

Seamans Capital Management – Q4 2018 Quarterly Report

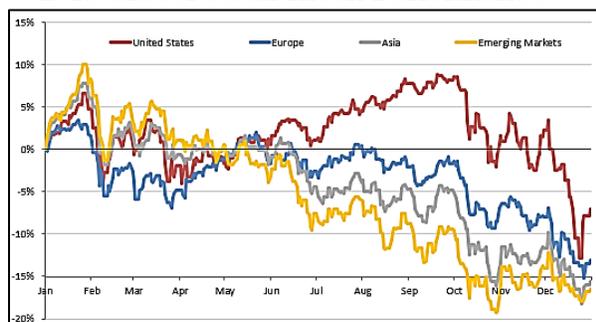
“Transitions themselves are not the issue, but how well you respond to their challenges!” *Jim George*

MARKET PERFORMANCES

Despite the U.S. stock market’s year-end correction, our conviction remains strong that technologically-enabled investments focused on essential services will retain and continue to build value over time. The January 2019 market rebound led by essential technology stocks is reassuring.

We look at the equities in our portfolios through a lens of the company’s abilities to generate and grow its free cash flow. More about this later.

2018 Global Stock Index Performance



Source: Bloomberg

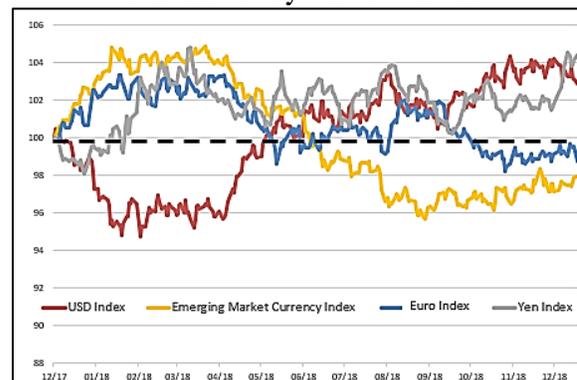
Looking at the chart of the global stock index performance above, the United States, in red, was the strongest-performing market in 2018 realizing its best gains in September before weakening under pressure from other markets and geopolitical events. The S&P 500 Index’s 9.2% decline in December, caused U.S. stocks to fall 7% for the year. European, Asian and emerging markets stock indices slid 13%, 16% and 17%, respectively.

The U.S. dollar and to a lesser extent, the yen, are considered safe havens for Chinese and

European investors. Money is flowing into safe currencies, causing the Japanese yen to gain 4% for the year, and the U.S. dollar to gain 3% for the year. Meanwhile, the euro lost 1%, emerging markets lost 2%, and the Chinese RMB fell 5% in 2018.

The U.S. has a distinguished record of never canceling its currencies or coins, all of which remain legal tender. Investors also appreciate the long historical record the U.S. has in paying their interest and principal on its government bonds on a timely basis.

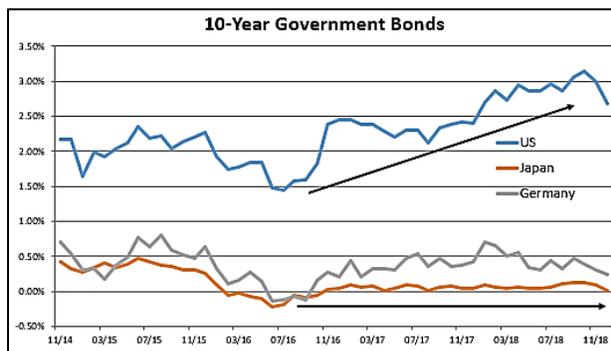
2018 Currency Performance



Source: Bloomberg

Looking at the broad trend in interest rates, we can see that U.S. interest rates have been rising steadily since 2016. The 10-year government bond rose from 1.5% to 2.7%. While interest rates in Japan and Germany, have been more or less flat. The U.S. has begun quantitative tightening, which Europe and Japan may find more challenging because of their levels of outstanding debt.

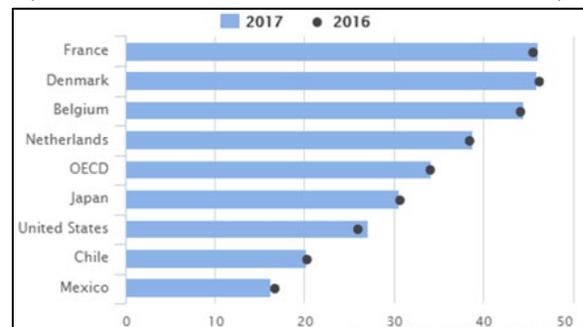
Global Interest Rate Trends



Source: Bloomberg

Tax Revenues in OECD Countries Continues to Rise

(Tax as % of GDP in Selected OECD Countries)



Source: OECD (2018), Revenue Statistics 2018

GEOPOLITICAL ISSUES

Politicians are experiencing a decline in popularity because governments are systematically seeking to increase taxes beyond the ability of their citizens to willingly support. As disruptive technologies have driven the consolidation of business sectors across multiple countries, the burden of taxation has risen on traditional industries experiencing declines.

Transformation is occurring in almost every sector across the world which is forcing companies to adopt new business models or be rendered obsolete. Companies such as Amazon are displacing the traditional retail model represented by Sears.

Individuals facing obsolete jobs are turning towards their governments for support which, in turn, are unable to adequately respond.

The rising demands of government pensions, health and welfare programs have led countries such as France to tax their citizens' income at an average rate of 46%, which is unsustainable even in a socialistically-based economy.

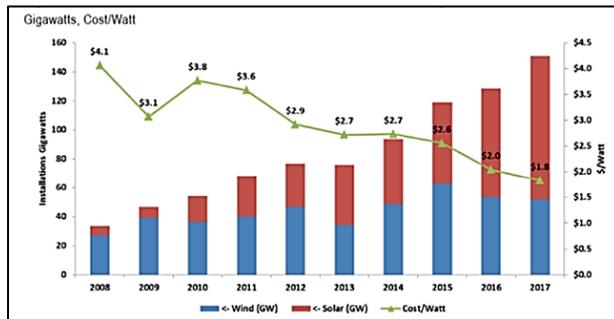
The “Yellow Vest” movement in France and other European countries is a classic public reaction to daily life when people are faced with decisions, which are essentially untenable to them. The movement has 70% support from the general population and is spreading to other European countries. Voters are actively questioning whether their elected officials have their best interests at heart. These issues have been growing for a number of years. The low interest rates in the QE era are rapidly exposing the gaps between pension assets and liabilities and driving tax increases.

Countries such as France are taxing their citizens' income at an average rate of 46%, which is unsustainable.

Unilateral government policies such as Germany's decision to allow immigrants into the E.U., are becoming targeted as sources of discontent amongst voters. In the United States, residents of high-tax states, including Illinois, New York, and New Jersey, are voting with their feet moving into states that have no state income taxes such as Nevada, Texas, and Florida.

SOLAR AND WIND INSTALLATIONS

More and More for Less and Less



Source: J.P. Morgan, Bloomberg New Energy Finance

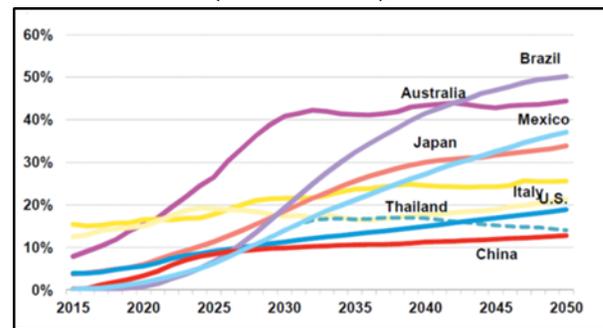
The chart above shows the global rise in solar and wind installations, and the decline in capital cost per watt. Despite this rise in installations, the annual capital expenditures on solar and wind has been roughly flat for the past four years in the range of \$250 to \$300 billion. With the continued decline in costs, the renewable energy industry is entering a stage where more gigawatts of solar and wind are being installed for less money.

Solar and battery-based energy development will likely be highly disruptive to traditional utility business models.

DECENTRALIZATION OF THE GRID

Solar and battery-based energy resources will serve to decentralize the grid. As more and more energy is produced, shared, and consumed locally, electricity decentralization ratios are expected to rise to about 50% in Brazil, 45% in Australia, and more than 30% in Mexico and Japan, according to Bloomberg New Energy Finance. This development is likely to be disruptive to traditional utility business models.

Electricity Decentralization by Country (2015 to 2020)

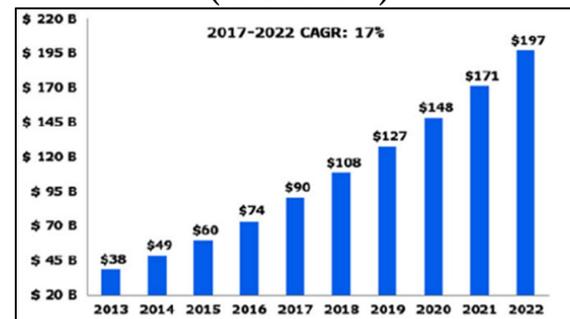


Source: Bloomberg New Energy Finance

SHIFT TO THE CLOUD

The enterprise IT market is still early in its shift from local services to the cloud. About 80% of workload yet to migrate to the cloud. This market is expected to remain robust and grow 17% per year between 2017 and 2022. Investments in cloud technologies are expected to rise from \$90 billion in 2017 to \$197 billion in 2022. Software spending continues to outpace overall outlays for hardware.

Software-as-a-Service Market Size (2013 to 2022)



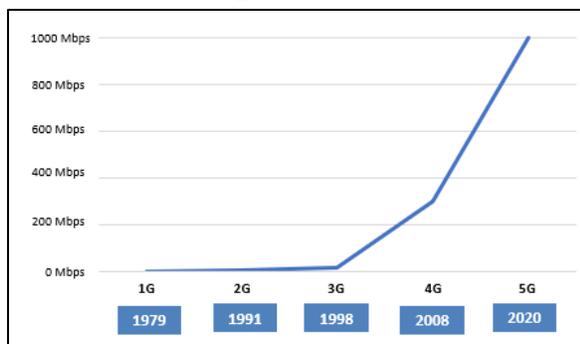
Source: IDC, Bloomberg Intelligence

The 5G network will move mobile technology to the next level, and is expected to enable \$12 trillion of goods and services by 2035.

THE LEAP TO 5G

5G is the next-generation wireless standard that follows 4G which will significantly improve data transmission speeds. 2G phones transmitted voice and data digitally. 3G and 4G brought data rates up from 200 kilobits per second to more than 300 megabits per second. By 2020, 5G is expected to transmit data at a rate of one gigabit per second.

**Data Rate Increases in Mobile Data
1G to 5G**



Source: The Conversation, CC-BY-ND

1G enabled the first analog cell phones. 2G enabled features such as texting and voicemail. 3G enabled mobile web browsing, image sharing, and GPS location tracking. 4G delivered deep web functionality to smartphones. 5G will move mobile technology to the next level, from connecting people to people and information to connecting people to almost everything in their lives. It is predicted that by 2035, the 5G network will enable \$12 trillion worth of goods and services. Being able to send and receive that much data quickly will open up new opportunities for augmented and virtual reality systems as well as automation, super-connected autonomous cars, and smart communities.

FREE CASH FLOW

We look at the equities in our portfolio through a lens of the companies' ability to generate cash and grow that cash flow. Our average public company that provides essential services or essential technologies produced 5.8% in free cash flow, in terms of its EBITDA-to-enterprise value. That cash flow has been growing at a rate of about 27% per year. One of the best measures of financial strength is free cash flow after all expenses have been paid. On this measure, these stocks produced a 3.5% free cash flow on enterprise value, which is growing at 33% per year. This is the equivalent of a bond with a 3.5% coupon that is doubling every two and a half years.

PRIVATE EQUITY UPDATE

Braidy Industries has produced about 62% net return since our Q1 2018 initial Series A investment, based on its Series B pricing.

Aequion, formerly known as EMOH Company, produced a 156% net return for investors in our Q1 2018 Series A investment, based on its Series B pricing.

We have identified a number of promising private equity opportunities, which are under review. These include a company that is developing sensors which place multiple applications on a single chip and a company that is developing real-time traffic management systems. We are also monitoring the development of another water technology company and a company making low cost chips for verification and authentication.

BRAIDY INDUSTRIES

Braidy Industries is a multi-material company that is targeting the auto, aerospace, tool, and defense industries to fulfill the requirements for lighter and stronger materials through its two subsidiaries, Braidy Atlas and Veloxint. Braidy Industries acquired NanoAL in September 2018 for \$4.2 million in cash plus an earn-out. The company is commercializing nanotechnology to develop stronger aluminum alloys. NanoAL has the potential to enhance the output of Atlas.

Braidy Atlas converted about one-third of its Memorandums of Understanding into signed contracts representing 100,000 tons of the plant's 300,000-ton capacity. Engineering and architectural plans for the mill have been completed. The company broke ground on the mill and started construction in June 2018, with completion expected in Q4 2020. First revenues for Braidy Atlas are expected in 2021.

Veloxint is preparing to roll out a line of ultra-high-strength sockets for the Stanley Black & Decker line of wrenches, and other hand tools will follow. Veloxint has an agreement to ultimately produce new hand tools to replace \$500 million in Stanley Black & Decker's annual outsourced orders. For its manufacturing, the company acquired 12.5 acres and a 70,000-square-foot structure adjacent to the site of Braidy Atlas. The company received a \$4 million grant from Kentucky to prepare Veloxint's manufacturing facility. Veloxint is expecting first revenues in mid-2019.

AEQUION

Aequion provides water solutions for agriculture, aquaculture, dairy, and water cleanup. It uses proprietary technology involving magnetic fields to break down water clusters and infuses them with oxygen to deliver multiple water solutions to multiple sectors.

Bill Brady, formerly CFO, was named as CEO in January with a primary focus on sales of its products to the large California markets.

The company made a technological breakthrough in December proving its water penetrated soil 48% faster than conventional water, reducing evaporation and water use by 15% to 20% for agricultural customers.

Agriculture is now expected to be Aequion's initial market, since no certifications are required. The sales team is currently deploying a mobile test unit at customer locations across the Central Valley of California to demonstrate onsite results in less than one hour.

Aequion brought production in-house, reducing the unit costs by 50%, allowing prices to be lowered without affecting profit margins. Sourcing stainless steel and welding offshore will further reduce production costs.

Aequion raised \$3.1 million of a \$6 million Series B convertible note and spent \$2.3 million on its development. The company's cash balance at December 31, 2018, was a little under \$1 million, which is expected to support the company until revenues begin flowing in Q2 2019.

CONCLUSION

In 2013, when we identified an acceleration in the transition from a fossil fuel economy to a renewable energy economy driven by technological innovations, we expected to see growing geopolitical issues and rising socioeconomic tensions across the globe. At that time, we recognized a growing interdependency giving rise to more complex patterns of interaction between and amongst government systems and their citizens.

While macro factors give rise to a vision of transformation, they do not address the critical importance of local adaptation by individuals to their changing daily lifestyles. We are now witnessing the emergence of the tensions inherent in large scale technological, socioeconomic and geopolitical change.

Last year was challenging for the financial markets as geopolitical concerns led to volatile markets around the world. While volatility may continue, we believe that public and private companies that are engaged in implementing innovative technologies to lower the costs and improve the benefits of the essential services we use on an everyday basis will provide them strong returns and stability investors seek in a challenging financial environment.

As a final thought, we would like to draw your attention to the following two books that may

offer you more insight into the current environment:

A Finer Future, by L. Hunter Lovins, Stewart Wallis, Anders Wijkman and John Fullerton

The Purpose of Capital: Elements of Impact, Financial Flows and Natural Being by Jed Emerson

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