PASI NEWS
since 1977

Volume 43 - Number 3 Fall 2019

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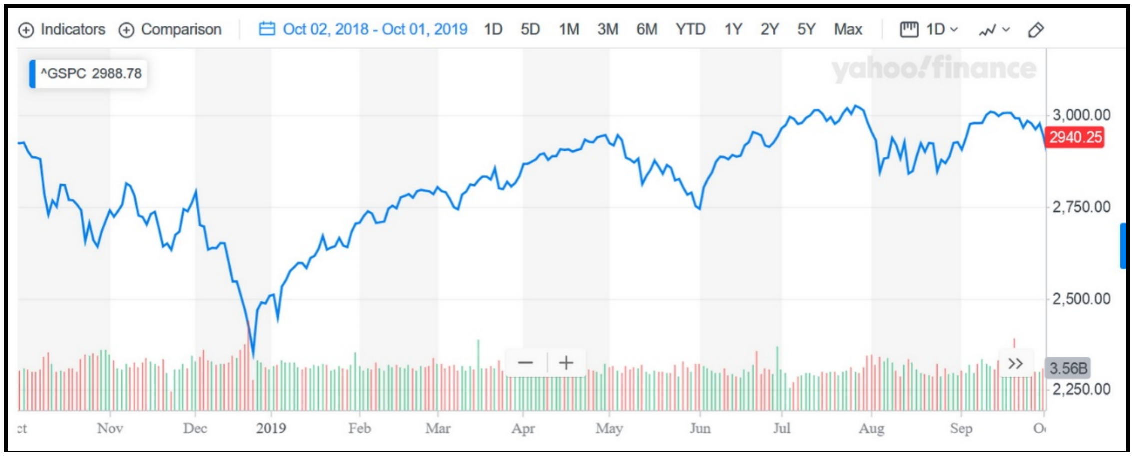
Market Update – *Glass Half Full?*

by David A. Jaffe, M.D.

In the so often upside-down world of investing, where good news is bad news and vice versa, the stock market began the third quarter of 2019 with a surge that propelled the S&P 500 to an all-time high. The catalyst? Federal Reserve Bank worries about the health of the U.S. economy! The market celebration? A Fed interest rate cut intended to support growth. Makes perfect sense, right? On the basis of that fragile foundation, it took but a tweet to shift investor sentiment, stocks tumbling in August over trade war concerns. Faced with paltry returns on conservative fixed income choices (bonds, CDs), investors sifting through stocks looking for value shifted their focus from high-flying momentum choices to more mundane businesses with long histories and cash dividends. This renewed buying helped reverse the stock market decline leaving the S&P 500 with a modest 1.7% gain for the third quarter.

Rewarded for our commitment to well established companies with profitable businesses, we are pleased to report that the PASI stock portfolio bested the market in the third quarter and is *exceeding* S&P 500 gains by a nice margin for the year. At the end of the third quarter our composite portfolio posted a 23.2% gain for the year, compared to 20.6% for the S&P 500 (both include reinvested dividends). We have enjoyed participation in virtually every sector: health care, technology, retail, consumer, financial services, and industrial companies have all seen healthy stock price appreciation.

Finally, it's probably incumbent on me to temper our celebration with a small dose of reality. The truth is, as we work to navigate the market cross currents, stocks have made little progress in the last twelve months. Graphically illustrated in the following chart, the fall high of 2018 was followed by a 20% market plunge in the 4th quarter. This year's recovery has just brought us back to that 2018 3rd quarter level, with 12 month gains a mere 2.1%.



S&P 500 10/1/2018 – 9/30/2019

For those disappointed with the (notably modest) decline of 2018, this year's strong recovery puts the market on track for an annualized two-year return of 8.3%, historically better than average. For those worried that the 2019 surge carries the risk of an imminent correction, this year's gains just get us back to where we were a year ago. Regardless of whether your glass is half full or half empty, it's crucial to remember that we're in this for the long haul and year-to-year volatility is simply an inevitable element of stock ownership.

An Economic Theory of (Almost) Everything

by Nathan Polackwich, CFA

Why are interest rates so low in America and negative in Japan and much of Europe? Why does America run a large trade deficit with a still developing and fast-growing country like China? Why are southern European countries like Italy and Greece such economic basket-cases? Why, despite record low interest rates and corporate tax cuts, are U.S. (and other nations') businesses still not investing? What inflated the U.S. housing bubble? Why have investors thrown tens of billions of dollars at ridiculously unprofitable businesses like Uber and WeWork and practically useless digital currencies like Bitcoin? Why is income inequality so pronounced across the developed world? Why has U.S. life expectancy started falling? What's behind the rise of populist governments worldwide? *What if I told you that a single, wildly misguided economic theory was the primary driver of all these trends?*

Once upon a time America was a land that needed lots of money for prodigious investment spending on infrastructure like canals and railroads. But in those days (the 19th century), the U.S. lacked the developed financial system and savings to pay for those investments. Fortunately, European economies – particularly Great Britain and Holland – had the mature financial industry and extra savings (due to less attractive investment opportunities at home) to provide America with the necessary funding. Although a great deal was borrowed, the money was invested on essential infrastructure that more than paid for itself with the economic growth it helped create.

This scenario where a country with insufficient savings but compelling investment potential attracts capital from countries with savings to spare is how the world *used* to work – but not anymore. In the modern global economy, savings are no longer scarce anywhere in the developed world or even in most emerging market countries. To some extent this abundance reflects the maturing of developed nations' economies and finance industries, as well as the aging of the population practically everywhere outside of Africa.

Problematically, though, certain fiscal and monetary policy choices by major governments – which were inspired by this single, misguided economic theory – have turned a global abundance of savings into an outright *glut*. And this savings glut (in addition to the side-effects of the policies that helped cause it), is behind practically everything – from trade distortions to investment bubbles to income inequality to negative (or very low) interest rates to even falling life expectancies in the U.S. – wrong with the global economy today.

What is this exceptionally destructive economic theory? – *Supply-Side economics*, which posits that tax cuts and other policies that favor businesses (or their owners) will stimulate investment and thus economic growth to the benefit of everyone. While reasonable in theory, the historical data shows zero correlation between tax rates and economic growth. In fact, the relationship has been slightly negative! For instance, America's best GDP growth in the post WWII period occurred between 1951-1970 (3.72% average annual real GDP growth), a time when the average corporate tax rate was around 50% and the highest marginal tax rate began at an astonishing 91% (1951) and ended at a still astronomically high 71.75% (1970).

Why don't Supply-Side policies boost economic growth? – *Because they attempt to fix a problem that no longer exists*. The theory centers around the notion that tax cuts or other subsidies for the wealthy and businesses will enable them to boost investment (by increasing their savings rates), expanding production and job formation. But Supply-Side policies only work if businesses lack the savings (or access to others' savings through borrowing) to increase investment. And as discussed earlier, with the modern global financial system, mature economies, and aging populations, savings are already plentiful.

So what happens when governments impose Supply-Side policies on major economies with no shortage of savings? The experiences of Germany and China are instructive.

Germany instituted such policies from 2003-2005 when they introduced labor reforms that effectively increased taxes on workers while cutting corporate taxes. Wage growth declined and corporate profits soared. German companies found themselves flush with cash (excess savings).

Similarly, China has suppressed its interest rates for years, a policy that represents a huge subsidy to Chinese businesses and penalty to its households who struggle to obtain a return on their savings higher than the rate of inflation. The result is that Chinese companies also generate enormous excess profits (savings) that exceed their country's overall investment needs.

Now, under the Supply-Side model, German and Chinese businesses would use their excess savings to dramatically increase investment in their home countries. But they haven't. Why? Because access to capital isn't a roadblock to business investment in the modern global economy. Rather, German and Chinese companies' rate of investment has lagged their growth in savings because they don't see the consumer demand that justifies greater business expansion. Compounding the issue, Germany and China's subsidizing of businesses *at the expense of workers* only served to further weaken consumer demand making higher business investment spending even less likely.

So where have all the German and Chinese excess savings gone?[1] It's important to understand that for an individual country, savings and investment don't have to equal (assuming they trade with other nations). But on a global basis, it's a fundamental accounting identity that total savings must equal total investment. Thus, if Germany, China, and other nations pursue policies that cause them to save much more than they invest, then, by definition, the rest of the world must invest much more than it saves. But when excess savings from one country enter another that doesn't need those savings for productive investment, there are only two possible outcomes:

1. **Investment rises** – But the savings are wasted on unproductive/unprofitable investments.

2. **Domestic savings fall** – Typically, this occurs thanks to higher household borrowing for consumption. But absent higher household (or sometimes government) borrowing, savings will fall due to rising unemployment and associated lower household income.

Other than these two outcomes, there are no other possibilities unless a country strictly limits excess foreign savings from entering its capital markets in the first place (not a bad idea).

Can you see where this is headed? German, Chinese and other countries' excess savings poured into the U.S. inflating the housing bubble that popped in 2008. Meanwhile, German excess savings also submerged southern European countries like Portugal, Italy, Ireland, Greece, and Spain (collectively, the PIIGS), which drove housing bubbles (particularly Ireland and Spain) and government borrowing/spending (with Greece as the poster child). More recently, investment bubbles have even popped up in speculative novelties like comically unprofitable technology companies and effectively useless cryptocurrencies like Bitcoin.

You know what else happens when excess savings from one country overwhelm another? The country on the receiving end of the savings ends up running a trade deficit. This is inevitable because of another fundamental accounting identity.

Exports – Imports = Savings – Investment

When Chinese or German or Japanese savings flood the U.S. economy, they're either going to be wasted on unproductive investment (like occurred during the U.S. housing bubble) and/or U.S. household consumption of goods and services, which necessarily causes the U.S. savings rate to decline. In the latter case, effectively, the excess foreign savings compel U.S. households to spend more than they make. And based on the accounting identity above, as U.S. savings fall (relative to U.S. investment), our trade deficit with excess savings countries like China, Germany, and Japan must widen.

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[1] Japan is also a major contributor to the global savings glut. Initially, this was caused by the same factor behind China's excess savings – suppressed interest rates that helped businesses and hurt households. But these days Japan's excess savings largely reflect its strong manufacturing base and export industries (generates lots of profits), extreme corporate financial conservativism (hoards profits), and declining population (weak consumer demand so no need to invest domestically).

Now, U.S. households spending more than they make doesn't reflect some lack of moral fiber. It's an inescapable consequence of the foreign savings inundating the U.S. economy. As Chinese savings, for instance, enter America they drive up the value of the U.S. dollar relative to China's currency (the Yuan). This makes China's currency weaker than it should be enabling Chinese businesses to outcompete those in America. All else constant, the result is higher U.S. unemployment and associated lower U.S. household income and savings.

For U.S. households, the only alternative to this income hit (absent higher government debt/spending) is to borrow money to maintain spending. Of course, while increased borrowing temporarily supports U.S. economic and job growth, debt levels can only rise so far – with the 2008/2009 Credit Crisis being a prime example of what happens when the dam breaks.

Doubling Down

So, the U.S. has been swamped by excess foreign savings from China, Germany, Japan, and a few others. This has led to a surging trade deficit as well as ballooning U.S. household (and increasingly U.S. government) debt. And note that, particularly in the case of U.S. households, debt-fueled consumption merely boosts growth today at the expense of tomorrow.[2]

How have major governments attempted to deal with these trade distortions, rising household debt levels (in the countries receiving all the excess savings), weak consumer demand, sluggish business investment, and global interest rates spiraling down into negative territory? – <u>Why, by doubling down on the same misguided Supply-Side policies that exacerbated the problems in the first place</u>! To the man with a hammer every problem looks like a nail.

1. *Businesses aren't investing even though interest rates are approaching (and in some countries are already below) zero?* Well, the solution must be to force interest rates even lower!

2. *Businesses aren't investing despite record high profit margins?* Well, just cut corporate taxes even more – That should do the trick!

Of course, these policies only make the global savings glut worse. They also aggravate income inequality. As China shows, suppressing interest rates makes businesses more profitable but hurts household income by reducing the interest they receive on their savings (particularly problematic for nations with aging populations).

Further, when tax cuts disproportionately benefit businesses and the wealthy, that extra income tends to be saved rather than spent. Then, when the economy doesn't respond with faster growth, the tax cuts cause government budget deficits to balloon. Ironically, this usually leads governments to cut back on the benefits they provide to poor and middle-class families. And as households' incomes get squeezed, consumer demand weakens (unless artificially propped up by rising debt), further disincentivizing business investment.

Minimal income growth and higher debt are not conducive to happy, healthy populations. There's a sense of despondency among the masses – not just in the U.S. but globally – that's

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[2] In the Federal Government's case, debt constraints are mainly political, so long as the government maintains control of the metaphorical "printing press."

behind higher suicide rates and opioid addiction as well as increased nationalism, xenophobia, and populist policies (like trade wars) as people and politicians seek a scapegoat. And these trends will continue until politicians realize that the global economy suffers not from a lack of supply but from weak demand.

Zebra Technologies – *How Barcodes Got Their Stripes*

by Jeremy Goldberg, CFA

"Internet of things", "cloud computing", "automation", "mobility". More than just buzz words, these technological advances are everywhere – from smartphones to athletic t-shirts to noninvasive sensors that detect when a cow is going into labor. Before Amazon Prime, most items ordered online took longer than two days to be delivered. Now, Amazon is offering one day and even same day shipping to certain locations. UPS and FedEx deliver seven days a week. You can check the inventory of your local supermarket and order a weeks' worth of groceries from the comfort of your own couch using your mobile phone that you unlocked with face ID; then you can tell your TV to play a movie for you while you wait for your items to be delivered. Why shut off your sprinklers if it rains when your sensors track the weather and automatically adjust the sprinkler schedule for you? Self-driving cars… well, we aren't quite there yet, but we are making progress! These buzz word applications are making our day-to-day lives easier and they are revolutionizing the way businesses manage their supply chains and logistics.

In order to enable the once-considered-impossible technology of today, companies need data, and lots of it! Real-time data empowers companies to make real-time decisions that improve workflow and cut costs, ultimately benefiting you and me, the consumers. Collecting, analyzing, and storing all of this data used to be a herculean task, until the rise of automatic identification and data capture (AIDC) technologies of which new PASI holding, Zebra Technologies (ZBRA), is at the forefront.

AIDC can be traced back to 1895, when American engineer Herman Hollerith developed a punched card tabulation machine to help analyze the 1890 U.S. census data. What once took eight years to complete, Mr. Hollerith accomplished in one.

Throughout the 20^{th} century, a series of identification advancements took place. The railroad industry was in search of a reliable and cost-effective system for identifying and tracking railcars. In 1961, The Boston and Maine Railroad began testing KarTrak, a barcode system with reflective color bars for coded asset information that used scanners to decode the labels by light transmission. By 1967, the Association of American Railroads was using this freight-tracking technology for all railcars. In 1969, GM began using barcode-reading technology to track different types of transmissions along a conveyer system at its Flint, Michigan factory. Then, in 1973, the U.S. adopted the IBM-developed Universal Product Code (UPC) system.

The UPC system transformed the retail industry. Manufacturers were now printing product information directly onto packages. Retailers would use in-store scanners to capture and transfer the data into a computer system, streamlining the checkout process and allowing more visibility into inventory management.

By the 1980s, barcode adoption spread like wildfire. Companies of all industries could use the scanned data to build customer profiles, develop loyalty rewards programs, and automate the inventory management process. With the introduction of QR codes in 1994, significantly more information could be encoded, scanned, and then deciphered within milliseconds.

Fast forward to today: While we still use barcodes and QR codes, more advanced technologies, such as RFID (radio-frequency identification – tracking patients and medical supplies in a hospital or microchipping your dog) and GPS (navigation systems), are reshaping how we interact with the world around us. Drivers' licenses, fingerprint scanners, every time a debit or credit card is swiped at checkout, talk-to-text, automatic medicine dispensing from pharmacies, even tracking the movement of a product within a warehouse (like Amazon) or on a salesfloor (like Ford locating a single vehicle on a car lot with 2,000+ vehicles), all require AIDC technologies. And the need for even more breakthrough capabilities will continue to drive investment and growth within the AIDC industry, which was estimated to be valued at $40 billion in 2018 (it is projected to reach $90 billion by 2025, an annual growth rate of 12.5%).[1]

The necessity for companies to invest in AIDC technologies to be successful in today's competitive market is the cornerstone of our investment in Zebra Technologies (ZBRA). A leader in the industry and the only player with a full suite of products, ZBRA designs, manufactures, and sells mobile computers, barcode scanners, RFID readers, specialty printers for barcode labeling and personal identification, real-time location systems, and more.

With more than 40% market share, ZBRA provides the software and hardware that allows businesses to collect real-time data and make immediate actionable decisions. The favorable secular trends towards the Internet of things, big data, and cloud computing (to name a few) create the growing requirement of having flexible and responsive inventory management systems and the ability to drive insights from the data being collected.[2] This process starts at the warehouse. According to VDC Research, the average warehouse size has almost tripled over the last two decades, and with it comes the need for improved fulfillment strategies, overall warehouse design, and automation. Notably, the U.S. Census Bureau estimates that e-commerce (online shopping) only represents ~11% of total retail sales. As e-commerce continues to become a larger part of consumer spending, there will be even more investment in innovative warehouse solutions.

This is ZBRA's bread and butter: capturing and analyzing data in real-time to create innovative solutions. At a warehouse, it begins with inbound logistics. With ZBRA's handheld, wearable, or vehicle-mounted mobile computers, tablets, scanners, and printers that sync seamlessly with their software (the hardware works with third-party software providers as well), companies can electronically capture real-time data and send it to their Warehouse Management System so employees know exactly where each item is located to speed up put-away and tracking, and provide an audit trail for traceability. When organizing shipments for delivery, ZBRA's SmartPack™ Trailer captures data such as load density, trailer fullness, load quality, wall-by-wall build profiles, and images of loads in progress to allow companies to maximize cargo space, cut fuel consumption, and minimize human error.

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[1] Zion Market Research.
[2] VDC Research and Morningstar.

That's just the tip of the iceberg! Healthcare companies use ZBRA's RFID system to ensure the right patient receives the right care at the right time by connecting the care team to real-time patient data, clinicians, and providers. Pharmacies can quickly and easily track medications to the unit-dose level. Hospitals also use ZBRA's tracking technology to track hospital assets. The University Health System's Hospital in San Antonio, for example, was experiencing high demand for smart IV pumps, but couldn't keep track of the 7,000 IV pumps in inventory. The hospital was utilizing only 45% of the pumps they had because of a poor inventory management system. After implementing ZBRA's RFID system to track IV pumps, utilization increased to 70% and the system was expanded to include large volume pumps, analgesia pumps, feeding pumps, and drains. Nurses went from waiting up to two hours before receiving a pump to just ten minutes.

Do you play or know anyone that plays Fantasy Football? All NFL player data is from ZBRA. They are the NFL's Official On-Field Player-Tracking Provider – a contract recently renewed through 2021, building upon their past five-season relationship. ZBRA captures data for the NFL by attaching RFID tags in player equipment and the football and transmitting real-time location data to receivers positioned around the stadium. The Zebra MotionWorks™ Sporttracking system captures metrics such as player speed, distance traveled, orientation and proximity, and acceleration/deceleration. This information is then utilized by the NFL to calculate vast amounts of information about every player for every play.

These are just a few examples of how ZBRA enables companies to obtain data to improve their business. Modernization of the warehouse, AIDC investments, and real-time analytics are not recommendations for success, they are requirements, and no company provides better solutions than ZBRA. And over the past 15 years, the stock market recognized these advantages, with shares trading at an average 21% premium to the S&P 500 index. While the company has only increased its competitiveness, shares currently trade at 16.5x 2019 earnings, a 5% discount to the S&P 500 index due to trade war fears. We believe this market pressure is unwarranted and provides an incredibly attractive investment opportunity. Buoyed with significant cash flow to weather an economic downturn, high switching costs, feeble competition, constant investment in research and development, strong synergistic acquisition ability, and healthy fundamentals, ZBRA is positioned to capitalize on today's connected world.

Disclosure