SAGA PARTNERS

SEMI-ANNUAL UPDATE

SECOND HALF 2022

H2 2022 Results

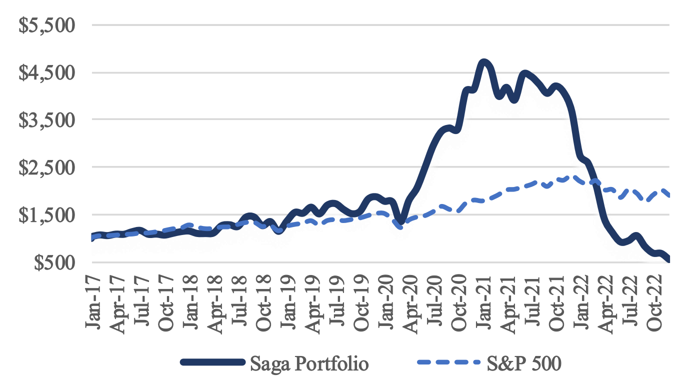
During the second half of 2022, the Saga Portfolio ("the Portfolio") declined 40.0% net of fees. This compares to the overall increase for the S&P 500 Index, including dividends, of 7.6%.

The cumulative return since inception on January 1, 2017, for the Saga Portfolio is -44.4% net of fees compared to the S&P 500 Index of 86.8%. The annualized return since inception for the Saga Portfolio is -9.3% net of fees compared to the S&P 500's 11.4%. Please check your individual statement as specific account returns may vary depending on timing of any contributions throughout the period.

Performance (as of 12/31/22)

	Saga (gross)	Saga (net)*	S&P 500	Relative Results
2017	16.0%	14.3%	21.8%	-7.5%
2018	2.1%	0.6%	-4.4%	5.0%
2019	65.6%	63.2%	31.5%	31.7%
2020	123.8%	120.5%	18.4%	102.1%
2021	-9.6%	-10.9%	28.7%	-39.6%
H1'22	-74.7%	-74.8%	-20.0%	-54.9%
H2'22	-39.6%	-40.0%	7.6%	-47.6%
2022	-84.7%	-84.9%	-18.1%	-66.8%
Cumulative	-39.2%	-44.4%	91.1%	-135.5%
Annualized	-8.0%	-9.3%	11.4%	-20.7%

Growth of $1,000



**Saga Portfolio serves as a model for client accounts. Net returns assume 1.5% AUM fee, or 0.375% applied to account balance at beginning of each quarter. S&P 500 performance includes dividends.*
Source: S&P Dow Jones Indices LLC

Portfolio Update

The chart below gives a breakdown of the year-to-year changes in the stock prices for the Saga Portfolio companies. While the Portfolio did not own each of the holdings over the entire six-year period, it provides an idea of swings in stocks prices in recent years. As it relates to when the Saga Portfolio first invested, LGI Homes and Trade Desk were first bought during 2017, Trupanion and Meta during 2018, Carvana in 2019, Roku in 2020, and Redfin in 2021.

Year-Over-Year % Change Share Price

Company	2017	2018	2019	2020	2021	2022
Carvana	78%	71%	181%	160%	-3%	-98%
LGI Homes	161%	-40%	56%	50%	46%	-40%
Meta	53%	-26%	57%	33%	23%	-64%
Redfin	33%	-54%	47%	225%	-44%	-89%
Roku	154%	-41%	337%	148%	-31%	-82%
Trade Desk	65%	154%	124%	208%	14%	-51%
Trupanion	89%	-13%	47%	220%	10%	-64%

Source: Factset, Saga Partners

The stocks that the Portfolio has owned have been very volatile since the COVID pandemic, yet we have barely made any changes. Why did we not sell shares when the market clearly viewed the prospects of our companies much stronger and pushed shares to higher prices?

We are attempting to do two things while investing in the public market: 1) identify companies whose long-term earning potential (microeconomic dynamics of the business) we believe we understand, and 2) allocate among the best opportunities we see available at the time.

The first task requires us to have an owner's mentality when searching through the thousands of opportunities available in the market. It means we attempt to picture what a company will look like in 10+ years. If one can't form a long-term view, then buying shares in the company becomes more of speculative exercise. They are more likely to adopt the market's view of the company, meaning as shares go up they like it more, and when shares go down they like it less. An owner's perspective would likely be the opposite.

Forming a long-term view is no easy task given how many things can change from now and 2033, but the even more difficult part of investing is that the market attempts to discount a company's future results into its current stock price. Whenever one owns a stock, they are essentially saying they have a better understanding of its intrinsic value than everyone else. No successful investment was obvious, at least to the rest of the world, otherwise the price would have already reflected the company's bright future. Therefore, we are searching for the few investments that we believe we can understand and that are misunderstood by the market.

We do this by evaluating the company's value proposition, underlying microeconomics of its business model, competitive advantage, and its market opportunity. Sometimes this leads us to a company like Carvana that has demonstrated its differentiated value proposition, attractive unit economics, and highly scalable business model. Sometimes it leads us to a company like Meta, which has an established network and slower growth outlook, but its valuation reflects a weaker future than what we expect for various different reasons. Forming long-term outlooks that diverge from the market's general view is no easy task and typically leads to little portfolio turnover as the Portfolio naturally concentrates to its best investments over time.

It is reasonable to suggest that when some of our companies were selling for historically high multiples during 2020 and 2021, we should have sold and sat in cash waiting for the market to provide more attractive prices. It has always been our approach to not try and predict the ups and downs of what a stock price will potentially do next, but rather attempt to think about the expected return of the asset over its life, and then compare it to other opportunities available at the time. When some of our companies were selling near their highs, the 10-year U.S. treasury yield was less than 1%, the S&P 500 was trading at a ~30x price-to-earnings ratio, and most mature companies with more modest growth prospects considered "wide-moat" were trading at even higher valuation multiples.

If our approach was to jump in and out of our investments based on what we thought shares may do over the next year, it is far more likely that we would have sold far before any high was reached, and if prices were to decline bought back far before the ultimate lows. There is also risk in selling something that one understands well and believes has a bright future in order to buy new things that one understands less well and potentially have less exciting prospects. When we identify a rare company that we can understand and has a long runway in front of it to compound capital, it generally takes a significant shift in the long-term outlook for us to interrupt its compounding. For the most part, we continued to prefer owning the companies already in our portfolio relative to other things available at the time.

This "not timing the market" philosophy may feel like a liability during drawdowns, but it is this same philosophy that positions us perfectly for the inevitable recovery. We much prefer the investing framework of "what is the best opportunity I can find at current prices?" to "what will the market do next?" It helps keep an owner's mentality that is focused on the micro analysis of a business as opposed to the macro analysis of the market. While macroeconomic variables are important, they are largely unpredictable in my opinion, and their effects on the prices of specific assets are even less predictable.

As shareholders, we eventually do want the price of our shares to go up or receive dividends to provide an attractive return from our initial investment. One can't rely on the excuse of being a long-term, owner-oriented investor indefinitely. As owners of these companies, we certainly don't ignore current results of our businesses, but consider results in the context of the long-term outlook and company-specific dynamics relative to the overall environment in which they operate.

Why have shares declined so much?

Below is a chart of gross profits for each of the companies going back to 2017. While free cash flow per share is what inevitably matter to owners, gross profits generally provide a decent proxy for how a business is developing over time, particularly for companies that are earlier in their life cycle and still investing most of their cash flows back into the company.

Gross Profit ($ in millions)							
Company	**2017**	**2018**	**2019**	**2020**	**2021**	**2022E**	**5 Yr. CAGR****
Carvana	$68	$197	$506	$794	$1,929	$1,370	
% Chg.	*255%*	*189%*	*157%*	*57%*	*143%*	*-29%*	*70%*
LGI Homes*	$490	$656	$845	$1,139	$1,396	$1,640	
% Chg.	*38%*	*34%*	*29%*	*35%*	*23%*	*17%*	*27%*
Meta	$35,199	$46,483	$57,927	$69,273	$95,280	$91,360	
% Chg.	*48%*	*32%*	*25%*	*20%*	*38%*	*-4%*	*22%*
Redfin*	$114	$123	$150	$234	$300	$182	
% Chg.	*35%*	*8%*	*22%*	*56%*	*28%*	*-39%*	*4%*
Roku*	$171	$296	$478	$765	$1,461	$1,532	
% Chg.	*122%*	*73%*	*61%*	*60%*	*91%*	*5%*	*47%*
Trade Desk	$242	$363	$505	$662	$991	$1,315	
% Chg.	*48%*	*50%*	*39%*	*31%*	*50%*	*33%*	*37%*
Trupanion	$43	$51	$65	$82	$104	$122	
% Chg.	*29%*	*19%*	*26%*	*26%*	*27%*	*17%*	*17%*

Source: Company filings, Factset, Saga Partners
**Redfin gross profits only include the Real Estate segment; Roku gross profits only includes the Platform segment, LGI Homes values reflect book value*
***5 Yr. CAGR reflects gross profit per share*

Throughout most of our companies' history they have executed exceedingly well, growing earning power at a strong rate, on average. Then three years ago COVID caused a huge shock to the overall economy. Trying to navigate the impact of COVID was difficult for even the most predictable and mature businesses. Our companies generally experienced a surge in demand during H2'20 and into 2021. While higher demand is often considered a good thing, exceptionally higher unexpected demand can cause serious logistical and supply chain issues for a business.

As our companies entered 2022, expectations were largely for continued growth from 2021 business volumes. The market shared this view as it placed what were generally historically average valuation multiples on this outlook. As the year progressed, expected demand came in lower than initial expectations for various reasons. Since several of our companies are at the point in their life where they are scaling their infrastructure and have a greater degree of operating leverage, a significant decline in expected demand can have a disproportionate impact to near-term cash flows.

The market also shifted sentiment from favoring companies investing in growing future cash flows to favoring cash flows today, which is a normal reaction when interest rates and the cost of capital go up. However, several of our companies' true potential earning power have been obscured under a misbalance between its cost structure and current demand. While their operating costs are largely fixed in the short-term, they are relatively variable in the intermediate term. It just takes time to get expenses back into balance.

Do recent operating results suggest permanently weaker results into the future?

I'd expect over any given 10–15-year period, a company will experience mostly pretty good years, a few great years, and a few bad years; assuming it's a good company. I have no clue in what order they will come but it is the job of an owner to know whether a bad year reflects a deeper fundamental problem with the company or if it is a storm that will eventually pass.

As far as I can tell nothing has fundamentally changed surrounding our companies' respective value propositions, relative competitive advantages, or market opportunities. If that were to change, such as what happened with GoodRx earlier in the year, I would adjust the Portfolio to reflect that revised long-term outlook. However, current valuations suggest the market is not only placing a lower valuation on our companies, as one would expect with higher interest rates and worse than expected near-term results, but valuing them as though they will never right-size their cost structures or continue to grow earning power in the future.

As it relates to specific companies within the Portfolio, I will provide updated thoughts on the two companies that have experienced some of the most disruption and headwinds over the past year, Redfin and Carvana. Before I touch on these specific companies, I think it would be helpful to dig into how I approach some of the microeconomic analysis used when evaluating these opportunities. What determines the size, profitability, and value of a company? Answering these questions helps explain where value is created and destroyed and guides where we invest today.

Microeconomics

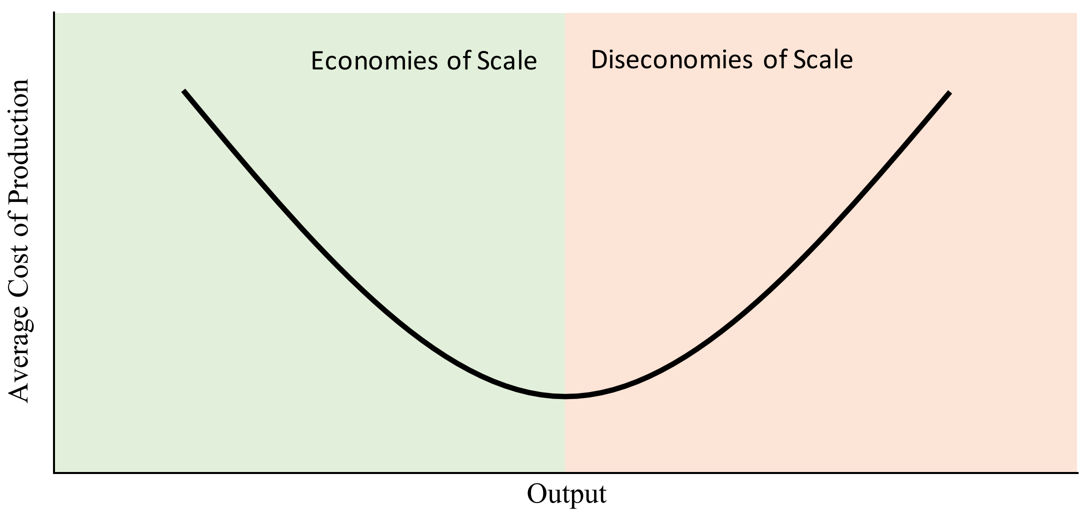
Firm Size, Economies of Scale, and Integration/Modularization

The intrinsic value of a company will always equal the present value of future net cash flows per share. However, starting the analysis by looking to the cash flows (the desired output) is putting the cart before the horse. If one simply takes the cash flow statement and extrapolates current results, the moment a company inevitably experiences periods of difficulty or strength may be extrapolated far into the future which leads to a questionable long-term outlook. However, if you work backwards from what drives a stock price over the long-term, you are able to analyze the underlying drivers of value.

For example, what are the inputs to a stock price? A company's cash flow. What causes cash flow? Attractive returns on invested capital (ROIC). What causes attractive ROIC? Charging premium prices for products and/or having a lower cost/capital structure. Why can a company charge premium prices or have a lower cost structure? Differentiated products/services (or at least the perception of differentiation) and/or greater productivity per unit than competitors (low-cost operator). What can potentially disrupt this advantage? If one can understand why a company has and can maintain a competitive advantage, they are better able to determine its long-term earning power potential, perhaps not in any given year, but over time.

The next steps would be determining where a company is in its lifecycle and its addressable market. The final step is comparing the range of long-term expectations to the current price, then compare that opportunity to others available at the time and allocate accordingly.

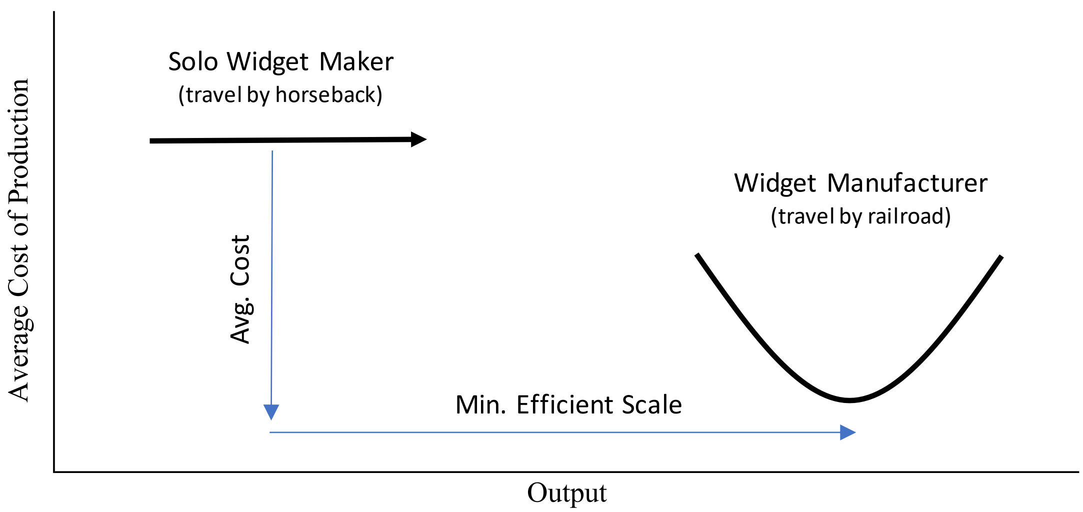
The potential size of a firm is an important consideration when valuing a company. One determining factor of firm size lies in its minimum efficient scale, which is the level of output where a firm reaches its lowest long-term average cost of production. Typically, as a company's output increases it benefits from economies of scale, as shown by the average cost of production decreasing. However, at some point increased output can lead to inefficiencies and diseconomies of scale, or a higher average cost of production with output.



The minimum efficient scale is based on the relationship between a company's sales and fixed costs (costs that do not change with output), i.e. its operating leverage. For example, with railroads no traffic can be carried until the entire track is laid between two destinations. Once built, an additional passenger or unit of freight carries little to no marginal costs, hence creating high operating leverage relative to traveling by horseback or walking. A company that has not reached efficient scale is at a cost disadvantage to a more efficient, larger competitor and therefore provides an indication of the volume (size) of output needed to be competitive.

The other determining factor of firm size is a specific company's cost of production relative to its competitors. A company can expand its output past its minimum efficient scale (experiencing diseconomies of scale) as long as its average cost of production is lower than its competitors.

If we assume a solo widget maker only has variable costs, then its average cost of production does not change with output. A widget manufacturer that has fixed costs and benefits from economies of scale will experience changes in its average cost of production with output and has a relative cost advantage to the solo widget maker at scale.



If a railroad's maximum capacity was 100 passengers, that would be the output required to reach the minimum efficient scale (lowest cost per unit of output). If those 100 passengers traveled by horseback, it would take the same resources (100 horses) and time per passenger regardless of output (constant average cost of production). If a passenger's goal is to travel between the railroad's two destinations, it would be more productive/effiicent to travel by train than by horseback.

The Industrial Revolution shifted the operating leverage and scale benefits in many industries. Products that were historically made by hand (variable cost structure) could be done at a much greater scale and lower average cost of production within larger corporations. Industries that had more complex processes surrounding production and supply chain needs benefitted from vertical integration. They experienced greater operating leverage and economies of scale, resulting in higher barriers to entry and a few market leaders that often competed in effective duopolies (or monopolies) within their respective industries. Smaller newcomers had difficulty setting up the infrastructure required for enough volume to reduce unit costs and become competitive. The first firms that came to dominate their industry often remained leaders for decades and were largely only disrupted if new technologies/processes emerged.

Industries that did not require complex processes surrounding production and value chains typically maintained a more variable cost structure and did not benefit to a similar extent from vertical integration to reduce unit production costs. Fixed costs were a small percent of overall costs, barriers to entry were low, and industries remained fragmented and relatively competitive. If part of a product's value chain eventually became commoditized, or if another firm could do something better (a lower average cost of production), then that part of the value chain would be disintermediated. Clayton Christensen explains this concept in his Law of Conservation of Attractive Profits.

Today's trucking industry is a great example of how the same basic service, shipping freight, provides very different economic outcomes to the company based on the dynamics within its value chain. There are two primary ways to ship goods via truck. A company can either hire a full truckload (FTL) carrier for one full trailer of space, or they can hire a less-than-truckload (LTL) carrier for smaller loads and share a trailer with other shippers. FTL carriers have low fixed costs and low barriers to entry. A firm that increases capacity by purchasing more trucks and hiring more drivers provides little cost advantages, and may even experience diseconomies of scale, compared to a single truck owner operator. Low barriers to entry and little operating leverage result in a highly fragmented industry with the top five carriers only having <5% market share. Strong competition and little differentiation result in most FTL carriers earning lackluster returns on invested capital over time.

Alternatively, LTL carriers must invest in a broad hub-and-spoke network of terminals and sophisticated load path planning software to coordinate the flow of goods from many shippers to many destinations. A complex network requiring a certain load density raises the fixed costs and operating leverage in the business model. Higher barriers to entry result in industry concentration, with the top five carriers making up over 50% market share. The leading LTL carriers earn attractive returns on capital. Old Dominion Freight Line (ODFL) and Saia Inc. (SAIA), for example, have had attractive financial results and have been some of the best performing stocks over the past 10-20 years. It pays to be capital-intensive if you get an attractive return on that invested capital.

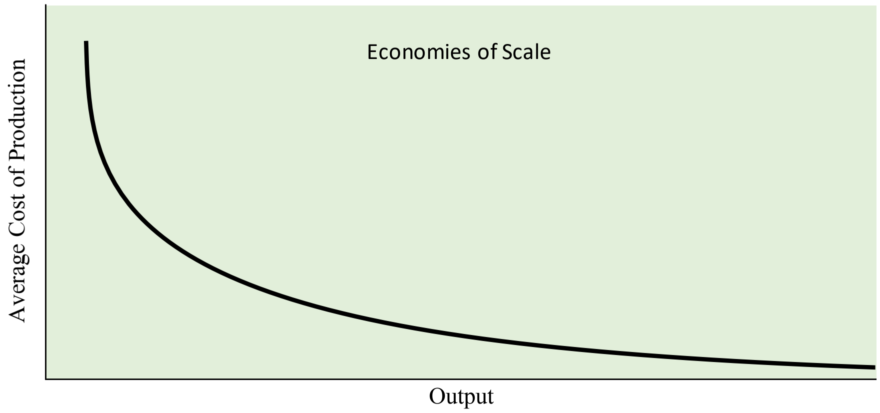
Relative Advantage, Zero Marginal Cost of Production, and Market Power

Fixed costs and economies of scale should always be considered relative to the total addressable market. Big firms in a large industry may have large upfront fixed costs and high operating leverage, but they may not have a cost advantage when compared to competitor offerings that have also reached minimum efficient scale (think auto OEMs, airlines, mobile wireless providers). Manufacturing automobiles has large upfront fixed costs which may imply barriers to entry and therefore less competition. However, the global auto industry is large and enough companies have reached minimum efficient scale to make it a competitive market.

Likewise, a little firm in a small industry may have a relative scale advantage and therefore earn attractive profits. Local newspapers had fixed costs associated with creating content, printing, and distribution of physical papers. There were essentially nominal marginal costs to print and distribute one more paper, therefore providing high operating leverage. The paper that had the most readers increased advertisers' willingness to pay for ad space. Readers actually sought out papers with the best advertisements (classifieds, coupons/sales, etc.). The paper with the most ad revenue per an impression could pay writers more, cover fixed costs easier, and therefore offer a better paper to readers at low prices.

In certain industries like local newspapers, there is a natural gravitation to a single firm winning most of the market. Considering the average cost of production relative to the total addressable market is therefore key. It is possible that a single firm's average cost curve decreases over the entire range of output, which suggests that one firm can produce the total market's output more efficiently than having multiple firms (i.e. a natural monopoly).

This dynamic was obviously disrupted for newspapers when the Internet reduced distribution costs of digital content to zero, increasing competition for eyeballs, and turning newspapers' operating leverage into a competitive disadvantage.



In recent decades, improved computing power and the Internet have reduced the marginal cost to produce and distribute digital goods to essentially zero (in theory). This has a similar effect as a firm whose average cost curve decreases over the entire range of output and therefore have a monopoly, except that all digital supply has this same dynamic.

Econ 101 teaches that competition should push the price of goods/services down to the marginal cost of production, at which point no excess profits are made. A firm will only earn attractive returns if they have market power (i.e. a competitive advantage). This can be expressed by either selling goods/services above the marginal cost of production or by having a cost advantage.

It's no surprise that the media industry was the first to be disrupted by digitization and the Internet. Most supply of media (news, music, books, movies, television) was restricted by physical distribution (or airwaves for radio and local TV broadcasters). Companies that controlled distribution were able to earn attractive economics because they often benefited from near monopoly-like dynamics within their respective local markets. When media was digitized and then distributed over the Internet, those moats of physical distribution were filled in and the supply of media content had to compete on a global playing field in which an increasing amount of content could be created and accessed over the Internet.

The impact varied across types of media but generally the problem for customers was no longer getting access to content but in filtering the proliferating volume of content. The power of legacy gatekeepers that controlled distribution fell while a new type of gatekeeper arose with companies like Google (now Alphabet) and Facebook (now Meta) that integrated all supply and demand on a single platform to help users search, filter, and even create the increasing supply of content. The media value chain shifted from vertical integration to disintegration (or modularization) for content creators. Companies like Google and Facebook benefitted from zero marginal cost of production as well as network effects which enabled them to grow to the entire size of their respective markets on a global scale.

The Internet's impact moved its way into the retail industry as customers were able to shop for products online as opposed to going to physical stores. What is interesting was that unlike in media, the larger business opportunity was not necessarily in being an asset-light platform (eBay's model) but in building the physical infrastructure and logistics that allowed products to be delivered quickly and reliably (Amazon's model). What created an advantage in e-commerce was not just developing a sufficiently large digital marketplace, software, or fulfillment infrastructure but in integrating all the pieces together that reduces the frictional and transaction costs in buying and obtaining products.

Understanding how these microeconomic dynamics impact companies throughout the economy, particularly in a digital and Internet enabled world, provides a framework to identify and direct where value will likely be created into the future. It helps answer questions like how will the television value chain evolve as it relates to content creation and distribution? How does the Internet impact certain retail channels? Does vertical integration or more of an asset-light approach make sense? There is no one size fits all answer to every company or industry. A company's competitive advantage does not necessarily depend on the product or service sold but on the economic dynamics of the specific situation. Two different companies that provide trucking services can have significantly different outcomes based on their distinct business model and value chain. The key is identifying whether one company is better able to provide a product or service than alternative solutions far into the future.

Company-Specific Discussion

I have discussed each of our companies in the past. We own an advertising buying platform, a residential real estate brokerage, a used car dealership, a television operating system, a social media company, a pet insurer, and a homebuilder. In deciding which companies to own, there is no predefined condition of being a certain size (large cap or small cap), young or mature, capital-intensive or capital-light, or in a certain industry. While each has different characteristics, our companies demonstrate a certain competitive advantage relative to alternative options.

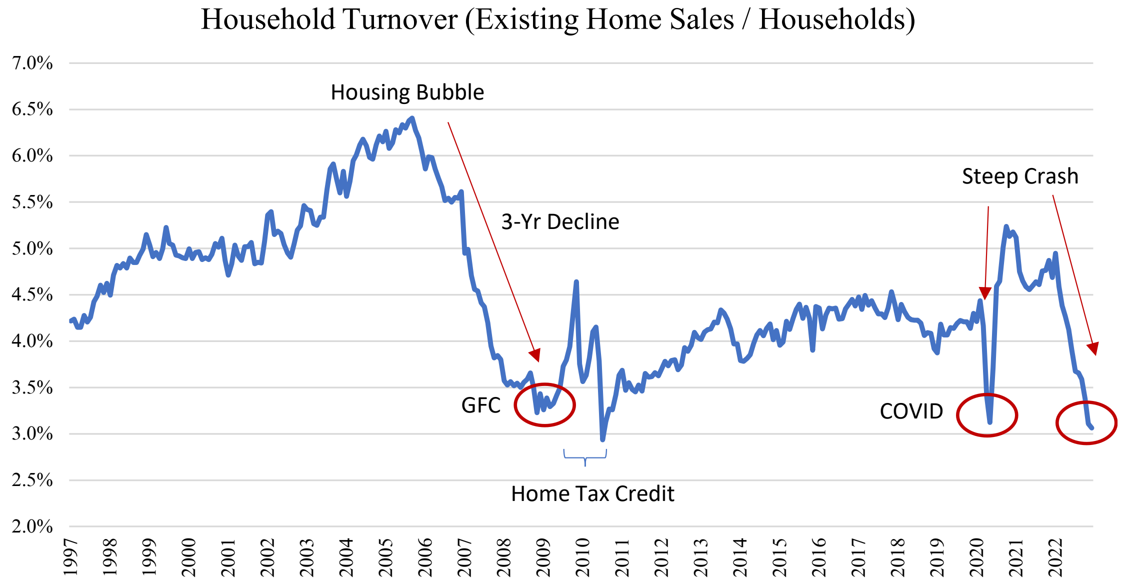
I thought it would be helpful to give updated thoughts on Redfin and Carvana since both of their industries have been significantly impacted by COVID, they both demonstrate some of the dynamics of complexity and integration discussed above, and their stocks have also experienced the largest declines in the Portfolio.

Redfin

Redfin's results have been disappointing in 2022. Aside from the COVID lockdown quarter of Q2'20, Redfin never experienced a year-over-year decline in transaction volume. In fact, the company has never grown transaction volume less than double digits.

The housing market has been difficult to navigate since COVID. Recent volatility in existing home sales is not what one would expect from normal cyclicality but has been due to the imbalances in supply/demand since COVID, combined with higher interest rates. Housing is unique in that most home buyers are also home sellers. Since rates moved up significantly in 2022, homeowners that refinanced at lower rates are less willing to buy a new home, at least at current prices, which has led to standstill in existing home transactions.

The chart below shows just how volatile existing home sales have been since COVID. Over the last 25 years, home turnover (U.S. home sales / U.S. household) ranged between 3.0%-6.5% at the extremes. At the end of 2022, volumes were at the low-end of the historic extremes. On average, or in more normal times, ~4%-5% of households typically sell their home. At the end of 2022, home turnover reached historically low levels of just 3%.



Source: FRED, Saga Partners

Despite what has happened over the last three years, I do not think there will be a permanently lowered rate of home turnover or that the extreme volatility in existing home sales will be the new normal far into the future. People buy homes for various reasons, such as new household formation (starting a family) and other life events (moving for work, upsizing as family grows or making more money, downsizing as kids leave or retire). Peoples' lives change and so do their needs. With home affordability at historic lows, prices either need to decline or household incomes need to rise to accommodate peoples' lives. Though many homeowners are locked into lower mortgage rates today, as the overall cost of new homeownership normalizes, I'd expect existing home sales to approach the ~4% range again (implying 5-6 million units in an average year).

Are Redfin's current results a reflection of a weakness in its value proposition or competitive position?

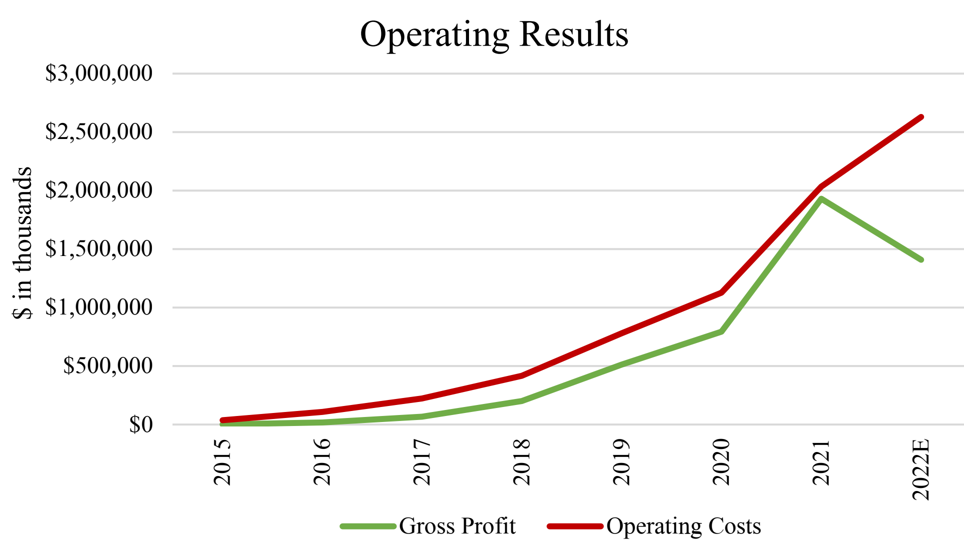
My view (which may seem evident since we still own Redfin) is that nothing fundamentally has changed surrounding the company's long-term competitive advantage. Other leading real estate brokers have experienced similar if not worse declines in transaction volumes.

Redfin's relative cost advantage to traditional real estate brokerages has not changed. It generates demand through its website that is funneled to Redfin agents who then help guide customers through the complex transaction of buying and selling a home. Redfin has invested in building an end-to-end real estate offering, starting with online search and 3D virtual tours, then self-tour scheduling ability, mortgage underwriting, and transaction advisory through its full-time agents. Increased automation surrounding demand aggregation and touring enables agents to spend their time where customers value it the most. Since agent do not have to prospect for demand to a similar extent as a traditional agent, they are more productive which lowers the frictional costs of exchanging home ownership. It's not that any one of Redfin's services is an advantage in and of itself, it is the integration of all the services working together that give it a cost advantage to traditional brokerages.

Historically Redfin has reinvested gross profits into building its integrated service offering operating around breakeven. Despite a difficult 2022, future growth in gross profits is expected to grow at a faster rate than operating expenses as the core service offerings have largely been built, providing positive cash flow in 2023 and net profits in 2024. From there, I'd expect Redfin to continue to grow as it takes share in each of its markets. While weaker results and a higher cost of capital (discount rate) would indicate a lower intrinsic value than a year or two ago, I find the $460 million market cap that shares sold for at the end of 2022 baking in an overly pessimistic future.

Carvana

I have discussed Carvana several times since we first purchased it in 2019 but want to provide an update given the stock's decline and negative headlines. Historically, Carvana has grown gross profits at a faster rate than operating costs. In 2021, Carvana grew retail unit volumes 74% to over 400,000 cars to become the second largest used car dealer after CarMax. Carvana reached $1.9 billion in gross profits, EBITDA breakeven, and expectations entering 2022 were for continued unit volume growth and scale operating costs.



Source: Company filings, Saga Partners

What happened in 2022?

Similar to Redfin, Carvana has been impacted by pretty extreme industry disruptions/volatility. Supply chain bottlenecks restricted new car production and caused prices to rise. When combined with higher interest rates, car affordability declined and used car volumes crashed.

Carvana plans and hires for expected capacity 6-12 months into the future. Entering 2022 the Company expected to grow unit volumes in the ~30% range year-over-year and therefore faced a cost structure far too high for the retail unit volumes experienced. Since demand has come in below expectations, management is now pursuing cost cuts to get back to EBITDA breakeven.

While adjusting to a more adverse macro environment would not typically be overly problematic, Carvana's acquisition of Adesa in April added $3.25 billion of 10.25% debt to its balance sheet. While the acquisition made strategic sense and enables Carvana to more than triple its reconditioning capacity and sell cars through the wholesale channel easier, it added more than $300 million in annual interest expense right before one of the steepest declines in used car industry volume experienced in history.

The key debate is whether Carvana has the liquidity runway to get to free cash flow breakeven. Carvana has three major buckets that make up the majority of operating expenses: compensation & benefits, advertising expense, and other overhead (roughly half of which is transaction & customer benefit costs). While these costs are fairly fixed in the short-term, they are more variable in the intermediate-term. Carvana has the ability to drastically cut costs if needed, to better match the demand environment.

Based on actions taken by management, it is expected that operating costs should fall to ~$400 million per quarter ($1.6 billion run rate) by Q3'23. This was roughly where operating costs were in Q1 and Q2 2021, when Carvana sold ~100,000 retail units. At that time, they were growing unit volumes ~75% year-over-year which suggests they were not operating at potential efficiency. As Carvana shifts focus from growth to efficiency, it is reasonable to expect costs to be able to come down commensurate with those unit volumes.

One can estimate what retail unit volumes may do throughout the next year, but at that cost basis, it would take ~100,000 retail units per quarter and a gross profit per retail unit of $4,000 to reach EBITDA breakeven. Without any additional operating efficiencies, ~125,000 retail units per quarter would get them to free cash flow breakeven to cover their interest expense and priority capital expenditures. If units remain depressed for longer than expected, management could cut operating costs further, however the ~$600 million in annual interest expense is pretty fixed absent a debt restructuring.

Depending on Q4'22 results, Carvana will likely have ~$1.4 billion in committed liquidity, netting out restricted cash if its floor plan were fully drawn. As expense cuts go through, they should reach EBITDA breakeven by Q3'23. At that point they will likely have ~$1 billion in committed liquidity to cover ~$150-200 million in quarterly interest and capex, giving them until the end of 2024 for used car volumes to recover to more normalized levels. This does not even consider the ~$2 billion in unpledged real estate that provides them with further liquidity options if needed.

The fact we have to even consider a scenario of whether Carvana will get through an extended downturn could be considered a red flag. I would tend to agree in most situations, but Carvana has experienced a highly unusual environment. Part of the margin of safety to their operating results is that they have the unit economics to cut costs if demand were to decrease. They also have ample liquidity to provide a runway to do so. They are now having to pull that lever given the adverse environment.

Perhaps Carvana was overly aggressive by expanding capacity too fast. However, one can also argue that in the long-term that buying and selling cars online is such an obviously better customer experience than the traditional used car buying experience. Therefore, it should take a decent share of overall used car sales and there is a winner-take-most dynamic to the company that can best integrate the online used car buying/selling experience. Once the infrastructure is built, it would be extremely difficult for anyone else to compete with and displace the company with the greatest market share. While Carvana is the clear online used car dealer leader today, it is very possible for a CarMax, Vroom, CarGurus, Lithia Motors, General Motor's CarBravo, or even Amazon to either scale their operations or enter the space. The prize for winning is substantial with potentially little left over for second place. Therefore, being aggressive in scaling its infrastructure is the right decision to make, with the understanding that it takes a lot of initial capital and one needs to be able to survive any potential downturn.

While Carvana has been negatively portrayed in the headlines, it has a strong customer value proposition, attractive unit economics compared to traditional brick & mortar dealerships, and a large market opportunity. It has the cost structure to get to EBITDA breakeven in the foreseeable future, and free cash flow breakeven as retail volumes begin to normalize sometime over the next two years. Some may ask why we have not added to our Carvana position if I continue to have conviction in Carvana's long-term outlook and shares have continued to decline into the end of the year. The answer is that we have limits to how much capital we are willing to put into any single investment and have reached that limit last June. That may mean we are limiting some upside by not adding to what could potentially be one of the best opportunities available at the current price, but it also limits the risk that any single position might permanently impair the Portfolio.

Conclusion

A large drawdown can be emotionally scary and difficult to live through. Since people buy stocks with the expectation that the price will go up at some point in the future, whenever a stock declines in price it gets further away from that goal. Maintaining an owner's mentality when investing in the public market is harder than ever with a constant news flow, daily market quotes, and the ease of trading. Declining stocks can cause disappointment and fear. It is very natural to attempt to guess what shares will do over the next year rather than evaluate what shares will return if held for the company's remaining life. Yet even if one does own a company's stock with an owner's mentality, it does not necessarily make living through steep price declines any less difficult.

Despite recent price performance, I continue to remain optimistic about the future of our companies and even more optimistic about their prices relative to future outlooks. If that were to change for any reason, I would adjust the Portfolio based on that revised outlook. If we are directionally correct about the long-term earning power of our companies, then their market price will generally reflect that outcome, outside periods of market turmoil.

I am so thankful for our investors that continue to think long-term and bear with us during what has been an extended drawdown. As always, please reach out if you have any questions or comments; I am always happy to hear from you.

Sincerely,

Joe Frankenfield

Appendix

Monthly Performance (gross of fees)*													Annual Performance			
Year	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Saga (gross)	Saga (net)	S&P 500	Relative Results
2017	3.9%	3.8%	-1.2%	3.2%	-0.3%	4.9%	2.9%	-7.0%	0.4%	-1.5%	3.4%	3.2%	**16.0%**	**14.3%**	21.8%	-7.5%
2018	1.5%	-4.3%	-0.2%	1.3%	13.9%	1.4%	-2.4%	15.7%	0.1%	-12.1%	6.8%	-15.1%	**2.1%**	**0.6%**	-4.4%	5.0%
2019	18.7%	13.9%	-1.2%	8.7%	-8.5%	12.2%	2.1%	-7.1%	-5.5%	3.6%	16.5%	2.6%	**65.6%**	**63.2%**	31.5%	31.7%
2020	-4.7%	-1.0%	-23.5%	33.5%	14.9%	21.2%	18.6%	10.0%	2.3%	-0.4%	24.3%	1.0%	**123.8%**	**120.5%**	18.4%	102.1%
2021	13.8%	-2.1%	-13.0%	4.9%	-6.4%	13.7%	-0.4%	-3.7%	-4.6%	4.2%	-3.1%	-9.6%	**-9.6%**	**-10.9%**	28.7%	-39.6%
2022	-25.0%	-6.0%	-18.1%	-32.7%	-20.9%	-17.6%	3.4%	11.0%	-21.5%	-16.4%	-1.0%	-19.0%	**-84.7%**	**-84.9%**	-18.1%	-66.8%
Cumulative return since inception													**-39.2%**	**-44.4%**	91.1%	-135.5%
Annualized return since inception													**-8.0%**	**-9.3%**	11.4%	-20.7%

**Saga Portfolio serves as a model for client accounts. Net returns assume 1.5% AUM fee, or 0.375% applied to account balance at beginning of each quarter.*
S&P 500 performance includes dividends.

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Saga Partners LLC is an independent registered investment advisory, providing portfolio management to individuals, retirement plans and institutional investors.

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