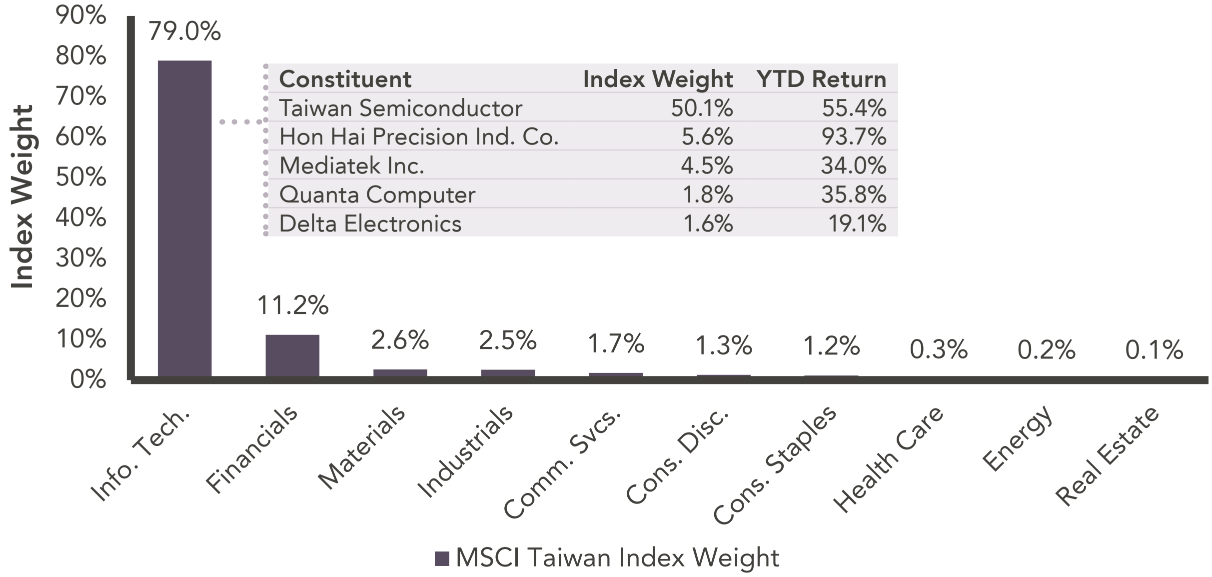
Chart of the Week

July 31, 2024

Semi-Charmed Country

JULIA SHEEHAN, ASSOCIATE RESEARCH ANALYST

The Taiwanese equity market is technology-heavy, with just one position (Taiwan Semiconductor Manufacturing Company) accounting for more than 50% of the MSCI Taiwan Index



Constituent	Index Weight	YTD Return
Taiwan Semiconductor	50.1%	55.4%
Hon Hai Precision Ind. Co.	5.6%	93.7%
Mediatek Inc.	4.5%	34.0%
Quanta Computer	1.8%	35.8%
Delta Electronics	1.6%	19.1%

Source: MSCI as of June 30, 2024

Index concentration has been top of mind for investors in recent time, as fervor surrounding advances in artificial intelligence has led to outsized weights of a handful of constituents (e.g., Microsoft, Nvidia, etc.) within domestic equity benchmarks like the S&P 500 Index. It is important to note, however, that index concentration is not simply a domestic phenomenon. For example, the Taiwanese equity market is notably exposed to technology-oriented companies, as roughly 80% of the MSCI Taiwan Index is comprised of Information Technology positions. Moreover, the index is heavily tilted toward one company in particular: Taiwan Semiconductor Manufacturing Company (TSMC). TSMC comprises just over 50% of the benchmark and has generated a year-to-date return of roughly 55% through the end of June. As it relates to these dynamics, readers may call to mind two questions: First, how did technology (and semiconductor manufacturing, in particular) come to play such an integral role within the Taiwanese economy? And second, to what extent are global semiconductor supply chains reliant on Taiwan?

TSMC was founded in 1987, with capital provided by the Taiwanese government in hopes of starting a new national industry. At that time, the company decided to focus solely on semiconductor production, which meant creating fabrication plants to manufacture chips for other businesses. This innovative model, commonly

CONTINUED >

known as the foundry model, allowed TSMC to work with semiconductor companies that designed their own chips as opposed to competing against them. It is evident now that this model was hugely successful, as the current revenue share of TSMC accounts for more than 60% of the global semiconductor foundry market. The total market share of Taiwan reaches 70% when one includes other Taiwanese foundry companies (e.g., UMC, PSCM, and VIS). Factors that have led to the country's strong success in this market include the aforementioned creation of the foundry model, as well as the highly efficient nature of Taiwanese semiconductor companies and the fact that employees in Taiwan's semiconductor workforce are compensated well relative to those employed in other industries.

Taiwan is clearly the dominant participant in the foundry market, but it is important to note that the production of semiconductors depends on multiple players, including "fabless" chip designers (e.g., NVIDIA), companies that test and package chips, and end manufacturers. This means that the semiconductor supply chain extends well beyond Taiwan, although the country's role within that chain is clearly crucial, as evidenced by the global chip shortage during the COVID-19 pandemic. In the wake of that shortage, and with continued geopolitical concerns surrounding China and Taiwan, countries around the world have aimed to de-risk supply chains and, therefore, have made significant investments in their domestic semiconductor industries. To that point, many European countries, as well as China, Japan, and the United States, have all committed significant resources to this endeavor. With increasingly complex artificial intelligence requiring more sophisticated chips, the semiconductor space still appears to present compelling investment opportunities, both within Taiwan and throughout the rest of the world.

PREPARED BY MARQUETTE ASSOCIATES

180 North LaSalle St, Ste 3500, Chicago, Illinois 60601
CHICAGO BALTIMORE MILWAUKEE PHILADELPHIA ST. LOUIS

PHONE 312-527-5500
WEB marquetteassociates.com

About Marquette Associates

Marquette was founded in 1986 with the sole objective of providing investment consulting at the highest caliber of service. Our expertise is grounded in our commitment to client service — our team aims to be a trusted partner and as fiduciaries, our clients' interests and objectives are at the center of everything we do. Our approach brings together the real-world experience of our people and our dedication to creativity and critical thinking in order to empower our clients to meet their goals. Marquette is an independent investment adviser registered under the Investment Advisers Act of 1940, as amended. Registration does not imply a certain level of skill or training. More information about Marquette including our investment strategies, fees and objectives can be found in our ADV Part 2, which is available upon request and on our website. For more information, please visit www.MarquetteAssociates.com.