client may incur. There is a marketing minimum of $5 million.

Denali Network Value Micro: Composite consists of fully discretionary micro cap portfolios. Results are compared against the returns of the Russell Microcap Value Index and intended to outperform that benchmark while maintaining similar sector, industry and security characteristics. The Denali Network Value Micro portfolio construction is based on the analysis of earnings, liquidity and other characteristics of selected companies from the Russell Microcap Index. As of February 4, 2014, the benchmark was changed from the Russell Microcap Index to the Russell Microcap Value Index retroactively. This change was made because we believed that the Value style index would provide a more useful performance comparison for clients and prospective clients in this strategy. The Denali NV Micro Composite was created December 31, 2013. As of July 17, 2014, the Denali Network Value Micro was renamed the NV Micro Composite. As of October 18, 2017 the NV Micro has been renamed Denali Network Value Micro. The composite is comprised of 100% non-fee-paying accounts for all periods presented. Net returns have been calculated by reducing gross returns by a model management fee of 1.25%. The model fee used to calculate performance is applied monthly. The fee schedule for this product is 125 bps on all fund assets under management. Client returns will be reduced by advisory and other expenses the client may incur. There is a marketing minimum of $5,000,000.

Denali Network Value Large Core: Denali Network Value Large Core composite consists of fully discretionary large cap portfolios that are restricted to shift the portfolio towards a core benchmark. Results are compared against the returns of the Russell 1000 Index and intended to outperform that benchmark while maintaining similar sector, industry and security characteristics. The Denali Network Value Large Core Composite was created September 30, 2018. The Denali Network Value Large Core portfolio construction is based on the analysis of earnings and liquidity of selected companies from the Russell 1000 Index. The management fee schedule is as follows: First $25 million 0.55%, next $25M 0.50%, next $50 million 0.45%, balance 0.40%. Client returns will be reduced by advisory and other expenses the client may incur. There is a marketing minimum of $5 million.

NV Index: The period of back testing for the NV 500 extends over a long-term period of 35 years, Dec 31, 1978 to Dec 31, 2015. Rebalancing done annually, each June 30. Back test results are only shown as an illustration for portfolios constructed using a Network Value Strategy, and are not meant to be representative of either historical or future actual returns. Client returns will be reduced by advisory and other expenses the client may incur. Leverage is not used.