

## Some Index Thoughts

Indexes provide reference for market direction and return. They also are the benchmarks upon which index and exchange-traded funds are constructed and managed. So changes in index components are viewed with more than passing interest. News was made recently when the index committee responsible for the Dow Jones Industrial Average ("DJIA") announced some notable changes to the index's 30-stock composition. The reason for these changes at this time brought attention to how the DJIA and other popular indexes are constructed. A look at some relevant index information can provide perspective and implications for investing in the current environment.

### Q PERSPECTIVE

Many changes have been made to the DJIA's composition over time. Last month, Exxon, Pfizer and Raytheon were removed while Amgen, Honeywell and Salesforce were added. Exxon had been the longest tenured member, having joined the index in 1928 as Standard Oil of New Jersey. Changes have been made for many reasons, but two broad objectives provide context. The first is to include companies that are meaningful in if not representative of U.S. business. The second is to be representative of the broad U.S. economy. **Table I** shows sector differences among the widely followed DJIA, S&P 500 and NASDAQ Composite indexes.

Each stock market index has a particular methodology for determining price levels. The DJIA methodology weights individual stocks by their share price. In fact, a recent 4-for-1 stock split for DJIA component Apple was proximate cause of the DJIA changes. The effect of Apple's stock split, with no other DJIA changes, was to reduce the index's technology weighting. The indexes in **Table I** have clear differences in sector weightings as highlighted by technology. These differences result at times in return disparities.

Market sector exposures have varied over time. This variance is particularly notable for indexes such as the S&P 500 in which the components are size-weighted. **Chart I** shows how sector weightings have varied over time for the S&P 500. Technology has received much attention recently as notable stocks, e.g., Facebook, Amazon, Apple, Netflix, Google (Alphabet) have grown substantially in market size, shifting sector weightings. Technology has been the largest and most variable sector weighting in the S&P 500 over time.

What stocks are in the technology sector? The actual sector assignments of some of the larger stocks linked to technology are shown in **Table II**. While the business of each of these companies has a strong technology foundation, their products and services in some cases align more closely with other sectors. These differences are important for understanding the composition of a portfolio relative to an index and the implications for both return and risk.

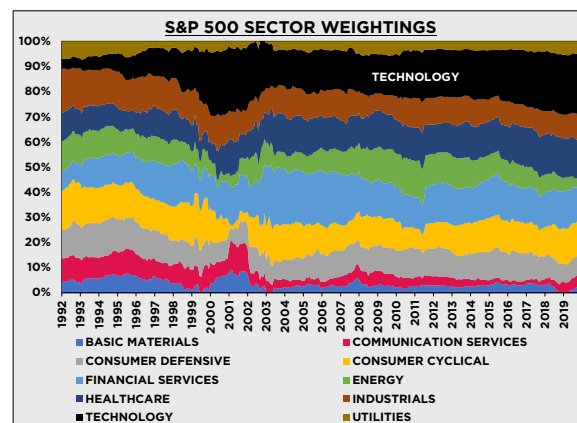
### INVESTMENT IMPLICATIONS

Market indexes are important guideposts for investors as well as underlying benchmarks for a range of index and exchange-traded funds. Index patterns of return and risk are as varied as their compositions. Properly linking indexes to portfolios means starting with goals, horizons and risk tolerances. Then asset allocations can be determined to which appropriate benchmarks can be assigned.

**TABLE I**

STOCK MARKET INDEX COMPARISONS			
SECTOR	DOW JONES INDUSTRIAL AVERAGE	S&P 500	NASDAQ COMPOSITE
BASIC MATERIALS	1%	2%	0%
COMMUNICATION SERVICES	5%	11%	17%
CONSUMER CYCLICAL	14%	11%	16%
CONSUMER DEFENSIVE	8%	8%	4%
ENERGY	2%	2%	0%
FINANCIAL SERVICES	17%	13%	5%
HEALTHCARE	19%	14%	11%
INDUSTRIALS	15%	9%	3%
REAL ESTATE	0%	3%	1%
TECHNOLOGY	19%	24%	41%
UTILITIES	0%	3%	1%

**CHART I**



**TABLE II**

WHO IS TECHNOLOGY?	
STOCK	SECTOR ASSIGNMENT
ADOBE	TECHNOLOGY
AMAZON	CONSUMER CYCLICAL
APPLE	TECHNOLOGY
FACEBOOK	COMMUNICATION SERVICES
GOOGLE (ALPHABET)	COMMUNICATION SERVICES
MICROSOFT	TECHNOLOGY
NETFLIX	COMMUNICATION SERVICES
PAYPAL	FINANCIAL SERVICES
SALESFORCE	TECHNOLOGY