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# STAHL REPORT COMPENDIUM

*The Contrarian Series*

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January 2020

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## Featured Companies

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*Interpublic Group of Companies, Inc. (IPG)*

*Omnicom Group Inc. (OMC)*

*WPP plc (WPP)*

*Lamar Advertising Company (LAMR)*



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## *Murray's Musings*

### SIZE FACTOR AND RISK IN EQUITY INDEX PERFORMANCE (AND THE SYSTEMIC RISKS INTRODUCED BY MEGA-CAP COMPANIES)

The size factor refers to the so-called empirically verified phenomenon that small- and mid-capitalization stocks generally outperform large-cap stocks. One is justified in using the term “so-called” as a qualifier inasmuch as, for at least ten years, this has not happened, as can be observed in the following table.

Table 1: Performance of S&P 500 vs. Russell 2000

<u>Period Ended 11/30/2019</u>	<u>S&amp;P 500</u>	<u>Russell 2000</u>
1 year	16.11%	7.51%
5 years	10.98%	8.22%
10 years	13.44%	12.38%

*Source: Bloomberg*

One can see that the S&P 500 has outperformed the Russell 2000 by a substantial margin, especially over five years, and even more in the last year.

The phenomenon is not time dependent. For example, for the period ended December 31, 2018, the S&P 500 had an even greater advantage vis-à-vis the Russell 2000. If this phenomenon continues, it would be extremely problematic for practitioners of establishment investment principles, since the standard deviation of the Russell 2000 is greater than that of the S&P 500; that is, the Russell 2000 exhibits greater risk. If the S&P 500 produces higher returns over time with less variability, it would undermine the foundations of modern portfolio theory.

An alternative way of trying to reconcile the recent data is to imagine that the large capitalization asset class now contains hitherto unseen risks, risks that exist but are not being reflected in the risk statistics. One possibility is to examine the phenomenon of the mega market capitalization stocks. In other words, standard deviation might not be the way that risk should be measured. An example of such is Apple Inc. (AAPL), which now has a market capitalization of \$1.2 trillion.

It is conceivable that the mere existence of a \$1.2 trillion market capitalization firm is potentially destabilizing. Let us presume that the business plan of Apple is to grow profits by 10% per annum. This is, in any case, the expectation of the various analysts who provide earnings estimates for Apple. Obviously, it is implied that this earnings growth will be reflected in the trading price of Apple shares.

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In order to accomplish this, in principle, Apple would need to create enough incremental profit to support an additional \$120 billion of market capitalization (10% of \$1.2 trillion = \$120 billion). This is equivalent to the current market capitalization of Union Pacific Corp. (UNP), which happens to be the 50<sup>th</sup> largest company in the S&P 500. In other words, if Apple were to increase its market value by 10%, it would be arithmetically equivalent to creating another Union Pacific Corp. It should be self-evident that it would be insufficient to do this only once. In the following year, Apple would have a market capitalization of \$1.32 trillion, (\$1.2 trillion + \$120 billion) and would need to create a yet-higher amount of profit than \$120 billion in order to achieve 10% growth on the higher base.

It should be noted in this connection that although Apple shares have certainly appreciated substantially in the past several years, the company itself has not greatly expanded its business. In Fiscal 2015, Apple recorded \$233.7 billion of revenue and almost \$53.4 billion of net profit. In Fiscal 2019, which ended in September 2019, the company recorded \$260 billion of revenue and \$55.3 billion of net profit. Revenue expanded at a 2.72% compound annual rate and net profit increased at the rate of 88 basis points per annum.

This means that its net profit margin, which is currently 21.25% has been gradually shrinking for the past four years. The shares have performed well, more than doubling during this period. This is because the company has repurchased roughly 1.145 billion shares, or 19.77% of the shares that were outstanding on a fully-diluted basis at the end of the 2015 fiscal year.

Should the current estimated rate of profit be realized, the company could purchase only 3.83% of the shares outstanding, if it invests all of its net income after dividend payments in share repurchases. Essentially, over the course of the past four years, Apple barely increased net income, but managed to double its P/E ratio. At today's higher share price, though, the purchasing power of the Apple net income is severely diminished. Thus, if it is to provide a robust return for shareholders, it must create more net profit.

Consequently, let us assume that Apple will produce an additional \$5.53 billion in net profit, meaning earnings increase by 10%. It will need to do this in the context of a declining iPhone market share. Different sources provide different estimates of the iPhone market share loss. One such firm, Strategy Analytics, calculates that Apple's market share of smartphones declined by 70 basis points to 11.1% globally. Meanwhile, Counterpoint calculates that the Apple smartphone market share declined by 120 basis points to 10.1%. The problem for Apple is not only the pressure from Samsung and Huawei, but also from relatively new firms such as Xiaomi and OPPO.

Another challenge is a modest worldwide decline in smartphone shipments as the world becomes saturated with smartphones. Strategy Analytics calculates that smartphone shipments recently declined by 3% versus the preceding year. This should illustrate how difficult it will be to grow profits by 10%.

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Nevertheless, we will accept that there will be no further smartphone market share losses or declines in the selling price. Let us simply assume that Apple TV+ in the time remaining until the end of Apple's fiscal year in September 2020, manages to convince every Netflix subscriber to switch to Apple TV. Moreover, despite the fact that Apple TV undersells Netflix by about 50%, we'll presume that Apple's cost of content production is much lower than for Netflix, so that Apple's earnings will be equivalent to Netflix's current earnings. In that case, Apple would add approximately \$2 billion to its current net income, for an increase of roughly 3.6%.

Looked at this way, it becomes clearer how difficult it is to grow \$55.3 billion of net income by 10% per annum. In any case, no company has ever managed to accomplish this magnitude of growth upon such a large base. Indeed, no company has ever achieved the current profit base of Apple.

However, if Apple accomplishes that feat, let us then assume that its share price advances by 10%. Since Apple is a 4.41% position in the S&P 500, this would add 44 basis points to the S&P 500 performance. However, it is obvious that Netflix would file for bankruptcy in the aforementioned scenario, and its stock would be worth zero. Netflix is a 51-basis-point position in the S&P 500, so then the index would lose 51 basis points. Thus, the Apple gain and the Netflix loss would combine for a net negative 7-basis-point impact on the S&P 500.

This is why the mere existence of mega-capitalization stocks in an index is problematic and introduces an unprecedented level of risk into the system. The companies become so large that, in success mode, they place competitive pressure on other firms in the index, which in turn reduce the index return by measurable amounts in failure mode.

For example, Apple now has a 21.27% net profit margin. In the context of financial history, such profit margins rarely occur. However, even when they do, they are even more rarely maintained. Consequently, let us assume that Apple could maintain its market share only by some price reductions, so that its profit margin becomes 15% instead of 21.27%. If the shares trade at 16x earnings instead of 21.7x earnings, the shares would suffer a 26.27% valuation multiple contraction, while the profit margin reduction would cause net income to decline by 29.48%. Viewed in totality, Apple would earn about \$39 billion after tax and trade at a P/E ratio of 16x for a market capitalization of \$624 billion, as opposed to the current \$1.2 trillion, resulting in a price decline of 48%. The loss to the index would be 212 basis points.

Microsoft and Amazon both play the same role as mega capitalization shares. As Microsoft and Amazon succeed with cloud computing, they unavoidably place pressure on companies such as IBM. This is necessarily the case; companies usually have finite lives. As long as Amazon displacement of competing companies was limited to privately owned bookstores, there was no negative index impact from its activities. However, once a mega-cap stock

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enters an index, it begins to displace various lesser firms within the index. In the modern era, the studies of long-term equity performance are too short to observe the displacement impact.

For instance, the automobile displaced a variety of very economically significant industries and businesses associated with horses. However, while the index measures General Motors as an automobile company and includes its enormous positive impact on the index's long-term returns, the index had no exposure to horse ranching. Nor did the index have any exposure to the many farms in the Northeast United States that produced grain to feed horses, farms that were likewise displaced. None of these businesses were publicly traded, so their multi-decade collapses could be neither recorded in the index nor detract from the positive contribution of General Motors.

### *The Mystery of the Historical Absence of Mega-Cap Companies*

In fact, in the roughly 100-year history of calculation of reliable indexes with objectively verifiable data, the mega-capitalization displacement problem has yet to appear. One should be able to infer the existence of a problem, since the oldest companies in the world are usually small. One would think that a company, or a group of companies, that is hundreds of years old, would be enormous, because they would have been compounding for a long period of time. But what we actually find is that the oldest companies are very small.

The unspoken presumption in indexation is that the various index constituents simply continue to compound over time and this is what produces the index rate of return. However, most businesses have finite lives. If this was not true, the Medici Bank today would be many times larger than Apple.

The Medici Bank was founded in 1397 and ceased operations in 1494, so that was nearly a century. Estimating the net worth of the bank in 1397 is extremely difficult, since it owned gold, land and art, in addition to cash, for which one would need to calculate the 14<sup>th</sup> century purchasing power. The authoritative work on the Medici Bank is entitled *The Rise and Decline of the Medici Bank, 1397-1494* by Raymond Adrien de Roover. According to this source, the capital of the early Medici Bank was 25,000 gold florins.

This is a reasonable estimate, since at the death of Giovanni Medici in 1429, his fortune was valued at 180,000 gold florins; it was actually compounding. A florin was fixed at 6.99828 grams of gold. The number originally was calculated in grains, since grams did not exist in the 14<sup>th</sup> century. However, I converted grains into grams.

A troy ounce of gold equals 31.103 grams, so the florin, assuming my calculation of grains to grams is correct, is 6.99828 divided by 31.103, which is the number of grams in a troy ounce, or 0.225 ounces of gold. Gold traded at \$1,456 an ounce at this writing. The florin is

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0.225 oz. x \$1,456/oz., or \$327.60 for each florin. Therefore, a fortune of 25,000 gold florins would be \$8,190,000.

Assuming the calculations are correct, if that sum of \$8,190,000 had compounded at 3% annually since 1397, it would be worth \$790.744 trillion today, or 658.95 times the current market capitalization of Apple.

If that initial sum had compounded at a 10% rate, which is equivalent to the accepted historical equity market return, it would be worth \$8,190,000 times the compounding numbers, which is  $5.575 \times 10^{25}$ . That is an unimaginably large number. For an idea of how large, it would be equivalent to 40% of the number of atoms that are believed to exist in the universe.

As a matter of interest, the demise of the Medici Bank is an example of what happens to virtually every large financial institution. The sums become so fantastic that investment begins to be made outside the circle of original competence. In this case, the bank was obliged to diversify outside of Florence. Specifically, the bank lent considerable sums in England near the end of the 15<sup>th</sup> century. The end of the 15<sup>th</sup> century in England was a time of the Wars of the Roses, when the two feuding branches of the Plantagenet line—the House of York and the House of Lancaster—fought for succession to the crown. The Medicis cleverly loaned money to both sides on the entirely reasonable theory that one side must win.

This proved to be true and Edward IV became the first Yorkist king. Unfortunately, neither side repaid the loans. This might have been survivable had the bank not also made the other common mistake of delegating responsibility to professional managers assigned to a limited or diversified function. In this case, the Bruges Bank manager, Tommaso Portinari, diversified into loans to the court of Burgundy, as well as to a shipping business. This could never be adequately studied or controlled by the Florence Branch, and the now familiar pattern of troubles due to lack of controls caused massive losses.

Logically, one would think that the oldest companies in the world should be the largest, since they have experienced (or, more precisely, had the opportunity to experience) hundreds of years of compound growth. In actuality, the longest-lived companies are, generally speaking, very small firms with narrow, undiversified business lines. In most cases, they occupy a niche too small to be interesting to potential competitors. One such company is Nishiyama Onsen Keiunkan, which is located in Hayakawa, Japan. Founded in the year 705 AD, it is a hotel with 37 rooms. It has been operated by the same family for over 1,300 years.

Another example is the Hoshi Ryokan, or traditional Japanese hotel that was founded in the year 718 and has been owned by the same family for 46 generations.

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Yet another example of specialization within a niche is Genda Shigyo, which was founded in the year 771. It is a ceremonial paper goods company that manufactures mizuhiki, which is colored paper that is twisted into cords. Sometimes, mizuhiki are twisted in such manner as to represent birds, dragons or turtles. Mizuhiki can be quite beautiful and takes enormous skill. It is an art form in itself and is even more complex than origami.

The oldest restaurant in the world is the Stiftskeller St. Peter, which was founded in 803 AD at St. Peter's Monastery in Salzburg, Austria. Apparently, it has never occurred to the proprietors to franchise their restaurant. Neither has it occurred to them to 'optimize' their financial metrics with a sale and leaseback of the underlying property. There is also no takeout menu to be delivered by Uber Eats.

In the United States, there are more recently founded examples of long-lived companies that are still in continuous operation. One is Citigroup, which at \$165.5 billion in market value, might qualify as a mega-cap company. Citigroup can trace its origins to the City Bank of New York, founded on June 16, 1812, with \$2 million of capital. In its history, the bank experienced several near insolvencies. In its current incarnation, it has a balance sheet with over \$2 trillion of assets. The shares trade at 87% of book value.

There are not many large capitalization stocks that trade at a discount to book value. Ordinarily, a large market capitalization is a sign of financial vigor. For a financial services firm, though, a substantial discount to book value is a warning of risk.

In any case, as of this writing, the mega-capitalization stocks continue to outperform the lesser-capitalization issues. The academicians inform us that the less well-capitalized smaller firms are those that contain risk. Perhaps, despite the findings of modern portfolio theory, there are enormous risks to be found within the firms with enormous market capitalizations (and perhaps as a function of their enormous market capitalizations).



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## *Industry Thoughts*

### AUTOMOBILES AND VALUATIONS (LOW AND HIGH)

The largest automobile manufacturers in the world generally trade at low valuations due to the risk of a recession that could dramatically reduce profitability.

Table 2: Valuations of Largest Automobile Manufacturers

	<u>P/E</u>	<u>P/B</u>
Ford	9.5x	1.02x
General Motors	8.0x	1.16x
Honda	8.0x	0.62x
Daimler AG	8.0x	0.91x

*Source: Bloomberg*

For example, Ford trades at 9.5x earnings, GM is 8x, Honda 8x, and Daimler trades at 8x earnings. All around the world, they trade at low valuations.

However, Ferrari NV (RACE) trades at 38.4x estimated 2019 profits and 18.61x book value. The average automotive company trades at or even below book value. This is how Ferrari fares, in terms of market value, relative to the world's major automakers. Ferrari has a market capitalization of \$31.3 billion. This is slightly below the \$35.9 billion market capitalization of Ford, approximately 63% of the market capitalization of GM, and about 61% of Honda's market capitalization. It also has 45% of the market capitalization of Daimler.

This is how Ferrari fares, in terms of actual production of automobiles. In the last six years, Ferrari has managed to increase its annual sales from 7,000 cars to 9,300 cars. Honda might make 9,300 cars in a couple of hours. Ferrari generates annual free cash flow of about \$445 million, and the market values the company at 80.67x these profits. The only circumstance in which this valuation can be maintained is if the company experiences no cyclical downturn. Although there were Ferraris built as early as 1940, the company recognizes its inception as 1947, when it was organized in a corporate form. Since that time, there have been many economic cycles during which Ferrari sales declined. Nevertheless, the shares are priced as if Ferrari is a growth company.

Another minor but nevertheless interesting point is that despite the widespread belief that electric cars will displace internal combustion engine vehicles, the consensus view of Ferrari is that 12-cylinder internal combustion engine vehicles are a growth market.

An important division within Ferrari is the Scuderia Ferrari, which is the racing division that has participated in every world racing championship for almost 70 years. This is certainly

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not consistent with the increasingly global acceptance of the idea of reducing unnecessary CO<sub>2</sub> emissions.

In any case, it is simply astonishing to see a company that is obviously cyclical trade at a growth company valuation. The anomaly may be explained by the fact that Ferrari is viewed as a growth company because, interestingly, it is investing heavily to create a hybrid electric version of its cars to be available for sale in the year 2022. Hence, the comparison for Ferrari is Tesla. Tesla trades at 8.66x book value, which is much less expensive than Ferrari on this metric.

There would appear to be no release of factual information, not even of declining sales of electric vehicles (in both the United States and worldwide), that will do anything to reduce the value of any company that states its wish to expand into electric vehicles and, thus, Ferrari shares have advanced 68% year to date.

For example, according to InsideEVs.com, in July 2019, worldwide sales of electric cars increased 8.39% vis-à-vis the prior year, 2018. In August, it was a decline of 8.70%. In September, there was a drop of 11.19%. The comparable year over year figures for the U.S. are: July, negative 10.23%; August, negative 23.89%; and September, negative 25.63%.

Table 3: Sales of Electric Vehicles

<u>Year</u>	<u>July</u>	<u>August</u>	<u>September</u>
2018 U.S. Sales	29,598	36,347	44,544
2018 Worldwide Sales	144,975	175,362	206,500
2019 U.S. Sales	26,570	27,665	33,128
2019 Worldwide Sales	157,144	160,108	183,393
U.S. Sales Increase/(Decrease)	(10.23)%	(23.89)%	(25.63)%
Worldwide Sales Increase/(Decrease)	8.39%	(8.70)%	(11.19)%

Source: InsideEVs.com

After the September figures were reported, the publication said that they will begin to update the numbers only quarterly, not monthly.

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## AUTOMOBILES (*CONT'D*)

### (*EMERGENT SYSTEMS AND THE SHORT LIFESPANS OF LARGE-CAP COMPANIES*)

*Q:* Murray, do you attribute these high growth multiples to indexation?

*A:* No, I don't attribute it to indexation. Because Ferrari is only in five ETFs. You can't blame every dysfunctional investment phenomenon on ETFs.

*Q:* So, when you were looking for small companies, is that how Ferrari caught your attention?

*A:* If I'm writing a report and I have to look up some data, there'll be something that catches my eye. And I say, wow, look at this. This is unbelievable. And it doesn't stop. My list of all the unusual things, the valuation anomalies, the classification anomalies, absurd presumptions is now so big that if I wrote a Compendium every week, it would take more than 100 years to finish.

I'd have to do 5,200 Compendiums. And even if I could do that, even if I could live that long and still wanted to write them, the trouble is what's called a mathematically irreducible problem, because by the time I got to them, they would be outdated by even more data. In mathematics it is referred to as emergent systems.

In other words, the mathematics you learn in school, to the degree it is taught, is linear mathematics. Calculus is a 17<sup>th</sup> century invention and most people don't even know calculus. The mathematics they learn actually predates calculus. Isaac Newton and Gottfried Leibniz invented calculus independently in the 17<sup>th</sup> century. And a lot more mathematics came after that. But, unless you're a specialist, it's not even taught.

Emergent systems is a branch of what's called complexity theory. Most mathematics are considered to be linear. For instance, in an algebraic equation, if you increase one side of the equation, the other side must increase as well. In other words, as in geometry, as Euclid said, "The sum of the parts must equal the whole."

However, that's not always true. In emergent systems, the sum of the parts do *not* equal the whole. You could have properties of the entirety that are different than the sum of all the individual properties.

Here's an example. Let's say you compare a mouse to an elephant. An elephant has 10,000 times more cells than a mouse. However, the metabolic rate of an elephant is lower than a mouse, which is why an elephant lives a lot longer. You might think that if you take a living creature like a mouse and just multiply the number of cells by 10,000, you would get a big mouse. But you don't get that. You get something else.

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It's much the same as for a city. Why do people tend to cluster in cities? You might think the comparative benefits of city and rural living are obvious, but not necessarily so. It can be much harder, in unexpected ways, to maintain the same standard of living in a rural setting. As one among an untold number of possible examples, you can take any city in the world, divide the miles of road by the population—in other words, the per capita miles of road—and compare the dynamics. In the city, you'll find that there's less roadway per person. The driving experience is more pleasant in the non-urban area, because there is less traffic congestion, but on the other hand, there are also fewer people to maintain the road. The roads are used more intensively in the urban area, and perhaps degrade more rapidly, but you have a larger tax base to support maintenance and repair. The dynamic of a city is very different than the dynamic of a countryside.

Anyway, that's what emergent systems are all about. The idea that you could have companies increase in scale and they'd just be scaled up versions of what they were 100 years ago—it doesn't work that way. Generally speaking, once they scale up too much, untoward things happen to them, pressures and possibilities and events that didn't or even couldn't have occurred when they were smaller. And so, a company's management thinks that if they have more capital and scale, then they must diversify into different business lines, and that such an initiative would be consistent with the idea of diversifying risk.

But actually, it's the reverse. If you look at a list of the oldest companies in the world, you'll see that they were able to maintain their exceedingly rare longevity because they maintained a very narrow business line, something they could control. As opposed to branching out into all these new businesses. But so far, at least historically, the companies that tried to expand beyond their circle of competence, and beyond their ability to closely control their activities, ultimately created problems for themselves and also created problems for society. Because when a big company fails, it has implications for just about everybody who lives in that society. That's the interesting thing about corporate growth, about investor projections of that growth and their sense of where the risk lies, and the valuations they therefore place on those factors—it really isn't a linear function.

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## *Facts & Figures*

### GLOBAL ADVERTISING EXPENDITURE (AND THE F&G OF THE FAANG)

According to Statista, global advertising expenditure was \$399.26 billion in 2010. It estimates that advertising spending worldwide will reach \$563.02 billion in 2019.

Table 4: Global Advertising Expenditure

	<i>(\$ in billions)</i>
2019	\$563.02
2018	543.71
2017	521.38
2016	503.67
2015	485.17
2014	467.58
2013	451.14
2012	434.04
2011	418.28
2010	399.26

*Source: Statista*

For all intents and purposes, if one calculates the year-to-date revenues of Google and Facebook, which is primarily advertising-related, and annualizes it, one would arrive at a figure of \$288 billion, or approximately 40% of the 2019 global advertising figure. Investors believe that Google and Facebook will continue to grow at 30% per year. Yet, worldwide advertising spending typically increases by between 3% and 4%, depending on the year.

Therefore, if two companies that collectively produce \$288 billion of revenue grow at, say, 30%, it would be all of 36 months until they would account for the entire global advertising revenue. Except, they would never reach 100% because even if all advertising were to go digital, there would be digital billboards not owned by Google and Facebook, and there are already many other websites that sell advertising.

If one thinks about the phenomenon of Google and Facebook within an index and its relation to the science of emergent systems, one would see that their growth rate is problematic. Even if they do not reach 100%, then will it be 99%, 92%, or 86%? What is the number? One does not really know. If we assume that the ultimate market share is 90%, then by the time it reaches 87% or 88%, the market would already realize the problem. Therefore, if 36 months were to be the theoretical time to saturation, in reality it will not be anything close to 36 months before investors react. One would have an indeterminate and very short time period before there would be a crisis.

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That is what happens with mega-cap companies. The mere existence of a mega-cap or a group of mega-caps within the index virtually guarantees that there will be a crisis. It does not matter what action the mega-cap pursues. It can decide to expand beyond its scope of business by offering some other service that will affect another company. For example, taking the case of Apple again, even if it could take away all of Netflix's business, that would not help its business tremendously. However, if that were to occur, Netflix would have no customers and clearly would become bankrupt. In this scenario, maybe Apple accomplishes its growth objective. However, would that even be enough to sustain the growth expectations, and to what end?

Apple would have increased its business by 10%. From an index point of view, the action would have eviscerated Netflix, and the net effect, as calculated earlier, would be a negative index-level impact. Taking this one step further, if every mega-cap company were to accomplish the same, the index would have a structural return property very unlike its historical property: it would not appreciate at 10% annually. In other words, the index would be in the process of destroying itself. Therefore, the mere existence of mega-caps within an index will actually cause the index to destroy itself.

*Q:* Why does this issue only pertain to mega-cap companies?

*A:* I didn't say it only pertains to mega-caps. In other words, if there were an index in the year 1494, using our terminology, the Medici Bank would not have been a mega-cap. Perhaps it would have been a small capitalization stock. It's the size of the biggest member relative to all the others that is pertinent. The mere fact of being mega is not the issue; the fact is if it's big enough relative to the other members and it continues to grow, at some point it has to start taking away business from the other companies in the index.

For example, when Amazon started, it was just displacing family-owned bookstores. From an index point of view, it caused no damage, even though it caused a lot of damage to those family-owned bookstores. Now, Amazon is so big, with \$250 billion of revenue, that if carried through to its logical conclusion, it will need to take revenues away from Target or Walmart, at that scale.

This is the environment in which Facebook and Google operate. The annual growth rate of global advertising expenditures, *excluding recessions*, was 3.89% per annum in the ten-year period between 2010 and 2019. Recently, the growth has been much higher due to the transition from traditional advertising venues to the internet. However, the expansion rate will ultimately normalize and, in the case of Facebook, the equity market will discount the normalization before it actually occurs, since it will be so readily observable. People will see when Facebook reaches the point that it cannot grow any further.

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## EMERGENT SYSTEMS AND LIMITS TO INTERNET ACTIVITY

According to InternetLiveStats.com, Google conducts 79,065 searches per second and 81,695 YouTube video views per second. This translates into 4,743,900 Google searches per minute, or 284,634,000 searches per hour, and 6,831,216,000 searches per day. Nevertheless, as there are 7.5 billion people on the planet, this level of activity is still less than one search per human on earth per day.

Why are there not more? One reason is that only 4.5 billion people have internet access. There is another reason, though: lack of time. For example, 2,861,470 emails are sent per second. Note that this does not include text messages. This translates to 247,224,000,000 emails sent in one day, which means, in principle, each human would be required— although they are not actually required—to read 32.96 emails per day.

If one also includes YouTube videos, text messages, Facebook page views, and so on, these allied activities in a way represent the idea of mega-cap companies. The volumes become so large that, even with 7.5 billion people in the world, even if they all had internet access, there are not enough minutes in a day to view all the information.

That is an example of emergent systems. One cannot simply take the growth of Google and Facebook and extrapolate it, because the idea of emergent systems is that once something becomes a certain size, the nature of the system actually changes, and in the instance of a mega-cap company, its success becomes an impediment to its own growth.

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# STAHL REPORT COMPENDIUM

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## GOOGLE MARKET SHARE

According to 99firms.com, Google's worldwide market share of internet search queries is up to 87.51%.

Table 5: Search Companies' Market Share

<u>Company</u>	<u>Market Share</u>
Google	87.51%
Baidu, Inc.	9.31%
Yahoo!	1.22%
Bing	0.91%
Yandex	0.47%

Source: 99firms.com

An interesting fact is that Google has gained market share relative to Baidu, despite the Chinese government's wishes. One issue with Google is that, as a generalization, people do not utilize the entirety of the search, which is very inefficient: 75.1% of all the click-throughs are in the top three search results that a query returns.

This statistic makes clear how important it is for a company to be in the top three positions, or at least on the first page, of a search result; otherwise it is a waste of money. According to Google itself, *only 0.78%* of Google users click on any result located on the second page of a search. At some point, companies will stop spending money with Google because it would be a waste.

As a result, certain words on Google have become very expensive on a click-through basis. The most expensive keyword on Google is "insurance" at \$59 per click. Keywords that are in the \$36 to \$48 range per click are: "loan," "mortgage," "credit," and "attorney."

There is significant competition to be the top result for those search words. If a company can sell a mortgage, I suppose it is worth \$48. However, there are many companies that wish to sell mortgages and they cannot all be in the top three positions. At some point, some will outbid others, causing the beginning of an emergent system, wherein some companies might decide to not spend the money, that it is not worth paying \$59 per click for insurance. If that occurs, the Google search placement prices might drop, which has never been seen before.

Looking at those keywords and the prices for them, one could say, ironically, that one would not think of Google as being in any way related to the financial services industry. Yet, when one looks at those keywords and how profitable and important they must be for the company's revenue, there actually is a profit linkage between Google and the financial services industry. Although one would not think there is a connection, there clearly is one. That is another example of an emergent system in operation.



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# STAHL REPORT COMPENDIUM

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The compound annual rate of return of Google's shares from its IPO date to the end of November 2019 is 19.67%. Year-to-date through December 6<sup>th</sup>, Google stock appreciated by 28.18%. In the past five years, Google's stock return was 20.97% per annum. That is somewhat illogical, because Google's valuation multiple should be declining as it approaches certain barriers to its growth. But it does not work that way, since the shares become more accepted and held by a greater number of people. That is the cause of bubbles: a greater number of people look at history and believe they should extrapolate from what has been, not realizing that in an emergent system it is the worst thing one can possibly do.

Year-to-date, Google's net income increased by 8.65%. Its revenues grew by 18.56%, while cost of revenues increased 22.21%. This is totally normal for large companies wherein revenues increase faster than profits. In any event, the stock price is increasing faster than the profits, which is also quite normal.

This is an example of gross margin contraction that is experienced by every mega-cap firm. It becomes increasingly difficult to attract marginal customers and, in this instance, those customers are more price-sensitive advertising buyers because only a few firms can afford to pay for the top three search engine spots in any given category.

## *Featured Companies*

### INTERPUBLIC GROUP OF COMPANIES, INC. (IPG)

Interpublic Group, with an \$8.72 billion market capitalization, is the fourth-largest advertising agency in the world. The advertising business grows in two dimensions. The first is growth resulting from the business expansion of their clients. The second is that smaller firms tend to merge to become larger firms. This is not a new phenomenon. For example, in 1930, H.K. McCann and Erickson merged to become McCann Erickson, which forms the central part of Interpublic Group today.

Sometimes, a large advertising agency will make substantial acquisitions to obtain a business skill that is lacking or unsatisfactorily developed at the parent company level. An example of such is Interpublic's acquisition of Acxiom in July 2018, for \$2.3 billion. Acxiom is a database marketing company.

As a consequence, there is a fairly high amount of depreciation and amortization expense at Interpublic. The shares trade at 11.9x 2019 earnings estimates and 11.24x 2020 estimates. The low multiples can be attributed to the low growth forecasted for both the company and the advertising industry. Industry growth is estimated to be about 5.8% per annum.

However, this rate of growth merely reflects the rate of growth of global advertising expenditures. As the fourth-largest global advertising firm, the rate of growth of Interpublic's business cannot reasonably be expected to be much higher than that of the industry. The shares trade at 10.73x gross cash flow and about 13.58x free cash flow, ignoring dividend requirements.

The balance sheet contains approximately \$3.6 billion of debt and \$520 million of cash. The debt is the consequence of payments for acquisitions. After capital expenditure requirements and dividends, the free cash flow is largely targeted towards debt repayment, at the rate of \$200 million to \$300 million per year.

The stock has a dividend yield of 4.18%. Barring any recession, which would likely negatively impact advertising spending, the company should be able to grow profits at about a 5% rate. If one assumes \$250 million of debt can be repaid every year, the market capitalization of the company would increase to reflect that, in accordance with the Modigliani-Miller Capital Structure Invariance Theorem. In relation to the current market capitalization, this would add 2.87% to the annual return.

Hence, making use of rather unheroic assumptions, the shares should produce an annual rate of return of 12.05%. This is the sum of the debt pay-down, the profit growth and the dividend

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# STAHL REPORT COMPENDIUM

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yield. It might seem rather unspectacular in relation to the 2019 S&P 500 rate of return. However, this magnitude of return represents normalcy. The S&P 500 return is the type of return usually experienced after a big decline or perhaps just prior to a big decline.

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# STAHL REPORT COMPENDIUM

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## OMNICOM GROUP INC. (OMC)

Omnicom Group has a \$17.41 billion market capitalization and is the world's second-largest advertising company. Properly speaking, its activities are not limited to advertising in the classically defined sense of the term. The services offered include public relations, customer relationship management and brand consultancy.

In 2013, Omnicom almost merged with Publicis Groupe, which is the third-largest advertiser. Even without the Publicis merger, Omnicom is a global company. About 55% of revenues derive from the United States, 9.6% from the U.K., 16.6% from the rest of Europe, 11.6% from the Asia Pacific Region, with only 2.8% from Latin America, and 1.6% in the Middle East and Africa.

Eventually, these latter regions will be areas of substantial growth, since the consumer culture has yet to evolve in the emerging markets in the manner in which it has in the developed world. Hence, one of the more interesting investor ironies is that an investment in an advertising agency such as Omnicom provides one with contingent emerging market exposure, which is not reflected in the share price.

Also, in terms of products being marketed or advertised, the largest individual exposure in Omnicom is pharmaceuticals and healthcare. This exposure is growing more rapidly than the more traditionally advertised products. Pharmaceuticals and healthcare represent 13% of all billings and should prove to be more resilient than the more conventional exposures, such as retailing, if there should ever be another recession.

The company's cash flow is largely, but not entirely, free cash flow. Gross cash flow should equal about \$1.7 billion, so that the shares trade at 10x gross cash flow. Annual capital expenditure requirements should be \$175 million to \$200 million. Another \$550 million will be paid to shareholders in the form of a dividend. The company routinely acquires small advertising agencies. The monies expended can range from a modest \$25 million to over \$300 million.

In any case, this leaves over \$500 million cash flow available for share repurchase. In the first nine months of 2019, Omnicom had already repurchased \$539.9 million of shares, and also made \$76 million of small agency acquisitions. Its balance sheet holds \$2.4 billion of cash against \$5.1 billion of total debt.

Hence, the company will repurchase at least 3.5% of its shares. The shares yield 3.25% and, coupled with perhaps 5.5% annual organic growth, should produce a 12.25% annual rate of return over time. At present, the shares trade at 12.7x estimated 2020 earnings.

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# STAHL REPORT COMPENDIUM

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## WPP PLC

WPP plc has a \$16 billion market capitalization. Technically, it is a British company, even though it is listed on the New York Stock Exchange and operates worldwide. In any event, it has a larger exposure to the United States than the U.K.

WPP is by far the world's largest advertising agency. It achieved that position largely by acquisitions. Over the years, it has acquired Ogilvy, Wunderman Thompson, Young & Rubicam, Grey, Hill & Knowlton and many other firms. It was founded as Wire & Plastic Products plc in 1971 with the objective of producing wire shopping baskets. As late as 1985, Martin Sorrell purchased a 35% interest in the company for \$676,000.

Since Mr. Sorrell's retirement, the company has focused on downsizing, since Sorrell had created a huge company through acquisitions. An important transaction in this regard is the recently announced sale of a 60% stake in WPP's subsidiary, Kantar, to Bain Capital Private Equity. Kantar is more of a market research firm than a classic advertising agency.

The objective is to reduce the number of advertising agencies, the number of brands and the number of employees. Most importantly, the plan is to reduce the corporate debt.

As of September 30, 2019, net debt was almost \$5.9 billion. The Kantar transaction is expected to close in mid-2020 and the proceeds to WPP should be approximately \$3.1 billion. The plan is that 40% of the proceeds, or roughly \$1.2 billion, will be returned to shareholders via a stock repurchase program. About \$325 million of that program is to be completed prior to March 2020 from the company's cash flow—in other words, before the close of the deal.

The leverage target is 1.5x to 1.7x EBITDA. This should result in net debt of slightly more than \$4 billion and EBITDA of \$2.35 billion, using the high end of the leverage range.

Thus, the company will be left with a net enterprise value of about \$20 billion and EBITDA of about \$2.35 billion, for an enterprise value-to-EBITDA multiple of 8.51x. The shares yield 5.87%.

The share repurchase should be ongoing, since the bulk of the EBITDA will be free cash flow once the Kantar transaction closes and the balance sheet is downsized. The now downsized WPP should be able to realize the same 5.5% annual organic revenue growth as the other large advertising firms.

Thus, one receives a 5.87% dividend yield; with an additional 3% per year from share repurchases, assuming the stock stays at the same price; and 5.5% organic growth, for a total

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# STAHL REPORT COMPENDIUM

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potential return of 14.37%, absent any P/E expansion. That is a reasonable projected rate of return from a low-valuation equity.

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# STAHL REPORT COMPENDIUM

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## LAMAR ADVERTISING COMPANY (LAMR)

Lamar Advertising Company, with an \$8.7 billion market capitalization, is a billboard company. It was founded in 1902 and has over 360,000 billboard displays in the U.S. and Canada. Lamar qualifies as an REIT. It is making a transition from the traditional static billboard display to an interactive or digital billboard display. Currently, less than 2% of the billboards are digital.

Thus, unlike other advertising firms, one might say that Lamar is on the trailing edge of technology. It is also leveraged, as it has used, and continues to use, debt to acquire operating assets. Technically, there exists about \$3 billion of debt against \$1.167 billion of equity. However, realistically, there is no tangible equity. This is not to say that the operating rights to place billboards on key pieces of real estate do not have considerable value. However, in terms of hard book value, there is none.

The company should generate \$600 million of cash flow per annum. Capital expenditures for maintaining the billboards and for continuing the conversion to digital billboards should be roughly \$125 million a year. The profits on a GAAP basis, which should exceed \$360 million annually, are used to pay dividends as required by the REIT statute.

This leaves about \$115 million of cash flow, which is usually used for acquisitions. Thus, without additional leverage, the company should be able to support its dividend, which now yields 4.43%, and some modest, perhaps 2%, annual organic growth by the conversion of static billboards to digital billboards. This would equate to a 6.43% annual rate of return, which would be a reasonably robust return for an REIT.

However, one must also factor in a 2%-plus inflation rate in the revenue received from billboards, static or otherwise. This would increase the return to 8.43% per annum, which is very good for an REIT.

Additionally, there is the matter of the annual acquisitions, for which there is \$115 million of cash flow available. The company's practice is to leverage an acquisition on a 2:1 basis or \$2 of debt for every \$1 of cash invested. This leads to asset growth of \$345 million annually, or another 10% on the existing asset base. Using this modality should increase the cash flow by 10% per annum. For the past four years, the cash flow has grown by 13.42% per annum.

For the past five years, Lamar's shares have produced a 14% compound annual return. This should continue unless it is disrupted by a meaningful increase in interest rates or a recession. For an REIT, Lamar provides an avenue to a fairly robust rate of return.

## *Post-Musings*

### THE GLOBAL ADVERTISING EXPENDITURE POOL: TRADITIONAL AGENCIES AND THE FACEBOOK/GOOGLE MODEL

A large advertising agency, such as Interpublic or Omnicom, has earnings that are essentially defined by the global advertising expenditure. Internet advertising companies, such as Facebook or Google, have earnings that are similarly defined. The difference is that in the case of the latter two companies, there has been much more growth from the shift away from traditional media, such as television, newspapers and magazines, towards the internet.

However, as a matter of logic, if the two advertisers collectively reach 100% market share, they must inherit the same growth rate as the conventional advertisers. Thus, the P/E ratios currently accorded to their shares reflect a growth rate that cannot possibly continue at the current rate. It must contract.

Another risk as seen in the statistics is that there is a great deal of clutter in internet advertising and it is unclear how effective marginal advertisements are. There is insufficient data to measure effectiveness in a historical sense, since the Google or Facebook campaigns of many firms are less than two years old. Moreover, internet advertising outside of the context of Google and Facebook, with web address destinations as opposed to the search firms, has just commenced and neither firm has experienced a recessionary advertising downturn.

In any case, Google, Facebook, Interpublic and Omnicom have earnings that reflect the same variable. Ultimately, those profits will be valued at the same multiple.



# STAHL REPORT COMPENDIUM

## WEALTH INDEX (Ticker: RCH Index)

As of September 30, 2019

Annualized Total Return	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	Since Incep. 1991 - Sep '19
Wealth Index	-5.04%	8.38%	6.41%	10.66%	12.48%	10.52%	8.53%	12.18%
S&P 500	4.25%	13.39%	10.84%	13.26%	13.24%	9.01%	6.33%	10.21%
S&P 500 Eq. Wgt.	3.40%	11.05%	9.46%	13.14%	13.41%	9.97%	9.24%	11.90%
Russell 3000	2.92%	12.83%	10.44%	13.00%	13.08%	9.10%	6.72%	10.35%
Russell 2000	-8.89%	8.23%	8.19%	10.43%	11.19%	8.19%	7.99%	10.39%
Excess Return vs. S&P 500	-9.29%	-5.02%	-4.42%	-2.60%	-0.76%	1.51%	2.19%	1.98%
Excess Return vs. S&P 500 Eq. Wgt.	-8.44%	-2.67%	-3.04%	-2.49%	-0.93%	0.54%	-0.72%	0.28%
Excess Return vs. Russell 3000	-7.95%	-4.46%	-4.03%	-2.35%	-0.60%	1.42%	1.80%	1.83%
Excess Return vs. Russell 2000	3.85%	0.15%	-1.77%	0.22%	1.29%	2.33%	0.53%	1.79%

\*Note: Calculated Using Total Returns

Risk Adjusted Return	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	Since Incep. 1991 - Sep '19
Wealth Index	(0.21)	0.53	0.42	0.74	0.79	0.56	0.40	0.61
S&P 500	0.23	1.10	0.91	1.19	1.06	0.65	0.43	0.72
S&P 500 Eq. Wgt.	0.16	0.84	0.75	1.11	0.97	0.62	0.56	0.76
Russell 3000	0.15	1.02	0.86	1.14	1.01	0.64	0.45	0.72
Russell 2000	(0.36)	0.48	0.51	0.68	0.65	0.44	0.41	0.56

\*Note: Calculated As Annualized Total Return Divided By Annualized Total Return Volatility (Uses Monthly Total Returns)

Information Ratio	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	Since Incep. 1991 - Sep '19
Wealth Index vs. S&P 500	(1.33)	(0.70)	(0.65)	(0.40)	(0.12)	0.18	0.21	0.20
Wealth Index vs. S&P 500 Eq. Wgt.	(1.89)	(0.54)	(0.61)	(0.53)	(0.20)	0.10	(0.08)	0.03
Wealth Index vs. Russell 3000	(1.30)	(0.71)	(0.67)	(0.42)	(0.11)	0.19	0.19	0.21
Wealth Index vs. Russell 2000	1.07	0.03	(0.32)	0.04	0.22	0.34	0.05	0.18

\*Note: Calculated As Annualized Excess Total Return Divided By Annualized Excess Total Return Volatility (Uses Monthly Excess Total Returns)

Wealth Index Rolling Average	Roll. 1 Year	Roll. 3 Year	Roll. 5 Year
vs. S&P 500	53.89%	57.42%	60.14%
vs. S&P 500 Eq. Wgt.	53.89%	51.29%	51.05%
vs. Russell 3000	55.99%	57.42%	64.69%
vs. Russell 2000	56.59%	61.29%	68.53%

\*Note: Calculated Using Total Returns

Annualized Volatility	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	Since Incep. 1991 - Sep '19
Wealth Index	24.29%	15.75%	15.18%	14.32%	15.86%	18.69%	21.39%	19.95%
S&P 500	18.75%	12.18%	11.93%	11.10%	12.55%	13.81%	14.59%	14.11%
S&P 500 Eq. Wgt.	20.90%	13.20%	12.59%	11.84%	13.76%	16.07%	16.56%	15.62%
Russell 3000	19.48%	12.54%	12.17%	11.38%	12.97%	14.30%	14.93%	14.37%
Russell 2000	24.87%	17.21%	16.16%	15.40%	17.29%	18.64%	19.54%	18.33%

\*Note: Calculated Using Total Returns

Annualized Tracking Error	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	Since Incep. 1991 - Sep '19
vs. S&P 500	7.00%	7.13%	6.85%	6.51%	6.53%	8.29%	10.37%	9.76%
vs. S&P 500 Eq. Wgt.	4.47%	4.93%	4.96%	4.69%	4.68%	5.46%	9.46%	8.75%
vs. Russell 3000	6.10%	6.25%	6.00%	5.64%	5.67%	7.43%	9.58%	8.94%
vs. Russell 2000	3.60%	5.13%	5.55%	5.33%	5.80%	6.84%	10.70%	9.85%

\*Note: Calculated Using Total Returns

Wealth Index Beta	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	Since Incep. 1991 - Sep '19
vs. S&P 500	1.27	1.16	1.15	1.16	1.16	1.24	1.32	1.26
vs. S&P 500 Eq. Wgt.	1.15	1.14	1.15	1.15	1.11	1.12	1.17	1.16
vs. Russell 3000	1.23	1.16	1.16	1.17	1.15	1.22	1.32	1.27
vs. Russell 2000	0.97	0.87	0.88	0.87	0.86	0.94	0.95	0.94

\*Note: Calculated Using Total Returns

Calendar Year Total Returns	Wealth Index	S&P 500	S&P 500 Eq. Wgt.	Russell 3000	Russell 2000	ER v. SP500	ER v. SP500 EW	ER v. R3000	ER v. R2000
1991	44.25%	30.47%	35.51%	33.68%	46.04%	13.78%	8.73%	10.57%	-1.80%
1992	20.20%	7.62%	15.63%	9.59%	18.41%	12.58%	4.56%	10.61%	1.79%
1993	3.38%	10.08%	15.12%	10.88%	18.88%	-6.70%	-11.75%	-7.50%	-15.50%
1994	0.33%	1.32%	0.95%	0.19%	-1.82%	-0.99%	-0.62%	0.14%	2.15%
1995	31.31%	37.58%	32.03%	36.80%	28.45%	-6.27%	-0.72%	-5.49%	2.86%
1996	23.09%	22.96%	19.02%	21.82%	16.49%	0.13%	4.06%	1.27%	6.59%
1997	27.31%	33.36%	29.05%	31.78%	22.36%	-6.06%	-1.74%	-4.48%	4.94%
1998	24.95%	28.58%	12.19%	24.14%	-2.55%	-3.63%	12.76%	0.81%	27.49%
1999	44.68%	21.04%	12.03%	20.90%	21.26%	23.64%	32.64%	23.78%	23.43%
2000	-19.16%	-9.10%	9.64%	-7.46%	-3.02%	-10.06%	-28.80%	-11.70%	-16.14%
2001	-10.80%	-11.89%	-0.39%	-11.46%	2.49%	1.08%	-10.41%	0.65%	-13.29%
2002	-15.49%	-22.10%	-18.18%	-21.54%	-20.48%	6.61%	2.69%	6.05%	4.99%
2003	45.41%	28.68%	40.97%	31.04%	47.25%	16.72%	4.44%	14.35%	-1.85%
2004	17.97%	10.88%	16.95%	11.95%	18.33%	7.09%	1.02%	6.02%	-0.36%
2005	3.30%	4.91%	8.06%	6.12%	4.55%	-1.61%	-4.76%	-2.82%	-1.25%
2006	22.61%	15.79%	15.80%	15.71%	18.37%	6.81%	6.81%	6.89%	4.24%
2007	1.73%	5.49%	1.53%	5.14%	-1.57%	-3.76%	0.20%	-3.41%	3.30%
2008	-43.67%	-37.00%	-39.72%	-37.31%	-33.79%	-6.68%	-9.95%	-6.37%	-9.89%
2009	72.80%	26.46%	46.31%	28.34%	27.17%	46.33%	26.49%	44.46%	45.62%
2010	31.51%	15.06%	21.91%	16.93%	26.85%	16.45%	9.60%	14.58%	4.65%
2011	5.11%	2.11%	-0.11%	1.03%	-4.18%	3.00%	5.22%	4.09%	9.29%
2012	13.53%	16.00%	17.65%	16.42%	16.35%	-2.48%	-4.13%	-2.89%	-2.82%
2013	41.08%	32.39%	36.16%	33.55%	38.82%	8.69%	4.92%	7.53%	2.25%
2014	7.06%	13.69%	14.49%	12.56%	4.89%	-6.63%	-7.43%	-5.50%	2.17%
2015	-6.87%	1.38%	-2.20%	0.48%	-4.41%	-8.26%	-4.67%	-7.35%	-2.46%
2016	16.85%	11.96%	14.80%	12.74%	21.31%	4.89%	2.05%	4.12%	-4.45%
2017	19.44%	21.83%	18.90%	21.13%	14.65%	-2.39%	0.54%	-1.69%	4.80%
2018	-13.80%	-4.38%	-7.64%	-5.24%	-11.01%	-9.42%	-6.16%	-8.56%	-2.79%
2019 YTD	17.00%	20.55%	20.10%	20.09%	14.18%	-3.56%	-3.11%	-3.10%	2.82%

\*Note: Calculated Using Total Returns

Source: Horizon Kinetics LLC, International Securities Exchange, Bloomberg

See important disclosures for additional information.

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# THE STAHL REPORT COMPENDIUM

Index Constituent Changes: 1. Nuveen Investments Inc (JNC US) was delisted from the US Security Exchange effective 11/14/2007 and has been removed from the index. 2. Alliance Financial Corp (ALNC US) was delisted from US Security Exchange effective 03/11/2013 and has been removed from the index. The divisor has been adjusted accordingly for each of these changes. 3. Fortress Investment Group (FIG US) was delisted from US Security Exchange effective 12/27/2017 and has been removed from the index.

## Money Manager Index

From Aug 1983 to December 2019

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr. End	Index	Yearly return	Annualized return (since inception)
1983								1.00	0.81	0.76	0.87	0.75	1983	0.75	(60.5)%	(50.2)%
1984	0.75	0.71	0.70	0.66	0.67	0.67	0.61	0.83	0.79	0.76	0.67	0.65	1984	0.65	(13.5)%	(26.5)%
1985	0.92	0.93	0.99	0.95	1.20	1.30	1.32	1.38	1.25	1.50	1.86	2.02	1985	2.02	211.8%	33.7%
1986	2.46	2.78	2.47	2.31	2.36	2.33	2.03	2.23	1.98	2.37	2.34	2.34	1986	2.34	15.9%	28.2%
1987	3.21	3.27	3.16	2.55	2.37	2.30	2.39	2.47	2.22	1.56	1.44	1.52	1987	1.52	(35.0)%	9.9%
1988	1.80	1.87	1.78	1.78	1.69	1.94	1.92	1.96	2.01	1.97	1.95	2.07	1988	2.07	36.0%	14.3%
1989	2.42	2.37	2.54	2.63	2.64	2.64	2.93	3.12	3.07	3.05	3.23	3.26	1989	3.26	57.8%	20.2%
1990	3.12	3.15	3.53	3.06	3.47	3.45	3.30	2.70	2.68	2.40	2.52	3.02	1990	3.02	(7.3)%	16.1%
1991	3.08	3.49	3.70	3.68	3.71	3.61	3.86	4.05	4.07	4.69	4.47	5.72	1991	5.72	89.4%	23.0%
1992	5.76	5.61	5.30	5.12	4.98	4.99	5.93	6.06	6.19	6.56	7.25	7.36	1992	7.36	28.6%	23.6%
1993	8.06	8.04	8.20	7.94	8.15	8.57	9.05	10.00	9.99	9.31	8.97	8.90	1993	8.90	21.0%	23.4%
1994	9.52	8.73	8.05	7.85	7.81	7.53	7.66	8.31	8.15	8.52	7.88	7.95	1994	7.95	(10.6)%	19.9%
1995	7.74	8.38	8.72	8.77	9.20	9.35	9.93	10.78	11.22	10.53	10.89	10.40	1995	10.40	30.8%	20.8%
1996	11.12	11.50	11.33	11.62	11.86	12.53	11.91	12.36	13.32	14.03	14.42	15.02	1996	15.02	44.4%	22.4%
1997	16.04	16.81	15.32	17.27	18.42	20.29	22.28	21.39	25.31	24.95	24.95	25.50	1997	25.50	69.8%	25.2%
1998	25.67	29.00	29.89	30.60	28.90	30.44	27.67	21.33	21.74	25.16	27.27	25.41	1998	25.41	(0.4)%	23.3%
1999	26.00	23.71	23.92	26.77	28.94	29.74	28.78	26.74	25.89	27.73	28.54	30.55	1999	30.55	20.2%	23.2%
2000	31.07	31.19	36.01	35.60	35.20	40.32	43.58	45.75	45.62	48.69	44.05	49.84	2000	49.84	63.1%	25.2%
2001	50.23	46.41	44.27	46.96	48.90	49.98	50.67	49.70	46.47	44.81	48.04	51.91	2001	51.91	4.2%	23.9%
2002	53.62	53.74	55.11	52.52	52.83	50.48	42.58	44.92	41.54	42.66	45.78	43.17	2002	43.17	(16.8)%	21.4%
2003	42.72	41.18	42.36	45.98	49.02	50.71	53.47	53.97	53.46	56.12	55.83	58.49	2003	58.49	35.5%	22.1%
2004	64.38	65.08	64.63	61.68	60.86	62.30	58.71	64.08	65.73	68.86	73.53	78.16	2004	78.16	33.6%	22.6%
2005	76.46	77.94	74.06	72.83	77.02	80.25	83.59	83.07	86.03	89.19	96.58	97.35	2005	97.35	24.6%	22.7%
2006	107.62	111.44	110.75	111.88	101.89	100.61	100.62	104.98	114.61	116.64	113.78	118.05	2006	118.05	21.3%	22.6%
2007	125.73	123.77	122.62	127.58	133.57	134.68	126.61	124.07	133.57	148.09	135.13	135.56	2007	135.56	14.8%	22.3%
2008	127.53	115.76	115.94	121.58	130.51	115.68	119.94	120.55	109.69	72.70	62.95	67.91	2008	67.91	(49.9)%	18.1%
2009	57.51	51.76	65.63	79.49	85.67	90.79	99.97	101.69	107.32	107.36	110.94	115.01	2009	115.01	69.4%	19.7%
2010	106.84	110.32	118.13	114.91	100.18	88.17	97.65	89.64	103.59	108.29	108.64	119.58	2010	119.58	4.0%	19.1%
2011	122.80	128.28	127.94	127.97	126.06	121.03	115.49	104.25	91.32	102.44	103.79	103.98	2011	103.98	(13.1)%	17.8%
2012	109.46	120.12	125.37	121.64	108.44	114.12	113.56	118.33	123.18	127.91	131.76	135.00	2012	135.00	29.8%	18.1%
2013	151.20	155.13	165.52	166.55	174.89	164.20	179.01	168.47	176.12	192.14	197.16	208.44	2013	208.44	54.4%	19.2%
2014	194.17	196.87	203.88	196.24	195.40	206.41	194.00	207.06	201.07	205.28	212.28	215.25	2014	215.25	3.3%	18.6%
2015	203.96	217.70	215.97	218.17	217.01	211.12	203.85	184.77	175.53	195.50	198.54	181.68	2015	181.68	(15.6)%	17.4%
2016	165.64	164.85	183.47	190.06	194.22	177.37	187.78	190.19	185.87	173.66	194.88	199.52	2016	199.52	9.8%	17.2%
2017	196.14	209.63	205.70	207.52	210.37	221.66	230.87	225.39	239.74	245.52	261.47	264.79	2017	264.79	32.7%	17.6%
2018	278.34	266.70	266.44	253.48	256.42	243.56	250.69	238.98	234.72	209.04	213.62	194.43	2018	194.43	(26.6)%	16.0%
2019	203.57	219.59	213.65	234.81	206.43	229.48	229.27	210.59	223.22	225.90	239.32	240.01	2019	240.01	23.4%	16.2%

S.No.	Ticker	Name	Amount Invested	Shares Purchased	Date of Investment	Current Index Value
1	AMG US Equity	Affiliated Manager	\$22,947	1,377	11/30/1997	\$ 116,671
2	BLK US Equity	BlackRock	\$23,205	1,658	9/30/1999	\$ 838,702
3	WDR US Equity	Waddell & Reed	\$27,513	1,587	3/31/1998	\$ 26,539
4	EV US Equity	Eaton Vance	\$2,641	3,998	1/31/1986	\$ 186,685
5	TROW US Equity	T. Rowe Price	\$2,423	2,014	4/30/1986	\$ 246,898
6	BEN US Equity	Franklin resources	\$908	1,263	4/30/1985	\$ 99,472
7	LM US Equity	Legg Mason	\$1,000	462	8/31/1983	\$ 16,782
8	FII US Equity	Federated Inv	\$26,381	2,206	5/31/1998	\$ 71,896
9	PZN US Equity	Pzena Investment Management	\$122,426	6,317	10/31/2007	\$ 54,454

# THE STAHL REPORT COMPENDIUM

Index Constituent Changes: 1. New Star Asset Management (NSAM LN) was delisted from the London Security Exchange effective 03/10/2009 and has been removed from the index. 2. Australia Wealth Management (AUW AU) was delisted from Australian Security Exchange effective 05/18/2009 and has been removed from the index. 3. Bluebay Asset Management/UNI (BBAY LN) was delisted from the London Security Exchange effective 12/20/2010 and has been removed from the index. 4. Everest Financial Group Limited (EFG AU) was delisted from the Australian Security Exchange effective 7/19/2011 and has been removed from the index. 5. RAB Capital Plc (RAB LN) was delisted from the London Security Exchange effective 9/2/2011 and has been removed from the index. 6. Invista Real Estate (INRE LN) was delisted effective 8/13/2012 and has been removed from the index. 7. F&C Asset Management Plc (FCAM LN) was delisted effective 5/8/2014 and has been removed from the index. 8. Charlemagne Capital Ltd (CCAP LN) was delisted effective 12/14/2016 and has been removed from the index. The divisor has been adjusted accordingly for each of these changes. 9. Henderson Group Plc (HGG LN) was delisted from London Security Exchange effective 5/30/2017 and has been removed from the index. 10. Aberdeen Asset Management Plc (ADN LN) was delisted from London Stock Exchange effective 8/14/2017 and has been removed from the Index.

## International Money Manager Index

From Nov 1986 to December 2019

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr. End	Index	Yearly return	Annualized return
																(since inception)
1986											1.00	1.02	1986	1.02	10.0%	10.0%
1987	1.25	1.37	1.48	1.48	1.37	1.33	1.39	1.40	1.33	0.81	0.76	0.73	1987	0.73	(27.7)%	(23.3)%
1988	0.75	0.92	1.02	0.95	0.80	0.89	0.88	0.82	0.86	0.88	0.89	0.93	1988	0.93	26.4%	(3.4)%
1989	1.03	1.02	1.06	1.17	1.19	1.18	1.25	1.16	1.17	1.20	1.21	1.28	1989	1.28	37.8%	8.1%
1990	1.24	1.24	1.18	1.19	1.22	1.24	1.26	1.26	1.23	1.24	1.25	1.33	1990	1.33	3.7%	7.0%
1991	1.34	1.52	1.56	1.58	1.57	1.47	1.52	1.64	1.81	1.89	1.94	1.92	1991	1.92	44.8%	13.5%
1992	2.01	1.93	1.88	2.14	2.19	2.13	2.08	1.99	1.95	1.77	1.76	1.96	1992	1.96	1.9%	11.5%
1993	1.98	2.03	2.20	2.39	2.42	2.45	2.54	3.05	3.01	3.07	3.01	3.30	1993	3.30	68.7%	18.1%
1994	3.72	3.39	3.17	3.04	2.99	2.89	3.01	3.14	3.13	3.19	3.15	3.15	1994	3.15	(4.7)%	15.1%
1995	3.07	3.12	3.28	3.41	3.56	3.59	3.87	3.76	3.76	3.77	3.70	3.73	1995	3.73	18.6%	15.4%
1996	3.76	3.85	3.70	3.79	3.96	3.90	3.75	3.96	4.16	4.47	4.90	4.86	1996	4.86	30.3%	16.8%
1997	5.11	5.37	4.99	4.96	5.43	5.94	6.57	6.32	7.45	7.24	6.80	7.19	1997	7.19	47.9%	19.3%
1998	7.12	8.05	8.78	9.25	8.95	8.74	8.91	6.67	6.08	7.01	7.51	7.71	1998	7.71	7.3%	18.3%
1999	7.99	8.21	8.68	9.07	8.71	8.61	8.63	8.43	8.47	8.79	9.80	10.79	1999	10.79	39.9%	19.8%
2000	11.23	12.27	13.95	13.50	13.73	15.39	15.85	16.82	17.07	16.31	14.43	16.76	2000	14.43	33.8%	20.7%
2001	17.42	15.88	13.46	15.14	15.84	15.15	14.21	13.61	10.77	11.43	13.90	14.12	2001	14.12	(2.2)%	19.1%
2002	14.74	13.78	15.09	15.11	16.38	14.14	12.92	12.10	11.23	11.06	11.33	10.50	2002	10.50	(25.6)%	15.7%
2003	10.18	9.52	9.69	10.62	12.17	13.04	13.98	15.38	16.67	17.88	18.16	18.07	2003	18.07	72.1%	18.4%
2004	20.00	22.41	29.98	35.46	26.68	30.80	25.37	25.20	23.67	23.34	27.56	31.48	2004	31.48	74.2%	20.9%
2005	32.19	32.57	31.88	27.79	27.36	29.05	30.38	31.49	33.39	32.24	32.95	37.18	2005	37.18	18.1%	20.8%
2006	41.01	40.97	43.69	46.45	42.39	41.58	40.60	43.32	43.55	43.70	44.58	49.38	2006	49.38	32.8%	21.3%
2007	50.95	51.18	53.59	56.09	58.16	56.37	53.90	48.65	50.96	57.03	48.21	45.75	2007	45.75	(7.3)%	19.8%
2008	38.71	39.71	38.59	40.18	39.25	35.10	34.59	33.33	26.09	18.72	14.50	15.79	2008	15.79	(65.5)%	13.3%
2009	14.62	13.24	14.96	19.63	22.82	23.73	26.14	27.05	28.41	28.53	28.69	29.83	2009	29.83	89.0%	15.8%
2010	28.50	27.58	29.90	29.58	25.53	24.72	27.82	26.74	30.36	33.68	31.85	34.52	2010	34.52	15.7%	15.8%
2011	34.91	36.17	36.51	39.63	37.86	35.31	35.83	32.76	29.28	32.04	31.23	30.59	2011	30.59	(11.4)%	14.56%
2012	32.12	34.36	35.67	35.08	31.03	32.92	32.66	34.17	36.33	37.28	38.11	40.73	2012	40.73	33.1%	15.22%
2013	43.61	42.58	44.42	49.29	50.40	47.75	50.58	49.32	52.49	55.65	55.41	58.88	2013	58.88	44.6%	16.19%
2014	55.35	58.98	61.86	59.92	59.05	59.89	57.84	58.64	55.47	54.37	55.77	54.31	2014	54.31	(7.8)%	15.24%
2015	52.77	58.87	58.99	62.11	62.25	60.43	60.71	56.91	55.46	60.65	60.93	59.48	2015	59.48	9.5%	15.04%
2016	55.01	53.65	59.90	61.89	61.45	55.81	58.56	58.48	60.83	60.64	58.86	59.91	2016	59.91	0.7%	14.53%
2017	63.15	64.71	65.79	71.50	74.59	75.64	80.02	78.81	81.32	81.68	83.28	84.08	2017	84.08	40.3%	15.28%
2018	94.34	87.65	87.29	86.78	83.38	82.63	84.75	85.31	85.67	76.31	72.64	66.46	2018	66.46	(20.9)%	13.94%
2019	74.78	79.39	81.00	86.52	82.17	91.43	91.77	89.72	89.03	91.00	99.15	104.96	2019	104.96	57.9%	15.06%

S.No.	Ticker	Name	Initial Amount Invested	Shares Purchased	Date of Investment	Current Index Value
1	IGM CN Equity	IGM Financial Inc	\$1,000	73	31/11/1986	\$ 2,143
2	IVZ US Equity	Invesco Plc (Previously Amvescap)	\$1,357	1,153	1/31/1991	\$ 10,361
3	SDR LN Equity	Schroders Plc	\$1,208	505	3/31/1991	\$ 22,300
4	RAT LN Equity	Rathbone Brothers Plc	\$1,208	736	3/31/1991	\$ 20,758
5	CIX CN Equity	CI Financial Corp.	\$2,585	3,224	6/30/1994	\$ 54,416
6	EMG LN Equity	Man Group Plc	\$2,862	6,344	10/31/1994	\$ 10,106
7	AGF/B CN Equity	AGF Management Ltd-CI B	\$3,343	1,346	1/31/1996	\$ 6,683
8	8739 JP Equity	Sparx Group Co Ltd	\$11,762	108	12/31/2001	\$ 24,970
9	AZM IM Equity	Azimuth Holding Spa	\$21,908	4,977	7/31/2004	\$ 118,890
10	PGHN SW Equity	Partners Group-Reg	\$36,848	578	3/31/2006	\$ 529,965
11	ASHM LN Equity	Ashmore Group Plc.	\$36,688	9,873	10/31/2006	\$ 67,748

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# THE STAHL REPORT COMPENDIUM

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