CHEVY CHASE TRUST
INVESTMENT ADVISORS

Investment Update—October 2017

This is a quarterly update of economic conditions and investment strategy.

U.S. equity markets continued a steady climb during the third quarter of 2017. The S&P 500 Index generated a total return of 4.48%, bringing the year-to-date return to 14.24%. Volatility remained exceptionally low. If the year were to end today, 2017 would contain the fewest +/- 1% days since 1964. The S&P has gone ten months without a sell-off of more than 3%, making it the second longest stretch since 1950. Historically, 3% (or greater) sell-offs have occurred on average every two to three months.

Unlike prior bull markets, the relatively steady climb higher does not seem to be lulling investors into complacency. Memories of the bursting internet bubble and global financial crisis, stretched valuations, and rising geopolitical risks (most notably North Korea), contribute to somewhat bearish sentiment. Also, investors instinctively, if not intellectually, understand the concept of "negative skew." Negative skew applied to equity markets means advances tend to be gradual and steady while sell-offs are sudden and sharp. Markets rarely melt up, but they do melt down.

Despite the longevity of this bull market (now well into its eighth year), and several real risks, we are maintaining our current portfolio strategy and positioning. Bear markets have almost always coincided with economic recessions, with the latter usually causing the former. None of our recession-timing signals are flashing red. ISM manufacturing new orders are strong, initial unemployment claims are low, core capital goods orders are accelerating, and the yield curve is not in immediate risk of inverting. U.S. financial conditions have eased this year, which should support near-term growth.

The key indicator we are watching is inflation. In our opinion, a sustained increase in inflation will mark the beginning of the end of this bull market. Rising inflation will signal that the slack created by the last recession has disappeared and the Federal Reserve will have a green light to raise interest rates with intent to slow economic growth.

After five months of inflation data coming in below consensus expectations, the August consumer price index was higher than expected. This is only one data point after a string of lower readings. We will be watching to see if this is a one-off blip or a change in trend. For now, we are holding on loosely, but alertly.

Looking Deeper

Understanding current equity market dynamics requires looking beyond aggregate results. Thus far, 2017 has seen the largest gap between the performance of growth and value stocks in twenty years. The two tables below illustrate this point.

2016 TOTAL RETURNS (%)

	Value	Core	Growth
Large	19.60	11.95	4.22
Mid	31.30	20.70	4.50
Small	34.00	26.45	20.79

2017 TOTAL RETURNS (%)

	Value	Core	Growth
Large	8.82	14.50	20.75
Mid	6.27	9.48	12.90
Small	-3.17	8.90	14.21

Source: Cornerstone Macro

During 2016 it paid to be smaller and more value-oriented (cyclically positioned). The opposite has been true thus far in 2017. Typically, large cap growth stocks outperform when we are in a slow growth environment. When growth is scarce, investors pay more for it. Cyclicals tend to outperform when underlying economic growth is accelerating.

Another shift that has occurred in 2017 is the outperformance of non-U.S. equity markets versus the U.S. From 2010 to 2016 the S&P 500 outperformed the MSCI All Country World Index

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7501 WISCONSIN AVENUE, SUITE 1500W, BETHESDA, MD 20814 TEL 240.497.5000 FAX 240.497.5011 WWW ChevyChaseTrust.com

in all but one year. The average difference between the two indexes was a whopping 4.9% per year. In 2017 the opposite has occurred. Year-to-date the MSCI All Country World Index has generated a total return of 17.75% versus the S&P 500's 14.24%.

Surprisingly, this performance divergence has occurred alongside a weakening U.S. dollar. Conventional wisdom at the beginning of 2017 was that the Federal Reserve would raise interest rates faster than other major geographies and, as a result, the U.S. dollar would strengthen. This did not happen. Despite two rate hikes this year, the DXY Index, which measures the U.S. dollar versus a basket of foreign currencies, has declined approximately 9%. This weakness serves as a tailwind for U.S. corporate earnings. A recent research report estimates that every 1% depreciation in the dollar increases S&P 500 earnings by 1.6%. Conversely, relative strength in the euro, yen and yuan acts as a drag on earnings. This makes the year-to-date performance of non-U.S. regions even more impressive.

Finally, U.S. dollar weakness is inflationary since it requires more dollars to buy the same imported goods bought just one year ago. The fact that inflation has missed consensus expectations for most of the year, despite dollar weakness, tells us that secular deflationary pressures are still present despite the U.S. economy approaching full employment. If the U.S. dollar stops depreciating, as many expect, the strong performance of non-U.S. equity markets will likely continue into 2018, and inflation may again fall short of expectations.

Equities

As thematic investors, we research secular trends and the resulting changes that we think will impact corporate strategies and performance. Our secular themes tend to be long-lived and typically remain relevant for multiple years. However, they evolve over time and the ideas they spawn and the stocks that capitalize on the themes change as they become more widely recognized. Two current examples are Amazon and NVIDIA.

For several years, the narrative around Amazon was that it didn't make money and would never be profitable. Our thematic research focused on the growing importance and underappreciation of access to consumer data (our Intangibles theme), and on changing consumer behavior as populations shifted toward denser urban areas in the U.S. (our U.S. Urbanization theme). We believed Amazon's dominant web services business and the fact that the company was already the largest cloud computing provider in the world, were not appropriately valued because most investors only viewed Amazon as a retail company. We also believed the company's substantial investment in fulfillment centers close to urban populations would give it a sustainable competitive advantage in retail delivery. This barrier to entry and first mover advantage contributed to the company's ability to increase market share at the expense of competitors. Today 80% of incremental retail sales occur online and 60% of those sales are captured by Amazon. The company now accounts for half of all growth in retail sales.

As Amazon's strong positioning became more evident, sentiment also changed. Recent headlines and analyst reports have been almost universally favorable. We still own Amazon, but its uniqueness is no longer as underappreciated.

Similar to Amazon, the semiconductor chip company NVIDIA appeared well positioned to capitalize on more than one of our investment themes. The initial thesis for investing in NVIDIA was fairly simple. The amount of global data being generated was growing at an exponential rate (our Intangibles and Automation themes). Making sense of that data was increasingly challenged with conventional processing techniques. Interestingly, we first discovered NVIDIA's advantages from speaking with genomic experts while researching our Molecular Medicine theme. We learned that the primary bottleneck in genomic sequencing was processing. Each human genome contains six billion base pairs. It took a day or more to process this amount of data with conventional CPUs and the data analysis portion of the total cost of genomic sequencing kept rising. Scientists discovered that NVIDIA's GPU chips, first created for graphically intense computer games were a perfect complement to CPUs as an accelerator.

Realizing that Molecular Medicine would not be the only field challenged by data proliferation, we examined the potential for GPUs in other fields and applications. NVIDIA

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also recognized the potential early and invested heavily in developing their GPUs and the requisite software required to easily program them for different applications. As a result, it was able to capture 85% market share before the opportunity became more broadly recognized by chip competitors. NVIDIA still has a leadership position, but the field is becoming more competitive as GPUs are critical technology for applications as diverse as artificial intelligence (AI) and self-driving vehicles.

Intangible Assets: An Investable Theme – A recent feature in The Economist stated "the world's most valuable resource is no longer oil, but data." In a twist on economics, oil's value derives from its limited supply and scarcity while data's value is derived from almost limitless growth and new discoveries.

Despite the growing importance of data, it is not listed as an asset on a company's balance sheet. Unlike property, plant and equipment, it is difficult to value and Generally Accepted Accounting Principles (GAAP) provide little guidance. Access to data has changed the nature of competition by creating self-sustaining network effects. By gathering more data, a firm can improve its products or services, which attracts more customers and generates more usable data. Importantly, these virtuous cycles are occurring across many industries in innovative ways.

The more data Tesla and Google gather from their self-driving cars, the better they become at driving themselves. The more information GrubHub gathers about when, where and what consumers order from restaurants, the better it can help manage inventory, workflow and customer service. Google, Facebook and Amazon can see what people search, share and buy, giving them almost a 'God's eye view.' And a company like NVIDIA acts as the 'pick and shovel' facilitating the mining of these vast pools of data. Data inundation, data mining and intangible assets that defy traditional valuation are related subjects in our thematic research.

Fixed Income

The 10 year bond yield ended the third quarter of 2017 at 2.33%, slightly below the 2.49% level where it began the year. It dipped to 2.00% in August, but rebounded as risk appetites increased and inflation expectations perked up after the higher than expected August CPI reading mentioned earlier. Forecasting a rise in yields has become a fool's errand. From a long term perspective, it does not appear that the secular downtrend of lower yields that has been in place for over 30 years is coming to an end. Still, there have been periods during this long bull market where multiple signals point to a modest rise in rates, even when economic conditions remain unchanged. This may be one of those periods. We think yields could climb moderately higher in the short term, but ultimately, we would not be surprised to see them fall early next year.

A big wild card in the bond market will be the impact of the Federal Reserve reducing the size of its balance sheet. Prior to the financial crisis, the Fed's balance sheet was about $900 billion. It ballooned to $4.5 trillion due to quantitative easing programs put in place to spur economic growth. Now the Fed is finally reversing course and will begin shrinking its balance sheet. Most investors expect this to have either little impact or push yields higher (bond bearish). In essence, shrinking the balance sheet is a form of tightening. Tightening is usually bearish for bonds as it typically implies a backdrop of strong economic growth. However, tightening in the absence of robust growth may lead investors to reduce long-term growth and inflation expectations and, therefore, in this instance, it may actually be bullish (yields may decline). We are in unchartered territory so it is difficult to predict. Time will tell.

We are maintaining our current positioning in short- to medium term investment grade bonds. At this point, we don't believe risk/reward warrants reaching for longer duration.