SaratogaRIM

2023 Quarterly Report

October 16, 2023

Q3

Moat Series Part 2: Technology Sector

Market Statistics							Source: FactSet (Sept. 30), Federal Reserve, * Spot prices (Sept. 30)
Stocks		**Yields (%)**				**Commodities**	
DJIA	33,507.5	Fed Funds	5.50	US Tr. 3-Y	4.80	Baltic Dry Index	1,701
P/E ratio	19.53	Disc. Rate	5.50	US Tr. 5-Y	4.61	Gold ($/oz)	1,848.1
S&P 500	4,288.05	Libor 1-Mo	5.43	US Tr. 10-Y	4.57	Silver ($/oz)	23.10
P/E ratio	20.69	US Tr. 1-Y	5.47	US Tr. 30-Y	4.70	Crude ($/bbl)* (NYM Light Sweet Crude)	90.79

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Continuing to Connect the Dots Between Moats, Profitability & Quality: Competitive Advantages Aren't Fixed Fortifications – They're Dynamic Structures Protecting Companies That, by Necessity, Can Never Let Their Guard Down.

By Kevin Tanner

Like many of you, I suspect, I've been experimenting with generative AI over the last couple months. I have to admit, I've approached this process with some trepidation. My apprehension, unquestionably, stems from unanimously menacing storylines about artificial intelligence run-amok from old-school science fiction of my youth – including (but not limited to): *Battlestar Galactica, The Terminator* and (of course) Stanley Kubrick's 1968 opus *2001: A Space Odyssey*. Anyone of a certain age knows exactly what I'm talking about.

In reality, SaratogaRIM has been developing its own quantitative skillsets and using various iterations of "machine learning" which is a subset of Artificial Intelligence (AI) in our research efforts for several years now. But these early days of the AI era's next phase feel very different.

Interactive technologies represent the latest battlefront in an ongoing digital revolution. OpenAI's surprise and dramatic launch of ChatGPT last November "changed the world overnight," *Barron's* declared. In an August 2023 cover story and roundtable entitled "AI is the Real Deal – If You Understand It," the magazine asserted that today's emergent constellation of generative AI products "promises to democratize the power of large data sets, making it dramatically easier for people and businesses to find information, create content, and analyze data." We believe this to be self-evidently true.

ChatGPT triggered an industry-wide scramble and drew more than its fair share of hype. Alphabet CEO Sundar Pichai, for example, said the breakthrough would "prove more impactful than the advent of fire." In March, technology's elder statesman Bill Gates wrote a smart and well-grounded blog posting entitled "Superintelligent AIs are in our future," which forecast that AIs "will be able to do everything that a human brain can, but without any practical limits on the size of its memory or the speed at which it operates." If so, the commercial impact could be monumental.

The global consulting giant McKinsey & Company notes that "AI has already permeated our lives incrementally" in our phones, cars and Amazon fulfillments using technologies "decades in the making," yet also recognizes that the broad utility of generative AI *is* different, and follows a "gradually, then all of a sudden" trajectory. In its latest study, *The Economic Potential of Generative AI* (June 2023), McKinsey estimates this technology will "add the equivalent of $2.6 trillion to $4.4 trillion annually across 63 use cases [McKinsey] analyzed – by comparison, the United Kingdom's entire GDP in 2021 was $3.1 trillion." In other words, a pie the size of a major European economy is up for grabs, with the bulk, the consultancy forecasts, falling into four areas: "customer operations, marketing and sales, software engineering, and R&D."

Technologies have come and gone since Silicon Valley still had orchards, to be sure. Promises of driverless-this or plug-and-play-that often prove correct in the trend line but wrong (sometimes wildly) per the timing. Apple CEO Tim Cook, perhaps the most understated of today's tech bosses, said recently that his company had already begun to tap the "enormous potential" of machine learning and AI. "We view AI as huge, and we'll continue to weave it in our products on a very thoughtful basis."

The word "continue" jumps out. As does the observation that Apple Inc. – which in June became the first company in the world to see its market value top $3 trillion – is anything but an upstart. One participant in the August *Barron's* roundtable on AI, Goldman Sachs Managing Director Brook Dane, sees today's tech giants as well-positioned in the emergent chatbot world. "In every transition, new companies

emerge, and some become large. But there really is a power of incumbency here, because of the need for data, and because you can develop these tools and techniques relatively quickly, the way Microsoft has announced AI software across its software stack. The incumbents," he concludes, "do have a huge advantage."

As illustrated by the essay that follows on page 8, Information Technology (IT) features a host of incumbent companies with robust business moats which have helped keep competitors at bay. These defenses, we believe, are essential to generating excess profitability over extended timeframes, even within industries undergoing rapid innovation. We think this will likely be especially so in the chatbot age.

* * *

SaratogaRIM's investment approach is geared towards long-term investing in sensibly priced businesses that earn persistently above average profitability, are financially healthy without using more than moderate levels of leverage and are relatively non-capital intensive. Over time, this approach, which combines attributes of quality, value and growth factors, has yielded a strong combination of enviable performance characteristics with downside protection. Given the emphasis on limiting our investable universe to companies that earn "persistently above average profitability", the study of competitive advantages (moats), particularly those that truly are sustainable, is foundational to our investment approach.

Charlie Munger makes the case for why moats matter. "In the long term," Berkshire Hathaway's 99-year-old vice chairman once wrote, "… it's difficult for a stock to earn a much better return than the business which underlies it earns. If the business earns a 6% return on capital for 40 years and you hold it for 40 years, you're not going to do much different than a 6% return, even if you buy it at a huge discount. Conversely, if a business earns 18% return on capital over 20 or 30 years, even if you pay an expensive looking price, you'll end up with one hell of a result". Translation: Long-term investors should be very focused on companies with moats.

An economic moat describes a company's ability to maintain a distinct, structural competitive advantage that allows it to earn excess profitability over sustained timeframes by fending off competition. The fact that the vast majority of companies never actually produce long stretches of excess profitability speaks to how rare these types of competitive advantages truly are. Even so, for those few great businesses that have proven themselves able to generate persistently above average profitability, the underlying factors that have enabled them to do so have remained remarkably consistent over time.

We realize the following section is repetitive from last quarter, but a brief review of different types of moats is in order so that readers recognize the common types and fully appreciate the competitive advantages their portfolio holdings enjoy. To be clear, each company's defensive characteristics are specific to its own lines of business; some spring overwhelmingly from a single advantage, others meld two or more moat-supporting attributes.

As you may recall from last quarter, moats derive their efficacy from a variety of sources. These may include intangible assets (brands, patents, proprietary technologies), switching costs (customers likely won't change providers unless the value proposition of doing so more than offsets a variety of costs such as price, risk, hassle), cost advantages (a company that produces a good or service at a lower cost than its competitors given either scale, proximity to customers, or access to low-cost raw materials), network effects (when the value of a particular good or service increases for both new and existing users as more customers use that good or service), and efficient scale (where markets of limited size are controlled by incumbents). We believe every single one of the companies within our investible universe benefits from one or more of these significant advantages. In fact, it's a prerequisite literally hardwired into our admissions/screening process.

Moat Sources (in order of prevalence)

Source: Morningstar. *Note: We began studying moats more than a decade before encountering*

Morningstar's work, yet nevertheless recognize Morningstar as the thought leader in this field. Consequently, we subscribe to their research, have read their books and draw from Morningstar this section's framing of moat sources because we're unaware of anything better.

Intangible Assets: Intangible assets such as brands, patents, proprietary technology, and regulation represent the most common moat source. The consumer staples and healthcare sectors have the highest proportion of moats from intangibles. Comparatively, intangibles are cited about a third of the time in the industrial, financial, and technology sectors.

- Considerations: Are customers growing more or less willing to pay up for a company's brand? If the firm's moat is built around patents, how easy is it to design around the patents?

Switching Costs: Switching costs represent inconveniences that a customer incurs when changing from one product or service to another. Customers typically won't change providers unless the value proposition of doing so more than offsets a variety of costs. Price, risk, hassle, distraction, psychology, and inertia can all be part of the consideration. Switching costs manifest in a variety of industries where customers have invested time and money to adopt products or services that are important to their purpose, often seen in banking, technology, defense, and healthcare.

- Considerations: How customized is the company's product or service? Is the level of customization within the industry increasing or not? Are technological improvements disrupting the industry and lowering switching costs?

Cost Advantages: A cost advantage is present when a firm can produce a good or service at a lower cost than competitors. It is typically underpinned by scale, proximity to customers, or access to low-cost raw materials. It allows businesses to offer lower prices to secure greater volumes and/or extract higher margins than competitors. Cost advantage is the second most common moat source. It applies frequently in the communication services, consumer defensive, and financial services sectors. Cost advantages are also relatively common across the healthcare, industrials, and consumer cyclical sectors.

- Considerations: Why are the trends within a company's cost structure different than peers in the industry looking forward? Can the company pass through supplier charges in a timely and efficient manner?

Network Effect: Network effects are observed when the value of a particular good or service increases for both new and existing users as more customers use that good or service. Users include all parties in a network, not just buyers or shoppers, but also suppliers and developers. Network effect is the rarest but most lucrative moat source. Networks can be direct where users lead to more users, or indirect, especially in data networks where Google search users feed more data, which leads to better algorithms and better future results for all users.

- Considerations: What level of engagement does each user have with the network and is this engagement increasing or decreasing? Can customers obtain similar benefits by being part of multiple networks, or is the market designed to support a single winner-take-all market? How is the company capturing the value of each incremental add to its network?

Efficient Scale: Efficient scale applies to firms that serve a market of limited size in which potential competitors have little incentive to enter because doing so would lower the industry's returns below the cost of capital. Few markets are conducive to efficient scale characteristics (regulated utilities, communication services, midstream oil and gas REITs, railroads, etc.), so it's among the rarest moat sources.

- Considerations: Is the addressable market finite? How many companies serve the industry? What is the cost of entering the market and how much market share would a new entrant have to claim in order to recoup the cost of entry? Have competitors attempted to enter the market and ultimately failed? How is the company's relationship with its regulators? Are new technologies,

markets, or other developments encouraging regulators to reconsider their original regulatory assumptions?

Moats are Two Dimensional & Mortal

Moats can be characterized by depth and width. Depth measures how much excess profit a company's moat generates, while width is a proxy for how long it might reasonably take for a competitor to cross the moat and steal the crown jewels.

A cursory review of the rise and fall of Research In Motion reveals what can happen if moats aren't defended. Founded in 1984, this Canadian-based firm helped create the smartphone market through its once-ubiquitous BlackBerry device, whose physical QWERTY keyboard and email capabilities endeared it to business users, pushing the firm's total revenue from $21M in FY98 (the year of its IPO) to $3B in FY07.

When Apple introduced its iPhone and Google released a beta version of its Android mobile operating system in 2007, Research In Motion's management team downplayed the threat, pointing to the company's strong reputation among professional users and existing relationships with carriers. A brief comment from Research In Motion's CEO on a June 2007 earnings call captures this apathy: "iPhone is launching, to the best of my knowledge, in one carrier in one country, and we're in about 100 countries and 300 carriers." Research In Motion's indifference initially appeared warranted; based on company filings and industry data from market research firms Gartner and IDC, we estimate that BlackBerry's global market share of smartphone shipments expanded from 11% in 2007 to 21% in 2009. The company's revenue also grew nearly 7x from FY07 to its peak in FY11, and its operating margin hovered between 21% and 29% throughout that entire window – supporting the notion of a deep economic moat.

However, the tide turned visibly the following year as Research In Motion's moat eroded and competitors devoured its profits – revenue dipped 8% and operating margin compressed by about 15 percentage points. In its FY12 annual report, Research In Motion summarized the competitive pressures with three key points. First, management acknowledged that consumers increasingly preferred "devices with access to the broadest number of applications, such as those available in the iOS and Android environments." Second, the core user base was being threatened by "a growing trend in enterprises to support multiple devices." Third, industry relationships were becoming less exclusive, as illustrated by "the increased desire by carriers to sell devices that operate on the new, faster LTE networks being built." Notably, the first LTE-compatible BlackBerries didn't hit the market until January 2013, four months after the LTE-enabled iPhone 5.

Research In Motion attempted to right the ship through a series of acquisitions, cost-cutting initiatives, product launches, and a name change (to "BlackBerry Limited" in 2013), but it was too late; the company's narrow moat had been breached. Revenue and profitability plummeted, and BlackBerry's market share sank below 1% in 2015. In 2016, the firm finally pulled the plug on its core smartphone business.

As this case study shows, competitive advantages aren't fixed fortifications – they're dynamic structures protecting companies that, by necessity, can never let their guard down. Firms that fail to defend and nurture their moats can lose them. Great businesses constantly innovate, rapidly adjust to changing circumstances, and often lead critical sectors in the global economy or forge new technologies that impact how we live, work, and play.

Given their dynamic and idiosyncratic nature, assessing moats is a never-ending exercise. Doing so involves mountains of data, advanced technologies, and years of accumulated domain knowledge specific to every company and industry we invest in – all of it updated, tested, retested, and calibrated afresh as new information appears. Our objectives with this series are to add transparency to our process and hopefully to share some of the confidence and pride we take in the ownership of what we believe are some of the world's best businesses.

Kevin Tanner | Chairman | CEO | CIO ■

Technology Company Overviews & Moat Synopses

On the bottom of pages 12 through 19, you will find a brief synopsis of the formal moat report for each of our technology companies outlined below. Full moat reports are available upon request.

Company	Sub-Industry	Overview
Apple (AAPL)	Technology Hardware, Storage & Peripherals	Apple is one of the largest companies in the world. It offers a range of electronic products, including smartphones, personal computers, tablets, wearables, and accessories. It also provides a mix of related services. *Moat Synopsis: Pg. 12*
Accenture (ACN)	IT Consulting & Other Services	Accenture is the world's largest IT/professional services company. It helps organizations in virtually every major region and industry determine strategy, deploy technology, and implement processes to improve operations. *Moat Synopsis: Pg. 13*
Adobe (ADBE)	Application Software	Adobe is one of the world's largest software companies. It offers consumers and organizations a range of solutions through its Creative Cloud, Document Cloud, and Digital Experience business. *Moat Synopsis: Pg. 14*
Alphabet/Google (GOOG/GOOGL)	Interactive Media & Services	Alphabet's core business, Google, operates numerous platforms like Search, Gmail, and YouTube that it primarily monetizes through advertising services. It also offers cloud infrastructure services through Google Cloud Platform. *Moat Synopsis: Pg. 15*
Cisco (CSCO)	Communications Equipment	Cisco offers solutions related to networking, security, collaboration, applications, and the cloud. It is focused on helping customers build resilient networks that can support a growing number of connections to users and devices. *Moat Synopsis: Pg. 16*
Microsoft (MSFT)	Systems Software	As the world's largest software company, Microsoft helps companies deploy applications beyond their firewall with Azure, enables users to get work done with Office apps, and gives PC makers a ubiquitous operating system to build on with Windows. *Moat Synopsis: Pg. 17*
Oracle (ORCL)	Systems Software	Oracle offers solutions that span the technology stack. Its databases underpin many of the world's leading applications and an increasing number of customers are implementing Oracle's Fusion applications and leveraging Oracle Cloud Infrastructure. *Moat Synopsis: Pg. 18*
Visa (V)	Transaction & Payment Processing Services	Visa is the world's largest payments technology company. It operates a massive transaction processing network called "VisaNet" that connects consumers, issuing and acquiring financial institutions, and merchants to support hundreds of millions of transactions per day. *Moat Synopsis: Pg. 19*

Moat Series Part 2: Technology Sector

By Mathew Spencer & Matt Casas

As outlined in Kevin's letter, moats are central to our investment approach at SaratogaRIM since they enable companies to generate a degree of excess profitability over some timeframe based on their depths and widths, respectively. We believe that moats play a particularly important role in the information technology sector, as they can help diligent firms fend off innovative upstarts and position themselves to capitalize on powerful secular tailwinds, like the adoption of cloud software and the rise of artificial intelligence (AI). Companies that play their cards right by appropriately pointing their resources toward attractive markets in an efficient manner have the potential to generate durable growth. The presence of moats means that certain companies have accumulated considerably more assets and experience than competitors have, which often stacks the deck in their favor. In other words: moats help winners keep on winning. In this report, we: 1) provide a brief overview of the information technology sector; 2) outline common competitive advantages in this segment of the market; and 3) examine how certain companies in our coverage universe nurture their moats.

Information Technology

There are countless ways to dissect the wide swath of businesses within the information technology (IT) sector. We find it useful to consider where each company sits in what we refer to as the "technology supply chain."

Fabless semiconductor companies arguably occupy the beginning of this supply chain. Here, businesses like Qualcomm and NVIDIA design some of the integrated circuits that power the world's consumer electronics and enterprise systems. Additionally, diversified giants like Amazon, Apple, Cisco, Google, and Tesla are increasingly designing their own chipsets to tackle specific problems. They lean on foundries – companies like TSMC that operate massive chip fabrication facilities (or "fabs") – to convert their designs into physical products.

To create impossibly complex semiconductor devices with features measured in nanometers, these chipmakers need multi-million-dollar devices from wafer fab equipment (WFE) vendors. Here, companies like ASML build lithography systems that manufacture light of a specific wavelength, funnel that light through a reticle containing a transistor blueprint, and project that pattern onto a wafer with remarkable precision. Vendors like Applied Materials and Lam Research offer machines that deposit and etch away films of insulating and conducting materials to help create chip features on silicon wafers. KLA provides process control and yield management solutions to help chipmakers detect and resolve critical product defects to improve their manufacturing processes and yields.

Once complete, these chips help power myriad electronic devices for consumers and enterprises. That includes smartphones from Apple and Samsung that run on Apple's iOS or Google's Android, PCs from Apple and Microsoft that run on Apple's MacOS or Microsoft's Windows, and servers from Cisco or Dell that run on Microsoft's Windows Server or Linux.

Those servers often populate data centers, some of which are operated by hyperscale cloud vendors like Amazon Web Services, Microsoft Azure, Google Cloud Platform, and Oracle Cloud Infrastructure. These companies invest tens of billions of dollars to cover the globe in powerful data centers that they constantly update and maintain so that customers can bypass major cap-ex requirements as they build and deploy applications beyond their own firewall.

At a high level, these devices (smartphones, tablets, PCs, servers, etc.) support the use of software applications and internet services, which arguably represent the end of the technology supply chain.

On the consumer side, countless people use Google Search or Microsoft's Bing to find information, Intuit's TurboTax to file tax returns, and

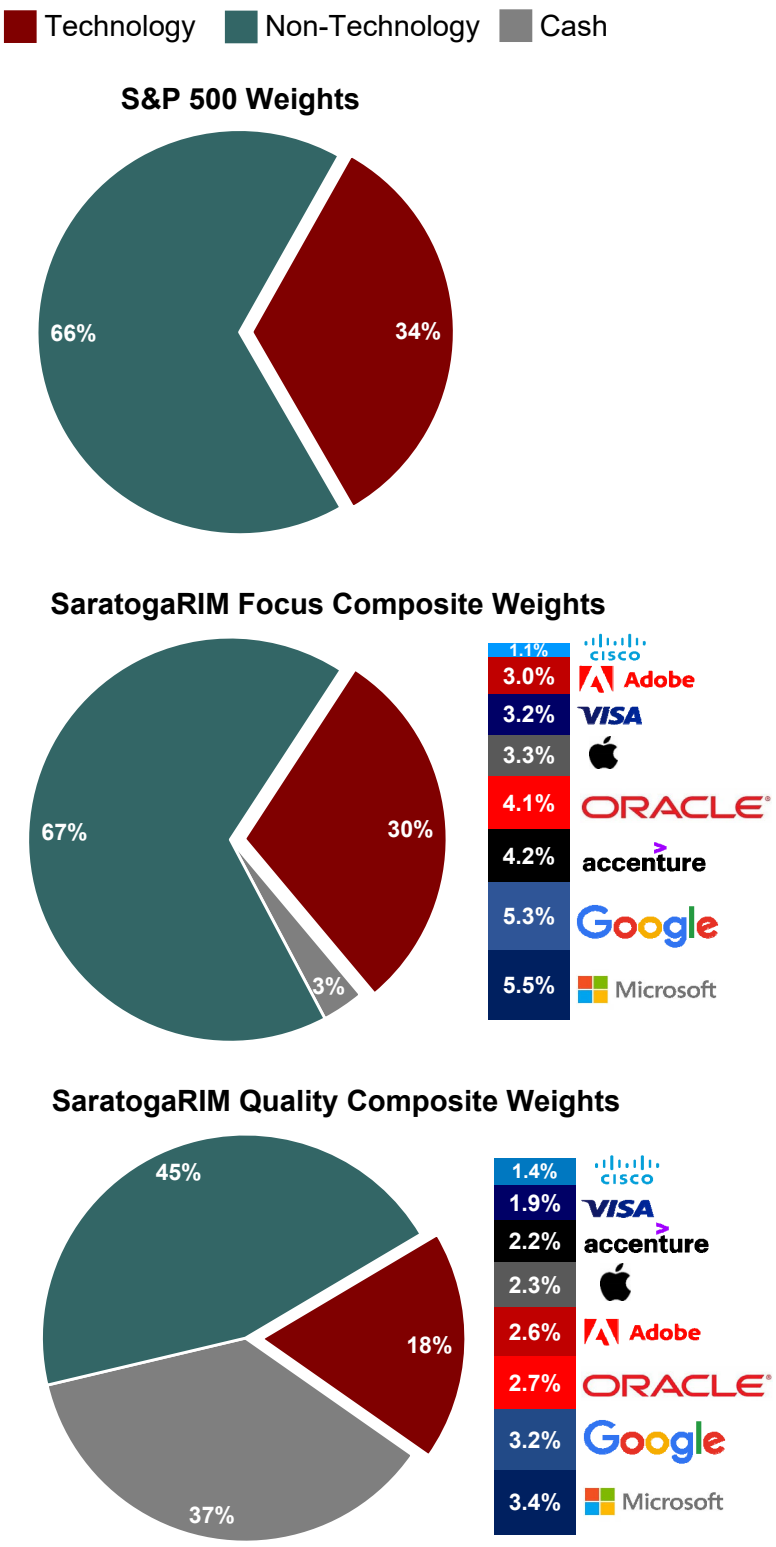
Adobe's Photoshop to create digital art. Through the combined efforts of the industry's engineers, the power of Moore's Law, and trillions of dollars of investment over decades, much of this can be done through a supercomputer most people carry around in their pockets – a smartphone.

On the business side, a local salon might use Intuit's QuickBooks to track its invoices, while a Fortune 500 company is more likely to use Oracle's Fusion ERP system to manage its diverse set of resources, track various projects, and maintain control of its supply chain. Meanwhile, a design specialist will probably use Adobe's Creative Cloud to develop digital marketing collateral for an upcoming ad campaign. Additionally, a salesperson might use Microsoft's Dynamics CRM to manage her pipeline of prospects and SAP's Concur to track reimbursable expenses incurred on a business trip.

We view IT services firms like Accenture and Cognizant as running parallel to this technology supply chain. They help clients across all major geographies and industries adopt new strategies; select, implement, integrate, and operate advanced technologies; and outsource business processes to accelerate revenue growth and improve efficiency.

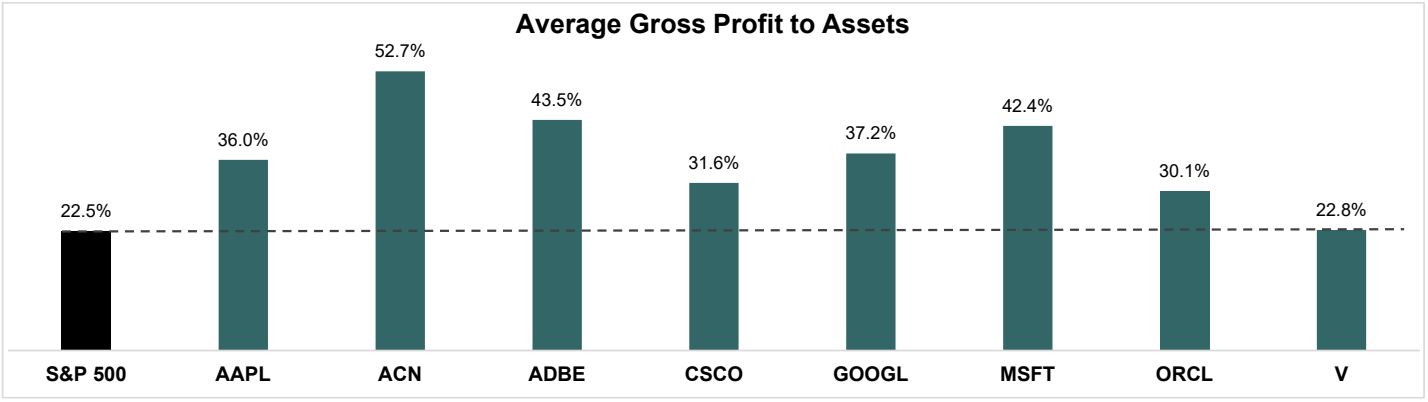
As this brief overview suggests, many organizations occupy various seats along the technology supply chain and occasionally change seats, which makes strict topology challenging. Out of necessity, the Global Industry Classification Standard (GICS) attempts to do this by saying the information technology sector includes companies in the following industry groups: 1) software and services; 2) technology hardware and equipment; and 3) semiconductors and semiconductor equipment. It further places each company into one of six industries and one of a dozen sub-industries. This classification captures all of the information technology companies in our coverage universe, except: 1) Alphabet (Google's parent company), which is included in the communications sector; and 2) Visa and Mastercard, which are in the financials sector. While we appreciate the role strict categorization plays in areas like performance tracking and attribution reports, we prefer to apply a more flexible approach when conducting fundamental analysis on a company to assess its merits as a potential investment.

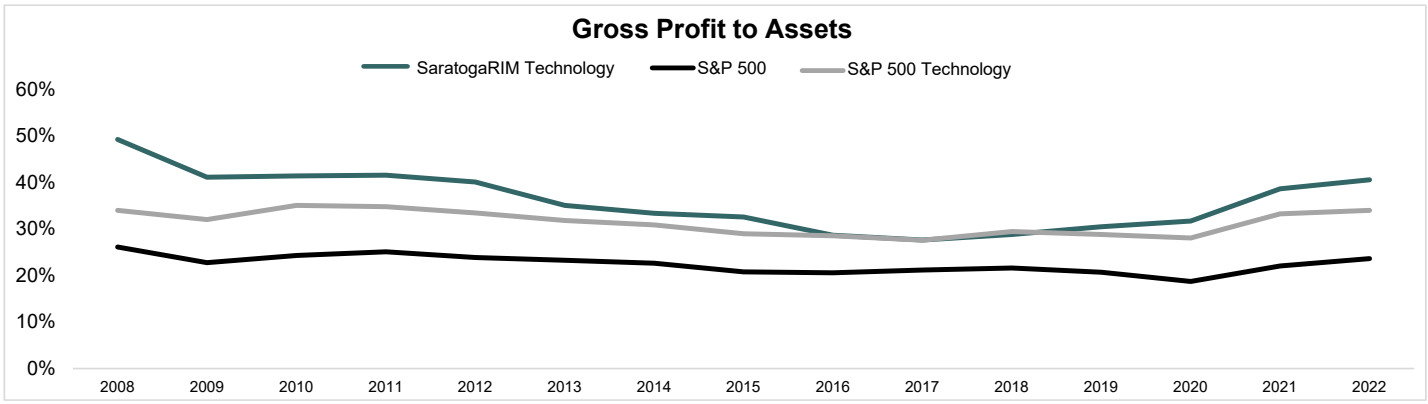
Fig. 1: Sector Weights — S&P 500 Index, SaratogaRIM Large Cap Quality Focus & SaratogaRIM Large Cap Quality Composites as of 9/30/23

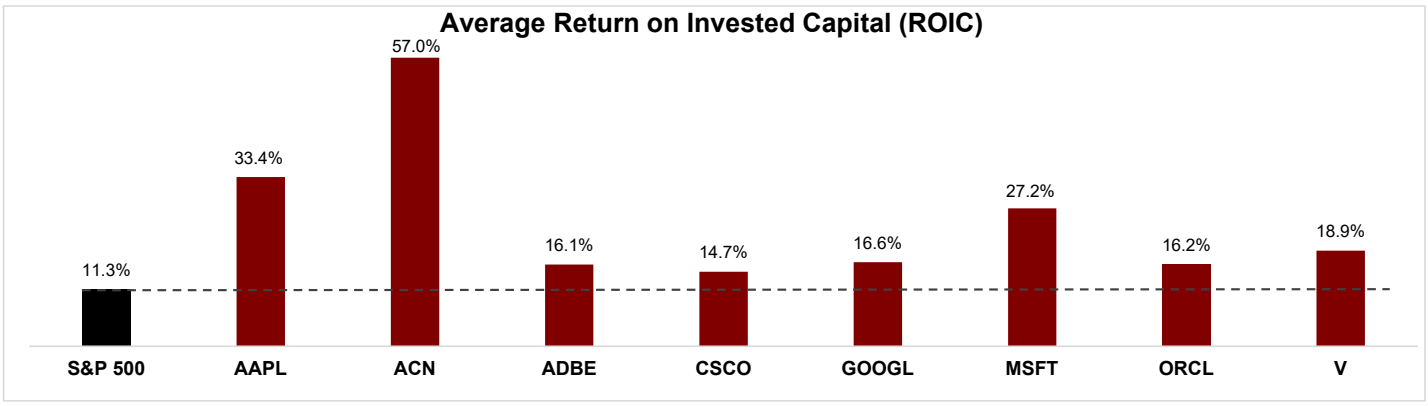


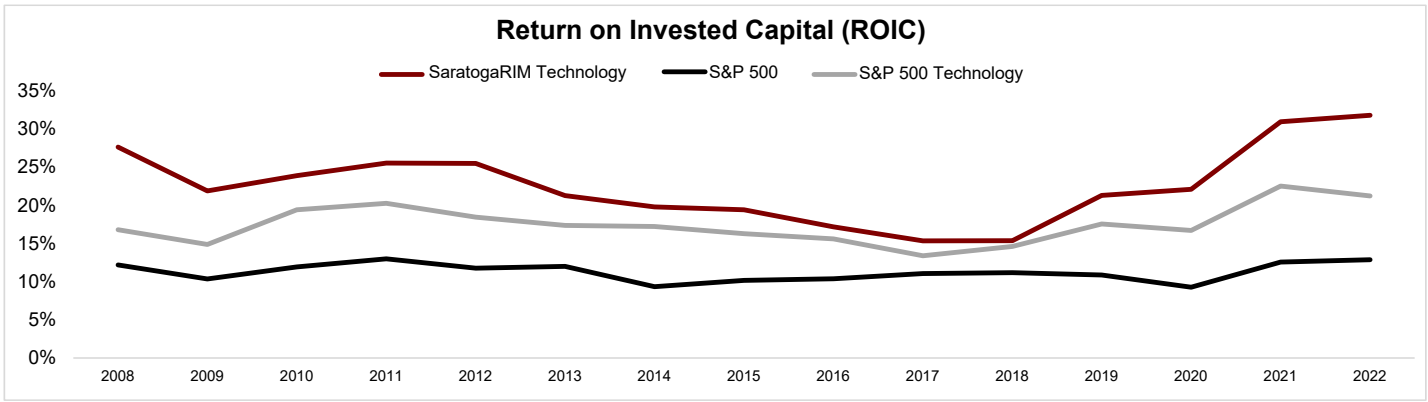
Source: FactSet, SaratogaRIM. The "technology" component of these pie charts include two stocks from the GICS "communications" sector (GOOG, GOOGL) and two stocks from the GICS "financials" sector (MA, V). Past investment results are no guarantee of future results. This report is incomplete without Disclosures (page 30), GIPS Composite Report: SaratogaRIM Large Cap Quality Focus (page 25) and GIPS Composite Report: SaratogaRIM Large Cap Quality (page 29).

Fig. 2: SaratogaRIM's Technology Sector Constituents vs. S&P 500 (Excluding Financials) and S&P 500's Technology Sector Constituents as of 9/30/23 — Profitability Metrics from 2008 through 2022









Source: FactSet, SaratogaRIM. All metrics in the ROIC and Gross Profit to Assets charts are derived from FactSet's data and calculations. It is important to note that neither Oracle nor Visa explicitly discloses total cost of revenue or total gross profit; Average Gross Profit to Assets figure uses historical estimates from FactSet. Past investment results are no guarantee of future results. The SaratogaRIM and S&P figures displayed above do not reflect actual market or composite performance and are not meant to represent any one client's investment experience. See information about Gross Profit to Assets and Return on Invested Capital (ROIC) within the Disclosures on page 30. This report is incomplete without Disclosures, GIPS Composite Report: SaratogaRIM Large Cap Quality Focus (page 25) and GIPS Composite Report: SaratogaRIM Large Cap Quality (page 29).

Competitive Advantages in Information Technology

As alluded to above, the information technology sector is ripe with successful companies wielding powerful competitive advantages – we actually consider it to be one of the richest sectors in terms of moats due to various dynamics that we discuss below. Prevalent sources of economic moats among technology companies include switching costs, scale efficiencies, network effects, and intangible assets related to brand power, patent protection, and product design expertise.

Before we dive into examples of these moat sources, we must stress an important consideration: companies sometimes benefit from *a mix* of competitive advantages that interact and determine the shapes and sizes of their economic moats. This is usually a byproduct of the tendency among large companies to pursue multiple market opportunities with various business units. These units forge competitive advantages based on how they adapt their business models to address unique customer bases with distinctive needs.

At a high level, the degree to which a competitive advantage influences the broader company's success determines whether we consider it to be a primary, secondary, or immaterial moat driver. For example, the competitive advantages of a business unit that represents 5% of total revenue might not matter all that much for the broader company's economic moat, except to the extent that: 1) that business unit's competitive advantages interact with the rest of the company; and 2) we expect that business unit's share of total revenue to grow in the relevant future. Accordingly, assessing the existence and magnitude of an economic moat is a dynamic exercise, especially for the fast-moving information technology sector. With that context, see below for an outline of some of the competitive advantages that recur in this sector.

Switching Costs: "Switching costs" represent perhaps the most common competitive advantage among technology companies, especially enterprise software providers like Adobe, Microsoft, Oracle, and SAP.

At a high level, IT departments typically avoid ripping and replacing software solutions for various reasons. First, they already invested time and effort in the original selection process and are generally hesitant to admit they made the wrong choice. Second, another selection process would mean incremental investments of time and effort; the IT department would have to research relevant vendors, conduct thorough product demonstrations, determine viability, solicit bids, and endure negotiations. Third, there is a risk that a new software solution could prove inferior, disrupt a company's processes, or experience low user adoption. Accordingly, the more mission-critical the solution of interest, the greater the stakes and the bigger the role inertia tends to play.

For example, enterprise resource planning (ERP) systems represent broad software platforms that help companies manage their resources, oversee projects, track financial results, and interact with supply chain partners. As such, enterprises typically replace their ERP systems infrequently (perhaps every decade or two), which is why ERP implementations have been compared to home purchases by former SAP CEO Bill McDermott and heart transplants by former NetSuite CEO Zach Nelson. When an enterprise commits to an ERP system, it usually represents a long-term relationship. That can provide the vendor of choice with favorable opportunities to accumulate invaluable experience and increasingly monetize that customer relationship by cross-selling additional modules and services.

Cost Advantages: From our perspective, "cost advantages" serve as another common moat source among technology companies. This often arises from an interesting dynamic. Specifically, markets like enterprise software and payment technology typically feature high upfront costs that sap a company's initial profitability and deter new market entrants.

For example, a startup might have to build a network of geographically dispersed, state-of-the-art data centers and establish a private telecommunications network covering millions of route miles before it could establish relationships with issuers and process transactions to compete directly with Visa or Mastercard. Simi-

larly, a VC-backed startup would have to employ an army of developers and lean on a mountain of infrastructure to build a new ERP to compete with Oracle or SAP. However, once those foundational pieces are in place, the *incremental* cost to serve each additional customer – whether that be processing a payment transaction or granting a Fortune 500 company access to a software application – is *relatively* minuscule. This leads to rich incremental margins, eventually leading to healthy overall margins once the business has achieved efficient scale.

We look for a handful of indicators to help determine whether a company might benefit from such advantages. Most importantly, does the business become more efficient as it gets bigger? If so, then that entity can invest more absolute dollars into its business than its competitors can while increasing profitability on a dollar and percentage basis.

We can use Microsoft as an example here. On an annual and non-GAAP basis between FY16 and FY23, the diverse technology giant grew its revenue from $92B to $212B (13% CAGR) and expanded its operating margin from ~30% to ~42% despite increasing its R&D expense from $12B to $27B (12% CAGR). Microsoft's top competitors in the enterprise applications market – including Oracle, SAP, Salesforce, and Workday – each spent less than $10B on R&D in their most recent fiscal years. This elevated capacity for investment should help Microsoft fend off competitors and pursue attractive growth markets that require participants to absorb significant losses in the early years.

Network Effects: We generally consider "network effects" to form the most powerful moat source. While rare overall, this competitive advantage is *relatively* common in the information technology sector.

We can summarize the general concept through Metcalfe's Law, which suggests that a network's value is proportional to the square of the number of nodes in the network. There are many ways to apply the concept of network effects to fundamental business analysis. We tend to lean towards a simple framework that considers the difference between direct and indirect network effects.

To put it simply, direct network effects are in play when the value of a platform service increases when the number of users increases. Examples here include communications platforms (e.g., WhatsApp, Discord, iMessage), social media platforms (e.g., Facebook, Instagram, Snapchat, TikTok), professional networking sites (e.g., LinkedIn), and search engines (e.g., Google, Bing).

Indirect network effects are present when a network supports two types of participants and the value of the network to one type of participant is heavily dependent on the growth of the other type of participant, and vice versa. Examples here include ecommerce websites that match buyers and sellers (e.g., Amazon, eBay), travel websites that match travelers with hotels and airlines (e.g., Airbnb, Booking.com, Expedia), app stores that match consumers with applications (e.g., Apple's App Store, Google Play Store), entertainment services that match consumers with content (e.g., YouTube, Netflix, Hulu, Disney+, Apple TV+), ridesharing apps

Apple (AAPL; Technology Hardware, Storage & Peripherals) – Moat Synopsis

Apple is one of the largest companies in the world. It offers a range of electronic products, including smartphones, personal computers, tablets, wearables, and accessories. It also provides a mix of related services.

We believe Apple's moat is based primarily on several competitive advantages. First, the company's world-renowned **brand** appears to help it generate premium pricing for its high-end hardware products. Second, we think that Apple benefits from **switching costs** in the form of: 1) developers being unwilling to abandon iOS and the App Store for fear of opportunity cost; and 2) consumers who adopt multiple devices from Apple and link numerous digital services to their Apple IDs. Third, we think Apple's App Store benefits from **network effects** as it represents a two-sided network that matches consumers with developers via applications. The company also appears to benefit from **cost advantages** related to scale.

that match riders with drivers (e.g., Uber, Lyft) and payment networks that match cardholders with merchants (e.g., Visa, Mastercard).

In determining whether a company might benefit from network effects, we start by trying to identify the presence of a network itself. As alluded to above, these networks assume numerous forms, and certain companies have multiple platforms that qualify as generating direct network effects, indirect network effects, or both.

For example, Apple's App Store represents a two-sided network that connects consumers with developers through a marketplace of applications. Consumers derive more value from the App Store when more apps are available and developers extract more value from the App Store when more consumers download their apps, make in-app purchases, and subscribe to their services.

Similarly, Visa and Mastercard operate major payment networks that connect consumers with merchants via credit and debit card transactions. As more cardholders join one of these networks, it becomes more appealing for merchants to accept those credentials. While plenty of merchants complain about the fees associated with accepting card payments, millions recognize that the cost is worth it because many consumers prefer to pay with cards (physical or digital). As more storefronts accept these credentials, it becomes increasingly attractive for consumers to carry them. After all, a credit card accepted by millions of merchants is exponentially more attractive than one accepted by only a few locations.

In a less obvious example, all of NVIDIA's GPUs are compatible with the same software (NVIDIA's "CUDA"), which provides developers around the world with access to a large installed base of devices for which they can create applications in a relatively efficient fashion. As developers create more accelerated applications, it attracts more end users. The growth of end users and their corresponding workloads stimulates demand from computer OEMs and cloud service providers, which build more computers and data centers powered by NVIDIA's technology. This fuels NVIDIA's R&D budget, influencing the creation of more advanced technologies, which prompts developers to construct new applications tuned for the advanced devices, perpetuating the cycle.

We believe these examples illuminate an important feature of network effects: they help winners keep winning. While present in all competitive advantages, this dynamic is exponentially magnified by network effects. The way we see it, a platform company's early efforts might be met with resistance that causes minimal customer adoption and profit, but as individual victories eventually compound, each subsequent battle becomes easier to win. Accordingly, many analysts describe network effects with flywheels.

Intangible Assets: A handful of companies in our coverage universe also benefit from the broad moat source category of "intangible assets," which includes benefits related to brand power, patent protection, and product design expertise.

Perhaps the most powerful version of brand power is the one that enables a vendor to

Accenture (ACN; IT Consulting & Other Services) – Moat Synopsis

Accenture is the world's largest IT services company. It helps organizations in virtually every major region and industry determine strategy, deploy technology, and implement processes to improve operations.

We think the firm's moat is primarily a function of **switching costs** strategic clients face due to the extensive knowledge Accenture has collected over the last several decades related to their technical landscapes, business models, competitive environments, and strategic roadmaps. We also believe that **intangible assets related to product design expertise** contribute to Accenture's moat.

charge a premium price for a product that is objectively comparable to alternatives. Apple, which has created a highly loyal following by effectively integrating proprietary hardware and software into devices that scream "conspicuous consumption," serves as a good example here. While Samsung, the market leader in smartphone shipments, offers premium devices with similar specifications and price points to Apple's high-end iPhones, we estimate that the overall ASP on Samsung's smartphones has been materially lower than the ASP on Apple's iPhones in recent years. Of course, other factors play a role in Apple's ability to charge premium effective prices, which speaks to the diversity of the company's moat and the interactive nature of competitive advantages.

Overall, we think it is rare for technology companies to truly derive meaningful pricing power from their brands. Accordingly, we also look for a weaker version of brand power that facilitates reduced search costs. For example, Cisco, which has been a mainstay in the networking business for decades, has generally developed a trustworthy reputation among IT departments. That goodwill means that Cisco can expect to be included in its fair share of requests-for-proposal (RFPs) without a commensurate increase in S&M spending. While the benefit is relatively limited, this dynamic does contribute to the moats of a handful of our companies.
Separately, some businesses benefit from the ability to influence industry standards, secure patents for IP that embodies those standards, and extract royalties from entities that claim conformity under those standards. Qualcomm's grip on the cellular industry serves as a primary example here.

Finally, certain businesses benefit from close collaboration with customers and partners, which helps them accumulate a degree of product design expertise that is nearly impossible for a newcomer to replicate overnight. In our view, this is the case with WFE vendors like Applied Materials, ASML, KLA, and Lam Research. This dynamic also helps fuel the moats of IT services vendors like Accenture and Cognizant.

Nurturing Moats

It is important for a company to continuously reinforce its moat by strengthening its existing competitive advantages and developing new ones. This concept is paramount in the information technology industry, which is characterized by rapid innovation and disruption. To that point, countless companies must contend with vigorous competitors seeking to capitalize on shifting customer preferences by deploying new technologies like generative AI and cloud computing.

Since ChatGPT – OpenAI's chatbot powered by a large language model (LLM) – surpassed the 100M-user threshold after only a few months in early 2023, executives in virtually all industries have scrambled to understand how the rise of generative AI might impact their businesses. In NVIDIA CEO Jensen Huang's words, "Generative AI has created a sense of urgency in companies everywhere to reimagine their products and business models." Traditional companies look at what Amazon, Airbnb, Uber, and Tesla have done to retailers, hotels, taxi companies, and automobile manufacturers, and fear they might be next, with generative AI

Adobe (ADBE; Application Software) – Moat Synopsis

Adobe is one of the world's largest software companies. It offers consumers and organizations a range of solutions through its Creative Cloud, Document Cloud, and Digital Experience business.

We believe Adobe's moat is based primarily on **switching costs** and – to a much lesser extent – **network effects**. For example, as creative professionals learn how to use Adobe's various Creative Cloud products, it generally becomes increasingly unappealing for them to switch to a competing vendor, as that would require them to get up to speed on a new set of tools with foreign user interfaces and workflows, among other challenges. Additionally, as many creative professionals learn to use Adobe's Creative Cloud tools in school, it increases the likelihood that employers will utilize those tools internally. With more employers demanding Creative Cloud skills, students are more likely to learn those skills, creating a modest indirect network effect.

and cloud technologies serving as primary catalysts. To avoid that fate, businesses must invest in technology to transform their products and services so they can redefine how they engage with key stakeholders and adapt to new environments.

Traditional companies might invest in autonomous database technology from Oracle, cloud infrastructure from Microsoft, cyber security solutions from Cisco, or digital advertising from Google to develop modern applications, scale efficiently into budding markets, defend against mercurial threat environments, and target new customers. They might also lean on trusted advisors like Accenture or Cognizant to point them in the right direction and implement these new systems effectively.

Obviously, there are countless vendors offering interesting technologies, and many of them are likely to gain their fair share of traction and headlines. However, we believe market leaders that invest thoughtfully in R&D to fuel innovation and enhance their economic moats are likely to exhibit durable growth and – at the right price – long-term capital appreciation. Below are a number of examples from our holdings that we believe exemplify these traits.

Apple: In our view, Apple is strengthening its moat by progressing along three vectors.

First, the Cupertino-based giant continues to launch new hardware products on a multi-year cycle. Whether it was the Apple II in the 70s, Macintosh in the 80s, iMac in the 90s, iPhone (and the App Store) in the 2000s, iPad in 2010, Apple Watch in 2014, or AirPods in 2016, Apple's hardware products have garnered an intensely loyal ecosystem of customers. In June 2023, Apple introduced its next major product platform, the Vision Pro mixed reality headset.

On one hand, we recognize that this product is unlikely to represent a material share of revenue in the immediate future. For starters, the baseline price of $3,499 is borderline exclusionary, as it is ~7x greater than Meta's brand new Quest 3 device, which starts at $499.99. Additionally, we think the device's appearance, size, battery life, and initial application library will largely limit it to stationary, indoor use-cases.

On the other hand, we view this device as an impressive combination of hardware and software that underscores decades of technological advancements from Apple and the rest of the industry. For perspective, the headset squeezes 23 million pixels into two micro-OLED displays the size of postage stamps, according to the company. To stream images to these displays "8x faster than the blink of an eye" and otherwise convince the user's senses that it is experiencing "reality," Apple had to develop a specialized microprocessor (the R1 chip) to efficiently digest the inputs from the 12 cameras, five sensors, and six microphones it packed into the device.

These technological requirements all but ensured the device's form factor would be closer to ski goggles than wire-framed glasses. Accordingly, it will likely take at least a few more iterations before Apple can deliver a mixed reality headset with a sleek form factor conducive to mobile use cases at an affordable price. With

Alphabet/Google (GOOG/GOOGL; Interactive Media & Services) – Moat Synopsis

Alphabet's core business, Google, operates numerous platforms like Search, Gmail, and YouTube that it primarily monetizes through advertising services. It also offers cloud infrastructure services through Google Cloud Platform.

In our view, Google exhibits a combination of competitive advantages. For example, its search business benefits from direct and indirect **network effects**. On the direct side, more users means more queries, which improves Google's ability to present relevant information quickly, which attracts more users and queries. On the indirect side, this process makes the platform more attractive for advertisers that want to target specific types of users. As Google does a better job serving relevant ads (and eliminating irrelevant ads and spam), it makes the platform more attractive for users. YouTube and other platforms appear to benefit from similar types of network effects. Additionally, we think Android benefits from **switching costs**, while the overall company benefits from **cost advantages**.

that context, we think the Apple Vision Pro demonstrates the firm's commitment to delighting its customers with new products containing the potential to change personal computing paradigms over time.

Second, the company is pursuing vertical integration. For example, with the release of the Mac Pro in June 2023, Apple officially transitioned its entire Mac lineup to run exclusively on internally developed silicon. As a quick overview, Apple unveiled the M1, the first chip designed specifically for Mac, in November 2020. The Apple Silicon unit has been building system-on-a-chip (SoC) devices to serve as the brains for most of Apple's other products – including iPhone, iPad, and Apple Watch – for more than a decade, but Apple had been relying on Intel to power its Mac lineup until this development. In our view, the Apple Silicon strategy should help the company reap the benefits of vertical integration, which include better supply chain management, tighter control of the product roadmap, and the potential for scale efficiencies.

Third, Apple is shifting its revenue towards services by offering a range of first- and third-party digital content, advertising, AppleCare, cloud storage, and payment services. We think Apple's services strategy increases the recurring nature of the business, which improves the predictability of financial results and helps management with long-term investment planning. It also provides the firm with a great way to further monetize its massive customer base of 2B+ active devices in an efficient manner. To that point, the gross margin on Apple's services revenue has been about 2x greater than that on its products revenue in recent years. We also think it increases switching costs, as a customer who downloads various premium apps and services linked to his Apple ID and devices is less likely to, say, switch to Android than is a customer with a blank iPhone, all else equal.

Adobe: Adobe seeks to strengthen its moat through internal and external means, as illustrated by its latest efforts in M&A and AI.

The company has long maintained a dominant position in its core digital media market through flagship offerings like Photoshop (for photo editing), Illustrator (for illustrating), and Premiere Pro (for video editing). However, upstart competitors have chipped away at attractive corners of this market, particularly in graphic design for social media and user experience design for mobile apps.

For example, Australia-based Canva operates a highly popular graphic design tool with strength in areas like social media graphics and presentations. The firm has raised close to $600M in private funding since its founding in 2012, including a $200M raise at a $40B valuation in 2021, according to the company. Canva is also rumored to be contemplating a sizeable IPO in the near future. Additionally, a private firm named Figma helps tens of millions of consumers and large customers with various design projects, including those related to user interfaces, user experiences, and graphics for websites, mobile apps, documents, and social media content.

Cisco (CSCO; Communications Equipment) – Moat Synopsis

Cisco offers solutions related to networking, security, collaboration, applications, and the cloud. It is focused on helping customers build resilient networks that can support a growing number of connections to users and devices.

While the company appears to benefit from **network effects**, **cost advantages** related to scale, and **brand power** to a very limited degree, we think Cisco's moat is based primarily on **switching costs**. For example, Cisco's switching portfolio connects devices to a company's network and enables them to securely share information with each other, while its routing portfolio essentially interconnects that network of devices to other private and public networks, including the broader internet. Any material change to the underlying networking gear and software introduces the risk of disruption to a firm's connectivity, security, and productivity. In addition, there are substantial costs associated with soliciting, evaluating, selecting, and implementing a new networking vendor. As such, the typical customer usually waits at least several years before upgrading or replacing its existing networking solutions, with longer timeframes for those that support mission critical applications, such as a company's central headquarters or high-availability data centers.

Adobe seemingly acknowledged this threat in September 2022 when it announced a definitive agreement to acquire Figma for a whopping $20B. On one hand, we appreciate the apparent high-quality nature of this asset, its strategic importance to Adobe, and the potential for synergies. On the other hand, the price tag (which was ~50x bigger than Figma's annual recurring revenue) leaves little room for error, in our view. With that being said, the deal's closure is still subject to regulatory approval, and regulators around the world have expressed varying levels of antitrust concerns.

While we have mixed feelings about Adobe's latest M&A efforts, we are intrigued by the firm's AI strategy. In our view, that strategy officially began in 2016 when the company released Adobe Sensei, a "set of intelligent services" across Adobe's platforms designed to "automate mundane tasks, drive predictive and personalization capabilities, and boost productivity," according to the company.

In March 2023, Adobe expanded its AI footprint when it announced Firefly, a family of generative AI models. In one use case, Firefly can act as a "creative copilot" in Photoshop through its Generative Fill capabilities and in Illustrator via its Generative Recolor skills. Specifically, Photoshop users can add, extend, or remove content from their images, while Illustrator users can change complex color schemes simply by submitting a series of text prompts to their Firefly-powered copilot.

We think the infusion of such new features throughout the platform should help Adobe extend its leadership in core creative categories for various reasons. On the product development side, we think Adobe's vault of proprietary creative and marketing data should help it train the models that power useful new features. Additionally, Adobe's massive customer base should enable it to test and tune those new features to ensure it puts out products that creative professionals and marketers will actually use.

On the go-to-market side, the presence of such a customer base also means Adobe can (relative to smaller competitors) spend less on new customer acquisition and more on product development and customer success, which should drive retention rates and ARPU – and therefore Adobe's long-term profitability. Similarly, Adobe's global sales engine should help ensure large agencies and enterprises deploy these new technologies, and the firm's ability to ink partnerships with industry leaders like NVIDIA and Google should influence new customer acquisition.

Alphabet (Google): From our perspective, Google is enhancing the vitality of its economic moat by infusing its core platforms with new capabilities and entering attractive new markets.

Like many other companies, Google is positioning itself to benefit from the rise of AI. Unlike most other companies, Google operates 15 product platforms that support over 500M users each, with six of them (Search, Gmail, Android, Chrome, YouTube, and Play) serving over 2B users apiece. This provides the company with a

Microsoft (MSFT; Systems Software) – Moat Synopsis

As the world's largest software company, Microsoft helps companies deploy applications beyond their firewall with Azure, enables users to get work done with Office apps, and gives PC makers a ubiquitous operating system to build on with Windows.

We believe that Microsoft primarily derives its economic moat from competitive advantages like **switching costs**, **network effects**, and **cost advantages** related to scale. For example, the market share of Windows (i.e., the lack of feasible alternatives) and the cost associated with building devices for other operating systems (including R&D and disgruntled consumers who were familiar with the Windows user experience) makes it hard for PC OEMs to move away from Microsoft's operating system. Additionally, we view Xbox (and Microsoft's broader gaming business) as a two-sided network that facilitates transactions between gamers and developers. Finally, we think Microsoft's scale enables it to invest more absolute dollars into its various businesses than its competitors can while still improving profitability.

treasure trove of invaluable first-party data that it can use to improve its products and services, which ultimately strengthens the company's economic moat by compounding the interrelated benefits of network effects, switching costs, and scale.

For example, more users on Search means more queries, which translates to more opportunities for Google's systems to learn how to find the best answers in a timely fashion. The better the job Google does in responding to search queries, the more attractive the platform is to curious consumers, perpetuating the cycle and triggering an indirect network effect. That is, more consumers navigating Search attracts more advertisers to the platform. This dynamic fuels Google's budget, enabling the company to plough more dollars into R&D without compromising efficiency. For perspective, Google spent nearly $43B (or ~15% of revenue) on R&D over the last four quarters. We think technologies like AI – an umbrella term that includes concepts like optical character recognition and machine learning – compound Google's ability to benefit from this data.

Unsurprisingly, the company has long focused on AI. It acquired AI startup DeepMind for a reported $500M in 2014, and Google officially shifted its focus to that of an "AI-first" organization around 2017, when a Google research team published a paper called "Attention Is All You Need." That paper described the concept of a transformer model – a deep neural network that tracks relationships in sequential data (e.g., words in a sentence) to learn context and meaning. The concept of a transformer model is largely considered to have been one of the key breakthroughs that eventually enabled LLMs and generative AI. While Microsoft and OpenAI have justifiably gained a lot of attention over the success of ChatGPT, which NVIDIA CEO Jensen Huang has dubbed the "iPhone moment for AI," Google deserves credit for its contributions to the field of generative AI.

We also note that the search giant is not sitting still. Specifically, management recently explained that nearly 80% of Google's advertisers are already using at least one of Google's AI-powered search ads products, like Performance Max. Google released this goals-based campaign type in 2020 to help performance advertisers access their entire Google Ads inventory from a single campaign. According to the company, this campaign architecture mixes machine learning models with user inputs like customer data or high-quality images to optimize bids and placements, which should ultimately drive conversion rates and overall campaign performance.

Additionally, Google is enhancing services across its platforms by increasingly incorporating the power of LLMs and generative AI, which produces output in various forms (e.g., text, images, sounds, code) based on prompts. For example, in May 2023, Google announced that its latest foundation model, PaLM 2, was offi-

Oracle (ORCL; Systems Software) – Moat Synopsis

Oracle offers solutions that span the technology stack. Its databases underpin many of the world's leading applications and an increasing number of customers are implementing Oracle's Fusion applications and leveraging Oracle Cloud Infrastructure.

From our perspective, Oracle's moat is based primarily on **switching costs**. However, the firm also appears to benefit from **cost advantages** related to scale and **network effects** to a lesser degree. At a high level, the critical nature of Oracle's primary solutions – from ERP software to database management systems – decreases the incentive for customers to risk disruption by replacing them with competing offerings.

For example, we view databases as being critically important because of the innovation they facilitate and the data they store. All types of companies are increasingly leveraging software to rapidly improve the way they engage with key stakeholders, operate their businesses, and compete with one another. Importantly, virtually every software application relies on a database to store, organize, and process data. As a result, databases directly impact an application's performance, scalability, flexibility, and reliability, which makes the database highly strategic. The underlying database grows harder to replace as: 1) developers, whose influence over enterprise IT budgets continues to grow, familiarize themselves with its operating protocols and build a preference for it; 2) customers develop more sophisticated applications on top of them; and 3) enterprises entrust them with storing and processing more valuable data.

cially supporting 25 products, including Bard, the AI-powered chatbot that competes with ChatGPT and Microsoft's Bing Chat. With the support of a more powerful underlying LLM, Bard: 1) is available in most regions around the world; 2) can interact with users in over 40 languages; 3) can read responses out loud; 4) is integrated with Google Lens (for multimodal capabilities); and 5) can help users write code. Google is similarly incorporating these capabilities into its core Search business via Search Generative Experience.

It is also important to note that the firm is trying to "mak[e] it easier for others to innovate using AI" through its Google Cloud business, which is just ~10% of total revenue (trailing four quarters) but growing rapidly. These efforts appear to be paying off, as the company recently claimed that over 70% of generative AI unicorns (private companies valued at $1B+) are Google Cloud customers. To be fair, our understanding is that many of these unicorns are also customers of at least one other cloud infrastructure vendor, like Oracle, Microsoft, or Amazon. However, Google's emphasis on building a platform optimized to train and serve generative AI models deserves recognition. Specifically, Google offers a wide choice of AI supercomputers with Google TPUs and advanced NVIDIA GPUs, including the recent launch of A3 supercomputers powered by NVIDIA's H100. Additionally, Google helps customers build, deploy, and scale a range of proprietary and third-party machine learning models on Google Cloud through its Vertex AI marketplace.

Microsoft: Microsoft has taken several steps to improve the integrity of its economic moat in recent years.

The launch of Windows Azure in 2008 signaled the company's recognition that the cloud would be a viable and potentially desirable application deployment model in the future. Microsoft's early entry into the Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) markets has enabled it to take a strong #2 position in one of enterprise technology's most attractive arenas, as we estimate that Azure's revenue of ~$57B during the most recent four quarters trailed only AWS's ~$85B.

More recently, Microsoft has invested heavily in AI to enhance its product offerings and access new avenues of long-term growth. In January 2023, Microsoft strengthened its strategic partnership with OpenAI, a leading AI research and deployment company and creator of ChatGPT, through a "multi-year, multibillion dollar investment." Thanks to this partnership, Microsoft Azure now supports all of OpenAI's workloads and Microsoft has begun to deploy OpenAI's models throughout its product portfolio. While the AI-powered Bing and Bing Chat have provided a burst of energy into Microsoft's ability to penetrate the massive search advertising market, we are more intrigued by the firm's "Copilot" strategy.

Visa (V; Transaction & Payment Processing Services) – Moat Synopsis

Visa is the world's largest payments technology company. It operates a massive transaction processing network called "VisaNet" that connects consumers, issuing and acquiring financial institutions, and merchants to support hundreds of millions of transactions per day.

We believe Visa primarily derives its economic moat from **network effects** and **cost advantages** related to its scale. Specifically, VisaNet is a major payment network that connects consumers with merchants via credit and debit card transactions. As more cardholders join the network, it becomes more appealing for merchants to accept those credentials. While plenty of merchants complain about the fees associated with accepting card payments, millions of them recognize that the cost is worth it because a growing number of consumers prefer to pay with cards (physical or digital). As more storefronts accept these credentials, it becomes increasingly attractive for consumers to carry them. This competitive advantage feeds into Visa's cost advantages. While there were major upfront costs associated with building this business, the cost to process each subsequent transaction is relatively miniscule, which leads to large incremental margins. At a certain scale (and at $11.6T of payments volume in FY22, Visa has clearly reached that scale), those incremental margins show up in the company's overall margins and enable it to invest more dollars into its business than competitors can without sacrificing efficiency, as measured by profitability metrics like operating margin and ROIC.

In March 2023, Microsoft unveiled Microsoft 365 Copilot, which utilizes LLMs and enterprise-specific data to help customers improve productivity. For an extra ~$30 per-user-per-month (a 50%+ premium over base plan rates), this copilot will follow knowledge workers around throughout the day, ready to receive prompts and help analyze data in Excel, create presentations in PowerPoint, draft emails in Outlook, and summarize key meeting takeaways in Teams. This new feature builds upon Microsoft's success with GitHub Copilot since launching that AI-powered developer solution in collaboration with OpenAI in 2021. These types of efficiency-oriented solutions should become increasingly important in a world where shifting trends around demographics and globalization push real GDP growth further out of reach.

We think Microsoft's scale advantages played a key role in enabling these investments. After all, it would be tough to convince an outside investor to plough tens of billions of dollars per year into an unproven business that promises to generate massive losses for years. For context, we estimate that Google Cloud lost ~$20B in operating profit from 2018 through 2022 before turning the corner in 2023 (we use Google Cloud as a rough proxy here due to Google's more detailed disclosures on this topic). However, Microsoft's success in its legacy businesses related to operating systems and office productivity applications provided it with a steady stream of cash flow and enabled it to accumulate ample resources. These assets permitted the firm to execute on management's bold vision in the mid-2000s with the confidence that considerable losses would eventually be followed by an inflection point where exponential growth in workloads would overcome the substantial fixed costs and enable increasingly attractive margins over time. We are cautiously attracted to the notion that the rise of generative AI could eventually play out in a comparable fashion for Microsoft.

Oracle: Oracle is undergoing what we consider to be one of the more significant transformations in our coverage universe. At a high level, the company is bolstering its economic moat and re-accelerating profitable revenue growth by entering new markets and transitioning its business model.

Regarding the former, the firm launched Oracle Cloud Infrastructure (OCI) in 2016 with very limited coverage and functionality. Oracle launched OCI Gen 2 in 2018 after having redesigned the way it approached data center architecture. According to the company's technical blog, OCI Gen 2 put "customer code, data, and resources on a bare metal computer, while cloud control code lives on a separate computer with a different architecture." In other words, Oracle cannot see its customers' data, which protects customers from Oracle's potential overreach; and customers cannot access the cloud control code, which protects each customer from other customers' potential missteps. To summarize, with OCI Gen 2, Oracle sought to address certain security- and privacy-related concepts that are critical in the context of a multi-tenant cloud architecture, especially for customers like governments, banks, and hospitals.

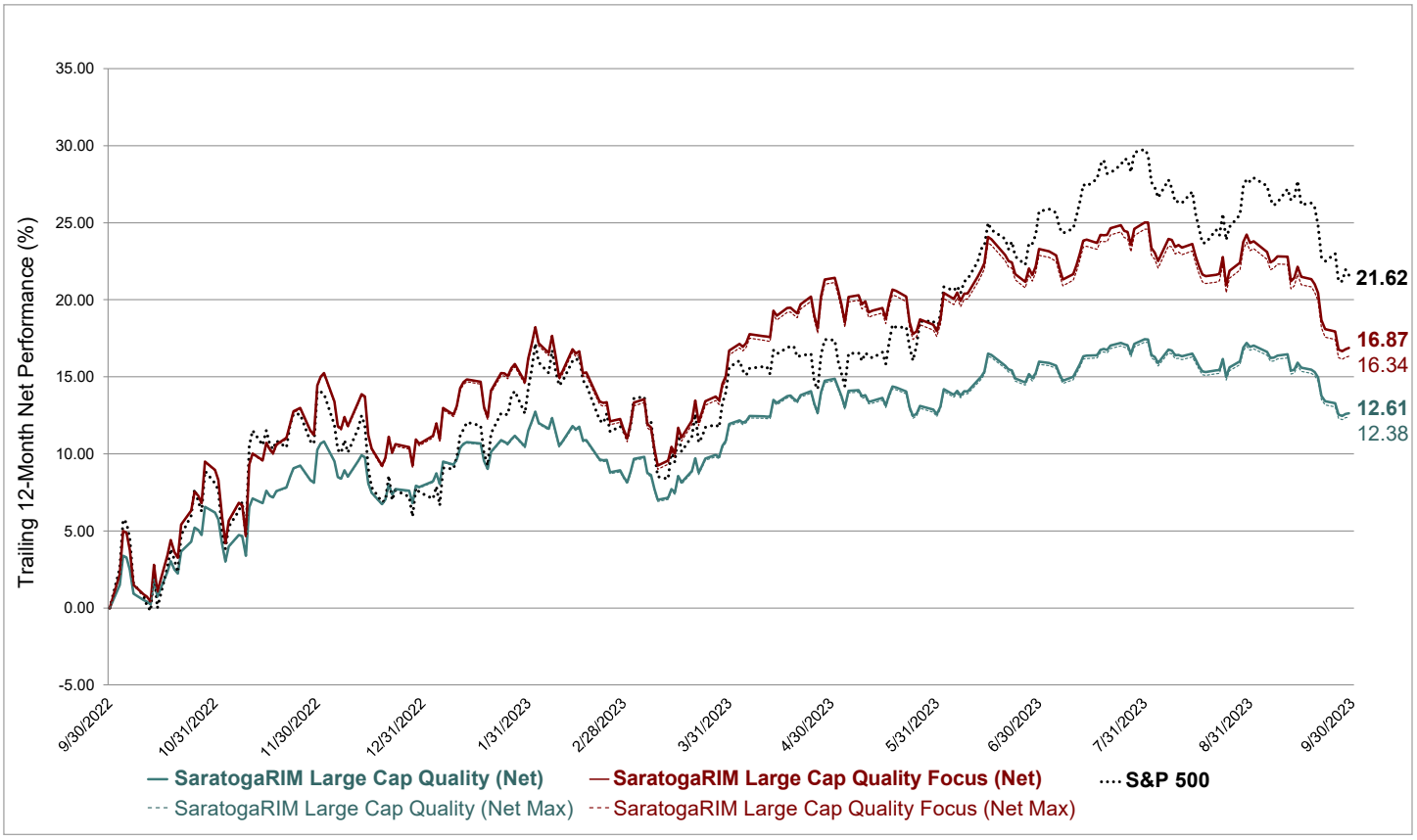
It also optimized OCI Gen 2 to run on Oracle's Autonomous Database, which the company released in 2017. This solution took Oracle's dominant position in legacy relational database management systems and enhanced it with intelligent capabilities. Oracle designed the Autonomous Database, as its name implies, to leverage machine learning to automatically apply adaptive performance tuning and install upgrades and patches while running. The combination of OCI's security-first approach, tight native links to Oracle's popular database and Fusion application solutions, and its presence as a low-cost alternative to the market leaders has helped Oracle gain share in the IaaS market. However, it is still far behind Amazon, Microsoft, and Google.

Additionally, Oracle slowly began to transition its legacy, on-premises software applications business to cloud-based Software-as-a-Service (SaaS) in the mid-2000s. It did this after witnessing the early successes of Salesforce and NetSuite, arguably the pioneers of the SaaS business model. Oracle doubled down on the SaaS movement by acquiring NetSuite – the leader in ERP software for midmarket customers – for over $9B in 2016. While the shift from perpetual licenses (which generate large chunks of revenue up front) to subscriptions (which generate revenue ratably) pressures

near-term revenue and profitability, it should create more value for Oracle over time. We hold this opinion because we believe the transition: 1) increases the predictability of future revenue, which helps management's long-term planning; 2) enables Oracle to handle more of the infrastructure-related work for the customer; 3) forces Oracle to be more customer-centric, which spurs more cross- and up-sell opportunities; and 4) provides Oracle with access to new customers that prefer to consume technology in this manner. ■

Trailing 12-Month Investment Results

Fig. 3: SaratogaRIM Large Cap Quality & Focus vs. S&P 500 TR Trailing 12-Months (9/30/22 - 9/30/23)



Source: FactSet, SaratogaRIM. Past investment results are not a guarantee of future results. Data presented net-of-fees. See full disclosures at the end of this report. This report is incomplete without Disclosures (page 30), GIPS Composite Report: SaratogaRIM Large Cap Quality Focus (page 25) and GIPS Composite Report: SaratogaRIM Large Cap Quality (page 29).

Over the 12 months that ended September 30th, net of fees, the SaratogaRIM Large Cap Quality Focus and Large Cap Quality composites earned 16.87% and 12.61% respectively. Net of maximum fees (which we refer to as Net Max), Focus and Quality returned 16.34% and 12.38% respectively. Over the same period, the S&P 500 Total Return Index was up 21.62%. These results were consistent with what we would expect at this phase in the economic and market cycles. As with any discussion of investment results, the SEC requires that we remind you that past performance is no guarantee of future returns. Please see the Large Cap Quality Focus and Large Cap Quality Composite Statistics and GIPS Composite Reports in addition to the full disclosures at the end of this report.

SaratogaRIM Large Cap Quality Focus

Composite Statistics

Q3 2023

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Firm Overview: Saratoga Research & Investment Management, founded in 1995, is an SEC Registered Investment Advisor specializing in the construction and management of equity portfolios composed of high caliber businesses utilizing common sense investment principles for individual and institutional investors.

Composite Overview: The SaratogaRIM Large Cap Quality Focus Composite includes all discretionary portfolios that invest in what the Firm believes to be high-quality companies with low balance sheet, business model (including capital intensity) and valuation risk. This composite will likely have a greater turnover ratio than other composites as it typically restricts cash to no more than 5% of the total portfolio value. See the GIPS Composite Report (Page 4) for the complete composite description.

SaratogaRIM Large Cap Quality Focus (LCQF) - Snapshot

Composite Name	SaratogaRIM Large Cap Quality Focus
Inception Date	8/29/2014
Firm Total Assets	$ 2,684,015,000
Composite Assets	$ 1,035,798,000
GIPS Compliance	Yes

Investment Results

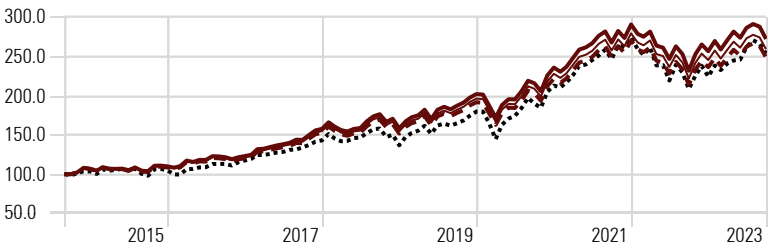
As of Date: 9/30/2023 Source Data: Total, Monthly Return

	Quarter to Date	Year to Date	1 Year	3 Years	5 Years	7 Years	Since Inception
SaratogaRIM LCQF (Gross)	-4.95	6.11	17.51	8.07	9.08	12.22	11.67
SaratogaRIM LCQF (Net)	-5.08	5.69	16.87	7.48	8.49	11.62	11.07
SaratogaRIM LCQF (Net Max)	-5.18	5.32	16.34	6.99	7.99	11.11	10.57
S&P 500 TR USD	-3.27	13.07	21.62	10.15	9.92	12.24	10.80

Investment Growth Relative to Benchmark

Time Period: 9/1/2014 to 9/30/2023

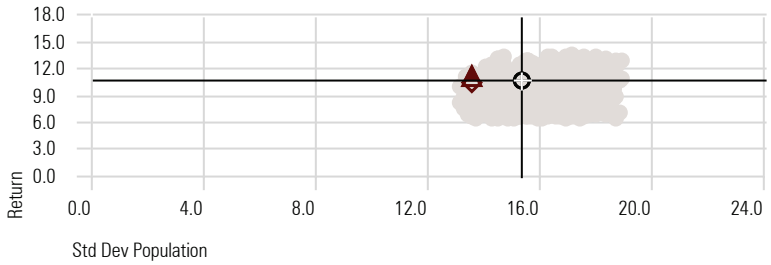
Source Data: Total Return



Standard Deviation vs. Annualized Rate of Return Relative to Benchmark & Peer Group

Time Period: 9/1/2014 to 9/30/2023

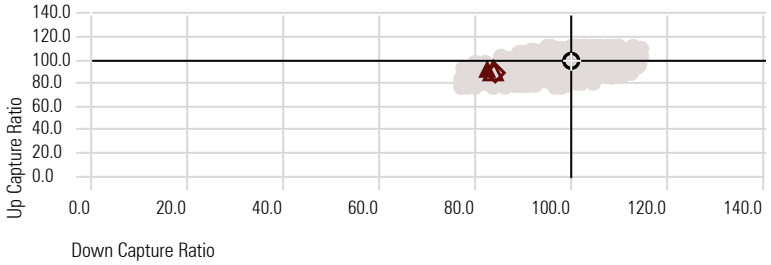
Peer Group (5-95%): Large Cap SA Source Data: Total, Monthly Return



Market Capture Relative to Benchmark & Peer Group

Time Period: 9/1/2014 to 9/30/2023

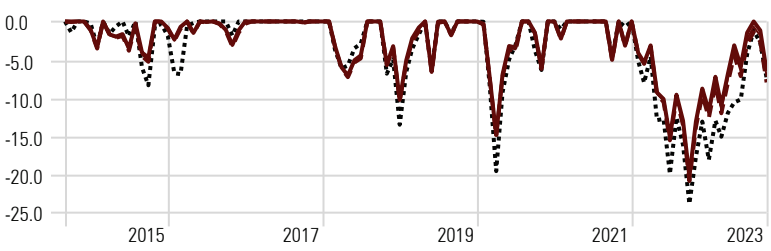
Peer Group (5-95%): Large Cap SA Source Data: Total, Monthly Return



Drawdown Relative to Benchmark

Time Period: 9/1/2014 to 9/30/2023

Source Data: Total, Monthly Return



Sector Weightings - GICS

Portfolio Date: 9/30/2023

	LCQF	S&P 500
Consumer Discretionary %	10.05	10.67
Consumer Staples %	11.98	6.57
Energy %	0.00	4.72
Financials %	9.33	12.81
Healthcare %	20.93	13.36
Industrials %	12.30	8.30
Information Technology %	21.95	27.46
Materials %	1.54	2.45
Communication Services %	11.92	8.87
Utilities %	0.00	2.41

Holding Fundamentals

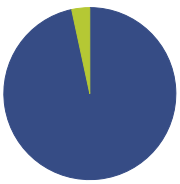
Dividend Yield	1.78
P/E Ratio (TTM)	22.55
P/CF Ratio (TTM)	17.43
P/B Ratio (TTM)	3.70
ROE % (TTM)	30.47
ROA % (TTM)	11.42
Net Margin %	16.37
Est. LT EPS Growth	9.66
Historical EPS Growth	13.54

Market Capitalization

Average Market Cap (mil)	242,434.96
Market Cap Giant %	58.45
Market Cap Large %	35.63
Market Cap Mid %	5.92

Asset Allocation

Portfolio Date: 9/30/2023

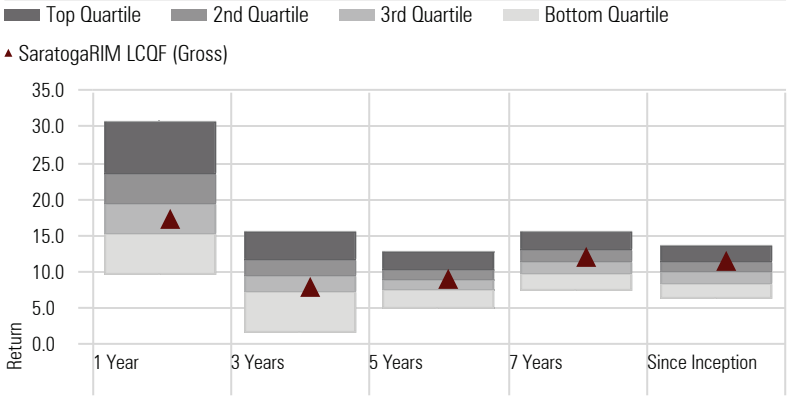


	%
Stock	96.6
Bond	0.0
Cash	3.4
Other	0.0
Total	**100.0**

GICS Sector Weightings, Holding Fundamentals, and Market Capitalization statistics reflect the weightings of the stock portion of the portfolio. Results of Morningstar's calculations may vary slightly from SaratogaRIM's own reported statistics within the GIPS Composite Report due to rounding. See Disclosures and Definitions (Page 3) and the GIPS Composite Report: SaratogaRIM Large Cap Quality Focus (Page 4).

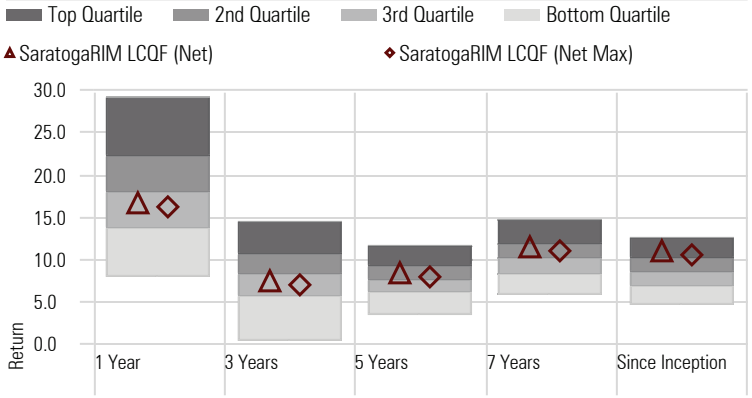
Investment Results Relative to Peer Group (Gross)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Gross, Monthly Return



Investment Results Relative to Peer Group (Net)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Net, Monthly Return



Investment Results Relative to Peer Group (Gross)

As of Date: 9/30/2023 Source Data: Gross, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	7 Years	Since Inception
SaratogaRIM LCQF (Gross)	17.51	8.07	9.08	12.22	11.67
S&P 500 TR USD	21.62	10.15	9.92	12.24	10.80
Median	19.37	9.41	8.81	11.23	9.81
Average	19.58	9.10	8.74	11.26	9.76
Count	1,555	1,466	1,368	1,250	1,126
5th Percentile	30.65	15.38	12.54	15.43	13.53
25th Percentile	23.34	11.51	10.17	12.85	11.18
50th Percentile	19.37	9.41	8.81	11.23	9.81
75th Percentile	15.12	7.25	7.32	9.61	8.30
95th Percentile	9.72	1.61	5.04	7.43	6.41

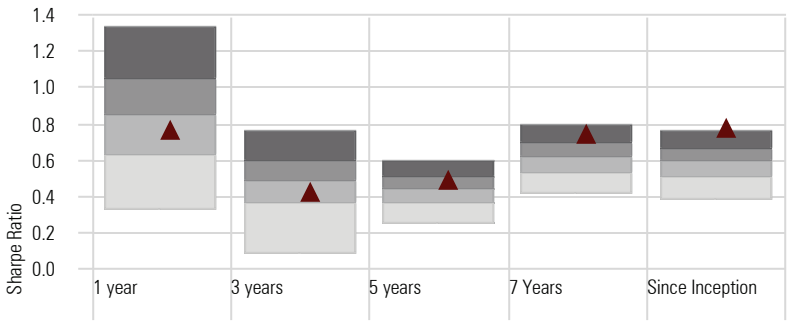
Investment Results Relative to Peer Group (Net)

As of Date: 9/30/2023 Source Data: Net, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	7 Years	Since Inception
SaratogaRIM LCQF (Net)	16.87	7.48	8.49	11.62	11.07
SaratogaRIM LCQF (Net Max)	16.34	6.99	7.99	11.11	10.57
S&P 500 TR USD	21.62	10.15	9.92	12.24	10.80
Median	17.99	8.32	7.58	10.06	8.57
Average	18.48	7.98	7.57	10.04	8.58
Count	1,532	1,446	1,348	1,231	1,110
5th Percentile	29.06	14.49	11.63	14.61	12.56
25th Percentile	22.29	10.61	9.30	11.82	10.22
50th Percentile	17.99	8.32	7.58	10.06	8.57
75th Percentile	13.80	5.74	5.99	8.13	6.89
95th Percentile	8.11	0.43	3.46	5.90	4.61

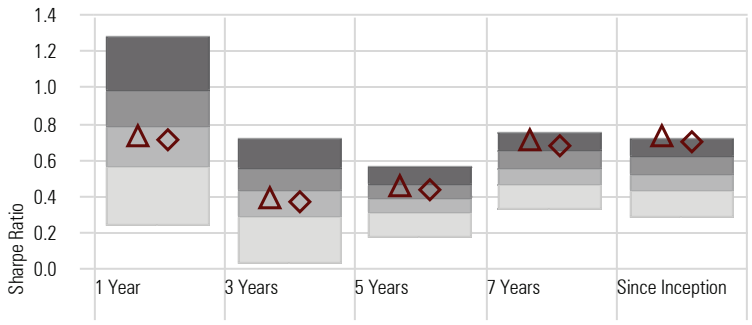
Sharpe Ratio Relative to Peer Group (Gross)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Gross, Monthly Return



Sharpe Ratio Relative to Peer Group (Net)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Net, Monthly Return



Sharpe Ratio Relative to Peer Group (Gross)

As of Date: 9/30/2023 Source Data: Gross, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	7 Years	Since Inception
SaratogaRIM LCQF (Gross)	0.77	0.43	0.50	0.75	0.78
S&P 500 TR USD	0.99	0.52	0.50	0.68	0.66
Median	0.85	0.48	0.44	0.62	0.59
Average	0.83	0.46	0.43	0.62	0.58
Count	1,555	1,466	1,368	1,250	1,126
5th Percentile	1.34	0.77	0.60	0.80	0.76
25th Percentile	1.05	0.59	0.51	0.70	0.67
50th Percentile	0.85	0.48	0.44	0.62	0.59
75th Percentile	0.63	0.36	0.36	0.53	0.51
95th Percentile	0.33	0.09	0.26	0.42	0.39

Sharpe Ratio Relative to Peer Group (Net)

As of Date: 9/30/2023 Source Data: Net, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	7 Years	Since Inception
SaratogaRIM LCQF (Net)	0.74	0.40	0.47	0.71	0.74
SaratogaRIM LCQF (Net Max)	0.71	0.37	0.44	0.68	0.71
S&P 500 TR USD	0.99	0.52	0.50	0.68	0.66
Median	0.79	0.42	0.38	0.55	0.52
Average	0.77	0.40	0.38	0.55	0.51
Count	1,532	1,446	1,348	1,231	1,110
5th Percentile	1.28	0.72	0.56	0.75	0.72
25th Percentile	0.99	0.55	0.46	0.65	0.61
50th Percentile	0.79	0.42	0.38	0.55	0.52
75th Percentile	0.56	0.29	0.30	0.46	0.42
95th Percentile	0.24	0.03	0.18	0.33	0.29

Results of Morningstar's calculations may vary slightly from SaratogaRIM's own reported statistics within the GIPS Composite Report due to rounding.
See Disclosures & Definitions (Page 3) and the GIPS Composite Report: SaratogaRIM Large Cap Quality Focus (Page 4).

Disclosures & Definitions

See additional important disclosures and composite-specific information within the GIPS Composite Report (Page 4).

Saratoga Research & Investment Management ("SaratogaRIM" or "the Firm") is an SEC Registered Investment Advisor. SEC Registration does not constitute an endorsement of the Firm by the Commission, nor does it indicate the advisor has attained a particular level of skill or ability. Advisory services are not made available in any jurisdiction in which SaratogaRIM is not registered or otherwise exempt from registration.

This report was generated by SaratogaRIM through Morningstar Direct's Presentation Studio using data from Morningstar Direct and Advent Axys. SaratogaRIM composite performance statistics are based off gross-of-fee or net-of-fee monthly performance data uploaded to Morningstar. Results of Morningstar's calculations may vary slightly from SaratogaRIM's own reported statistics within the GIPS Composite Report due to rounding. The Peer Group statistics within this report contain U.S. Large Cap separate account managers that appear in the Morningstar database for the relevant periods shown as of the report generated date. The information and statistical data contained herein have been obtained from sources that SaratogaRIM believes to be reliable but in no way are warranted by the Firm as to accuracy or completeness.

Results of the SaratogaRIM Large Cap Quality Focus Composite do not reflect the results of any one portfolio in the composite. Performance figures are based on historical information and do not guarantee future results. Actual current performance may be higher or lower than the performance presented. All investing entails the risk of loss. This summary is for informational purposes only and does not constitute an offer to sell or a solicitation of an offer to buy any securities and may not be relied upon in connection with any offer or sale of securities. It is not intended to serve as a substitute for personalized investment advice. Prospective clients should recognize the limitations inherent in the composite strategy and should consider all information presented regarding the Firm's investment management capabilities. The contents of this report are only a portion of the original material and research and should not be relied upon in making investment decisions.

Gross-of-fee returns are calculated gross of management, custodial and external consultant or advisory fees and net of transaction costs. Net-of-fee returns are calculated net of actual management fees and transaction costs and gross of custodian fees and external consultant or advisory fees. Prior to October 31, 2022, non-fee-paying accounts were included in composite net-of-fee return calculations without a fee rate; per the SEC Marketing Rule effective November 4, 2022, net-of-fee returns labeled "Net" now include a model fee rate of 1.00% for all non-fee-paying accounts. Additionally, a separate net-of-fee return calculation has been added to SaratogaRIM marketing materials using the current maximum fee rate charged by SaratogaRIM for the SaratogaRIM Large Cap Quality Focus Composite (1.00%, labeled "Net Max"). Calculations are available upon request. Information pertaining to the Firm's advisory fees is set forth in SaratogaRIM's current disclosure statement, which is available upon request.

Definitions: Standard Deviation measures the dispersion of a dataset relative to its mean. Sharpe Ratio is a risk-adjusted measure that is calculated by using excess return and standard deviation to determine reward per unit of risk. The higher the Sharpe Ratio, the better the portfolio's historical risk-adjusted performance. Excess Return measures the difference in return, cumulative or annualized, between the strategy and a benchmark. Market Capture Ratios measure the extent to which a strategy participates in market moves over time; Up (Down) Market Capture measures relative performance in months which the benchmark generates positive (negative) returns over time. Drawdown is a measure of peak-to-trough decline over the period of time until a new high is reached.

Benchmark Disclosures: Benchmarks are unmanaged and provided to represent the investment environment in existence during the time periods shown. The S&P 500® Total Return Index has been selected as the benchmark for comparison purposes. The S&P Total Return Index assumes that all dividends and distributions are reinvested. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. Portfolios are managed according to their respective strategies which may differ significantly in terms of security holdings, industry weightings, and asset allocation from those of benchmarks. An index is not available for direct investment, and does not reflect any of the costs associated with buying and selling individual securities or any other fees, expenses, or charges. | The S&P 500 Index is a product of S&P Dow Jones Indices LLC ("SPDJI"), and has been licensed for use by SaratogaRIM. Standard & Poor's®, S&P®, and S&P 500® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by SaratogaRIM. SaratogaRIM's products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the S&P 500 Index.

GIPS Composite Report

SaratogaRIM Large Cap Quality Focus

Q3 2023

Saratoga Research & Investment Management | SaratogaRIM.com | (408) 741-2330 | 14471 Big Basin Way, Suite E, Saratoga, CA 95070

Composite Performance Statistics

Year	Composite Gross TWR	Composite Net TWR	Composite Net Max TWR	S&P 500 Total Return	Standard Deviation	3 Yr Ann Standard Dev Composite Net TWR	3 Yr Ann Standard Dev S&P 500 Total Return	# of Portfolios in Composite	End of Period Composite Assets	End of Period Total Firm Assets
2014 (8/31)	6.95	6.71	6.59	3.46	n/a	-	-	31	59,408,640.33	1,614,090,418.39
2015	2.85	2.29	1.83	1.38	0.18	-	-	88	122,809,323.37	1,638,083,262.32
2016	11.96	11.35	10.83	11.96	0.63	-	-	151	198,406,977.89	1,800,890,893.30
2017	28.23	27.52	26.96	21.83	0.49	8.70	9.92	287	362,440,319.53	2,113,160,549.13
2018	0.38	-0.18	-0.62	-4.38	0.60	10.30	10.80	303	316,630,422.08	2,013,567,458.02
2019	27.67	26.98	26.39	31.49	0.63	11.41	11.93	403	533,438,674.16	2,333,608,905.18
2020	16.71	16.08	15.56	18.40	1.00	15.84	18.53	626	793,063,147.30	2,631,534,466.80
2021	23.31	22.64	22.09	28.71	0.67	15.07	17.17	924	1,039,079,017.33	2,957,751,865.10
2022	-11.74	-12.22	-12.62	-18.11	0.52	17.57	20.87	913	853,935,678.90	2,603,780,552.47
09/30/23	6.11	5.68	5.32	13.07	n/a	16.12	17.60	1,041	1,035,797,746.09	2,684,014,809.94
Trailing Annualized Returns as of 09/30/23										
1 Year	17.51	16.87	16.34	21.61						
5 Year	9.08	8.49	7.99	9.92						
10 Year										
Composite Inception	11.68	11.07	10.57	10.81						

Firm Description: Saratoga Research & Investment Management ("SaratogaRIM" or "the Firm") is an SEC Registered Investment Advisor specializing in the construction and management of equity portfolios composed of high caliber businesses utilizing common sense investment principles. SEC Registration does not constitute an endorsement of the firm by the Commission, nor does it indicate the advisor has attained a particular level of skill or ability. The Firm's investment process is designed to meet the long-term needs of conservative individual and institutional investors. Advisory services are not made available in any jurisdiction in which SaratogaRIM is not registered or otherwise exempt from registration. The Firm was founded in 1995; prior to March 7, 2007, Saratoga Research & Investment Management was known as Tanner & Associates Asset Management.

Composite Description: The SaratogaRIM Large Cap Quality Focus Composite includes all discretionary portfolios that invest in what the Firm believes to be high-quality companies with low balance sheet, business model (including capital intensity) and valuation risk. This composite will likely have a greater turnover ratio than other composites as it typically restricts cash to no more than 5% of the total portfolio value. Individual position sizes typically range from 1% to 10% of the total portfolio value, but there is no maximum size for an individual position. This composite has higher levels of concentration, particularly in the top 10 positions; collectively, the top 10 positions make up at least 50% of the portfolio. While the investment criteria for this composite narrows the investable universe to predominantly large-cap companies based in the U.S., the composite has no restrictions on market cap size or where the company is domiciled. Investment ideas that do not meet the stated composite criteria ("outside the box ideas") are allowed so long as they do not cumulatively represent more than 10% of the total portfolio value. The minimum requirement to establish a new account is $100,000 (reduced from $250,000, effective May 1, 2019). The minimum asset level is $75,000 (reduced from $225,000, effective May 1, 2019). Inception date: August 31, 2014. Creation date for GIPS: August 31, 2014.

GIPS Compliance: SaratogaRIM claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. SaratogaRIM has been independently verified by The Spaulding Group for the periods March 1, 2000 through December 31, 2022. | A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. The SaratogaRIM Large Cap Quality Focus Composite has had a performance examination for the periods September 1, 2014 through December 31, 2022. The verification and performance examination reports are available upon request. | GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein. | A list of SaratogaRIM's composite descriptions is available upon request. Policies for valuing investments, calculating performance, and preparing GIPS reports are available upon request. To obtain GIPS-compliant performance information for SaratogaRIM's strategies and products, please contact Marc Crosby, President, at (408) 741-2332 or Marc@SaratogaRIM.com.

Disclosures: Results of the SaratogaRIM Large Cap Quality Focus Composite do not reflect the results of any one portfolio in the composite. Valuations are computed and performance is reported in U.S. dollars based on trade dates as of month-end, net-of-fees, while accounting for dividend reinvestment. Aggregate composite returns are calculated using the Average Capital Base equation (also known as the Modified Dietz method), which utilizes the beginning asset value plus weighted cash flows. Gross and Net TWRs are calculated based on the geometric linking of the monthly internal rate of return for portfolios present for the entire month. Individual portfolios are revalued monthly; portfolios are also revalued intra-month when large external cash flows occur in excess of 10% of the portfolio's fair value. Daily reconciliation is performed between the Firm's records and the custodian and broker records through Advent to verify client assets. Gross-of-fee returns are calculated gross of management, custodial and external consultant or advisory fees and net of transaction costs. Net-of-fee returns are calculated net of actual management fees and transaction costs and gross of custodian fees and external consultant or advisory fees. Prior to October 31, 2022, non-fee-paying accounts were included in composite net-of-fee return calculations without a fee rate; per the SEC Marketing Rule effective November 4, 2022, net-of-fee returns labeled "Net" now include a model fee rate of 1.00% for all non-fee-paying accounts. The model fee rate for non-fee-paying portfolios was applied quarterly until October 2022, when the Firm switched to deducting monthly. Additionally, a separate net-of-fee return calculation has been added to SaratogaRIM marketing materials using the current maximum fee rate charged by SaratogaRIM for the SaratogaRIM Large Cap Quality Focus Composite (1.00%, labeled "Net Max"). The "Net Max" return fee data represents the reduction of the gross of fee composite returns by the monthly portion of the annual model fee rate of 1.00%. The SaratogaRIM fee is normally 1.00% for the SaratogaRIM Large Cap Quality Focus Composite; may be negotiated, as warranted by special circumstances. Dispersion is calculated as the asset-weighted standard deviation of annual net-of-fee portfolio returns around the median net-of-fee portfolio return in the composite. Dispersion is based only on portfolios that were in the composite for the full annual period and is only shown for the annual periods where the composite had more than 5 portfolios for the full year. The 3-year annual standard deviation (external dispersion) is based on net-of-fee returns.

Benchmark Disclosures: Benchmarks are unmanaged and provided to represent the investment environment in existence during the time periods shown. The S&P 500® Total Return Index has been selected as the benchmark for comparison purposes. The S&P Total Return Index assumes that all dividends and distributions are reinvested. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. Portfolios are managed according to their respective strategies which may differ significantly in terms of security holdings, industry weightings, and asset allocation from those of benchmarks. An index is not available for direct investment, and does not reflect any of the costs associated with buying and selling individual securities or any other fees, expenses, or charges. | The S&P 500 Index is a product of S&P Dow Jones Indices LLC ("SPDJI"), and has been licensed for use by SaratogaRIM. Standard & Poor's®, S&P®, and S&P 500® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by SaratogaRIM. SaratogaRIM's products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the S&P 500 Index.

SaratogaRIM Large Cap Quality

Composite Statistics

Q3 2023

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Firm Overview: Saratoga Research & Investment Management, founded in 1995, is an SEC Registered Investment Advisor specializing in the construction and management of equity portfolios composed of high caliber businesses utilizing common sense investment principles for individual and institutional investors.

Composite Overview: The SaratogaRIM Large Cap Quality Composite includes all discretionary portfolios that invest in what the Firm believes to be high-quality companies with low balance sheet, business model (including capital intensity) and valuation risk. This composite allows cash to accumulate at certain stages of the market cycle and has no maximum cash position size. See the GIPS Composite Report (Page 4) for the complete composite description.

SaratogaRIM Large Cap Quality (LCQ) - Snapshot

Composite Name	SaratogaRIM Large Cap Quality
Inception Date	2/29/2000
Firm Total Assets	$ 2,684,015,000
Composite Assets	$ 1,170,544,000
GIPS Compliance	Yes

Investment Results

As of Date: 9/30/2023 Source Data: Total, Monthly Return

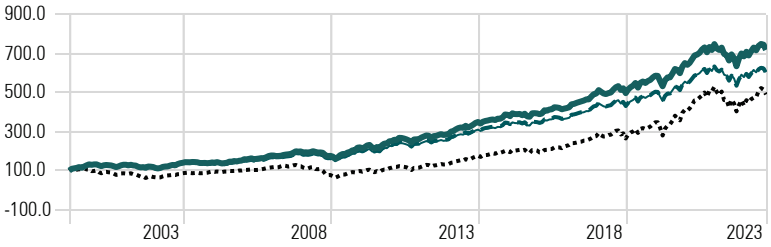
	Quarter to Date	Year to Date	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years	Since Inception
SaratogaRIM LCQ (Gross)	-2.73	4.85	13.23	5.30	6.17	7.94	8.19	9.24	9.08	8.73
SaratogaRIM LCQ (Net)	-2.87	4.43	12.62	4.71	5.58	7.34	7.59	8.59	8.33	7.93
SaratogaRIM LCQ (Net Max)	-2.91	4.26	12.38	4.51	5.37	7.13	7.38	8.43	8.26	7.91
S&P 500 TR USD	-3.27	13.07	21.62	10.15	9.92	12.24	11.91	11.28	9.72	6.98

Investment Growth Relative to Benchmark

Time Period: 3/1/2000 to 9/30/2023

Source Data: Total Return

SaratogaRIM LCQ (Gross) SaratogaRIM LCQ (Net) SaratogaRIM LCQ (Net Max) S&P 500 TR USD

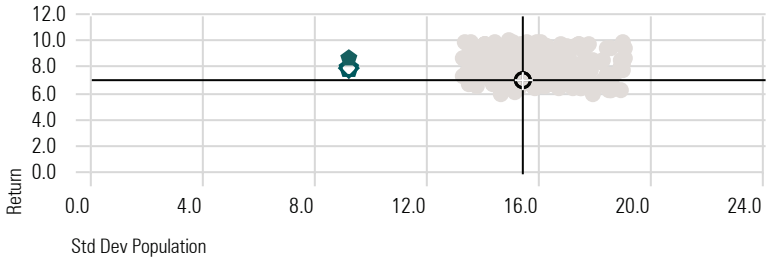


Standard Deviation vs. Annualized Rate of Return Relative to Benchmark & Peer Group

Time Period: 3/1/2000 to 9/30/2023

Peer Group (5-95%): Large Cap SA Source Data: Total, Monthly Return

SaratogaRIM LCQ (Gross) SaratogaRIM LCQ (Net) SaratogaRIM LCQ (Net Max) S&P 500 TR USD

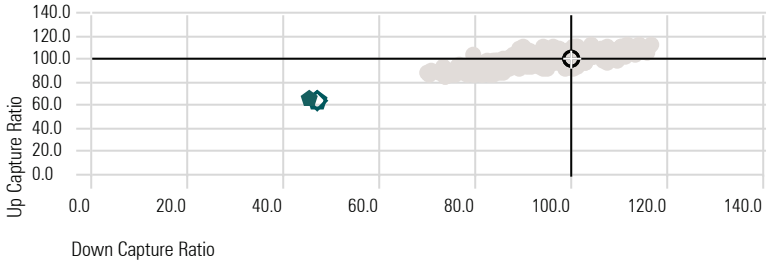


Market Capture Relative to Benchmark & Peer Group

Time Period: 3/1/2000 to 9/30/2023

Peer Group (5-95%): Large Cap SA Source Data: Total, Monthly Return

SaratogaRIM LCQ (Gross) SaratogaRIM LCQ (Net) SaratogaRIM LCQ (Net Max) S&P 500 TR USD

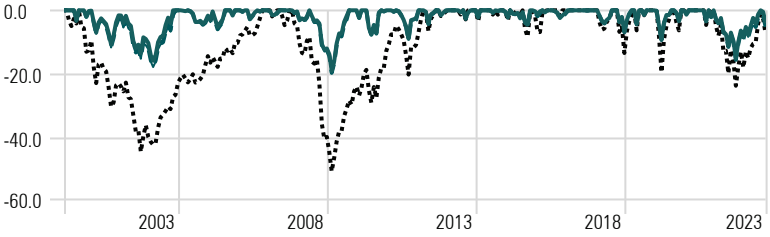


Drawdown Relative to Benchmark

Time Period: 3/1/2000 to 9/30/2023

Source Data: Total, Monthly Return

SaratogaRIM LCQ (Gross) SaratogaRIM LCQ (Net) SaratogaRIM LCQ (Net Max) S&P 500 TR USD



Sector Weightings - GICS

Portfolio Date: 9/30/2023

	LCQ	S&P 500
Consumer Discretionary %	9.97	10.67
Consumer Staples %	13.73	6.57
Energy %	0.00	4.72
Financials %	8.68	12.81
Healthcare %	19.45	13.36
Industrials %	13.06	8.30
Information Technology %	23.04	27.46
Materials %	1.98	2.45
Communication Services %	10.07	8.87
Utilities %	0.00	2.41

Holding Fundamentals

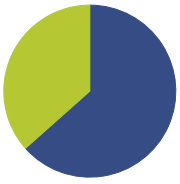
Dividend Yield	1.84
P/E Ratio (TTM)	22.61
P/CF Ratio (TTM)	17.10
P/B Ratio (TTM)	3.90
ROE % (TTM)	30.19
ROA % (TTM)	11.55
Net Margin %	16.33
Est. LT EPS Growth	9.54
Historical EPS Growth	12.44

Market Capitalization

Average Market Cap (mil)	232,362.78
Market Cap Giant %	60.07
Market Cap Large %	32.55
Market Cap Mid %	7.38

Asset Allocation

Portfolio Date: 9/30/2023

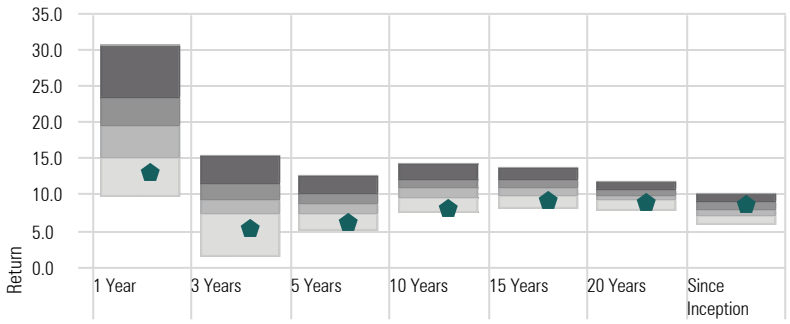


	%
Stock	63.4
Bond	0.0
Cash	36.6
Other	0.0
Total	**100.0**

GICS Sector Weightings, Holding Fundamentals, and Market Capitalization statistics reflect the weightings of the stock portion of the portfolio. Results of Morningstar's calculations may vary slightly from SaratogaRIM's own reported statistics within the GIPS Composite Report due to rounding. See Disclosures and Definitions (Page 3) and the GIPS Composite Report: SaratogaRIM Large Cap Quality (Page 4).

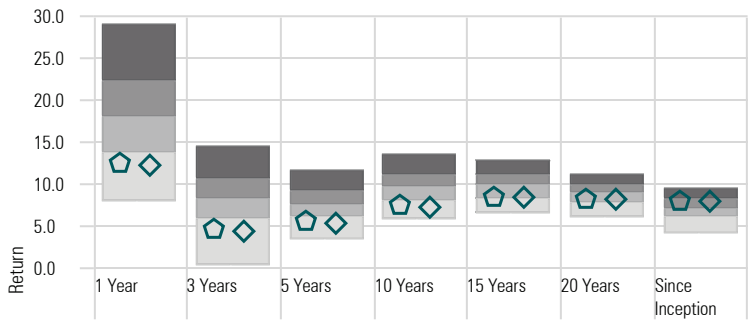
Investment Results Relative to Peer Group (Gross)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Gross, Monthly Return



Investment Results Relative to Peer Group (Net)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Net, Monthly Return



Investment Results Relative to Peer Group (Gross)

As of Date: 9/30/2023 Source Data: Gross, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception
SaratogaRIM LCQ (Gross)	13.23	5.30	6.17	8.19	9.24	9.08	8.73
Median	19.37	9.41	8.81	10.87	10.94	9.91	8.00
Average	19.58	9.10	8.74	10.80	10.88	9.94	8.06
Count	1,555	1,466	1,368	1,108	881	596	397
5th Percentile	30.65	15.38	12.54	14.30	13.57	11.75	9.99
25th Percentile	23.34	11.51	10.17	12.12	11.93	10.73	9.02
50th Percentile	19.37	9.41	8.81	10.87	10.94	9.91	8.00
75th Percentile	15.12	7.25	7.32	9.44	9.74	9.26	7.12
95th Percentile	9.72	1.61	5.04	7.65	8.27	7.90	5.85

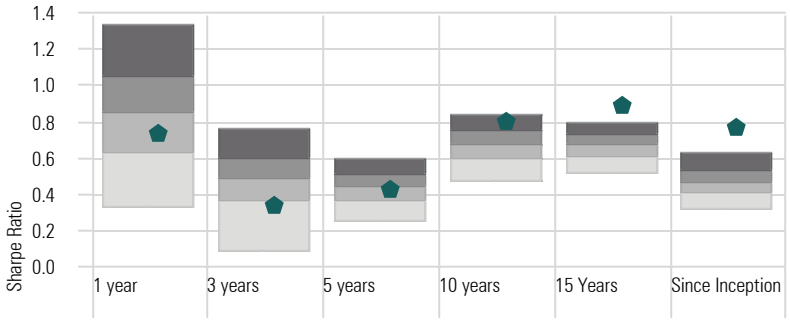
Investment Results Relative to Peer Group (Net)

As of Date: 9/30/2023 Source Data: Net, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception
SaratogaRIM LCQ (Net)	12.62	4.71	5.58	7.59	8.59	8.33	7.93
SaratogaRIM LCQ (Net Max)	12.38	4.51	5.37	7.38	8.43	8.26	7.91
Median	17.99	8.32	7.58	9.59	9.82	9.06	6.98
Average	18.48	7.98	7.57	9.61	9.72	8.78	6.98
Count	1,532	1,446	1,348	1,092	870	590	396
5th Percentile	29.06	14.49	11.63	13.42	12.80	11.02	9.36
25th Percentile	22.29	10.61	9.30	11.21	11.05	9.90	8.12
50th Percentile	17.99	8.32	7.58	9.59	9.82	9.06	6.98
75th Percentile	13.80	5.74	5.99	8.08	8.29	7.73	6.05
95th Percentile	8.11	0.43	3.46	5.83	6.65	6.07	4.19

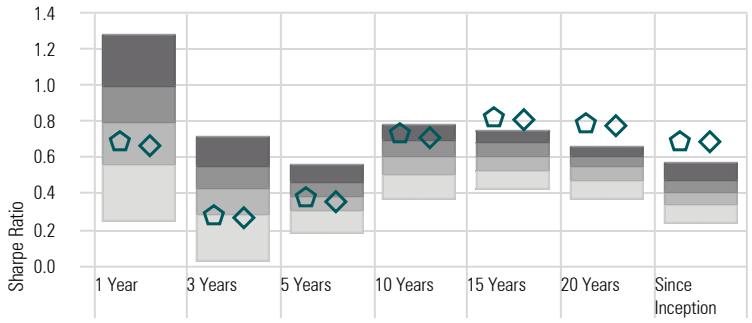
Sharpe Ratio Relative to Peer Group (Gross)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Gross, Monthly Return



Sharpe Ratio Relative to Peer Group (Net)

As of Date: 9/30/2023 Peer Group (5-95%): Large Cap SA Source Data: Net, Monthly Return



Sharpe Ratio Relative to Peer Group (Gross)

As of Date: 9/30/2023 Source Data: Gross, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception
SaratogaRIM LCQ (Gross)	0.73	0.34	0.43	0.80	0.89	0.87	0.77
Median	0.85	0.48	0.44	0.68	0.68	0.61	0.46
Average	0.83	0.46	0.43	0.67	0.66	0.61	0.47
Count	1,555	1,466	1,368	1,108	881	596	397
5th Percentile	1.34	0.77	0.60	0.83	0.80	0.71	0.63
25th Percentile	1.05	0.59	0.51	0.75	0.72	0.65	0.53
50th Percentile	0.85	0.48	0.44	0.68	0.68	0.61	0.46
75th Percentile	0.63	0.36	0.36	0.59	0.60	0.57	0.40
95th Percentile	0.33	0.09	0.26	0.47	0.52	0.48	0.32

Sharpe Ratio Relative to Peer Group (Net)

As of Date: 9/30/2023 Source Data: Net, Monthly Return Peer Group: Large Cap SA

	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception
SaratogaRIM LCQ (Net)	0.69	0.29	0.38	0.74	0.83	0.79	0.69
SaratogaRIM LCQ (Net Max)	0.67	0.27	0.36	0.72	0.81	0.78	0.69
Median	0.79	0.42	0.38	0.60	0.60	0.55	0.40
Average	0.77	0.40	0.38	0.59	0.60	0.53	0.40
Count	1,532	1,446	1,348	1,092	870	590	396
5th Percentile	1.28	0.72	0.56	0.78	0.75	0.66	0.57
25th Percentile	0.99	0.55	0.46	0.69	0.67	0.60	0.47
50th Percentile	0.79	0.42	0.38	0.60	0.60	0.55	0.40
75th Percentile	0.56	0.29	0.30	0.51	0.53	0.47	0.34
95th Percentile	0.24	0.03	0.18	0.37	0.42	0.37	0.24

Results of Morningstar's calculations may vary slightly from SaratogaRIM's own reported statistics within the GIPS Composite Report due to rounding.
See Disclosures and Definitions (Page 3) and the GIPS Composite Report: SaratogaRIM Large Cap Quality (Page 4).

Disclosures & Definitions

See additional important disclosures and composite-specific information within the GIPS Composite Report (Page 4).

Saratoga Research & Investment Management ("SaratogaRIM" or the "Firm") is an SEC Registered Investment Advisor. SEC Registration does not constitute an endorsement of the Firm by the Commission, nor does it indicate the advisor has attained a particular level of skill or ability. Advisory services are not made available in any jurisdiction in which SaratogaRIM is not registered or otherwise exempt from registration.

This report was generated by SaratogaRIM through Morningstar Direct's Presentation Studio using data from Morningstar Direct and Advent Axys. SaratogaRIM composite performance statistics are based off gross-of-fee or net-of-fee monthly performance data uploaded to Morningstar. Results of Morningstar's calculations may vary slightly from SaratogaRIM's own reported statistics within the GIPS Composite Report due to rounding. The Peer Group statistics within this report contain U.S. Large Cap separate account managers that appear in the Morningstar database for the relevant periods shown as of the report generated date. The information and statistical data contained herein have been obtained from sources that SaratogaRIM believes to be reliable but in no way are warranted by the Firm as to accuracy or completeness.

Results of the SaratogaRIM Large Cap Quality Composite do not reflect the results of any one portfolio in the composite. Performance figures are based on historical information and do not guarantee future results. Actual current performance may be higher or lower than the performance presented. All investing entails the risk of loss. This summary is for informational purposes only and does not constitute an offer to sell or a solicitation of an offer to buy any securities and may not be relied upon in connection with any offer or sale of securities. It is not intended to serve as a substitute for personalized investment advice. Prospective clients should recognize the limitations inherent in the composite strategy and should consider all information presented regarding the Firm's investment management capabilities. The contents of this report are only a portion of the original material and research and should not be relied upon in making investment decisions.

Gross-of-fee returns are calculated gross of management, custodial and external consultant or advisory fees and net of transaction costs. Net-of-fee returns are calculated net of actual management fees and transaction costs and gross of custodian fees and external consultant or advisory fees. Prior to October 31, 2022, non-fee-paying accounts were included in composite net-of-fee return calculations without a fee rate; per the SEC Marketing Rule effective November 4, 2022, net-of-fee returns labeled "Net" now include a model fee rate of 0.75% for all non-fee-paying accounts. Additionally, a separate net-of-fee return calculation has been added to SaratogaRIM marketing materials using the current maximum fee rate charged by SaratogaRIM for the SaratogaRIM Large Cap Quality Composite (0.75%, labeled "Net Max"). Calculations are available upon request. Information pertaining to the Firm's advisory fees is set forth in SaratogaRIM's current disclosure statement, which is available upon request.

Definitions: Standard Deviation measures the dispersion of a dataset relative to its mean. Sharpe Ratio is a risk-adjusted measure that is calculated by using excess return and standard deviation to determine reward per unit of risk. The higher the Sharpe Ratio, the better the portfolio's historical risk-adjusted performance. Excess Return measures the difference in return, cumulative or annualized, between the strategy and a benchmark. Market Capture Ratios measure the extent to which a strategy participates in market moves over time; Up (Down) Market Capture measures relative performance in months which the benchmark generates positive (negative) returns over time. Drawdown is a measure of peak-to-trough decline over the period of time until a new high is reached.

Benchmark Disclosures: Benchmarks are unmanaged and provided to represent the investment environment in existence during the time periods shown. The S&P 500® Total Return Index has been selected as the benchmark for comparison purposes. The S&P Total Return Index assumes that all dividends and distributions are reinvested. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. Portfolios are managed according to their respective strategies which may differ significantly in terms of security holdings, industry weightings, and asset allocation from those of benchmarks. An index is not available for direct investment, and does not reflect any of the costs associated with buying and selling individual securities or any other fees, expenses, or charges. | The S&P 500 Index is a product of S&P Dow Jones Indices LLC ("SPDJI"), and has been licensed for use by SaratogaRIM. Standard & Poor's®, S&P®, and S&P 500® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by SaratogaRIM. SaratogaRIM's products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the S&P 500 Index.

GIPS Composite Report

SaratogaRIM Large Cap Quality

Q3 2023

Saratoga Research & Investment Management | SaratogaRIM.com | (408) 741-2330 | 14471 Big Basin Way, Suite E, Saratoga, CA 95070

Composite Performance Statistics

Year	Composite Gross TWR	Composite Net TWR	Composite Net Max TWR	S&P 500 Total Return	Standard Deviation	3 Yr Ann Standard Dev: Composite Net TWR	3 Yr Ann Standard Dev: S&P 500 Total Return	# of Portfolios in Composite	End of Period Composite Assets	End of Period Total Firm Assets
2000 (2/29)	31.62	30.58	30.82*	-2.45	n/a	-	-	44	13,012,273.41	26,739,562.04
2001	-1.54	-2.51	-2.27*	-11.93	2.87	-	-	56	24,787,551.38	36,880,632.99
2002	-8.93	-9.74	-9.60*	-22.06	1.84	-	-	79	28,949,501.66	39,231,009.25
2003	18.16	17.09	17.27*	28.68	2.09	-	-	87	37,399,754.37	52,738,112.73
2004	1.33	0.40	0.56*	10.88	2.06	-	-	90	39,743,734.02	58,324,543.15
2005	7.02	6.02	6.21*	4.91	2.29	-	-	88	39,293,990.53	61,636,483.18
2006	17.03	15.93	16.17*	15.80	3.14	-	-	83	44,027,113.77	73,239,570.18
2007	11.68	10.62	10.86*	5.49	2.86	-	-	84	48,997,165.75	79,207,247.76
2008	-11.48	-12.34	-12.15*	-37.00	3.24	-	-	112	50,664,984.48	80,940,276.87
2009	25.04	23.91	24.05*	26.46	2.60	-	-	260	149,105,345.03	183,475,714.03
2010	14.26	13.42	13.42*	15.06	0.79	-	-	491	308,291,988.80	419,588,547.25
2011	4.32	3.70	3.53	2.11	0.53	11.86	18.71	1,176	675,883,971.31	758,793,592.13
2012	9.93	9.31	9.11	16.00	0.61	9.98	15.09	1,540	950,046,377.00	1,044,968,031.90
2013	21.65	20.98	20.75	32.39	1.63	7.85	11.94	1,823	1,259,241,527.31	1,403,561,332.55
2014	10.59	9.99	9.76	13.69	0.94	6.30	8.97	1,913	1,338,659,044.57	1,614,090,418.39
2015	1.84	1.28	1.07	1.38	1.00	6.96	10.47	1,983	1,266,678,096.48	1,638,083,262.32
2016	6.95	6.35	6.15	11.96	0.89	6.48	10.59	2,196	1,329,320,194.32	1,800,890,893.30
2017	17.72	17.07	16.85	21.83	1.52	6.15	9.92	2,383	1,481,531,427.12	2,113,160,549.13
2018	0.41	-0.14	-0.34	-4.38	0.48	6.54	10.80	2,480	1,401,704,942.18	2,013,567,458.02
2019	18.03	17.38	17.14	31.49	2.08	7.39	11.93	2,583	1,505,375,555.14	2,333,608,905.18
2020	11.05	10.44	10.22	18.40	0.95	9.93	18.53	2,428	1,458,530,696.52	2,631,534,466.80
2021	14.96	14.32	14.09	28.71	1.15	9.56	17.17	1,921	1,439,757,287.98	2,957,751,865.10
2022	-8.41	-8.92	-9.10	-18.11	0.78	11.63	20.87	1,739	1,156,118,739.10	2,603,780,552.47
09/30/23	4.85	4.42	4.26	13.07	n/a	10.94	17.60	1,691	1,170,544,019.34	2,684,014,809.94
Trailing Annualized Returns as of 09/30/23										
1 Year	13.23	12.62	12.38	21.61						
5 Year	6.16	5.58	5.37	9.92						
10 Year	8.19	7.59	7.38	11.92						
Composite Inception	8.72	7.93	7.91	6.98						

**The highest potential fee rate for existing and prospective clients is currently 0.75%. Actual fee rates charged in prior years may have been higher and as a result cause the Composite Net Max TWR to be higher than the Composite Net TWR.*

Firm Description: Saratoga Research & Investment Management ("SaratogaRIM" or "the Firm") is an SEC Registered Investment Advisor specializing in the construction and management of equity portfolios composed of high caliber businesses utilizing common sense investment principles. SEC Registration does not constitute an endorsement of the Firm by the Commission, nor does it indicate the advisor has attained a particular level of skill or ability. The Firm's investment process is designed to meet the long-term needs of conservative individual and institutional investors. Advisory services are not made available in any jurisdiction in which SaratogaRIM is not registered or otherwise exempt from registration. The Firm was founded in 1995; prior to March 7, 2007, Saratoga Research & Investment Management was known as Tanner & Associates Asset Management.

Composite Description: The SaratogaRIM Large Cap Quality Composite (SaratogaRIM Equity Composite) includes all discretionary portfolios that invest in what the Firm believes to be high-quality companies with low balance sheet, business model (including capital intensity) and valuation risk. This composite allows cash to accumulate at certain stages of the market cycle and has no maximum cash position size. Individual position sizes typically range from 1.5% to 6% of the total portfolio value, but there is no maximum size for an individual position. While the investment criteria for this composite narrows the investable universe to predominantly large-cap companies based in the U.S., the composite has no restrictions on market cap size or where the company is domiciled. Investment ideas that do not meet the stated composite criteria ("outside the box ideas") are allowed so long as they do not cumulatively represent more than 10% of the total portfolio value. Prior to December 31, 2009, client-directed securities may have been permitted so long as they did not represent more than 10% of the total portfolio value. The minimum requirement to establish a new account is $100,000. The minimum asset level is $50,000 (prior to August 30, 2010, there was no account minimum). Inception date: February 29, 2000. Creation date for GIPS: August 30, 2010.

GIPS Compliance: SaratogaRIM claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. SaratogaRIM has been independently verified by The Spaulding Group for the periods March 1, 2000 through December 31, 2022. | A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. The SaratogaRIM Large Cap Quality Composite has had a performance examination for the periods February 29, 2000 through December 31, 2022. The verification and performance examination reports are available upon request. | GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein. | A list of SaratogaRIM's composite descriptions is available upon request. Policies for valuing investments, calculating performance, and preparing GIPS reports are available upon request. To obtain GIPS-compliant performance information for SaratogaRIM's strategies and products, please contact Marc Crosby, President, at (408) 741-2332 or Marc@SaratogaRIM.com.

Disclosures: Results of the SaratogaRIM Large Cap Quality Composite do not reflect the results of any one portfolio in the composite. Valuations are computed and performance is reported in U.S. dollars based on trade dates as of month-end, net-of-fees, while accounting for dividend reinvestment. Aggregate composite returns are calculated using the Average Capital Base equation (also known as the Modified Dietz method), which utilizes the beginning asset value plus weighted cash flows. Gross and Net TWRs are calculated based on the geometric linking of the monthly internal rate of return for portfolios present for the entire month. Individual portfolios are revalued monthly; portfolios are also revalued intra-month when large external cash flows occur in excess of 10% of the portfolio's fair value. Daily reconciliation is performed between the Firm's records and the custodian and broker records through Advent to verify client assets. Gross-of-fee returns are calculated gross of management, custodial and external consultant or advisory fees and net of transaction costs. Net-of-fee returns are calculated net of actual management fees and transaction costs and gross of custodian fees and external consultant or advisory fees. Prior to October 31, 2022, non-fee-paying accounts were included in composite net-of-fee return calculations without a fee rate; per the SEC Marketing Rule effective November 4, 2022, net-of-fee returns labeled "Net" now include a model fee rate of 0.75% for all non-fee-paying accounts. The model fee rate for non-fee-paying portfolios was applied quarterly until October 2022, when the Firm switched to deducting monthly. Additionally, a separate net-of-fee return calculation has been added to SaratogaRIM marketing materials using the current maximum fee rate charged by SaratogaRIM for the SaratogaRIM Large Cap Quality Composite (0.75%, labeled "Net Max"). The "Net Max" return fee data represents the reduction of the gross of fee composite returns by the monthly portion of the annual model fee rate of 0.75%. SaratogaRIM fee is normally 0.75% for the SaratogaRIM Large Cap Quality Composite; may be negotiated, as warranted by special circumstances. Dispersion is calculated as the asset-weighted standard deviation of annual net-of-fee portfolio returns around the median net-of-fee portfolio return in the composite. Dispersion is based only on portfolios that were in the composite for the full annual period and is only shown for the annual periods where the composite had more than 5 portfolios for the full year. The 3-year annual standard deviation (external dispersion) is based on net-of-fee returns. As of January 2022, SaratogaRIM's composite descriptions have been revised to better reflect the criteria used in determining composite inclusion/exclusion. The resultant updates to composite constituents for the SaratogaRIM Large Cap Quality Composite caused performance differentials that modestly exceeded the Firm's materiality threshold in four years (two years being positive and two years being negative). However, since inception annualized performance was affected by an immaterial amount (0.0026%). For additional information and calculation details, please contact Marc Crosby (Marc@SaratogaRIM.com).

Benchmark Disclosures: Benchmarks are unmanaged and provided to represent the investment environment in existence during the time periods shown. The S&P 500® Total Return Index has been selected as the benchmark for comparison purposes. The S&P Total Return Index assumes that all dividends and distributions are reinvested. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. Portfolios are managed according to their respective strategies which may differ significantly in terms of security holdings, industry weightings, and asset allocation from those of benchmarks. An index is not available for direct investment, and does not reflect any of the costs associated with buying and selling individual securities or any other fees, expenses, or charges. | The S&P 500 Index is a product of S&P Dow Jones Indices LLC ("SPDJI"), and has been licensed for use by SaratogaRIM. Standard & Poor's®, S&P®, and S&P 500® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by SaratogaRIM. SaratogaRIM's products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the S&P 500 Index.

Disclosures

See additional important disclosures and composite-specific information within the GIPS Composite Reports for SaratogaRIM Large Cap Quality Focus (page 25) and Large Cap Quality (page 29).

Saratoga Research & Investment Management ("SaratogaRIM" and "the Firm"), founded in 1995, is an SEC Registered Investment Advisor specializing in the construction and management of equity portfolios composed of high caliber businesses utilizing an investment process built on common sense investment principles for individual and institutional investors. SEC Registration does not constitute an endorsement of the Firm by the Commission, nor does it indicate the advisor has attained a particular level of skill or ability. Advisory services are not made available in any jurisdiction in which SaratogaRIM is not registered or otherwise exempt from registration.

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As additional peer group comparison data for the relevant period becomes available through Morningstar, statistics within the Composite Statistics pages may be updated and subsequently replaced within the version of this quarterly report that is published to SaratogaRIM.com. The Composite Statistics report generation date can be found within the footers of each Composite Statistics report. The original Quarterly Report publish date is located on the upper right hand corner of the Quarterly Report cover page and the main report page footers.

2023 Q3 Report Charts: All charts and tables within this report are created by SaratogaRIM. **Fig. 1** displays quarter-end sector weightings for the SaratogaRIM Large Cap Quality Focus and Large Cap Quality composites along with the S&P 500 Index using FactSet data. The "technology" component of these pie charts include two stocks from the GICS "communications" sector (GOOG, GOOGL) and two stocks from the GICS "financials" sector (MA, V). **Fig. 2** contains four charts displaying different profitability metrics for SaratogaRIM's technology sector constituents (individually and combined), S&P 500's technology constituents, and the S&P 500 Index (excluding Financials) from 2008 through 2022 (using data from FactSet). The SaratogaRIM and S&P figures displayed within the charts do not reflect actual market or composite performance, rather the metrics as labeled in the corresponding chart title. Gross profit to assets (GPA) is a ratio used to determine how efficiently a firm uses its assets to generate gross profits. It is calculated as gross profits divided by the firm's total assets. Gross profits is calculated as revenues minus cost of goods sold. Total assets is the sum of all current and long-term assets. Return on invested capital (ROIC) is a calculation used to assess the profitability of internal investments made by a company. It is calculated by dividing net operating profit after tax (NOPAT) by invested capital. All metrics in the ROIC and Gross Profit to Assets charts are derived from FactSet's data and calculations. It is important to note that neither Oracle nor Visa explicitly discloses total cost of revenue or total gross profit; Average Gross Profit to Assets figure uses historical estimates from FactSet. **Fig. 3** illustrates cumulative daily return estimates calculated by FactSet utilizing month-end holdings data for the relevant period shown and may differ from actual performance. Ending label data points represent actual net performance and net max performance. Past investment results are not a guarantee of future results. For further information or clarification regarding any of the charts or concepts within this report, please email your *specific* questions to InvestorRelations@SaratogaRIM.com.

Gross-of-fee returns are calculated gross of management, custodial and external consultant or advisory fees and net of transaction costs. Net-of-fee returns are calculated net of actual management fees and transaction costs and gross of custodian fees and external consultant or advisory fees. Prior to October 31, 2022, non-fee-paying accounts were included in composite net-of-fee return calculations without a fee rate; per the SEC Marketing Rule effective November 4, 2022, net-of-fee returns labeled "Net" now include a model fee rate of

0.75% for all non-fee-paying accounts in the SaratogaRIM Large Cap Quality composite/1.00% in the SaratogaRIM Large Cap Quality Focus composite. Additionally, a separate net-of-fee return calculation has been added to SaratogaRIM marketing materials using the current maximum fee rate charged by SaratogaRIM for the corresponding composite, labeled "Net Max" (0.75% for the SaratogaRIM Large Cap Quality Composite/1.00% for the SaratogaRIM Large Cap Quality Focus Composite). Calculations are available upon request. Information pertaining to the Firm's advisory fees is set forth in SaratogaRIM's current disclosure statement, which is available upon request. Results of the SaratogaRIM Large Cap Quality Composite & the SaratogaRIM Large Cap Quality Focus Composite do not reflect the results of any one portfolio in those composites.

Benchmarks are selected based upon similarity to the investment style of the Firm's composites and accepted norms within the industry. Benchmarks are provided for comparative purposes only and holdings of the Firm's clients' portfolios will differ from actual holdings of the benchmark indexes. Benchmarks are unmanaged and provided to represent the investment environment in existence during the time periods shown. The benchmarks presented were obtained from third-party sources deemed reliable but not guaranteed for accuracy or completeness. Indices are unmanaged, hypothetical portfolios of securities that are often used as a benchmark in evaluating the relative performance of a particular investment. An index should only be compared with a mandate that has a similar investment objective. An index is not available for direct investment, and does not reflect any of the costs associated with buying and selling individual securities or management fees.

The S&P 500 Total Return is the total return version of the S&P 500 Index, which has been widely regarded as the best single gauge of large-cap U.S. equities since 1957. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. (Note: A total return index assumes that all dividends and distributions are reinvested.) The S&P 500 Index is a product of S&P Dow Jones Indices LLC ("SPDJI"), and has been licensed for use by SaratogaRIM. Standard & Poor's®, S&P® and S&P 500® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by SaratogaRIM. SaratogaRIM's products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the S&P 500 Index.

Direct clients may access their portfolio information and reports including client-specific information through SaratogaRIM's Client Portal. If you are a direct client needing Client Portal access or assistance, please call (408) 741-2330 or email ClientService@SaratogaRIM.com. The Firm recommends that you compare your Saratoga Research & Investment Management reports with the ones you receive from your custodian(s). The custodian of record is required under current law to provide separate account statements. Market values reflected in the custodian's statement and those cited in this report may differ due to the use of different reporting methods. To the extent that any discrepancies exist between the custody statement and this report, the custody statement will take precedence. Values may vary slightly because of situations such as rounding, accrued interest or the timing of information reporting. A fee statement showing the amount of the Asset-Based fee, the value of clients' assets on which the Asset-Based fee is based and the specific manner in which the Asset-Based fee was calculated are available from SaratogaRIM upon request. As a general rule, SaratogaRIM does not disclose private information regarding clients' accounts unless the Firm relies on certain third parties for services that enable the Firm to provide its investment services to their clients. The Firm may also disclose nonpublic information where required to do so under law.

If you wish to become a client of SaratogaRIM, you will be required to sign an Investment Advisory Agreement that exclusively governs the relationship between you and SaratogaRIM. You will also be required to review SaratogaRIM's most recent Privacy Notice, Form CRS, and Form ADV, which are publicly available on SaratogaRIM.com/documents. To receive a printed copy of the Firm's Privacy Notice, Form CRS, or Form ADV, please contact Marc Crosby, President, at (408) 741-2332 or Marc@SaratogaRIM.com.

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