

Apple Inc.

AI/Vision Pro; end of negative EPS est revisions; upgrade to Buy; PO to \$225

Rating Change: BUY | PO: 225.00 USD | Price: 182.68 USD

AI/Vision Pro are drivers for upside to Hardware, Services

We upgrade Apple to Buy from Neutral, given: 1) stronger multi-year iPhone upgrade cycle driven by need for the latest hardware to enable Generative AI features to be introduced in 2024/2025 (large part of installed base still on iPhone 11), 2) higher growth in Services as Apple better monetizes its installed base (see our [deep dive](#)), 3) silicon roadmap to morph from PC to Servers to Autonomous, driving higher margins, 4) capital returns strong (buybacks, dividend) even post approaching net cash neutral, 5) GM stable to higher over time (mix, price, vertical integration), 6) AAPL remains underweighted vs. S&P500 (Fig 13, 14) and anticipation of AI features could induce institutional investors to increase positions, 7) risk around legal issues is manageable, and 8) recent relative underperformance suggests many risks baked into expectations (since 7/1/23, AAPL -5% vs. SPX +6%, AMZN +17%, META +29%, MSFT +15%).

Raising iPhone and Services estimates

Investor focus is shifting to the expected launch of Vision Pro in Feb 2024 and AI enabled iPhones in 2024/2025. We raise our iPhone unit ests (F24/F25/F26 go from 231mn/244mn/230mn to 233mn/250mn/250mn), and our Services ests (F24/F25 go from \$95bn/\$107bn to \$97bn/110bn, respectively). Our EPS ests for F25/F26 are now higher than the Street by 7% /4% (Fig 4). In Services, we see traction with a broader installed base with several categories including advertising, and health & fitness.

Look past near term order changes in supply chain

Our checks suggest higher iPhone production in Dec and potentially lower in March but no aggregate material order changes. FX tailwinds provide rev, margin offset. China weakness is largely offset by strength in other countries (Fig 15). We expect Apple to introduce AI driven features in iOS18 with monetization through better iPhone hardware and AI enabled third party apps. Vision Pro could surpass iPad revs over time as spatial computing takes hold offering differentiated use cases driving services upside.

Risk factors; PO moves to \$225 (from \$208)

Risk factors include GM pressure from higher bill of materials (BOM) costs, order cuts from weaker demand, China iPhone pressure, delayed AI uptake, and weaker consumer spending. PO to \$225 (from \$208) on 32x (unch) C24E EPS of \$7.00 (prior \$6.45).

Estimates (Sep) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	6.11	6.13	6.73	7.62	8.17
GAAP EPS	6.12	6.12	6.73	7.62	8.17
EPS Change (YoY)	8.9%	0.3%	9.8%	13.2%	7.2%
Consensus EPS (Bloomberg)			6.62	7.15	7.86
DPS	0.90	0.94	0.99	1.04	1.09
Valuation (Sep)					
P/E	29.9x	29.8x	27.1x	24.0x	22.4x
GAAP P/E	29.8x	29.8x	27.1x	24.0x	22.4x
Dividend Yield	0.5%	0.5%	0.5%	0.6%	0.6%
EV / EBITDA*	21.4x	22.0x	20.4x	18.4x	17.4x
Free Cash Flow Yield*	3.9%	3.5%	3.6%	3.8%	4.1%

* For full definitions of *IQmethod*SM measures, see page 21.

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Timestamp: 18 January 2024 06:00AM EST

18 January 2024

Equity

Key Changes

(US\$)	Previous	Current
Inv. Opinion	B-2-7	B-1-7
Inv. Rating	NEUTRAL	BUY
Price Obj.	208.00	225.00
2024E Rev (m)	401,034.3	405,214.3
2025E Rev (m)	427,207.6	438,715.1
2026E Rev (m)	432,062.8	456,671.7
2024E EPS	6.41	6.73
2025E EPS	6.82	7.62
2026E EPS	7.14	8.17

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Stock Data

Price	182.68 USD
Price Objective	225.00 USD
Date Established	18-Jan-2024
Investment Opinion	B-1-7
52-Week Range	133.77 USD - 199.62 USD
Mkt Val (mn) / Shares Out (mn)	2,824,579 USD / 15,461.9
Free Float	94.0%
Average Daily Value (mn)	10001.34 USD
BofA Ticker / Exchange	AAPL / NAS
Bloomberg / Reuters	AAPL US / AAPLOQ
ROE (2024E)	134.9%
Net Dbt to Eqty (Sep-2023A)	130.5%
ESGMeter TM	High

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to "BofA ESGMeter Methodology".

iQprofileSM Apple Inc.

iQmethodSM – Bus Performance*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	46.6%	47.5%	47.9%	46.9%	40.8%
Return on Equity	175.5%	171.9%	134.9%	105.0%	73.5%
Operating Margin	32.1%	31.8%	32.7%	33.4%	33.6%
Free Cash Flow	111,443	99,584	102,080	106,448	115,160

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.2x	1.1x	1.1x	1.1x	1.1x
Asset Replacement Ratio	1.0x	1.0x	1.4x	1.3x	1.2x
Tax Rate	16.2%	14.7%	16.0%	16.0%	16.0%
Net Debt-to-Equity Ratio	190.3%	130.5%	69.1%	38.5%	-3.4%
Interest Cover	NM	NM	NM	NM	NM

Income Statement Data (Sep)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	394,328	383,285	405,214	438,715	456,672
% Change	7.8%	-2.8%	5.7%	8.3%	4.1%
Gross Profit	172,026	170,452	184,642	202,566	211,847
% Change	11.7%	-0.9%	8.3%	9.7%	4.6%
EBITDA	137,601	133,300	144,113	159,707	168,394
% Change	8.5%	-3.1%	8.1%	10.8%	5.4%
Net Interest & Other Income	(291)	(765)	(755)	(656)	(395)
Net Income (Adjusted)	99,803	96,995	104,167	115,427	121,118
% Change	5.4%	-2.8%	7.4%	10.8%	4.9%

Free Cash Flow Data (Sep)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	105,764	103,187	110,803	122,416	128,460
Depreciation & Amortization	11,104	11,519	11,449	13,318	15,071
Change in Working Capital	1,200	(6,577)	(5,228)	(13,069)	(11,502)
Deferred Taxation Charge	895	0	0	0	0
Other Adjustments, Net	3,188	2,414	1,264	1,331	1,398
Capital Expenditure	(10,708)	(10,959)	(16,209)	(17,549)	(18,267)
Free Cash Flow	111,443	99,584	102,080	106,448	115,160
% Change	19.9%	-10.6%	2.5%	4.3%	8.2%
Share / Issue Repurchase	(89,402)	(77,550)	(76,000)	(76,000)	(43,000)
Cost of Dividends Paid	(14,841)	(14,875)	(15,318)	(15,751)	(16,190)
Change in Debt	(4,078)	(5,923)	0	0	0

Balance Sheet Data (Sep)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	23,646	29,965	41,499	56,195	112,166
Trade Receivables	28,184	29,508	38,734	46,017	56,216
Other Current Assets	83,575	84,093	84,947	85,065	85,679
Property, Plant & Equipment	42,117	43,715	51,301	58,820	65,737
Other Non-Current Assets	175,233	165,302	165,852	166,407	166,968
Total Assets	352,755	352,583	382,333	412,504	486,765
Short-Term Debt	21,110	15,807	10,000	10,000	10,000
Other Current Liabilities	132,872	129,501	134,886	129,768	129,637
Long-Term Debt	98,959	95,281	95,281	95,281	95,281
Other Non-Current Liabilities	49,142	49,848	49,865	49,871	49,873
Total Liabilities	302,083	290,437	290,032	284,920	284,791
Total Equity	50,672	62,146	92,301	127,585	201,974
Total Equity & Liabilities	352,755	352,583	382,333	412,504	486,765

* For full definitions of iQmethodSM measures, see page 21.

Company Sector

IT Hardware

Company Description

Apple Inc. (AAPL) designs, manufactures, and markets consumer electronics and computers, and has developed its own proprietary iOS, Mac OS, tvOS and Watch OS operating systems and related software platform/ecosystem.

Revenues are principally derived from the iPhone line of smartphones, Services, hardware sales of the Macintosh family of notebook and desktop computers, iPad tablets, and wearables.

Investment Rationale

Our Buy rating on Apple is based on: 1) expected strong iPhone upgrade cycle in F25 driven by the need for latest hardware to enable Gen AI features, 2) higher growth in Services revenue, 3) higher margins from more internally developed silicon, 4) continuing capital returns, 5) AI features that can drive higher institutional ownership, and 6) risk around legal issues being manageable.

Stock Data

Average Daily Volume 54,801,616

Quarterly Earnings Estimates

	2023	2024
Q1	1.88A	2.10E
Q2	1.52A	1.62E
Q3	1.26A	1.39E
Q4	1.46A	1.61E

Upgrade to Buy on upside from AR/VR

We upgrade Apple to Buy, from Neutral and raise our PO to \$225 based on 32x our C24E EPS of \$7.00. Our target multiple compares to the 5-year historical range of 16-34x (median 27x). We believe a multiple at the higher end of the historical range is justified given the company's large cash balance and opportunity to diversify into new end markets, and increasing mix and diversity of services.

Upside risks to our view are stronger than expected iPhone cycle, gross margin upside from better mix (higher end products), vertical integration, commodity tailwinds (ex-memory), higher services mix and FX. Faster and stronger uptake of the Vision Pro, faster than expected recovery in emerging markets, faster than expected recovery in consumer spending could drive incremental upside.

Downside risks to our view are gross margin pressure from higher bill of materials (BOM) costs, order cuts, China iPhone pressure (including competition from Huawei), delayed AI uptake, and weaker consumer spending. Other risks include adverse impact from litigation (including with EPIC Games), potential Justice Dept Antitrust case, headline risk from DOJ's investigation of Google, and negative impact from Europe's Digital Markets Act (DMA). Longer-term risks include potential trade conflicts, tariffs, a stronger USD, longer iPhone replacement cycles, commoditization of the smartphone market, intensifying competition in the tablet market, ability to manage beat and raise expectations for EPS estimates, and requirement to maintain pace of product innovation.

BofA Prior vs Revised estimates

Figure 1 shows our revised estimates. We now model 250mn iPhones for both F25 and F26 which we believe will benefit from new AI driven demand. We also raise our estimates for Apple's Services revenues to \$97bn/\$110bn/\$123bn in F24/F25/F26, respectively.

Figure 1: BofA old vs new estimates

We model F24 revenue/EPS of \$405bn/\$6.73

Units (K)	F24E	F25E	F26E	F24E	F25E	F26E	ΔF24	ΔF25	ΔF26
iPhone	231,000	244,000	230,000	233,000	250,000	250,000	2,000	6,000	20,000
iPad	51,457	50,885	50,968	51,457	50,885	50,968	0	0	0
Mac	25,843	27,135	28,492	25,843	27,135	28,492	0	0	0
iPod	1,069	855	684	1,069	855	684	0	0	0
Apple Watch	45,666	47,949	50,347	45,666	47,949	50,347	0	0	0
Old Estimates				New Estimates					
ASP (\$)	F24E	F25E	F26E	F24E	F25E	F26E	ΔF24	ΔF25	ΔF26
iPhone	\$914	\$909	\$912	\$916	\$921	\$920	\$2	\$12	\$9
iPad	\$536	\$541	\$551	\$536	\$541	\$551	\$0	\$0	\$0
Mac	\$1,132	\$1,120	\$1,108	\$1,132	\$1,120	\$1,108	\$0	\$0	\$0
iPod	\$131	\$128	\$126	\$131	\$128	\$126	\$0	\$0	\$0
Apple Watch	\$416	\$416	\$416	\$416	\$416	\$416	\$0	\$0	\$0
Old Estimates				New Estimates					
Revenue (\$)	F24E	F25E	F26E	F24E	F25E	F26E	ΔF24	ΔF25	ΔF26
iPhone rev (\$mn)	\$211,249	\$221,854	\$209,645	\$213,496	\$230,255	\$230,005	\$2,247	\$8,401	\$20,360
iPad rev (\$mn)	\$27,558	\$27,522	\$28,065	\$27,558	\$27,522	\$28,065	\$0	\$0	\$0
Mac rev (\$mn)	\$29,249	\$30,384	\$31,561	\$29,249	\$30,384	\$31,561	\$0	\$0	\$0
Watch (\$mn)	\$18,998	\$19,948	\$20,946	\$18,998	\$19,948	\$20,946	\$0	\$0	\$0
Services rev (\$mn)	\$95,216	\$106,903	\$119,224	\$97,149	\$110,009	\$123,473	\$1,933	\$3,106	\$4,249
Other rev, ex-Watch (\$mn)	\$18,764	\$20,596	\$22,621	\$18,764	\$20,596	\$22,621	\$0	\$0	\$0
Total Apple Revenue (\$mn)	\$401,034	\$427,208	\$432,063	\$405,214	\$438,715	\$456,672	\$4,180	\$11,508	\$24,609
Total Apple EPS	\$6.41	\$6.82	\$7.14	\$6.73	\$7.62	\$8.17	\$0.33	\$0.80	\$1.02

Source: Company reports, BofA Global Research estimates

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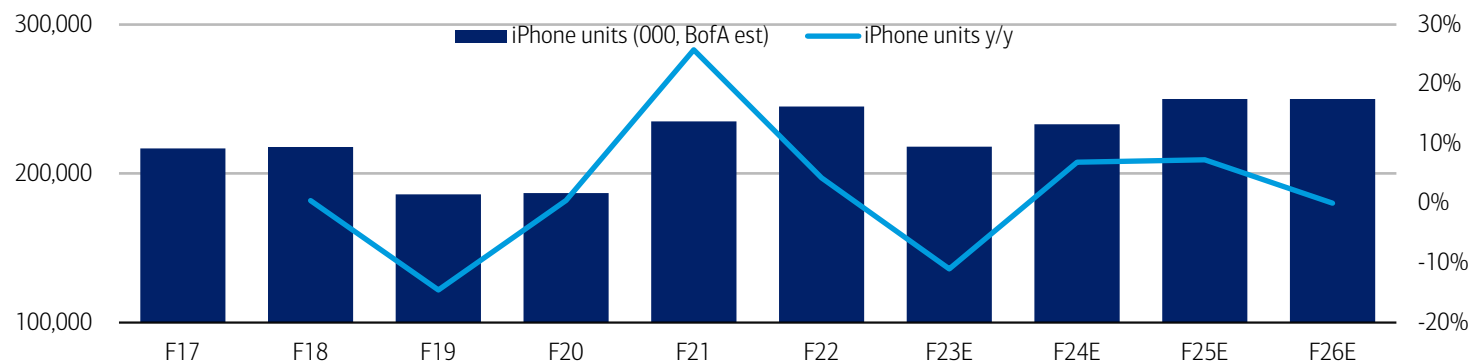


iPhone sales to benefit from AI-driven demand

We think iPhone sales in F25/F26 could be higher than prior years given AI-driven demand for more capable hardware, driving an iPhone upgrade cycle.

Figure 2: BofA estimated iPhone units, by fiscal year

We model 250mn iPhones for both F25 and F26, partly driven by AI related demand and pent up upgrade demand

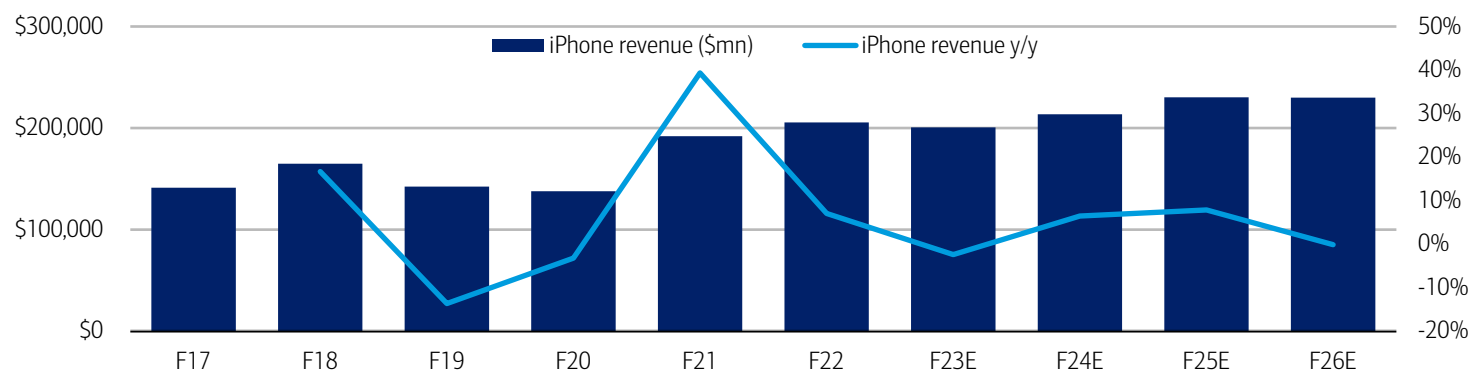


Source: Company reports, BofA Global Research estimates

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Figure 3: BofA estimated iPhone revenue, by fiscal year

We model iPhone revenue of \$230bn for both F25 and F26, partly driven by AI related demand



Source: Company reports, BofA Global Research estimates

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Figure 4: Estimates – Revised BofA ests vs. Street

We model revenue/EPS of \$405bn/\$6.73 for Apple in F24

	F24	F25
Revenue - Street (\$bn)	\$397.4	\$420.4
EPS - Street	\$6.61	\$7.21
Revenue - BofA (\$bn)	\$405.2	\$438.7
EPS - BofA	\$6.73	\$7.62
Product Revenue - Street (\$bn)	\$302.2	\$315.8
Services Revenue - Street (\$bn)	\$95.3	\$104.6
Product Revenue - BofA (\$bn)	\$308.1	\$328.7
Services Rev - BofA (\$bn)	\$97.1	\$110.0
iPhone units - Street (mn)	227.3	235.4
iPhone units - BofA (mn)	233.0	250.0

Source: Visible Alpha, BofA Global Research estimates

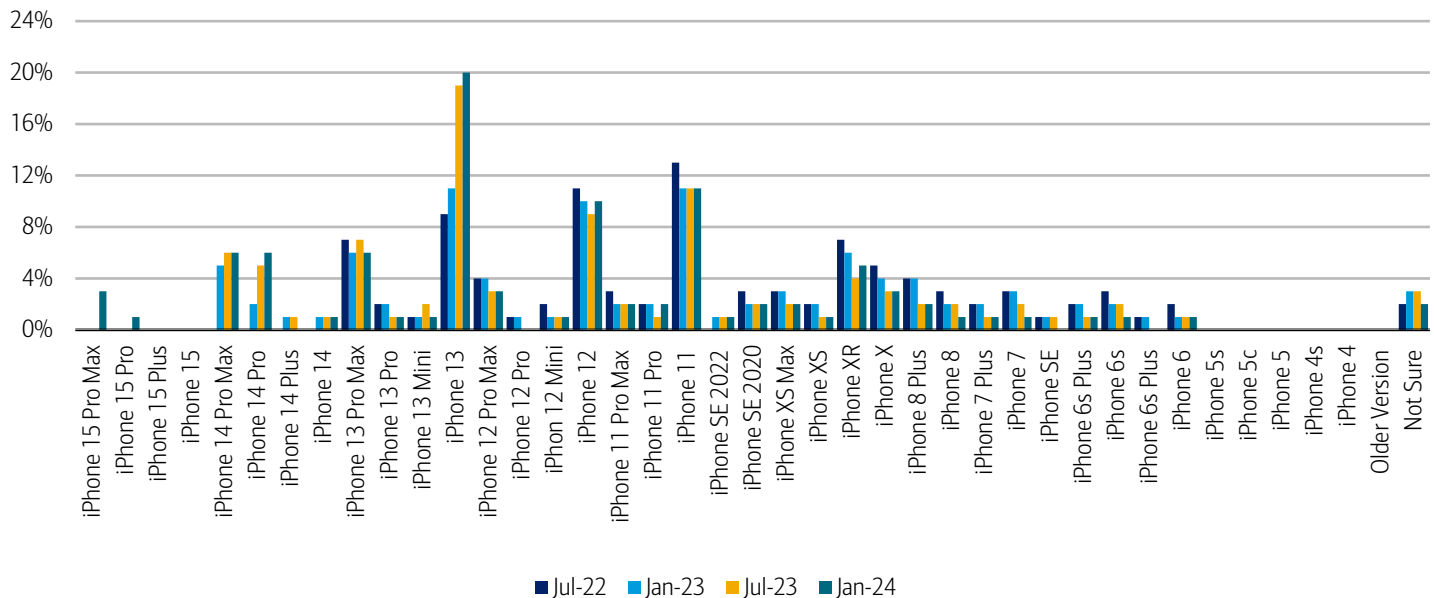
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Installed base has significant number of older phones

Our on-going global smartphone survey suggests that during the six months ended Jan 2024, 28% of respondents used a phone in the iPhone 13 family, which compares to 13% of respondents who used a phone in the iPhone 14 family. In our opinion, the iPhone installed base has a significant percent of even older iPhones, including iPhone 12 (combined 14% of respondents use iPhone 12 Mini/Pro/Pro Max), iPhone 11 (combined 15% of respondents use the Pro/ Pro Max versions). In our view, this suggests that Apple should continue to see upgrade demand from older device owners, especially as AI enabled Apps will require higher processor power.

Figure 5: iPhone ownership amongst survey respondents, rolling 6-months (Global)

High level of older iPhone usage across regions signals continued room for upgrade demand from older device owners.



Source: BofA Global Research

Sample size:

Aug 2021 – Jan 2022 = 18,678

Feb 2022 – Jul 2022 = 23,314

Aug 2022 – Jan 2023 = 31,838

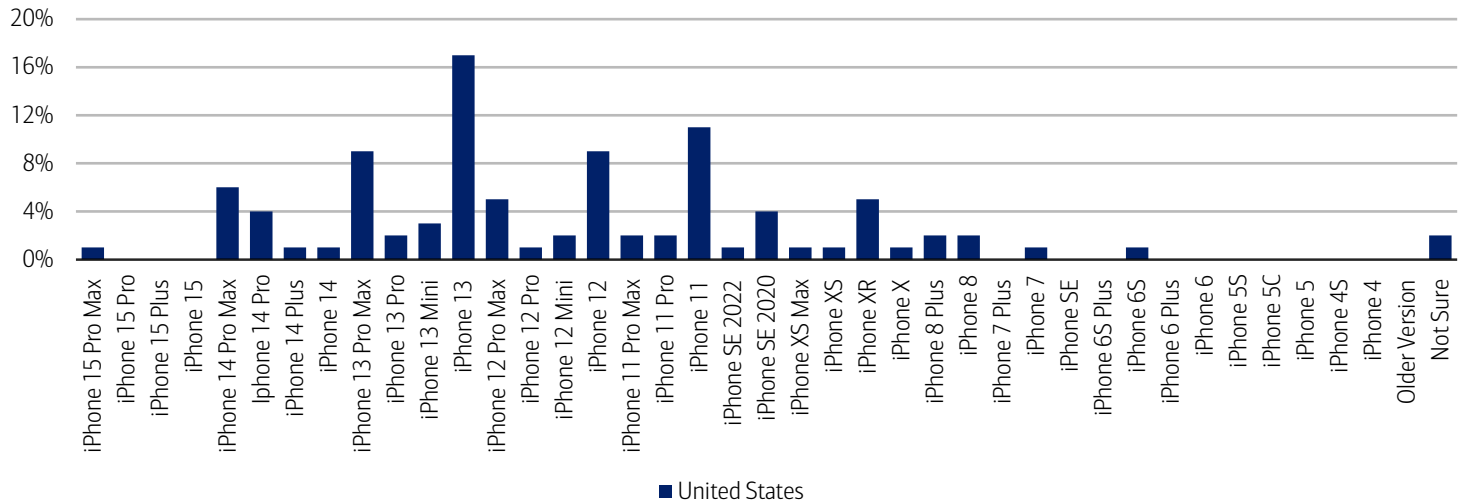
Feb 2023 – Jul 2023 = 31,855

Aug 2023 – Jan 2024 = 24,006

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Figure 6: iPhone ownership amongst survey respondents (Jan 2023 – Dec 2023), US

The top three most popular iPhones, amongst our survey respondents in the US, are iPhone 13, iPhone 11, and iPhone 12, respectively

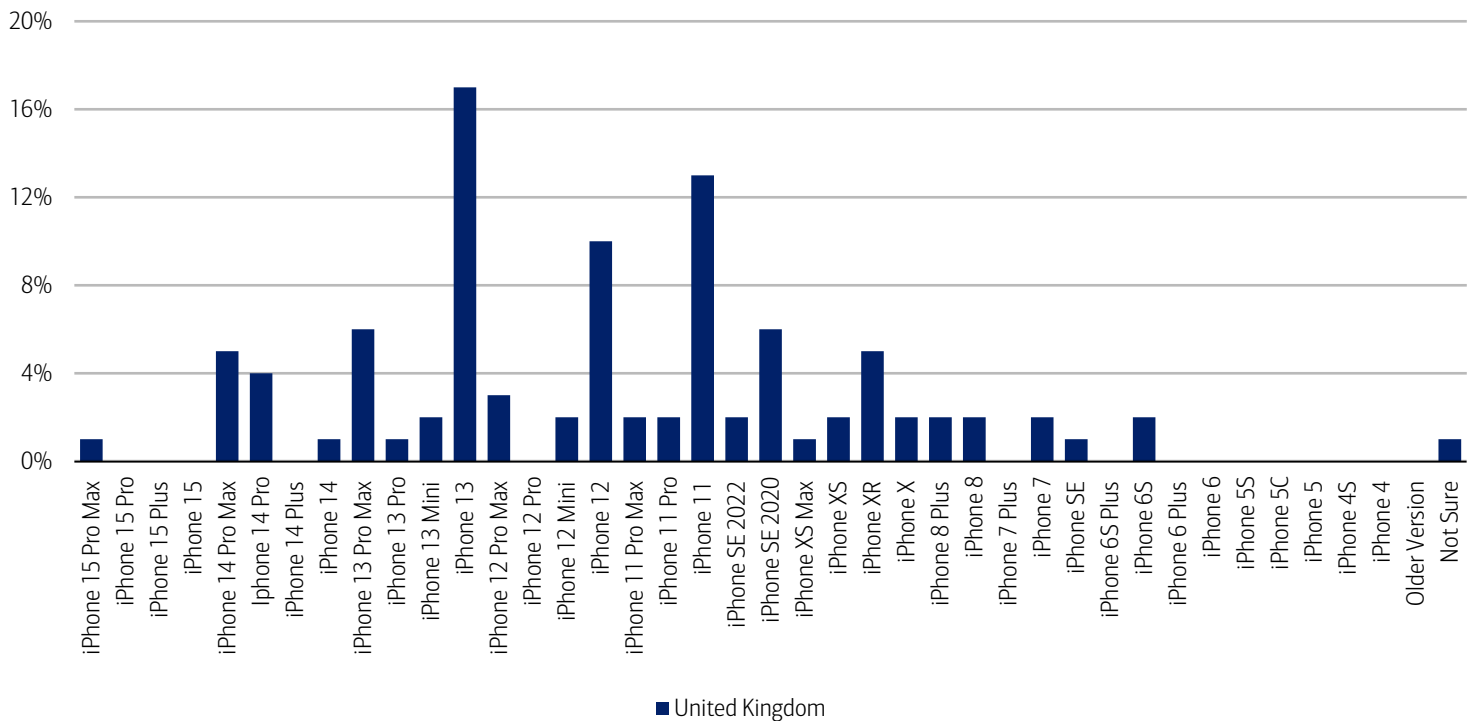


Source: BofA Global Research
Sample size = 7,388

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Figure 7: iPhone ownership amongst survey respondents (Jan 2023 – Dec 2023), UK

The top three most popular iPhones amongst our survey respondents in the UK are also the iPhone 13, iPhone 11, and iPhone 12, respectively

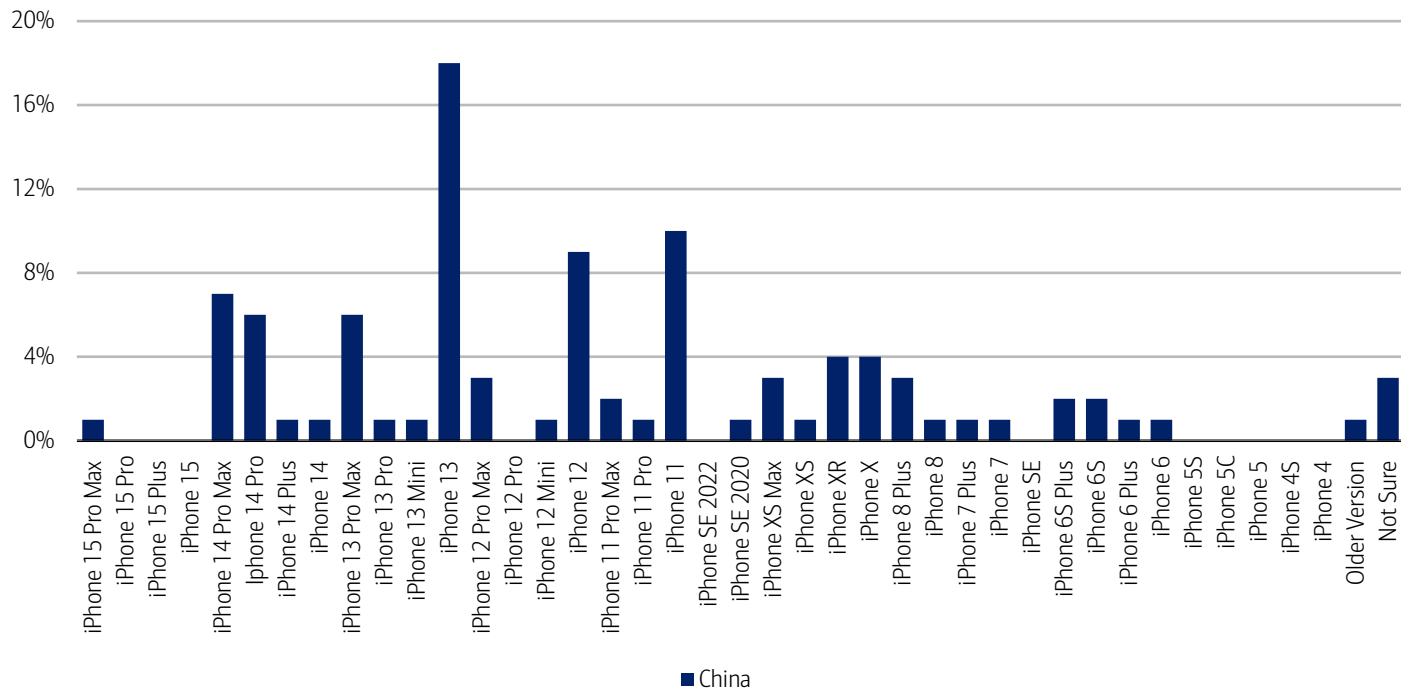


Source: BofA Global Research
Sample size = 7,939

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Figure 8: iPhone ownership amongst survey respondents (Jan 2023 – Dec 2023), China

iPhone 13, iPhone 11, and iPhone 12 remain the most popular amongst our survey respondents in China

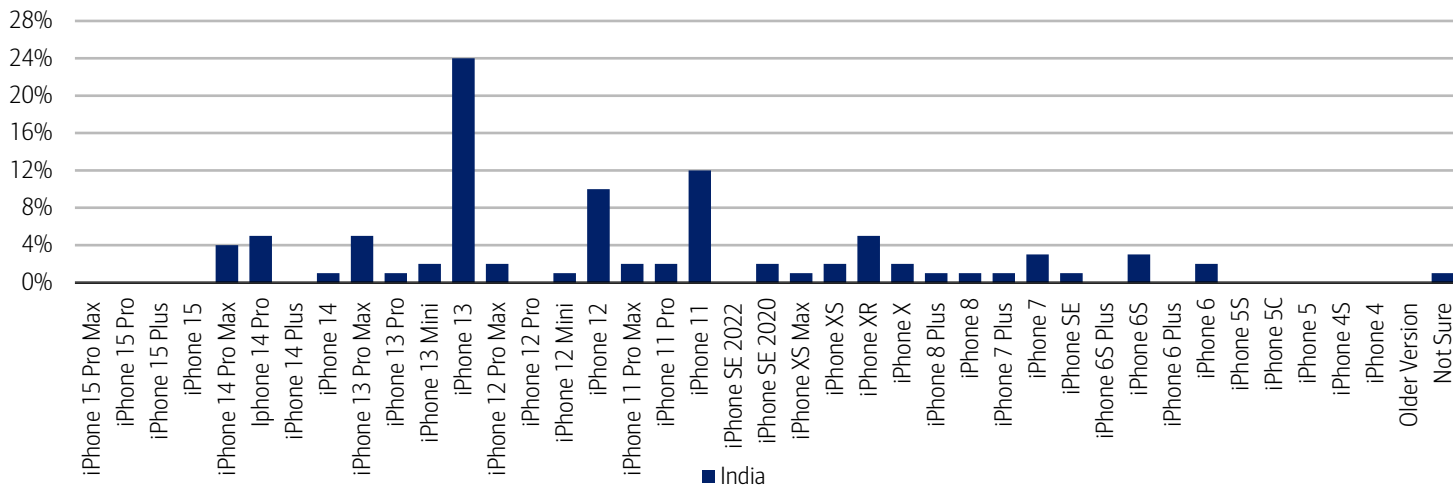


Source: BofA Global Research
Sample size = 36,596

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Figure 9: iPhone ownership amongst survey respondents (Jan 2023 – Dec 2023), India

The top three most popular iPhones amongst our survey respondents in India are also the iPhone 13, iPhone 11, and iPhone 12, respectively.



Source: BofA Global Research
Sample size = 7,832

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Amongst our survey respondents, iPhone 13 use remains especially high in India (24% respondents). In China, iPhone 13 is the most used (18%), followed by the iPhone 11 (10%) and iPhone 12 (9%). Similarly, iPhone 13 is also the most popular amongst UK respondents (17%) as well as US respondents (17%).

Apple's AI initiatives

We expect Apple's annual capex spend to move meaningfully higher given Generative AI related spending. We model capex growing 48% y/y in F24 to \$16bn from about \$11bn in F23, followed by 8% y/y and 4% y/y growth in F25/F26 to \$17.5bn and \$18.3bn, respectively.

Apple has a large installed base (over \$2bn consumer devices) and in our opinion, can differentiate itself by developing AI models that can cater to its large consumer installed base and run on mobile phones, tablets and notebooks. Revenue contribution from AI could be meaningful if Apple can charge a subscription for an AI product or service.

Competitor Samsung's new Galaxy S24 phone incorporates several AI features including:

- Live translate – two-way real-time voice and text translations
- Interpreter – live conversations can instantly be translated on a split-screen view – works without Wi-Fi or cellular data
- Chat assist – help perfect conversational tones to ensure communication sounds as intended
- Android auto – summarizes incoming messages and suggests relevant replies & actions allowing the driver to stay focused on the road
- Note assist – AI-generated summaries, template creation to streamline notes
- Transcript assist – uses AI and speech-to-text technology to transcribe & summarize recordings even if there are multiple speakers
- Circle to Search - With a long press on the home button, users can circle, highlight, scribble on, or tap anything on Galaxy S24's screen to see helpful, high-quality search results
- ProVisual Engine – comprehensive suite of AI-powered tools that transform image capturing abilities
- Enhanced zoom up to 100x remaining crystal clear
- Nightography – captures more light in dim conditions, even when zoomed in
- Galaxy AI editing tools - enable simple edits after the shot is taken like erase, re-compose, and remaster
- Edit suggestion - uses Galaxy AI to suggest perfectly suitable tweaks for each photo
- Generative Edit - can fill in parts of an image background with generative AI, such as filling in the background of a crooked picture
- Instant Slow-mo - can generate additional frames based on movements to smoothly slow down action-packed moments for a more detailed look
- Super HDR – reveals lifelike previews before the shutter is pressed
- Third-party social app integration - Premium Galaxy S series camera features now integrate directly with mobile apps for social sharing

Apple has already been using AI in several photo and video applications (face recognition for example), but with better hardware we think Apple could incorporate on-device AI with some of the features above and over the next few years starting with iPhone 16 incrementally shift from optimizing AI with limited dedicated resources to maximizing AI with dedicated hardware. Media articles have also suggested that Apple's GPT chatbot could be more powerful than Open AI's GPT 3.5 model.

Figure 10 shows the various AI related projects that, we believe, Apple has been working on.

Figure 10: Apple's reported AI initiatives

As per media reports, Apple is working on several AI projects

Product/Service	Description
Ajax LLM and internal chatbot	Apple has reportedly built a large language model called Ajax. An internal chatbot for employees is based on Ajax which is currently under testing.
Ferret AI	Open-source Multimodal Large Language Model (MLLM) which can study specific sections of an image and infer the objects within that image to respond to user queries.
LLM in a Flash	Efficiently run LLMs in resource-limited environments such as mobile phones, tablets and notebooks by optimizing data transfer from flash to DRAM during inference.
HUGS: Human Gaussian Splats	Neural rendering framework that can be trained using short videos to create animatable avatars.
MLX Machine Learning Framework	Machine learning frameworks and model libraries using which developers can build foundational models for Apple Silicon
Quartz - AI health coach	Apple is reportedly working on a service called Quartz that will use data from an Apple Watch and use AI to offer customized health suggestions and coaching programs for users.
AI enhancements for Siri	Siri is reportedly being improved with Generative AI capabilities to enhance natural conversation capabilities and integrate with the Messages app
AI in Apps	Apple is said to be working on infusing AI in Apple's core apps. Examples include auto-summarizing and auto-complete, automatic playlist generation for Apple Music, creating content in Pages and Keynote and customer service in AppleCare.
AI for code development	Apple's development tools like Xcode are reportedly being enhanced with Generative AI features, which can help developers write code for applications quickly

Source: Bloomberg, WSJ, Ars Technica, and other media outlets.

BofA GLOBAL RESEARCH

Apple has been working on several AI related initiatives including a large language model called Ajax which is used in an internal chatbot which employees are currently testing. Another multimodal large language model is called Ferret which we believe is used to study portions of an image and is used to infer the objects within the image, and respond to user queries.

We believe one of Apple's focus areas is to run LLMs efficiently in resource limited environments like mobile phones and tablets. "LLM in a Flash" transfers data from flash storage to DRAM during inferencing to improve performance.



The Vision Pro can be a meaningful new device

Apple has time and again created new categories of devices. Its recent foray into spatial computing with the Vision Pro can, in our opinion, over time, prove to be a significant revenue driver for the company. The Vision Pro headset can seamlessly blend digital content with a user's physical surrounding. The user can then navigate what they see by using their eyes, hands and voice.

The Vision Pro can display multiple screens to the user each with its own content. In terms of content consumption, the Vision Pro can transform a room into a user's personal theater. The Vision Pro can be used to watch movies, shows and for gaming. The device has more pixels than a 4K TV for each eye. The Vision Pro allows users to capture spatial photos and videos in 3D.

The Vision Pro can also be used as a collaboration tool where users can have a FaceTime video call using video tiles that are life-size.

The Vision Pro supports up to 2 hours of general usage, and up to 2.5 hours of video playback.

While we have not factored in meaningful revenue contribution from Vision Pro for F24, in our opinion, in outer years this new product has the potential to become as large as the iPad from a revenue contribution standpoint.

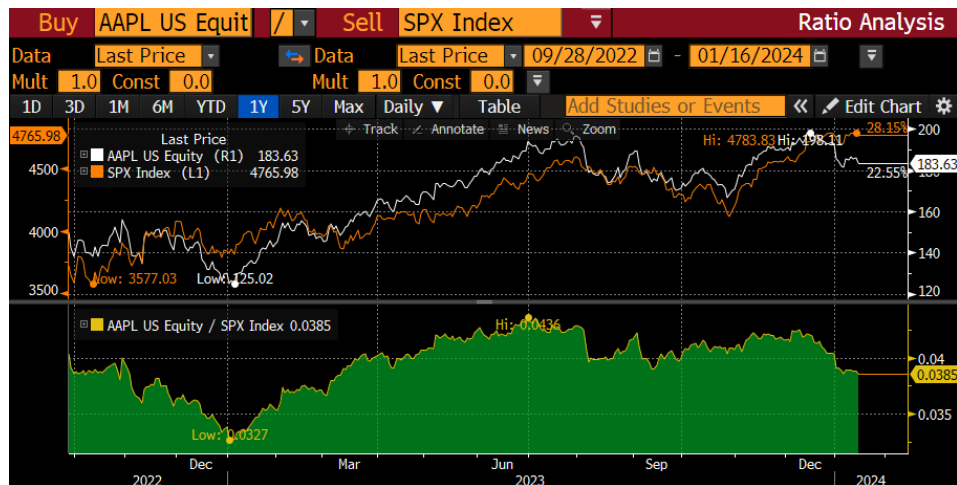
We view the initial uptake from developers and Apple enthusiasts at the \$3500+ price point to be limited to several hundred thousand units in 2024. However, as the usage and use cases improve, we expect the price point to drop to \$1500-\$2000 over the next 2 years and drive several millions of units and create an installed base to monetize very distinct and differentiated experiences (sports, concerts etc.) which could easily charge \$20-\$100 per experience over time (Ticketmaster has U2 tickets at the Las Vegas Sphere for \$750).

AAPL shares underperformed over the past year and half

We downgraded Apple shares from Buy to Neutral in September of 2022. As shown in Figure 11, during the period Sep 2022 to Jan 2024, Apple has underperformed the S&P 500 index by about 6%. More recently since the middle of 2023, the relative underperformance has been more material after the mega-cap runup in 1H2023 and concerns around a weaker iPhone cycle and valuation.

Figure 11: Relative performance of Apple shares vs. S&P 500

During the period Sep 2022 to Jan 2024, Apple has returned 22% vs. 28% for SPX



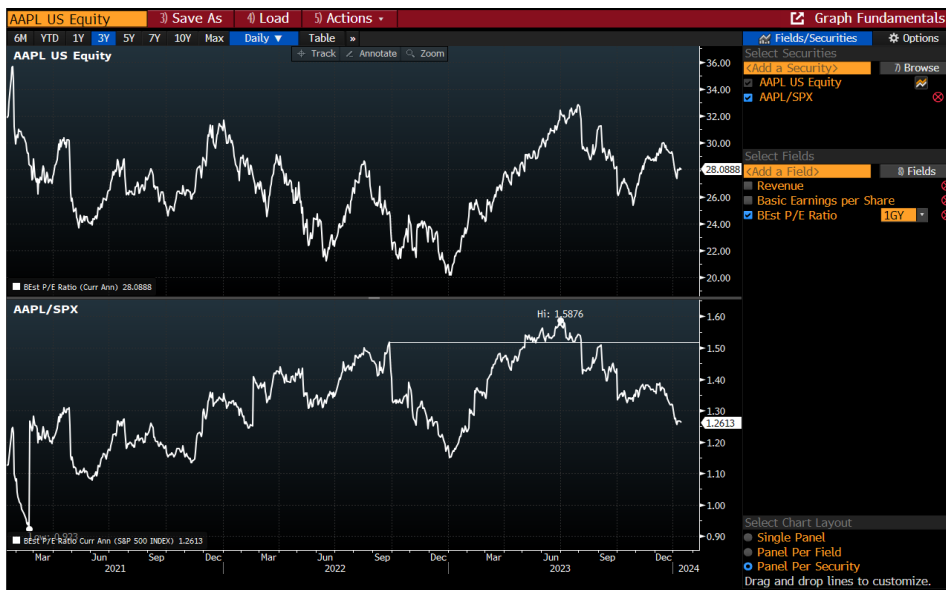
Source: Bloomberg

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As shown in Figure 12, at the time of our downgrade in Sep 2022, Apple shares were trading at 1.5x the multiple of S&P 500. After more than a year, shares are now trading at just 1.3x the multiple of S&P 500. Shares in the past have traded as high as 1.6x on a relative basis and given AAPL's very strong services portfolio that is still under-penetrated, we think the relative multiple has the potential to expand further. In the past, AAPL's gross margins of 38% were at risk of compressing when the multiple peaked. Given the mix shift to services and increasing vertical integration we see more stable GMs significantly north of 40% that can drive the relative multiple higher. We do not expect the relative multiple compress much lower, especially below 1.2x, which in our opinion would make for an even more compelling reason to own shares of AAPL.

Figure 12: Apple current P/E multiple and relative multiple vs. S&P 500

Apple shares are currently trading at 28x current year earnings estimate. On a relative basis, Apple's P/E multiple is 1.3x that of the S&P 500



Source: Bloomberg

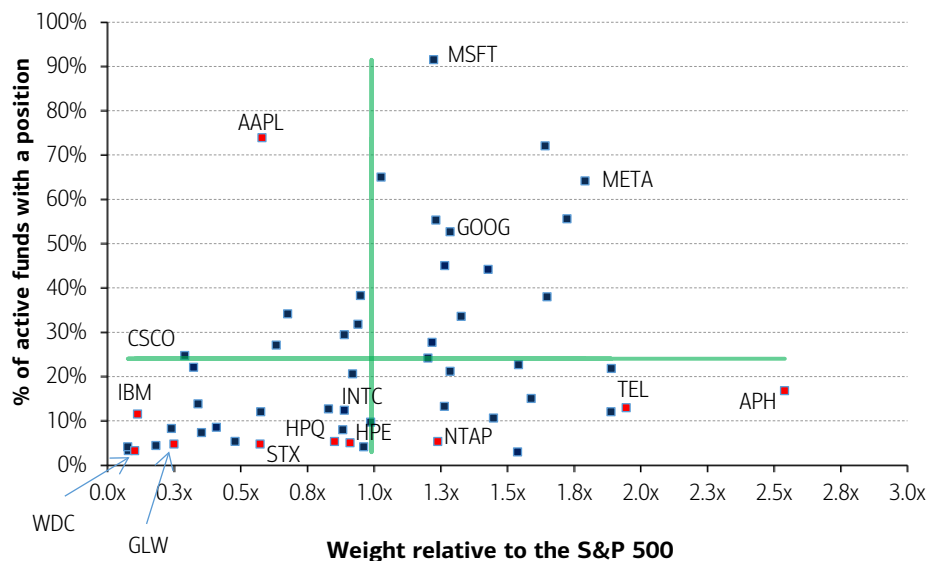
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Apple remains underweighted in US Active Fund Manager holdings

Based on BofA Global Research Equity Strategy Data, Apple remains underweight in holdings of US active fund managers. Figure 13 shows fund ownership and stock weighting for IT Hardware and Supply Chain stocks in the S&P 500.

Figure 13: Tech stocks in S&P 500 - rel. weight vs. % ownership

AAPL remains underweight

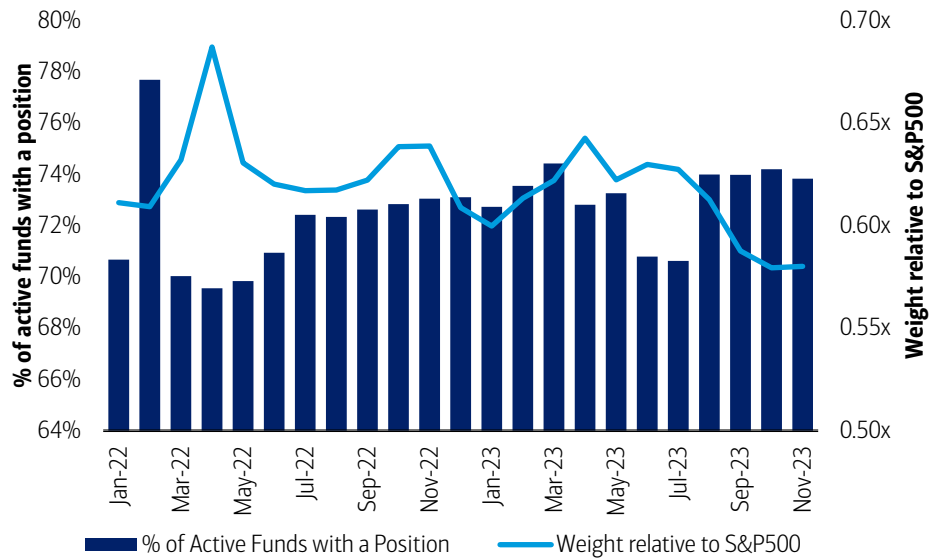


Source: BofA Global Research US Equity & US Quant Strategy

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Figure 14: AAPL's rel. weight vs. % ownership (from Jan '22 – Nov '23)

As of Nov 2023, 73.8% of US active fund managers owned AAPL stock



Source: BofA Global Research US Equity & US Quant Strategy

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Figure 14 shows the trend in ownership and relative weighting of Apple in holdings of US active fund managers. As of the end of November, ownership of AAPL improved about 70bps YoY to 73.8%. Relative weighting declined by 0.03x to 0.58x.

Multiple risk factors, but manageable

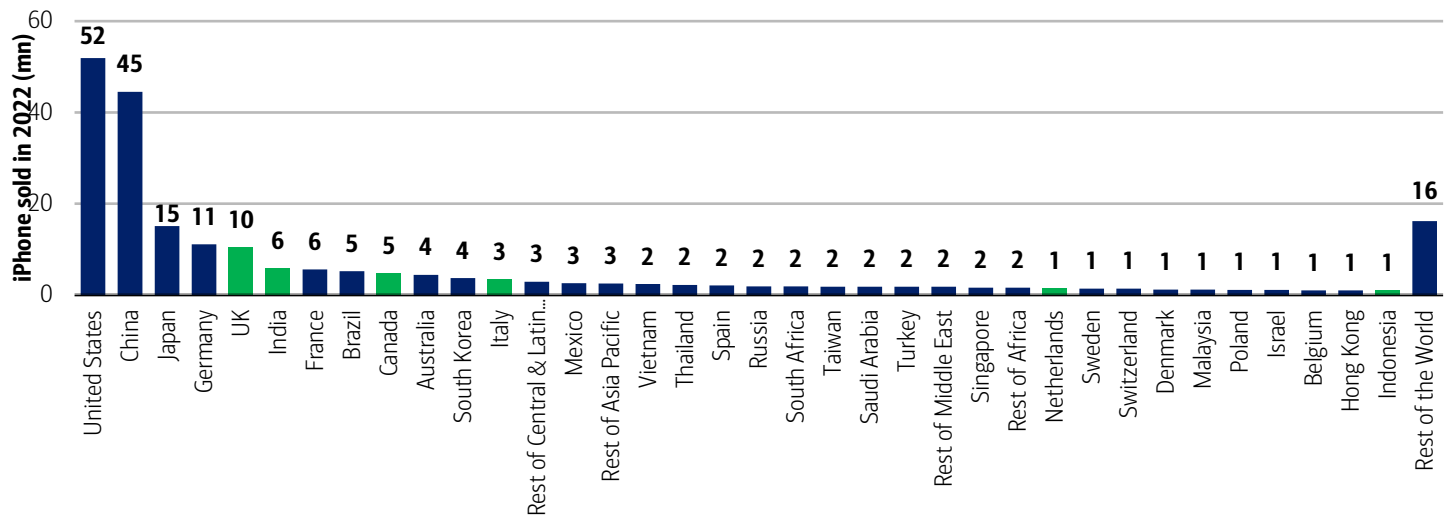
We see several risk factors including smartphone competition in China, fallout from DOJ investigation of Google, litigation with Epic Games on 30% take rate, and use of 3rd party App stores, and impact of the European Union's Digital Markets Act. We see the impact of each of these risks as manageable.

Competition in China

Recent media reports indicate that Apple is cutting prices in China which could relate to lower sales given increased competition from Huawei and Samsung. As per these reports, Apple is lowering the price of iPhones by \$70 in China ahead of the Lunar New Year holiday. Apple is seeing increased competition from Huawei which in August of 2023 launched a phone with high-speed 5G capability. We estimate that since the US ban on export of sensitive technology to Huawei was imposed, Apple iPhone sales benefited by 20-30mn units. We now see the potential for Huawei to regain these units over time (say 5mn unit headwind to Apple, per year). In our opinion, Apple has the opportunity to make up this shortfall of units through sales in other regions, or by lowering the price of the iPhone in China.

Figure 15: iPhones sold in 2022, by country (mn)

Apple sold about 44.5mn iPhones in China in 2022



Source: Techno Insights

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As shown in Figure 15, Apple has a long tail of countries where it sells iPhones and any share gain and higher sales in these countries can offset weakness in China.

Department of Justice investigation of Google

In 2020, the U.S. Justice Department (DOJ) filed a suit against Google for monopolizing search and search advertising. Specifically, it objects to Google paying Apple to be the default search engine on iPhones. We note that the DOJ has not asked Apple to change any of its practices. There are two components to this case: 1) fixed component: which is the fee that Google pays to Apple to be the default search engine, and 2) variable component: which is the TAC (Traffic Acquisition Cost) that Google pays to Apple for getting access to user traffic from iPhones, which then forms the basis for it to generate advertising revenue. In our opinion, while the fixed payment to Apple is subject to the outcome of the DOJ suit (if Google is no longer allowed to pay for being the default), Apple has an opportunity to grow the variable component. In our view, Apple's economics with other search providers (Microsoft, DuckDuckGo) is more lucrative, and Apple could actually earn more by re-directing more traffic to these other search providers.

Litigation with Epic Games on 30% take rate

Epic Games and other developers have complained against the 30% commission that Google and Apple charge software developers. Recent media reports indicate that a Federal jury in San Francisco has ruled against Google in an Antitrust case brought by Epic Games and agreed that it maintained monopoly power by engaging in anticompetitive conduct. We do not see an immediate impact to Apple as Google is likely to appeal the ruling. Moreover, in our opinion, there were factors specific to Google in this lawsuit including the allegation that the company made side deals with large developers to charge lower commissions. In 2021, Apple won a similar case against Epic, on 9 out of 10 counts; all except the anti-steering policies where Apple was prohibited from stopping developers from informing users of other payment systems within Apps.

In 2021, Apple announced that it would allow developers to share purchase options with users outside of their iOS app (agreed to let developers reach out to consumers through different means such as email). It agreed to expand the price points developers can offer for subscriptions, in-app purchases, and paid apps. In 2020, Apple announced that it would cut fees charged to small developers who generate under \$1mn in annual rev to 15%, which is the fee that it charges for subscription Apps after the first year. Recently,

the U.S. Supreme Court declined to hear the legal case between Apple and Epic Games. This would mean that Apple needs to open its App Store to alternate payment systems. Apple will not be able to adopt anti-steering measures. However, some recent articles on Bloomberg indicate that while Apple is providing developers the ability to link to alternate App Stores; however, it will take a 27% commission on payments when such links are clicked.

DMA may force Apple to allow 3rd party App stores

The European Union's Digital Market's Act (DMA) is designed to regulate dominant digital platforms and ensure fair competition. As part of this, from Mar 2024, Apple may have to allow third-party app stores and payment gateways to function on its devices. Apple is also making some Apple Pay changes and giving NFC chip access to competitors.

Based on SensorTower data on developer revs, we est. the App store contributes about \$25bn of revenue for Apple per year. Of this, 7% comes from the European Union, 32% comes from the U.S., 27% from China, and 34% from the Rest of the World. Assuming 85% GM on App Store rev, we estimate about \$1.00 of annual earnings contribution. Every 10% reduction in annual App Store rev thus impacts earnings by about \$0.10. In our opinion, the potential impact of the DMA and opening up to 3rd-party App stores is not clear, as depending on how its implemented, users may find it too cumbersome to use 3rd-party App stores, and there may be security concerns which limit their usage.

Potential Justice Dept Antitrust case

Media articles suggest that the Justice Department plans to file an antitrust lawsuit alleging that Apple intentionally disadvantages rivals by imposing restrictions on OS and hardware. It remains early days to speculate on the outcome of this potential threat.

End of negative estimate revision cycle

As seen in the Figure below, consensus estimates had trended down significantly in 2023 and have since bottomed out. In our opinion, the estimate revision cycle is likely to turn positive again.

Figure 16: Estimate revisions

EPS estimate revisions for F24 have trended down most of last year and stabilized recently



Source: Bloomberg

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Model

Figure 17: Apple Income Statement

We model F24 revenue/EPS of \$405bn/\$6.73

	F2023				F2024E				F2022	F2023	F2024E	F2025E	F2026E
(\$ Millions Except Per Share Data)	12/22	3/23	6/23	9/23	12/23E	3/24E	6/24E	9/24E					
Income Statement													
Revenue (\$mn)	117154	94836	81797	89498	118415	97723	88535	100540	394328	383285	405214	438715	456672
iPhone revenue	65775	51334	39669	43805	69298	50541	42986	50671	205489	200583	213496	230255	230005
iPad revenue	9396	6670	5791	6443	7258	7069	6191	7040	29292	28300	27558	27522	28065
Mac revenue	7735	7168	6840	7614	7141	7456	6735	7916	40177	29357	29249	30384	31561
iTunes / Software / Services	20766	20907	21213	22314	23050	24043	24395	25661	78129	85200	97149	110009	123473
Other Rev	13482	8757	8284	9322	11668	8615	8229	9252	41241	39845	37762	40544	43567
Cost of Goods Sold (excl. Stock-based comp.)	66496	52534	45058	48745	64366	52856	48033	55317	222302	212833	220572	236150	244825
Gross Profit (excl. Stock-based comp.)	50658	42302	36739	40753	54049	44867	40503	45223	172026	170452	184642	202566	211847
Total Operating Expense (excl. Stock-based comp.)	12772	12114	11871	11914	12907	12780	12710	13581	45529	48671	51978	56176	58524
R&D (excl. Stock-based comp.)	6778	6526	6511	6376	6868	7134	6906	7038	22727	26191	27945	30375	31641
SG&A (excl. Stock-based comp.)	5994	5588	5360	5538	6039	5646	5805	6543	22802	22480	24033	25801	26883
Operating Income (Pre-Stock-based comp.)	37886	30188	24868	28839	41142	32088	27792	31642	126497	121781	132664	146389	153323
Total Operating Expense (incl. Stock-based comp.)	14316	13658	13415	13458	14541	14414	14344	15215	51345	54847	58514	63072	65780
R&D (incl. Stock-based comp.)	7709	7457	7442	7307	7849	8115	7887	8019	26251	29915	31869	34499	35965
SG&A (incl. Stock-based comp.)	6607	6201	5973	6151	6692	6299	6458	7196	25094	24932	26645	28573	29815
Operating Income (Incl. Stock-based comp.)	36016	28318	22998	26969	39167	30113	25817	29667	119437	114301	124764	138069	144583
Total Interest and Other Income/(Expense)	-393	64	-265	29	-200	-196	-190	-168	-334	-565	-755	-656	-395
Pretax Income (Pre SBC)	37493	30252	24603	28868	40942	31891	27602	31473	126163	121216	131909	145733	152928
Provision for Income Taxes (Credit)	5920	4500	3087	4322	6551	5103	4416	5036	20442	17829	21105	23317	24469
Net Income (Pre Stock-based comp.)	31573	25752	21516	24546	34391	26789	23186	26438	105721	103387	110803	122416	128460
Stock-based comp. (After tax)	-1575	-1592	-1635	-1590	-1659	-1659	-1659	-1659	-5918	-6392	-6636	-6989	-7342
Net Income (Incl. Stock-based-comp)	29998	24160	19881	22956	32732	25130	21527	24779	99803	96995	104167	115427	121118
Diluted EPS (Pre-Stock-based comp)	1.98	1.63	1.36	1.57	2.21	1.73	1.50	1.72	6.48	6.54	7.16	8.08	8.66
Diluted EPS (Incl. Stock-based comp)	1.88	1.52	1.26	1.46	2.10	1.62	1.39	1.61	6.11	6.13	6.73	7.62	8.17
Diluted Weighted Average Shares	15956	15847	15775	15672	15592	15512	15432	15352	16326	15813	15472	15152	14832
Income Statement (Cont'd)													
% Growth Rates													
Revenues (Y/Y)	(5.5%)	(2.5%)	(1.4%)	(0.7%)	1.1%	3.0%	8.2%	12.3%	7.8%	(2.8%)	5.7%	8.3%	4.1%
Gross Profit (Y/Y)	(7.1%)	(1.3%)	1.5%	6.1%	6.7%	6.1%	10.2%	11.0%	11.7%	(0.9%)	8.3%	9.7%	4.6%
Opex (Y/Y)	13.0%	8.9%	4.5%	1.4%	1.1%	5.5%	7.1%	14.0%	18.5%	6.9%	6.8%	8.1%	4.2%
R&D (Y/Y)	24.9%	18.5%	10.1%	8.4%	1.3%	9.3%	6.1%	10.4%	22.3%	15.2%	6.7%	8.7%	4.2%
SG&A (Y/Y)	2.0%	(0.6%)	(1.5%)	(5.6%)	0.8%	1.0%	8.3%	18.2%	14.9%	(1.4%)	6.9%	7.4%	4.2%
Op. Income (Y/Y)	(12.4%)	(4.9%)	0.1%	8.2%	8.6%	6.3%	11.8%	9.7%	9.4%	(3.7%)	8.9%	10.3%	4.7%
Pretax Income (Y/Y)	(12.8%)	(5.2%)	(0.9%)	9.3%	9.2%	5.4%	12.2%	9.0%	8.9%	(3.9%)	8.8%	10.5%	4.9%
Net Income (Y/Y)	(13.4%)	(3.4%)	2.3%	10.8%	9.1%	4.0%	8.3%	7.9%	5.4%	(2.8%)	7.4%	10.8%	4.9%
EPS (Y/Y)	(10.3%)	(0.0%)	5.4%	13.9%	11.7%	6.3%	10.7%	10.2%	8.9%	0.3%	9.8%	13.1%	7.2%
Diluted Shares (Y/Y)	(3.4%)	(3.4%)	(3.0%)	(2.8%)	(2.3%)	(2.1%)	(2.2%)	(2.0%)	(3.2%)	(3.1%)	(2.2%)	(2.1%)	(2.1%)
Revenues (Q/Q)	30.0%	(19.1%)	(13.7%)	9.4%	32.3%	(17.5%)	(9.4%)	13.6%					
Gross Profit (Q/Q)	28.5%	(21.0%)	(14.2%)	8.2%	32.0%	(17.9%)	(9.1%)	15.2%					
Opex (Q/Q)	8.7%	(5.2%)	(2.0%)	0.4%	8.3%	(1.0%)	(0.5%)	6.9%					
Op. Income (Q/Q)	42.1%	(20.3%)	(17.6%)	16.0%	42.7%	(22.0%)	(13.4%)	13.9%					
Diluted Shares (Q/Q)	(1.0%)	(0.7%)	(0.5%)	(0.7%)	(0.5%)	(0.5%)	(0.5%)	(0.5%)					
% of Revenues													
Gross Profit (Excl. Stock Based Comp Expense)	43.2%	44.6%	44.9%	45.7%	45.6%	45.9%	45.7%	45.0%	43.6%	44.5%	45.6%	46.2%	46.4%
Gross Profit (Incl. Stock Based Comp Expense)	43.0%	44.3%	44.5%	45.2%	45.4%	45.6%	45.4%	44.6%	43.3%	44.1%	45.2%	45.8%	46.1%
Opex	10.9%	12.8%	14.5%	13.3%	10.9%	13.1%	14.4%	13.5%	11.5%	12.7%	12.8%	12.8%	12.8%
R&D	5.8%	6.9%	8.0%	7.1%	5.8%	7.3%	7.8%	7.0%	5.8%	6.8%	6.9%	6.9%	6.9%
SG&A	5.1%	5.9%	6.6%	6.2%	5.1%	5.8%	6.6%	6.5%	5.8%	5.9%	5.9%	5.9%	5.9%
Opex (including Stock Based Comp)	12.2%	14.4%	16.4%	15.0%	12.3%	14.7%	16.2%	15.1%	13.0%	14.3%	14.4%	14.4%	14.4%
EBIT (Pre-Stock Based Comp)	32.3%	31.8%	30.4%	32.2%	34.7%	32.8%	31.4%	31.5%	32.1%	31.8%	32.7%	33.4%	33.6%
Stock Based Comp Expense	(1.3%)	(1.7%)	(2.0%)	(1.8%)	(1.4%)	(1.7%)	(1.9%)	(1.7%)	(1.5%)	(1.7%)	(1.6%)	(1.6%)	(1.6%)
EBIT (Post-Stock Based Comp)	30.7%	29.9%	28.1%	30.1%	33.1%	30.8%	29.2%	29.5%	30.3%	29.8%	30.8%	31.5%	31.7%
Pretax Income	32.0%	31.9%	30.1%	32.3%	34.6%	32.6%	31.2%	31.3%	32.0%	31.6%	32.6%	33.2%	33.5%
Tax Rate	15.8%	14.9%	12.5%	15.0%	16.0%	16.0%	16.0%	16.0%	16.2%	14.7%	16.0%	16.0%	16.0%
Net Income (Operating, Pre-SBC)	25.6%	25.5%	24.3%	25.6%	27.6%	25.7%	24.3%	24.6%	25.3%	25.3%	25.7%	26.3%	26.5%
Net Income (Operating, Post-SBC)	26.9%	27.2%	26.3%	27.4%	29.0%	27.4%	26.2%	26.3%	26.8%	27.0%	27.3%	27.9%	28.1%

Source: Company reports, BofA Global Research estimates

Figure 18: Apple segment details

We model iPhone units of 250mm for F25

	F2023				F2024E								
(\$ Millions Except Per Share Data)	12/22	3/23	6/23	9/23	12/23E	3/24E	6/24E	9/24E	F2022	F2023	F2024E	F2025E	F2026E
Sales By Segment													
Total Revenue (\$mn)	\$117,154	\$94,836	\$81,797	\$89,498	\$118,415	\$97,723	\$88,535	\$100,540	\$394,328	\$383,285	\$405,214	\$438,715	\$456,672
iPhone revenue	65,775	51,334	39,669	43,805	69,298	50,541	42,986	50,671	205,489	200,583	213,496	230,255	230,005
iPad revenue	9,396	6,670	5,791	6,443	7,258	7,069	6,191	7,040	29,292	28,300	27,558	27,522	28,065
Mac revenue	7,735	7,168	6,840	7,614	7,141	7,456	6,735	7,916	40,177	29,357	29,249	30,384	31,561
iPod revenue	71	35	38	35	55	27	30	28	228	179	140	110	86
iTunes / Software / Services revenue	20,766	20,907	21,213	22,314	23,050	24,043	24,395	25,661	78,129	85,200	97,149	110,009	123,473
Accessories	4,251	5,709	4,596	5,272	3,826	5,424	4,366	5,008	21,263	19,828	18,624	20,486	22,535
Apple Watch	9,160	3,013	3,650	4,015	7,786	3,163	3,833	4,216	19,750	19,839	18,998	19,948	20,946
% of Revenue													
iPhone revenue	56%	54%	48%	49%	59%	52%	49%	50%	52%	52%	53%	52%	50%
iPad revenue	8%	7%	7%	7%	6%	7%	7%	7%	7%	7%	7%	6%	6%
Mac revenue	7%	8%	8%	9%	6%	8%	8%	8%	10%	8%	7%	7%	7%
iTunes / Software / Services revenue	18%	22%	26%	25%	19%	25%	28%	26%	20%	22%	24%	25%	27%
Product Segment Revenue Growth - Y/Y													
iPhone revenue	(8%)	2%	(2%)	3%	5%	(2%)	8%	16%	7%	(2%)	6%	8%	(0%)
iPad revenue	30%	(13%)	(20%)	(10%)	(23%)	6%	7%	9%	(8%)	(3%)	(3%)	(0%)	2%
Mac revenue	(29%)	(31%)	(7%)	(34%)	(8%)	4%	(2%)	4%	14%	(27%)	(0%)	4%	4%
iTunes / Software / Services revenue	6%	5%	8%	16%	11%	15%	15%	15%	14%	9%	14%	13%	12%
Product Segment Revenue Growth - Q/Q													
iPhone revenue	54%	(22%)	(23%)	10%	58%	(27%)	(15%)	18%					
iPad revenue	31%	(29%)	(13%)	11%	13%	(3%)	(12%)	14%					
Mac revenue	(33%)	(7%)	(5%)	11%	(6%)	4%	(10%)	18%					
iTunes / Software / Services revenue	8%	1%	1%	5%	3%	4%	1%	5%					
Units by Segment													
Total Units (k)													
iPhone	70,000	55,000	42,000	51,000	74,000	56,000	46,000	57,000	245,000	218,000	233,000	250,000	250,000
iPad	14,709	13,435	12,589	11,776	11,767	14,107	13,218	12,365	59,348	52,509	51,457	50,885	50,968
Mac	6,848	6,444	5,225	6,480	6,368	6,766	5,904	6,804	28,369	24,997	25,843	27,135	28,492
Product Segment Unit Growth - Y/Y													
iPhone	(15%)	(8%)	(16%)	(4%)	6%	2%	10%	12%	4%	(11%)	7%	7%	0%
iPad	(6%)	(15%)	(15%)	(10%)	(20%)	5%	5%	5%	(13%)	(12%)	(2%)	(1%)	0%
Mac	(10%)	(10%)	(5%)	(20%)	(7%)	5%	13%	5%	3%	(12%)	3%	5%	5%
Product Segment Unit Growth - Q/Q													
iPhone	32%	(21%)	(24%)	21%	45%	(24%)	(18%)	24%					
iPad	12%	(9%)	(6%)	(6%)	(0%)	20%	(6%)	(6%)					
Mac	(15%)	(6%)	(19%)	24%	(2%)	6%	(13%)	15%					
Product Segment ASPs													
iPhone	940	933	945	859	936	903	934	889	839	920	916	921	920
iPad	639	496	460	547	587	477	443	542	494	539	536	541	551
Mac	1,110	1,091	1,283	1,153	1,099	1,080	1,116	1,142	1,416	1,174	1,132	1,120	1,108
Product Segment ASP Growth - Y/Y													
iPhone	8%	11%	16%	7%	(0%)	(3%)	(1%)	3%	3%	10%	(0%)	1%	(0%)
iPad	38%	3%	(6%)	(0%)	(8%)	(4%)	(4%)	(1%)	6%	9%	(1%)	1%	2%
Mac	(21%)	(24%)	(3%)	(18%)	(1%)	(1%)	(13%)	(1%)	11%	(17%)	(4%)	(1%)	(1%)
Product Segment ASP Growth - Q/Q													
iPhone	17%	(1%)	1%	(9%)	9%	(4%)	4%	(5%)					
iPad	17%	(22%)	(7%)	19%	7%	(19%)	(7%)	22%					
Mac	(21%)	(2%)	18%	(10%)	(5%)	(2%)	3%	2%					

Source: Company reports, BofA Global Research estimates

BofA GLOBAL RESEARCH

Figure 19: Apple Balance Sheet

We model Apple's total asset of \$382bn for F24

	F2023				F2024E								
(\$ Millions Except Per Share Data)	12/22	3/23	6/23	9/23	12/23E	3/24E	6/24E	9/24E	F2022	F2023	F2024E	F2025E	F2026E
Balance Sheet													
Total Assets	\$346,747	\$332,160	\$335,038	\$352,583	\$359,498	\$351,703	\$356,867	\$382,333	\$352,755	\$352,583	\$382,333	\$412,504	\$486,765
Total Current Assets	128,777	112,913	122,659	143,566	147,183	137,036	142,029	165,180	135,405	143,566	165,180	187,277	254,061
Cash/Equivalents	20,535	24,687	28,408	29,965	31,555	34,127	43,248	41,499	23,646	29,965	41,499	56,195	112,166
ST Investments	30,820	31,185	34,074	31,590	31,590	31,590	31,590	31,590	24,658	31,590	31,590	31,590	31,590
Accounts Receivable	23,752	17,936	19,549	29,508	30,586	27,169	26,078	38,734	28,184	29,508	38,734	46,017	56,216
Deferred Tax Assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Inventory	6,820	7,482	7,351	6,331	6,602	7,528	7,836	7,185	4,946	6,331	7,185	7,303	7,917
Other Current Assets	46,850	31,623	33,277	46,172	46,850	36,623	33,277	46,172	53,971	46,172	46,172	46,172	46,172
PP&E	42,951	43,398	43,550	43,715	46,446	48,224	49,553	51,301	42,117	43,715	51,301	58,820	65,737
LT Investments	114,095	110,461	104,061	100,544	100,544	100,544	100,544	100,544	120,805	100,544	100,544	100,544	100,544
Goodwill	5,889	5,889	5,889	5,889	5,889	5,889	5,889	5,889	5,889	5,889	5,889	5,889	5,889
Intangible Assets	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149
Other Assets	52,886	57,350	56,730	56,720	57,287	57,860	56,703	57,270	46,390	56,720	57,270	57,825	58,386
Total Liabilities	\$290,020	\$270,002	\$274,764	\$290,437	\$278,174	\$265,322	\$269,172	\$290,032	\$302,083	\$290,437	\$290,032	\$284,920	\$284,791
Total Current Liabilities	137,286	120,075	124,963	145,308	132,999	120,145	124,024	144,886	153,982	145,308	144,886	139,768	139,637
Accounts Payable	57,918	42,945	46,699	62,611	56,063	43,208	47,114	67,979	64,115	62,611	67,979	62,855	62,722
Accrued Liabilities	67,885	64,556	67,055	66,890	66,936	66,937	66,910	66,907	68,757	66,890	66,907	66,913	66,916
Deferred Revenue - Current	7,992	8,131	8,158	8,061	8,107	8,108	8,081	8,078	7,912	8,061	8,078	8,084	8,087
Other Current Liabilities (accrued exp)	59,893	56,425	58,897	58,829	58,829	58,829	58,829	58,829	60,845	58,829	58,829	58,829	58,829
Current Portion LT Debt/commercial paper	11,483	12,574	11,209	15,807	10,000	10,000	10,000	10,000	21,110	15,807	10,000	10,000	10,000
LT Debt	99,627	97,041	98,071	95,281	95,281	95,281	95,281	95,281	98,959	95,281	95,281	95,281	95,281
Other LT Liabilities	53,107	52,886	51,730	49,848	49,848	49,895	49,868	49,865	49,142	49,848	49,865	49,871	49,873
Deferred Revenue - Non-Current	0	0	0	0	46	47	20	17	0	0	17	23	25
Deferred Tax Liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Non-Current Liabilities	53,107	52,886	51,730	49,848	49,848	49,848	49,848	49,848	49,142	49,848	49,848	49,848	49,848
Shareholders' Equity	\$56,727	\$62,158	\$60,274	\$62,146	\$81,324	\$86,381	\$87,695	\$92,301	\$50,672	\$62,146	\$92,301	\$127,585	\$201,974
Common Stock	66,399	69,568	70,667	73,812	73,812	73,812	73,812	73,812	64,849	73,812	73,812	73,812	73,812
Paid-in Capital	0	0	0	0	0	0	0	0	0	0	0	0	0
Preferred Stock	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Retained Earnings (Deficit)	3,240	4,336	1,408	(214)	18,964	24,021	25,335	29,941	(11,109)	(214)	29,941	65,225	139,614
Accumulated Other comprehensive income	(12,912)	(11,746)	(11,801)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)	(3,068)	(11,452)	(11,452)	(11,452)	(11,452)
Treasury Stock	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Liabilities & Shareholders' Equity	346,747	332,160	335,038	352,583	359,498	351,703	356,867	382,333	352,755	352,583	382,333	412,504	486,765
Balance Sheet Statistics													
Book Value per Share	\$3.56	\$3.92	\$3.82	\$3.97	\$5.22	\$5.57	\$5.68	\$6.01	\$3.10	\$3.93	\$5.97	\$8.42	\$13.62
Tangible Book Value per Share	\$3.05	\$3.42	\$3.31	\$3.45	\$4.70	\$5.05	\$5.16	\$5.49	\$2.61	\$3.42	\$5.45	\$7.89	\$13.08
Debt/Equity	196%	176%	181%	179%	129%	122%	120%	114%	237%	179%	114%	83%	52%
Net Cash & Investments	\$54,340	\$56,718	\$57,263	\$51,011	\$58,408	\$60,980	\$70,101	\$68,352	\$49,040	\$51,011	\$68,352	\$83,048	\$139,019
Net Cash & Investments per Share	\$3.41	\$3.58	\$3.63	\$3.25	\$3.75	\$3.93	\$4.54	\$4.45	\$3.00	\$3.23	\$4.42	\$5.48	\$9.37
Inventory Turns	45.2x	29.4x	24.3x	28.5x	39.8x	29.9x	25.0x	29.5x	38.6x	37.7x	32.6x	32.6x	32.2x
Days of Inventory	8	12	15	13	9	12	14	12	9	10	11	11	11
Days Accts. Receivable	20	20	21	25	23	27	27	29	25	27	30	35	40
Days payables	83	86	90	101	83	85	85	94	96	107	107	100	92
Cash cycle	(55)	(54)	(54)	(64)	(51)	(46)	(43)	(52)	(62)	(71)	(65)	(54)	(41)
Op. WC/Revenue	(6%)	(5%)	(6%)	(7%)	(4%)	(2%)	(4%)	(5%)	(8%)	(7%)	(5%)	(2%)	0%
ROE	223%	163%	130%	150%	183%	120%	99%	110%	172%	155%	146%	122%	82%
ROA	34%	28%	24%	27%	37%	28%	24%	27%	29%	28%	28%	30%	28%
Drivers:													
Inventory Turns	39.0x	28.1x	24.5x	30.8x	39.0x	28.1x	24.5x	30.8x	44.9x	33.6x	30.7x	32.3x	30.9x
Inventory Days	9	13	15	12	9	13	15	12	8	11	12	11	12
Days Accts. Receivable	18	17	22	30	23	25	27	35	26	28	34	38	44
Days Payables	78	74	93	116	78	74	88	111	104	106	111	96	92
Cash Cycle	(51)	(44)	(57)	(74)	(46)	(36)	(47)	(64)	(70)	(67)	(65)	(47)	(36)

Source: Company reports, BofA Global Research estimates

Figure 20: Apple Cash Flow Statement

We model \$102bn of free cash flow for F24

	F2023				F2024E								
(\$ Millions Except Per Share Data)	12/22	3/23	6/23	9/23	12/23E	3/24E	6/24E	9/24E	F2022	F2023	F2024E	F2025E	F2026E
Cash Flow Statement													
Cash from Operating Activities	\$34,005	\$28,560	\$26,380	\$21,598	\$28,320	\$29,227	\$35,575	\$25,166	\$122,151	\$110,543	\$118,288	\$123,997	\$133,427
Net Income	29,998	24,160	19,881	22,956	32,732	25,130	21,527	24,779	99,803	96,995	104,167	115,427	121,118
Depreciation and Amortization	2,916	2,898	3,052	2,653	2,663	2,829	2,938	3,019	11,104	11,519	11,449	13,318	15,071
Stock Based Compensation	2,905	2,686	2,617	2,625	1,975	1,975	1,975	1,975	9,038	10,833	7,900	8,320	8,740
Deferred Taxes	0	0	0	0	0	0	0	0	895	0	0	0	0
Other - Loss on disposition of PPE	(317)	(1,415)	81	(576)	0	0	0	0	111	(2,227)	0	0	0
Change in Working Capital	(1,497)	231	749	(6,060)	(9,050)	(707)	9,136	(4,607)	1,200	(6,577)	(5,228)	(13,069)	(11,502)
Accounts Receivable	4,275	5,321	(1,987)	(9,297)	(1,078)	3,418	1,091	(12,656)	(1,823)	(1,688)	(9,226)	(7,282)	(10,199)
Inventory	(1,807)	(741)	(22)	952	(271)	(926)	(308)	652	1,484	(1,618)	(854)	(119)	(614)
Other Current Assets	(1,779)	12,472	(2,445)	(12,661)	(678)	10,227	3,346	(12,895)	(14,019)	(4,413)	0	0	0
Accounts Payable	(6,075)	(14,689)	3,974	14,901	(6,548)	(12,855)	3,905	20,866	9,448	(1,889)	5,368	(5,125)	(133)
Deferred Revenue	131	(131)	0	0	46	1	(27)	(3)	478	0	17	6	3
Other Asset and Other Liabilities	3,758	(2,001)	1,229	45	(521)	(572)	1,129	(570)	5,632	3,031	(533)	(549)	(558)
Cash from Investing Activities	(\$1,445)	\$2,319	\$437	\$2,394	(\$4,737)	(\$3,909)	(\$3,541)	(\$4,022)	(\$22,354)	\$3,705	(\$16,209)	(\$17,549)	(\$18,267)
Capital Expenditures	(3,787)	(2,916)	(2,093)	(2,163)	(4,737)	(3,909)	(3,541)	(4,022)	(10,708)	(10,959)	(16,209)	(17,549)	(18,267)
Sale of PP&E	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds of investments	7,636	11,385	12,795	13,698	0	0	0	0	67,363	45,514	0	0	0
Purchase of Investments	(5,153)	(6,044)	(9,759)	(8,557)	0	0	0	0	(76,923)	(29,513)	0	0	0
Acquisitions/intang assets	0	0	0	0	0	0	0	0	(306)	0	0	0	0
Other/Strategic investments	(141)	(106)	(506)	(584)	0	0	0	0	(1,780)	(1,337)	0	0	0
Cash from Financing Activities	(\$35,563)	(\$25,724)	(\$24,048)	(\$23,153)	(\$22,766)	(\$22,746)	(\$22,913)	(\$22,893)	(\$110,749)	(\$108,338)	(\$91,318)	(\$91,751)	(\$59,190)
Proceeds from the issuance of term debt, net	0	0	5,228	0	0	0	0	0	5,465	5,228	0	0	0
Repayments of term debt	(1,401)	(2,250)	(7,500)	(0)	0	0	0	0	(9,543)	(11,151)	0	0	0
Issuance of Common	0	0	0	0	0	0	0	0	0	0	0	0	0
Treasury Stock	(19,475)	(19,594)	(17,478)	(21,003)	(19,000)	(19,000)	(19,000)	(19,000)	(89,402)	(77,550)	(76,000)	(76,000)	(43,000)
Preferred Stock	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	(2,705)	(484)	(2,438)	(385)	0	0	0	0	(6,383)	(6,012)	0	0	0
Dividends	(3,768)	(3,650)	(3,849)	(3,758)	(3,766)	(3,746)	(3,913)	(3,893)	(14,841)	(14,875)	(15,318)	(15,751)	(16,190)
ESOP Proceeds	0	0	0	0	0	0	0	0	0	0	0	0	0
Foreign Exchange Effects	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Change in Cash	(\$3,003)	\$5,155	\$2,769	\$839	\$818	\$2,572	\$9,121	(\$1,749)	(\$10,952)	\$5,910	\$10,762	\$14,697	\$55,970
Net Cash - Beginning Balance	24,977	21,974	27,129	29,898	30,737	31,555	34,127	43,248	35,929	24,977	30,887	41,649	56,345
Net Cash - Ending Balance	21,974	27,129	29,898	30,737	31,555	34,127	43,248	41,499	24,977	30,887	41,649	56,345	112,316
Free Cash Flow													
Free Cash Flow	\$30,218	\$25,644	\$24,287	\$19,435	\$23,584	\$25,318	\$32,034	\$21,144	\$111,443	\$99,584	\$102,080	\$106,448	\$115,160
Cash From Operations	34,005	28,560	26,380	21,598	28,320	29,227	35,575	25,166	122,151	110,543	118,288	123,997	133,427
Capital Expenditures	(3,787)	(2,916)	(2,093)	(2,163)	(4,737)	(3,909)	(3,541)	(4,022)	(10,708)	(10,959)	(16,209)	(17,549)	(18,267)
Free Cash Flow Per Share	\$1.89	\$1.62	\$1.54	\$1.24	\$1.51	\$1.63	\$2.08	\$1.38	\$6.83	\$6.30	\$6.60	\$7.03	\$7.76
Free Cash Flow (after acq.)	30,218	25,644	24,287	19,435	23,584	25,318	32,034	21,144	111,137	99,584	102,080	106,448	115,160
Drivers													
Depreciation & amortization	2,916	2,898	3,052	2,653	2,663	2,829	2,938	3,019	11,104	11,519	11,449	13,318	15,071
Cap Ex/Depreciation	1.3	1.0	0.7	0.8	1.8	1.4	1.2	1.3	1.0	1.0	1.4	1.3	1.2
Cap Ex/Sales	(3%)	(3%)	(3%)	(2%)	(4%)	(4%)	(4%)	(4%)	(38%)	(28%)	(35%)	(23%)	(14%)
Annual Depr. % of PP&E (prior qtr)	28%	27%	28%	24%	24%	24%	24%	24%	28%	27%	24%	24%	24%

Source: Company reports, BofA Global Research estimates

BofA GLOBAL RESEARCH

Price objective basis & risk

Apple Inc. (AAPL)

Our PO of \$225 is based on approximately 32x our C24E EPS. Our target multiple compares to the 5-year historical range of 16-34x (median 27x). We believe a multiple at the higher end of the historical range is justified given a large cash balance and opportunity to diversify into new end markets, increasing mix and diversity of services.

Downside risks are: a) weaker iPhone 15 cycle on consumer spending risk, b) weaker near-term services trajectory where App Store & Licensing can decelerate, c) gross profit dollars declining y/y next few quarters, d) iPads/Macs reverting to pre-COVID levels, and e) stronger dollar. Other risks are potential trade conflicts, tariffs, longer iPhone replacement cycles, commoditization in the smartphone market, intensifying competition in the tablet market, ability to manage beat and raise expectations for EPS estimates, and requirement to maintain pace of product innovation.

Upside risks are: a) stronger sales of Pro iPhone models which can help average selling price and help the mix of the business, b) est. revisions can be lower vs. peers, c) potential new products (AR/VR), and services (advertising). Other upside risks are stronger than expected iPhone cycle, gross margin upside from better mix of higher end iPhones, tailwinds from lower memory costs, and a faster than expected recovery in emerging markets.

Analyst Certification

I, Wamsi Mohan, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - IT Hardware and Technology Supply Chain Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Amphenol	APH	APH US	Wamsi Mohan
	Apple Inc.	AAPL	AAPL US	Wamsi Mohan
	Corning Inc.	GLW	GLW US	Wamsi Mohan
	Dell Technologies Inc.	DELL	DELL US	Wamsi Mohan
	Flex Ltd.	FLEX	FLEX US	Ruplu Bhattacharya
	HP Inc.	HPQ	HPQ US	Wamsi Mohan
	International Business Machines Corp.	IBM	IBM US	Wamsi Mohan
	Jabil Inc.	JBL	JBL US	Ruplu Bhattacharya
	Nutanix Inc.	NTNX	NTNX US	Wamsi Mohan
	Roku, Inc.	ROKU	ROKU US	Ruplu Bhattacharya
	Seagate Technology	STX	STX US	Wamsi Mohan
	Sensata Technologies Holdings Plc	ST	ST US	Wamsi Mohan
	TD Synnex Corp	SNX	SNX US	Ruplu Bhattacharya
	TE Connectivity Ltd.	TEL	TEL US	Wamsi Mohan
	Teradata Corporation	TDC	TDC US	Wamsi Mohan
	Western Digital Corporation	WDC	WDC US	Wamsi Mohan
NEUTRAL				
	Arrow Electronics Inc.	ARW	ARW US	Ruplu Bhattacharya
	Avnet Inc.	AVT	AVT US	Ruplu Bhattacharya
	CDW Corp	CDW	CDW US	Ruplu Bhattacharya
	Concentrix Corporation	CNXC	CNXC US	Ruplu Bhattacharya
	Hewlett-Packard Enterprise	HPE	HPE US	Wamsi Mohan
	Pure Storage	PSTG	PSTG US	Wamsi Mohan
UNDERPERFORM				
	DigitalOcean	DOCN	DOCN US	Wamsi Mohan

US - IT Hardware and Technology Supply Chain Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	NetApp Inc.	NTAP	NTAP US	Wamsi Mohan
	Sanmina Corporation	SANM	SANM US	Ruplu Bhattacharya
	Vishay Intertechnology, Inc.	VSH	VSH US	Ruplu Bhattacharya
	Vizio	VZIO	VZIO US	Wamsi Mohan

iQmethodSM Measures Definitions**Business Performance**

Return On Capital Employed

Return On Equity
Operating Margin
Earnings Growth
Free Cash Flow

Quality of Earnings

Cash Realization Ratio
Asset Replacement Ratio
Tax Rate
Net Debt-To-Equity Ratio
Interest Cover

Valuation Toolkit

Price / Earnings Ratio
Price / Book Value
Dividend Yield
Free Cash Flow Yield
Enterprise Value / Sales

EV / EBITDA

Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income
Operating Profit
Expected 5 Year CAGR From Latest Actual
Cash Flow From Operations – Total Capex

Numerator

Cash Flow From Operations
Capex
Tax Charge
Net Debt = Total Debt – Cash & Equivalents
EBIT

Numerator

Current Share Price
Current Share Price
Annualised Declared Cash Dividend
Cash Flow From Operations – Total Capex
EV = Current Share Price × Current Shares + Minority Equity + Net Debt + Other LT Liabilities
Enterprise Value

Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill
Amortization
Shareholders' Equity
Sales
N/A
N/A

Denominator

Net Income
Depreciation
Pre-Tax Income
Total Equity
Interest Expense

Denominator

Diluted Earnings Per Share (Basis As Specified)
Shareholders' Equity / Current Basic Shares
Current Share Price
Market Cap = Current Share Price × Current Basic Shares
Sales
Basic EBIT + Depreciation + Amortization

iQmethodSM is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of *iQmethod* are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

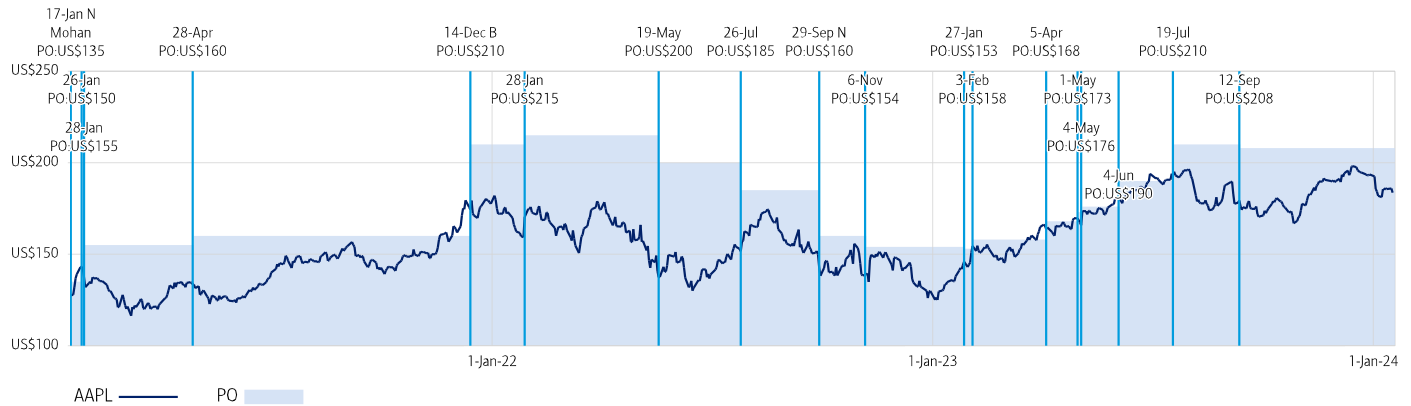
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Disclosures

Important Disclosures

Apple Inc. (AAPL) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Technology Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. **Coverage Cluster** is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

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