

## **2024 Starts Off with a Bang**

### ***Chip Shares Rally on NVDA Strength, but Stats and 1Q Outlook are Weak***

The REALLY BIG NEWS in semiconductors last month was Nvidia's F4Q earnings—that truly was jaw-dropping impressive: A multi-billion-dollar company growing faster than the universe is expanding and more profitable than, well, Elon Musk—all thanks to AI. Okay, I'm exaggerating. But Wall Street didn't think so and promptly took NVDA and the rest of the chip sector 'to the moon.'

Unfortunately, other than Nvidia's financials the rest of the semiconductor sector data is relatively downbeat: 1Q guidance from 4Q earnings season is calling for an unusually weak decline averaging -5.5%; January industry statistics dropped only slightly better than average sequentially at -2.1%; and over half of the equities in my Tokeneke Universe have declined year-to-date through February. Yes, this is supposed to be a double-digit growth year for chip revenues lead by AI and memory and automotive, but it sure isn't starting off very well. Unless you're Nvidia, of course.

As noted last month, I think expectations for this year need to be downgraded. While AI and memory are legitimately large growth opportunities, the rest of the industry's markets—PCs, smartphones, servers, industrial, communications—are experiencing malaise or transitions, or both.

In the meantime the SOX index is way over-extended versus the S&P500, and most fundamental valuations across the sector are less than attractive—and in fact, fully valued in many cases. Net-net, I would be very careful and extremely selective approaching potential chip sector opportunities at this time.

**Huawei-ization:** Another new vocabulary word last month, compliments of DigiTimes. This one reflects a parallel universe of products and technologies developed in China amid US attempts to limit advanced technology transfers. Huawei has been in the dog house with the US for a number of years which forced it out of the smartphone business only to subsequently re-enter with its own non-Android O/S and non-Qualcomm application processor. DigiTimes coined the term to describe a new wireless technology from Huawei called NearLink which is kind of a knock-off combination of WiFi and low-power Bluetooth. I still consider this part of the 'new normal' chaos with every semiconductor company doing what it can to preserve its supply chain and sales in a variety of ad hoc fashions amid US technology sanctions while China develops some of its own supply chains and technologies—although I agree Huawei-ization is at the very dark-gray end of the spectrum approaching discrete market and supply separation.

Recall last month's *Indigenization* word describing regional supply chain developments, which I consider to be more generally reflective of this 'new normal.' Also recall China's hoarding of equipment and leading-edge chips last year ahead of anticipated embargoes, which I think will cause them to eventually flood world-wide markets with mature-technology devices, albeit after the lack of Chinese market access to our pricey, leading-edge products stymies the sales of such offerings.

**Structural Differences:** Recall that my US-equity-based Tokeneke Universe does *not* include some three-quarters of industry memory business from Samsung, SK Hynix and Kioxia. While my Universe does include Micron and Western Digital, it will probably under-perform expected industry growth in 2024 due to under-representation of more robust expected memory growth. My Tokeneke Universe also does *not* include very large international players (aforementioned memory guys plus MediaTek, Infineon, Renesas, Rohm, Winbond, Macronix, Nanya, Novatek, Realtek) although it does include wafer foundries (TSMC, UMC, GlobalFoundries, Skywater Tech, Tower Semi) and IP companies (Rambus, Xperi, Ceva, InterDigital, Arm, Adeia) that count as costs associated with manufacturing rather than industry sales. I also normalize fiscal quarters to the best fitting two out of three months. Unreported acquisition stub-periods and mergers exiting the sector can also make a difference.

While these differences are significant, most US-based investors experience the sector from the Tokeneke Universe perspective. The Philadelphia Semiconductor Index Option (SOX) is similarly under-represented in memories, although this is mitigated by the inclusion of equipment firms supplying to memory firms (*or maybe not*).

**Average January Decline:** Worldwide chip industry revenues for January declined by -2.1% sequentially on a three-month rolling average basis, according to statistics released by the Semiconductor Industry Association (SIA) earlier this week. The positive spin is that the year-year growth of +15.2% is the largest since May 2022 and the very slightly above average number is better than I expected. Nevertheless: January is a seasonally down month; this report is just a skosh above normal; and it is the first sequential monthly decline since last February. January has averaged a decline of -2.2% with a high of +1.7%, a low of -12.2%, and 32 declines in the last 37 years,

including 11 of the last 12. All regions dropped: Japan was the worst at -3.9% followed by Europe at -2.8%, China at -2.5%, The Americas at -1.5% and then Asia-Pacific at -1.4%. See the Charts on Page 3 of this report.

Next month's release of February statistics is likely to be much weaker than normal, in my opinion, based on abysmal 1Q guidance during 4Q earnings season as well as Chinese New Year landing on February 10 this year that always creates a holiday-induced crater in the numbers. February has averaged a decline of -2.1% with a high of +2.5%, a low of -7.7%, and 30 declines in the last 37 years, including all of the last 19.

**Really Bad 1Q Outlook:** The 1Q revenue outlook based on management guidance is well below average after 48 out of 53 companies in my Tokeneke Universe have reported by the end of last week. The specific weighted average revenue guidance calls for a sequential decline of -5.5% this quarter, ranging from -8.5% to -2.5%. And if I exclude Nvidia it drops to -9.0% ranging from -12.2% to -5.8%. The 1Q is seasonally the weakest quarter of the year with an average sequential revenue decline of -2.1%, a high of +9.2%, a low of -19.4%, and 25 declines in the last 37 years—including 11 of the last 12, according to industry statistics.

**Another Deal Bites the Dust:** Renesas backed out of its proposed purchase of Sequans Communications for \$3.03 per ADS in cash after multiple extensions following an adverse tax ruling by Japanese authorities. Banking deals so far this year include: Xperi divesting Autosense to Tobii; Qorvo buying Anokiwave; Ceva divesting its Intrinsic Design group; Renesas purchasing PCB-maker Altium; Broadcom divesting the User Computing division from its acquisition of VMware to KKR for \$4B; and GlobalFoundries cleared to collect CHIPs benefits amounting to \$1.5B. Open and/or pending deals include: Western Digital plans to split its hard-drive and flash operations into two separate companies 2H24; Silicon Motion suing MaxLinear for backing out of its takeover last year; and Infinera rumored to be shopping itself last March before it stumbled into a revenue recognition review triggered by EY late-3Q23.

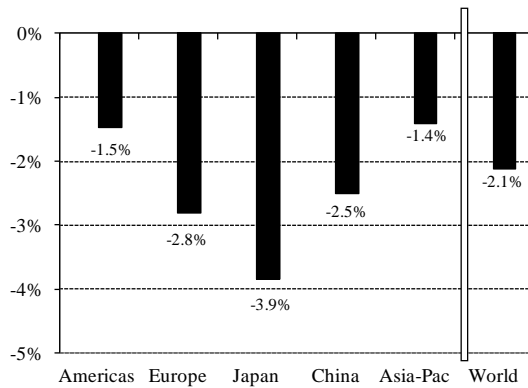
**Big Chip Rally:** Semiconductor sector share prices rallied hard and wide last month even before Nvidia turbo-charged equities after announcing earnings on Feb 21. During February the Philadelphia Semiconductor Index Option (SOX) gained +10.9% and significantly outperformed broader market indices, while 35 out of 54 stocks in my Universe advanced by an average of +7.8%. Year-to-date the SOX is outperforming broader equity markets with a gain of +13.2%, although only 23 out of 54 stocks in my Universe advanced by an underperforming +2.3%. Broader markets have gained with the NASDAQ, S&P500 and DOW up by +7.2%, +6.8%, and +3.5%, respectively.

February				YTD				Indices		
Winners (35/54)		Losers		Winners (23/54)		Losers			Feb	YTD
GSIT	110.1%	SQNS	-77.2%	PXLW	102.3%	SQNS	-76.3%	SOX	10.9%	13.2%
ARM	99.6%	WOLF	-20.1%	ARM	87.7%	MBLY	-41.2%	SMH	14.0%	21.2%
PXLW	49.7%	AOSL	-14.7%	NVDA	59.8%	WOLF	-40.2%	NASDAQ	6.1%	7.2%
SKYT	33.8%	RMBS	-13.6%	GSIT	57.6%	SITM	-24.2%	S&P500	5.2%	6.8%
QUIK	31.2%	SITM	-13.2%	AMD	30.6%	MX	-24.0%	DOW	2.2%	3.5%
average stock +7.8%		SOX +10.9%		average stock +2.3%		SOX +13.2%				

**Stocks Still Scary:** As I noted last month, I think expectations for this year need to be downgraded. While AI and memory are legitimately large growth opportunities, the rest of the industry's markets—PCs, smartphones, servers, industrial, communications—are experiencing malaise or transitions, or both. In the meantime the SOX index is way over-extended versus the S&P500 (note the relative premium of the SOX in the chart on Page 4 of this report), and most fundamental valuations across the sector are less than attractive—and in fact, fully valued in many cases. Net-net, I would be very careful and extremely selective approaching potential chip sector opportunities at this time.

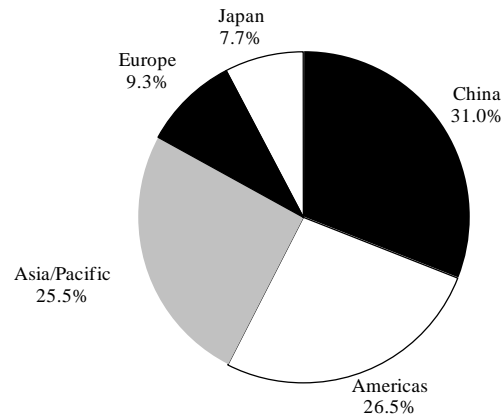
—Dan K. Scovel  
Semiconductor Analyst

**January 2024 Semiconductor Growth by Region**  
(compared with prior month)



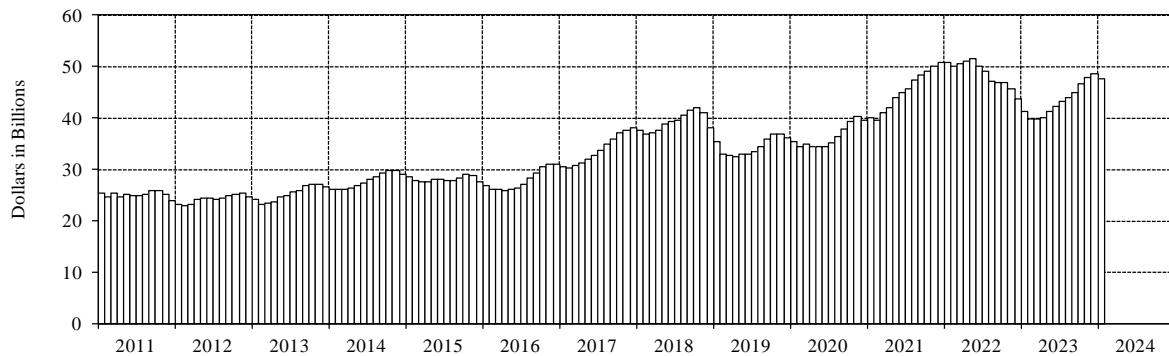
Source: WSTS and Tokeneke Research LLC

**January 2023 Semiconductor Revenue by Region**



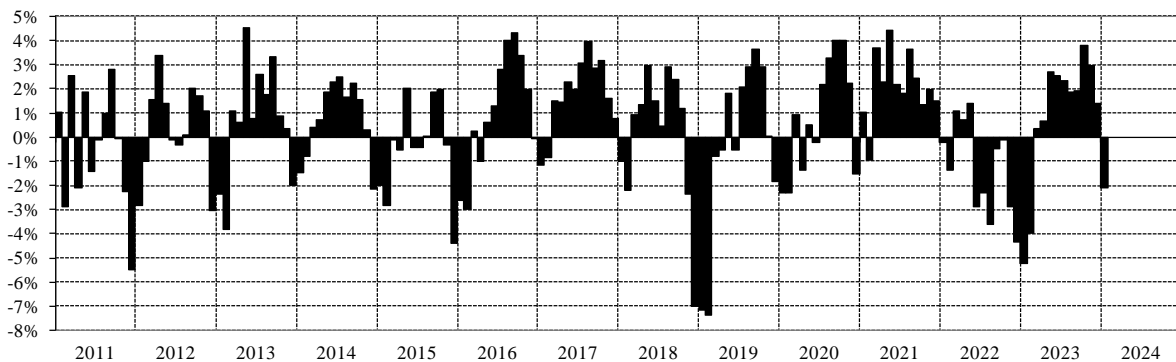
Source: WSTS and Tokeneke Research LLC

**Worldwide Semiconductor Revenues**  
3-month Rolling Average

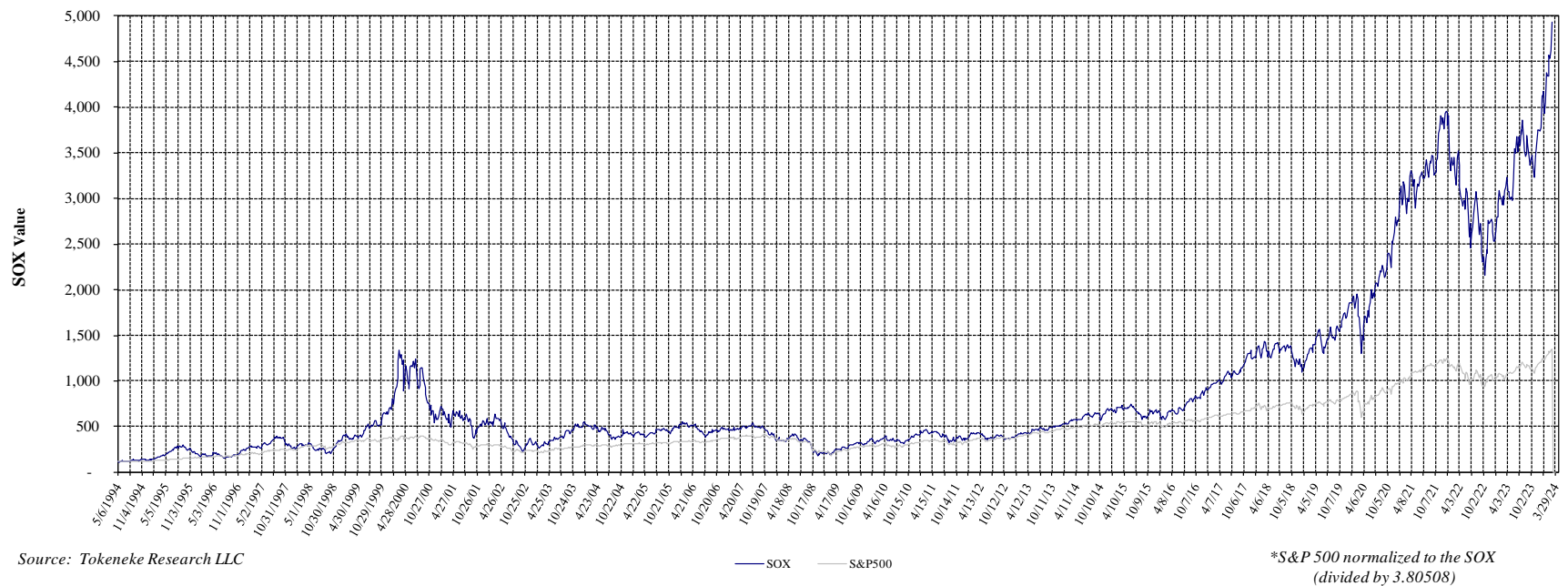


Source: WSTS and Tokeneke Research LLC

**Worldwide Semiconductor Revenue Growth**  
Sequential 3-month Rolling Average



Source: WSTS and Tokeneke Research LLC

**Weekly Philadelphia Semiconductor Index Option (SOX) vs. S&P 500**

### **The Company**

Tokeneke Research is an independent research firm specializing in semiconductor industry business issues, providing fundamental research focused on US equities across all market capitalizations within the sector to investors. The company was founded in 2005 and is based in Connecticut.

### **The Offering**

- *Monthly Newsletter:* A summarized review of noteworthy industry business developments, sales statistics, and sector equity market performance, as well as a near-term and annual outlook for sector business fundamentals and share prices. This report typically includes two pages of text and a handful of recurring charts and tables. It is intended for relatively broad-based distribution.
- *Industry Reports:* Publications offering insight and perspective to industry-wide, multi-year forecast updates; periodic sub-sector product type and end-market reviews; fundamental and valuation perspectives on sector equity relationships; and industry introductory overview. These are more detailed reports with varying shelf-lives, and are intended for narrow distribution to interested clients.
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### **My Background**

I have an electrical engineering background, nearly 12 years of semiconductor industry experience, and was on Wall Street for nearly eight years where I was selected as the Best On The Street semiconductor analyst for 2002 by The Wall Street Journal, and third-rated Best of the Best across all sectors.

I obtained my undergraduate BS degree in electrical engineering from the University of Washington, and my MBA from Santa Clara University. My industry experience consists of nearly 12 years in various technical sales and marketing roles at four different semiconductor firms located in Silicon Valley beginning with Advanced Micro Devices in 1984, followed by two small start-up companies, and ending at Cirrus Logic where I supported the firm's Japanese market development. I joined Farnestock & Co. as a senior semiconductor analyst in 1996 and was recruited by Needham & Co. in April 2000.

My formal coverage list as a sell-side analyst included the following equities: AMD, ALSC, ALTR, ARTI, ATML, CUBE, CY, ESST, GNSS, INTC, ISSI, LSI, MOSY, MU, OIIM, OVTI, RMTR, SIII, SMSC, STEC, SVTG, TDFX, TSRA, TXN, and ZRAN.

**—Dan K. Scovel**  
*Semiconductor Analyst*

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