

SAP SE

Cloud acceleration and cost reset support > 20% EBIT CAGR

Reiterate Rating: BUY | PO: 178.00 EUR | Price: 160.76 EUR

Reiterate Buy on confirmed Cloud momentum acceleration

We reiterate our Buy on SAP post a solid print. We raise 2025 EBIT and FCF by 11% and 7% respectively and raise our PO from €173 to €178 (ADR moves from \$186 to \$191). Cloud backlog accelerated to 27% in Q4 from 25%, providing significant visibility on a business that now accounts for >50% of software revenues. The €2bn / 8000 FTE (7% headcount) restructuring plan drives a 40% cut to 2024 FCF but supports >20% EBIT CAGR to 2025. Shares rose 7.6% to a record €160.8 high, reflecting the scope of 2025 upgrades (ie no multiple expansion), with arguably a stronger mid term revenue growth visibility. Reiterate Buy: (1) strong Cloud momentum with CCB +27% cc (2) EBIT accelerates to double digit in 2024-2026 supporting multiple expansion and (3) an unlevered balance sheet provides flexibility for capital deployments.

Growth algorithm in play: Cloud drives acceleration

We expect Software revenue growth to accelerate from 7.9% in 2023 to 9.6% in 2024 and 11.4% in 2025, driven by an increasing weight of Cloud (45% end 2022 to 65% in 2025). We were encouraged by the acceleration in CCB to 27%, with the new segment Cloud ERP suite (82% of cloud) growing 33%, and supporting the revenue growth acceleration in 2024/2025 and beyond. The transactional drag (c1.5pp in 2024) should ease. Business Al is a clear priority, with >50% of customers taking the Premium GROW offer including Al. Operating leverage drives >20% EBIT CAGR from 2023 to 2025.

Cloud/EBIT upgrades, PO increased to €178

We raise 2024/25 revenue by 2% on increased confidence on Cloud growth with EBIT upgrades of 12% in 2025 following SAP's restructuring program and increased focus on scaling efficiently. PO raised from €173 (25x 2024 EBITDA for Cloud business) to €178 (26x EBITDA) on peers multiple. SAP currently trades at a 9% discount to peers at 17.1x 2024 EV/2024 EBITDA vs 19x with a highly predictable growth trajectory.

Estimates (Dec) (EUR)	2022A	2023A	2024E	2025E	2026E
EPS (Adjusted Diluted)	4.08	4.95	4.37	5.79	6.79
EPS Change (YoY)	-39.5%	21.5%	-11.7%	32.4%	17.3%
Dividend / Share	2.05	2.11	2.17	2.24	2.75
ADR EPS (Adjusted Diluted - US\$)	4.29	5.36	4.77	6.31	7.41
ADR Dividend / Share (US\$)	2.16	2.28	2.37	2.44	2.99
Valuation (Dec)					
P/E	39.4x	32.5x	36.7x	27.8x	23.7x
Dividend Yield	1.28%	1.31%	1.35%	1.39%	1.71%
EV / EBITDA*	19.2x	18.9x	20.5x	16.6x	14.5x
Free Cash Flow Yield*	2.55%	2.88%	2.01%	4.46%	5.24%
* For full definitions of <i>iQmethod</i> sm measures, see page 15.					

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 16 to 19. Analyst Certification on page 14. Price
Objective Basis/Risk on page 14.

Timestamp: 25 January 2024 12:31AM EST

25 January 2024

Equity

Key Changes		
(EUR)	Previous	Current
Price Obj.	173.00	178.00
2024E Rev (m)	33,354.4	33,935.7
2025E Rev (m)	36,854.9	37,454.2
2026E Rev (m)	40,279.7	41,283.0
2024E EPS	4.60	4.37
2025E EPS	5.41	5.79
2026E EPS	6.21	6.79

Frederic Boulan, CFA >> Research Analyst MLI (UK) +44 20 7995 7101 frederic.boulan@bofa.com

James Pavey, CFA >> Research Analyst MLI (UK) james.pavey@bofa.com

Victor Cheng, CFA >> Research Analyst MLI (UK) victor.cheng@bofa.com

Aditya Buddhavarapu, CFA >> Research Analyst MLI (UK) aditya.buddhavarapu@bofa.com

Stock Data

Price (Common / ADR)	160.76 EUR / 174.61 USD
Price Objective	178.00 EUR / 191.00 USD
Date Established	25-Jan-2024/25-Jan-2024
Investment Opinion	B-1-7 / B-1-7
52-Week Range	101.46 EUR-161.98 EUR
Market Value (mn)	189,697 EUR
Shares Outstanding (mn)	1,180.0 / 1,180.0
Average Daily Value (mn)	293.34 USD
Free Float	86.8%
BofA Ticker / Exchange	SAPGF / GER
BofA Ticker / Exchange	SAP / NYS
Bloomberg / Reuters	SAP GY / SAPG.F
ROE (2024E)	12.2%
Net Dbt to Eqty (Dec-2023A)	-2.5%
ESGMeter™	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".

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

iQprofile[™]SAP SE

Key Income Statement Data (Dec)	2022A	2023A	2024E	2025E	2026E
(EUR Millions)					
Sales	30,871	31,207	33,936	37,454	41,283
EBITDA Adjusted	9,929	10,094	9,311	11,523	13,166
Depreciation & Amortization	(1,896)	(1,373)	(1,493)	(1,528)	(1,560)
EBIT Adjusted	8,033	8,721	7,818	9,995	11,606
Net Interest & Other Income	(1,581)	(493)	(80.3)	(91.3)	(9.47)
Tax Expense / Benefit	(1,377)	(1,728)	(1,618)	(2,559)	(3,076)
Net Income (Adjusted)	4,778	5,844	5,162	6,833	8,018
Average Fully Diluted Shares Outstanding	1,172	1,180	1,180	1,180	1,180
Key Cash Flow Statement Data					
Net Income (Reported)	2,290	6,103	3,675	6,818	8,009
Depreciation & Amortization	1,896	1,373	1,493	1,528	1,560
Change in Working Capital	1,031	57.0	0	(650)	(300)
Deferred Taxation Charge	0	0	0	0	0
Other CFO	429	(1,340)	(555)	1,800	1,754
Cash Flow from Operations	5,646	6,193	4,613	9,496	11,024
Capital Expenditure	(874)	(785)	(848)	(1,124)	(1,197)
(Acquisition) / Disposal of Investments	NA 1.540	NA 1.601	NA	NA	NA 12.4
Other CFI	1,540	1,691	84.8	93.6	134
Cash Flow from Investing	(1.500)	906	(764)	(1,030)	(1,063)
Share Issue / (Repurchase) Cost of Dividends Paid	(1,500)	(949)	(2,000)	(2,051)	(1,511)
Increase (decrease) debt	(2,865) (1,354)	(2,395) (4,702)	(2,464) (850)	(2,538) (900)	(2,614)
Other CFF	(618)	319	(325)	(325)	(1,100) (325)
Cash Flow from Financing	(6,337)	(7,727)	(5,639)	(5,814)	(5,550)
Total Cash Flow (CFO + CFI + CFF)	(25.0)	(628)	(1,790)	2,651	4,410
FX and other changes to cash	(1,769)	2,234	(1,7,30)	0	0
Change in Cash	(1,794)	1,606	(1,912)	2,651	4,410
Change in Net Debt	440	(6,308)	1,062	(3,551)	(5,510)
Net Debt	5,214	(1,094)	(32.4)	(3,584)	(9,094)
Key Balance Sheet Data					
Property, Plant & Equipment	4,934	4,276	3,915	3,719	3,527
Goodwill	33,106	29,088	29,088	29,088	29,088
Other Intangibles	3,835	2,505	2,137	1,835	1,530
Other Non-Current Assets	11,716	11,891	11,891	11,891	11,891
Trade Receivables	6,258	6,361	6,880	7,593	8,202
Cash & Equivalents	9,862	11,468	9,556	12,208	16,618
Other Current Assets	2,449	2,702	3,756	3,976	4,298
Total Assets	72,160	68,291	67,223	70,310	75,154
Long-Term Debt	10,252	8,643	7,793	6,893	5,793
Other Non-Current Liabilities	1,603	1,707	1,907	2,107	2,107
Short-Term Debt	4,824	1,731	1,731	1,731	1,731
Other Current Liabilities	12,628	12,845	14,083	14,030	14,324
Total Liabilities	29,307	24,926	25,514	24,761	23,955
Total Equity	42,853	43,365	41,710	45,549	51,199
Total Equity & Liabilities	72,160	68,291	67,223	70,310	75,154
Business Performance*					
Return On Capital Employed	16.2%	22.3%	21.7%	28.5%	28.6%
Return On Equity	12.1%	14.0%	12.2%	15.8%	16.7%
Operating Margin	15.1%	18.5%	16.1%	25.5%	27.1%
Free Cash Flow (MM)	4,772	5,408	3,765	8,372	9,827
Quality of Earnings*					
Cash Realization Ratio	1.18x	1.06x	0.89x	1.39x	1.37x
Asset Replacement Ratio	0.46x	0.57x	0.57x	0.74x	0.77x
Tax Rate	44.5%	32.7%	30.0%	27.0%	27.5%
Net Debt/Equity	12.2%	-2.52%	-0.08%	-7.87%	-17.8%
Interest Cover	5.80x	18.6x	NM	NM	NM
* For full definitions of <i>IQ</i> method SM measures, see page 1					

Company Sector

PC Software

Company Description

Founded in 1972, SAP is the recognized leader in enterprise application software for all types of industries and for every major market. Headquartered in Walldorf, Germany, SAP is the world's largest application software company. SAP employs over 100,000 people.

Investment Rationale

We expect SAP to experience a rerating as its pivot to the Cloud drives an acceleration in both revenue and margins. Its business is now largely transitioned to recurring sales, with licence accounting for <5% in 2023E.

Stock Data	
Shares / ADR	1.00
Price to Book Value	4 5x

Quarterly Earnings Estimates

	2023	2024
Q1	1.07A	0.86E
Q2	1.06A	0.98E
Q3	1.43A	1.17E
Q4	1.40A	1.37E

Key Changes		
(US\$)	Previous	Current
Price Obj.	186.00	191.00
2024E EPS	5.02	4.77
2025E EPS	5.90	6.31
2026E EPS	6.77	7.41



Changes to estimates and valuation

Exhibit 1: Changes to our estimates

Cloud upgrades of 2-3% as CCB accelerates and EBIT upgrades as SAP restructures and scales efficiently

	I	New estimates			Old estimates	Delta			
In €mn (except per share values)	2023E	2024E	2025E	2023E	2024E	2025E	2023E	2024E	2025E
Licences	1,767	1,134	737	1,575	1,088	816	12.2%	4.2%	-9.7%
Cloud	13,664	17,086	21,280	13,520	16,702	20,701	1.1%	2.3%	2.8%
Maintenance	11,497	11,245	10,796	11,504	11,108	10,711	-0.1%	1.2%	0.8%
Services	4,279	4,471	4,642	4,280	4,457	4,627	0.0%	0.3%	0.3%
Revenue	€ 31,207	€ 33,936	€ 37,454	€ 30,880	€ 33,354	€ 36,855	1.1%	1.7%	1.6%
% YoY growth	5.7%	8.7%	10.4%	5.0%	8.0%	10.5%			
Ex FX	9.0%	8.9%	10.4%	6.6%	8.7%	10.5%			
Adjusted operating profit	€ 6,500	€ 7,818	€ 9,995	€ 6,550	€ 7,679	€ 8,938	-0.8%	1.8%	11.8%
% margin	20.8%	23.0%	26.7%	21.2%	23.0%	24.3%			
Reported operating profit	€ 5,785	€ 5,473	€ 9,567	€ 5,830	€ 7,189	€ 8,515	-0.8%	-23.9%	12.4%
% margin	18.5%	16.1%	25.5%	18.9%	21.6%	23.1%			
Adjusted EPS	€ 4.95	€ 4.37	€ 5.79	€ 3.82	€ 4.60	€ 5.41	29.6%	-4.9%	7.1%
% YoY growth	23.3%	-11.7%	32.4%	106.8%	20.4%	17.6%			
YoY, ex FX	37.2%	-11.6%	32.4%	110.8%	21.2%	17.6%			
Reported EPS	€ 5.17	€ 3.11	€ 5.78	€ 6.02	€ 4.12	€ 5.15	-14.1%	-24.3%	12.3%
FCF to equity	€ 5,083	€ 3,440	€ 8,047	€ 4,950	€ 5,784	€ 7,506	2.7%	-40.5%	7.2%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 2: SAP Sum of the Parts valuation (€mn except per share data when stated)

Cloud accounts for c85% of current equity value

SOTP Valuation	Methodology	EV Sales Mult (x)	2024 EV/ EBITDA Mult (x)	EV 100%	Stake	EV SAP	Multiple Comment	Per share
Cloud (ex Qualtrics)	Target Multiple	9.6x	26x	165,988	100%	165,988	26x 2024 EBITDA, in line with US cloud software for respective growth	142
License + Maintenance	DCF	2.6x	7x	32,458	100%	32,458		28
Services	Target Multiple	1.4x	14x	6,080	100%	6,080	Blend of Accenture, Capgemini & IBM	5
Enterprise Value (€,m)				-	-	204,526	•	
Net Debt 2024 (BofAe, €,m)				-	-	-3,521	<u>-</u>	
Equity Value (€,m)				-	-	208,047	•	
Fully diluted share count (m)				-	-	1,172	<u>-</u>	
Value per share (€/share)				-	-	178	-	
Value per share (€/share)				-	-	178	-	
Share price			•	•		161		
Upside (downside) potential						11%		

Source: BofA Global Research estimates



Exhibit 3: New 2024 /2025 guidance Consensus to increase

		20	24	Δ (%)			
				Guidance	Guidance	BofA vs	
In €mn (except per share values)	Guidance	BofA	Cons.	vs. BofA	vs cons	Cons.	
Licences		1,134	1,121			1.2%	
Maintenance		11,245	11,173			0.6%	
Cloud Subscription	17,150	17,086	17,001	0.4%	0.9%	0.5%	
SSRS Revenue	€ 29,250	€ 29,465	€ 29,192	<i>-0.7%</i>	0.2%	0.9%	
Total Revenue		€ 33,936	€ 33,647			0.9%	
Adjusted Operating Profit (post SBC)	€ 7,750	€ 7,818	€ 7,727	-0.9%	0.3%	1.2%	
% margins		23.0%	23.0%				
FCF to equity	€ 3,500	€ 3,440	€ 6,046	1.8%	-42.1%	-43.1%	
		20	25		Δ (%)		
				Guidance	Guidance	BofA vs	
In €mn (except per share values)	Guidance	BofA	Cons.	vs. BofA	vs cons	Cons.	
Licences		737	872			-15.5%	
Maintenance		10,796	10,700			0.9%	
Cloud Subscription	21,500	21,280	21,197	1.0%	1.4%	0.4%	
SSRS Revenue		€ 32,812	€ 32,459			1.1%	
Total Revenue	€ 37,500	€ 37,454	€ 37,282	0.1%	0.6%	0.5%	
Adjusted Operating Profit (post SBC)	€ 10,000	€ 9,995	€ 9,426	0.0%	6.1%	6.0%	
% margins	26.7%	26.7%	25.3%				
FCF to equity	€ 8,000	€ 8,047	€ 7,419	-0.6%	7.8%	8.5%	

Source: BofA Global Research estimates



Earnings call key takeaways

Summary

- 1. Positive on medium term revenue outlook with Cloud ERP suite (82% of cloud) growing 33%, driving growth acceleration in 2024/2025 and acceleration beyond 2025.
- 2. 27% Cloud growth (cc) : translate to 24-27% cloud growth in 2024 with some drag from transactional (c1.5%) but to ease over time
- 3. Business Al: Rise premium grow premium: 50% of customers selecting Premium offer. Moving from discovery to adoption.
- 4. FCF/restructuring €2bn cost, savings reinvested in 2024 but benefits in 2025 and beyond. 2025 FCF driven by profit growth, moderate assumptions on working cap. 2025 upgraded to 10bn post 2bn SBC, benefits more apparent in coming years, net of restructuring of spilling out in further years
- M&A: don't need to buy growth, but will keep eyes open to further complement our portfolio

Prepared remarks

- Met or exceeded outlook on all key metrics. Need to lead the way to lead in Business Al
- Major set of update: Announced new transformation program, investment in strategic growth areas, esp in Gen Al, Sharing outlook for 2024, Update on 2025 ambitions including effect of transformation plan
- Customer wins include Vodafone with Signavio, EMS, VW SuccessFactor, NVDIA
- Guidance: total revenue expected to accelerate to 2027, lead with RISE, hundreds of net new every year.
- Cloud: Targeted incentive to accelerate migration. GROW big success, 700 new subs
- BTP: 2.5bn run rate and growing at double digits
- Top 1,000 customers using average 4 solution, (3 last year), top 100 at 5 up from 4.
- €1bn investment on business AI
- M&A: don't need to buy growth, but will keep eyes open to further complement our portfolio
- · Infusion of Business AI across all the business
- Further opportunities to enhance operating model
- Cloud ERP 82% of cloud, 33% growth, sustain v high growth rate
- Region: strong APJ and EMEA, solid US
- EBIT impacted accelerated cap sales, higher bonus pool, 109mln Q4 2022 Litmus baseline.
- Tax: 28-32% non IFRS tax rate, higher end in 2024 due to restructuring costs



- FCF support but some capex pushed out to 2024
- €2bn restructuring, vast majority recognised in H1 2024. Preliminary number, could evolve. Any saving we can extract to be reinvested in that investment.
- 2025 upgraded to 10bn post 2bn SBC, benefits more apparent in coming years, net of restructuring of spilling out in further years. 5.9bn FCF in 2024 excluding oneoffs.
- 2025: significant reduction in cash SBC in FCF.
- 1000 customers using Cloud for sustainable enterprise.

Q&A

Update S4 HANA and S4 HANA cloud migration? How is traction with large / complex customers? Users like NVIDIA want to build more resilient supply chains.
Significant uptick in >5mln deals, and total backlog committed coming especially from large enterprise to remodel business models. Overall very confident with traction with large enterprise customers. To navigate macro uncertainty they need operationally efficient processes and need to find ways to monetise - only answer is cloud with SAP. Order entry reflects market demand.

Business Al progress? Launched two new products recently - RISE premium and GROW premium (50% of customers selecting Premium offer). Business Al is moving from discovery to adoption.

Cloud ERP - what is outside of Cloud ERP in cloud and what actions are being taken here? Ariba and S4 come as one procurement platform. Former HANA Enterprise is in decline. We have 32% to 33% growth in Cloud ERP. Outside of Cloud ERP the remained of the SaaS / PaaS portfolio was under pressure in 2023. Extension suite is a mid-sing digit grower with laaS c16%. Applying same growth rates over the next two years would get us to the 2025 guidance.

Restructuring plan: further benefits post 2025? Much higher recurring growth with total cloud backlog €44bn. RISE has 50% net new customers. For 2025 and beyond we expect higher recurring revenue share with lower share of licence. We see further total revenue acceleration in 2025 and beyond, no lack of new solutions to win market share in the coming years. We expect all these levers to help drive margin expansion beyond 2025.

Business AI / SAP: access to customer data and processes, how does it differentiate SAP, customers willing to share their data? Develop strong platform, predictive sales, inventory, can take a ton of opex out for customers.

27% CCB growth in Q4: Litmus lapping, LeanIX, quantify growth drivers, reconciliation with 24-27% guide, assumptions transactional side? 10mln contribution from LeanIX in Q4 / December with about 100mln translation into Cloud revenue guidance with transactional cloud being the delta. EUR800mln is transactional which stagnated in 2023 and we expect will stagnate in 2024 which we expect will shave of about 1.5% in 2024 but this will ease over time. HSD possible in 2025. Supplier networks is a strategic investment.

FCF: levers on working cap, others? Lion share of bridge is uplift in profits. Some cash SBC. Moderate assumption in working cap, already progress in 2023 driving outperformance in FCF. Already worked through some factoring unwind in 2023 with only EUR200mln left to go in 2024.



2024 Software guidance: implication on maintenance? Good Q4 in licence. Some customers had to upsell due to growing businesses. Prudent to project continuous decline. Good licence performance make YoY comp tougher going forward. With underlying growth increasing it is only a matter of time until we report double digits for total revenue. Possible in 2024, very likely to happen in 2025. Extremely confident on total revenue trajectory.

Q4 EBIT commentary? impact on higher bonusses, higher Department of Justice settlement cost (c200mln impact vs 155mln already booked), impact from sales commissions for a strong Q4.

Product cycle? Consistent feedback from Davos was strong momentum with partners with SAP growing faster than the rest of their portfolio. We will be onboarding further partners for RISE. We are working with partners to ramp up capacity.



Q4 results review

Solid Q4, bullish outlook bar 2024 FCF

SAP delivered a solid Q4 with a 1.8% revenue beat vs consensus and Adj EBIT 1.5% beat. Group revenue was up 9% YoY on a constant currency basis with Cloud and Software revenues 2.3% ahead. Cloud backlog was strong at + 27% YoY (cc), an unexpected acceleration from 23% in Q3. FY24 guidance was strong on top line with Cloud revenue +24-27% c.c vs consensus + 24.2% with total cloud and software revenue 8-10% cc. However, 2024 FCF is impacted by €2.4bn headwinds (restructuring and one-offs) with a 2024 outlook of€3.5bn vs css €6bn. Reit Buy

Guidance: cloud acceleration in '24 but €2.4bn FCF hit

2024 outlook: Cloud revenue +24-27% vs consensus + 24.2%, Cloud and software revenue +8-10% vs street +9.1%. EBIT guidance €7.6-7.9bn, up 17-21% c.c (post share-based compensation) vs street c€7.65bn. Guidance for free cash flow at c€3.5bn is below consensus at €6bn due to c.€2bn program payouts, €0.2 billion impact from FY23 settlement payout and €0.2 billion adverse impact from factoring discontinuation. The current 2025 revenue ambition was reiterated for >€21.5bn of Cloud revenues which implies a 2023-'25E CAGR of c.25% however the EBIT target was upgraded/ restated post SBC to c.€10bn (previously c€11.5bn before c €2bn of SBC). FCF was upgraded to c€8bn from €7.5bn, supported by the benefit from the restructuring plan.

Q4 in detail: beat on licence

SAP delivered a solid Q4 with a 1.8% revenue beat vs Visible Alpha consensus driven by a licence beat, up 9% YoY on a constant currency basis, with Software revenues 2.3% ahead (licences 36% ahead, maintenance -0.8% miss, Cloud -0.6% miss). Cloud backlog was strong, + 27% YoY (cc) from 25% in Q3. Adj EBIT of €2,510 (pre SBC) was 1.5% above css. Adj EPS -12% miss, FCF 18% ahead.

Exhibit 4: Q4'23 results review

Revenues c.1.8% ahead, Adj EBIT c.1.5% beat, FCF 18% beat

		Q4'23		Δ (%)		
In €mn (except per share values)	Actual	Cons.	Guidance	Actual vs. Cons.	Actual vs. Guidance	
	27%	•				
Licences	841	618		36.0%		
Maintenance	2,846	2,868		-0.8%		
Cloud Subscription	3,699	3,722	3,791	-0.6%	-2.4%	
SSRS Revenue	€ 7,386	€ 7,218	€ 6,896	2.3%	7.1%	
% yoy growth reported	5.8%	3.4%	-1.2%	241 bps	702 bps	
% yoy growth constant currency	10.0%					
Services revenue	1,082	1,099		-1.5%		
Total Revenue	€ 8,468	€ 8,317		1.8%		
% yoy growth reported	5.0%	3.1%		188 bps		
Adjusted Operating Profit (old def pre SBC)	€ 2,510	€ 2,473	€ 2,269	1.5%	10.6%	
% margins	29.6%	29.7%		-10 bps		
YoY ex FX growth	2.0%					
Reported Operating profit	1,900					
% margins	22.4%					
Adjusted EPS	€ 1.41	€ 1.60		- 12.1%		
Reported EPS	€ 1.01			•		
FCF to equity	€ 1,660	€ 1,405	€ 1,397	<i>18.1%</i>	18.8%	

Source: BofA Global Research estimates, Company compiled consensus (*Visible Alpha consensus), Company report

BofA GLOBAL RESEARCH

Exhibit 5: FY'23 actuals vs consensus

Revenue beat of 0.5% driven by a 14.3% beat vs consensus in licenses

	FY'23			Δ (%)		
In €mn (except per share values)	Actual	Cons.	Guidance	Actual vs. Cons.	Actual vs. Guidance	
Current Cloud Backlog	27.0%					



Exhibit 5: FY'23 actuals vs consensus

Revenue beat of 0.5% driven by a 14.3% beat vs consensus in licenses

		FY'23			Δ (%)
Licences	1,767	1,546		14.3%	
Maintenance	11,497	11,518		-0.2%	
Cloud Subscription	13,664	13,691	13,757	-0.2%	-0.7%
SSRS Revenue	€ 26,928	€ 26,762	€ 26,438	0.6%	1.9%
% YoY growth reported	6.1%	5.4%	4.1%	66 bps	193 bps
% YoY growth constant currency	9.0%				
Services revenue	4,279	4,298		-0.4%	
Total Revenue	€ 31,207	€ 31,060		0.5%	
% YoY growth reported	5.7%	5.2%		50 bps	
Adjusted Operating Profit (old def pre SBC)	€ 8,721	€ 8,687	€ 8,480	0.4%	2.8%
% margins	27.9%	28.0%		-2 bps	
YoY ex FX growth	13.0%				
Reported Operating profit*	5,785				
% margins	19%				
Adjusted EPS (Basic)	€ 5.01	€ 5.20		-3.6%	
Reported EPS (Diluted)*	€ 5.17				
FCF to equity*	€ 5,083	€ 4,859	€ 4,900	4.6%	<i>3.7%</i>

Source: BofA Global Research estimates, Company compiled consensus, Company guidance (mid-point of range), Company report



Exhibit 6: SAP P&L Summary (€mn)Double digit EPS growth ahead

	2019	2020	2021	2022	2023	2024E	2025E	2026E
Revenue								
Cloud Subscription	7,014	8,085	9,418	12,556	13,664	17,086	21,280	25,792
Licences	4,532	3,642	3,248	2,056	1,767	1,134	737	590
Organic licence growth	-5%	-17%	-11%	-39%	-12%	-35%	-35%	-20%
Maintenance	11,548	11,506	11,412	11,909	11,497	11,245	10,796	10,192
Software Revenue (cloud + on premise)	23,094	23,233	24,078	26,521	26,928	29,465	32,812	36,573
Consulting	3,713	3,361	3,078	3,558	3,500	3,669	3,816	3,892
Other services	827	749	686	792	779	802	826	817
Total Revenue	27,634	27,343	27,842	30,871	31,207	33,936	37,454	41,283
% YoY growth reported	11.7%	-1.1%	1.8%	10.9%	5.7%	8.7%	10.4%	10.2%
% YoY growth constant currency	9.0%	1.0%	3.0%	5.0%	9.0%	8.9%	10.4%	10.2%
% YoY growth organic	6.7%	0.4%	3.4%	4.4%	7.7%	8.9%	10.4%	10.2%
Cost of SSRS	4,246	4,369	4,697	5,201	5,075	5,738	6,365	6,935
% margin	82%	81%	80%	80%	81%	81%	81%	81%
Cost of Services	3,407	2,994	2,631	3,085	3,028	3,228	3,365	3,438
% margin	25%	27%	30%	29%	29%	28%	28%	27%
Cost of revenues	7,653	7,363	7,328	8,286	8,103	8,966	9,730	10,373
Gross Profit	19,981	19,980	20,514	22,585	23,104	24,970	27,724	30,910
% gross margin	72.3%	73.1%	73.7%	73.2%	74.0%	73.6%	74.0%	74.9%
Research & Development	3,852	4,153	4,666	5,530	5,611	5,981	6,542	7,145
% of revenue	14%	15%	17%	18%	18%	18%	17%	17%
Sales & Marketing	6,783	6,371	6,480	7,749	7,583	7,808	7,842	8,565
% of revenue	25%	23%	23%	25%	24%	23%	21%	21%
General & Administrative	1,153	1,191	1,181	1,263	1,174	1,262	1,345	1,500
% of revenue	4%	4%	4%	4%	4%	4%	4%	4%
Restructuring and Other	-18	-18	-43	10	16	0	0	0
Adjusted Operating Profit (new def:post SBC)	6,393	6,448	5,439	5,421	6,500	7,818	9,995	11,606
% margin	23%	24%	20%	18%	21%	23%	27%	28%
Other non-operating income/expense	-73	-179	17	-195	-24	0	0	0
Net financial cost	196	776	2,174	-1,386	-469	-80	-91	-6
Adjusted Profit before taxation	8,334	8,880	10,421	6,452	8,228	7,738	9,904	11,600
Taxation	-2,180	-2,350	-2,078	-1,903	-2,413	-2,476	-2,971	-3,480
% tax rate	-26%	-26%	-20%	-29%	-29%	-32%	-30%	-30%
Profit for the period	6,154	6,530	8,343	4,549	5,815	5,262	6,933	8,120
Minority interest	-50	-138	-392	229	29	-100	-100	-100
Consolidated net income	6,104	6,392	7,951	4,778	5,844	5,162	6,833	8,020
Adjusted EPS (Diluted)	5.11	5.42	6.74	4.08	4.95	4.37	5.79	6.80
Dividends (cash)	1,887	2,183	2,891	2,390	2,464	2,538	2,614	3,205
DPS (cash)	1.58	1.85	2.45	2.05	2.11	2.17	2.24	2.75
WASO (Diluted)	1,194	1,180	1,180	1,172	1,180	1,180	1,180	1,180

Source: BofA Global Research estimates, Company report



Exhibit 7: SAP Summary Cash flow forecasts (€mn) Strong growth from 2024

Income from continuing operations Depreciation and amortization	2019	2020	2021	2022	2023	2024E	2025E	2026E
	3,387	5,280	5,383	1,714	3,565	3,775	6,918	8,111
Depression and annormation	1,872	1,831	1,775	1,896	1,373	1,493	1,528	1,560
Income tax expense	1,231	1,938	1,467	1,378	1,728	1,618	2,559	3,077
Finance income and finance costs, net	-196	-776	-2,174	1,385	469	80	91	6
Decrease/increase in sales and bad debt allowances on trade receivables	14	68	-11	89	-10	0	0	0
Other adjustments for non-cash items	507	-426	1,709	1,256	10	11	11	12
Decrease/increase in trade receivables	-1,495	826	410	128	-433	-519	-713	-609
Decrease/increase in other assets	-574	-664	-679	-1,294	-666	-1,054	-70	-322
Decrease/increase in trade payables, provisions and other liabilities	326	304	386	120	661	1,065	631	314
Increase/decrease in contract liabilities	1.007	128	139	733	495	498	-358	305
Interest paid	-341	-244	-183	-248	-356	-310	-282	-254
Interest received	97	122	48	166	469	229	191	247
Income taxes paid, net of refunds	-2,338	-1,194	-2,063	-1,675	-2,242	-1,418	-2,359	-3,077
Others (SBC)	0	0	0	0	1,130	1,300	1,500	1,654
Net cash (used in)/generated from operating activities	3,497	7,193	6,207	5,646	6,193	4,613	9,646	11,026
Net cash (used in)/generated from operating activities	3,437	7,193	0,207	3,040	0,133	4,013	3,040	11,020
Cash flows from investing activities								
Business combinations, net of cash and cash equivalents acquired	-6,215	-662	-1,125	-679	-1,168	0	0	0
Proceeds from sales of subsidiaries or other businesses	61	203	-57	289	0	0	0	0
Purchase of intangible assets and property, plant and equipment	-817	-816	-825	-874	-785	-848	-1,124	-1,197
Proceeds from sales of intangible assets or property, plant, and equipment	71	88	92	60	99	85	94	134
Purchase of equity or debt instruments of other entities	-900	-2,535	-4,368	-2,320	-3,566	0	0	0
Proceeds from sales of equity or debt instruments of other entities	778	735	3,229	4,190	907	0	0	0
Cash flows from advances (supply chain financing)	0	0	0	0	0	0	0	0
Net cash used in investing activities	-7,021	-2,986	-3,054	666	906	-764	-1,030	-1,063
	7,021	_,,,,,,	,			70.	.,,,,,	1,000
Cash flows from financing activities								
Dividends paid	-1,790	-1,864	-2,182	-2,865	-2,395	-2,464	-2,538	-2,614
Dividends paid on non-controlling interests	-17	-2	-54	-12	-13	0	0	0
Purchase of treasury shares	0	-1,492	0	-1,500	-949	-2,000	-2,051	-1,511
Proceeds from changes in ownership interests in subsidiaries	0	95	2,827	33	0	0	0	0
Payments for taxes related to net share settlement of equity awards	0	0	0	-282	0	0	0	0
Proceeds from borrowings	3,622	2,132	1,680	158	13	0	0	0
Repayments of borrowings	-1,309	-2,430	-1,952	-1.445	-4,081	-850	-900	-1,100
Transactions with non-controlling interests	0	-59	0	0	0	0	0	0
Payments of lease liabilities	-404	-378	-374	-424	-325	-325	-325	-325
Cash flows with funders (supply chain financing)	0	0	0	0	0	0	0	0
Net cash (used in)/generated from financing activities	101	-3.997	-54	-6.337	-7.727	-5,639	-5,814	-5,550
	101	2,223		-,	.,	-,	-,	2,222
\ \	2.422	210	3,099	-25	-628	-1,790	2,801	4,412
Net (decrease)/increase in cash and cash equivalents	-3,423	210	3,033			1,7 30	2,001	.,
Net (decrease)/increase in cash and cash equivalents	,		•			•	•	·
Net (decrease)/increase in cash and cash equivalents Cash and cash equivalents at the beginning of the period	8,628	5,315	5,311	8,898	9,008	8,002	6,212	9,014
Net (decrease)/increase in cash and cash equivalents Cash and cash equivalents at the beginning of the period Exchange gain (loss) on cash and cash equivalents	,	5,315 -214	•			•	•	9,014 0
Net (decrease)/increase in cash and cash equivalents Cash and cash equivalents at the beginning of the period	8,628	5,315	5,311	8,898	9,008	8,002	6,212	9,014
Net (decrease)/increase in cash and cash equivalents Cash and cash equivalents at the beginning of the period Exchange gain (loss) on cash and cash equivalents	8,628 110	5,315 -214	5,311 488	8,898 133	9,008 -378	8,002 0	6,212 0	9,014 0

Source: BofA Global Research estimates, Company report



Exhibit 8: SAP Balance sheet forecast (€mn) Fast deleveraging

	2019	2020	2021	2022	2023	2024E	2025E	2026E
Cash and cash equivalents	5,314	5,311	8,898	9,006	8,124	6,212	9,014	13,426
Other financial assets	297	1,635	2,758	856	3,344	3,344	3,344	3,344
Trade and other receivables	7,933	6,593	6,357	6,258	6,361	6,880	7,593	8,202
Other non-financial assets	1,179	1,333	1,626	2,152	2,358	3,412	3,482	3,804
Tax assets	469	212	402	297	344	344	344	344
Total current assets	15,192	15,084	20,041	18,569	20,531	20,193	23,778	29,121
Goodwill	29,162	27,560	31,103	33,106	29,088	29,088	29,088	29,088
Intangible assets	4,491	3,784	3,966	3,835	2,505	2,137	1,835	1,530
Property, plant, and equipment	5,497	5,042	4,975	4,934	4,276	3,915	3,719	3,527
Other financial assets	2,337	3,512	6,279	5,626	5,543	5,543	5,543	5,543
Trade and other receivables	129	131	147	169	203	203	203	203
Other non-financial assets	1,701	1,926	2,612	3,546	3,552	3,552	3,552	3,552
Tax assets	434	270	272	324	400	400	400	400
Deferred tax assets	1,286	1,167	1,778	2,051	2,193	2,193	2,193	2,193
Total non-current assets	45,037	43,392	51,132	53,591	47,760	47,030	46,532	46,036
Total assets	60,229	58,476	71,173	72,160	68,291	67,223	70,310	75,156
-								
Trade and other payables	1,576	1,213	1,545	2,106	1,775	2,840	3,471	3,785
Tax liabilities	249	429	317	278	205	205	205	205
Financial liabilities	3,273	2,348	4,528	4,824	1,731	1,731	1,731	1,731
Other non-financial liabilities	4,809	4,654	5,181	4,799	5,607	5,607	5,607	5,607
Provisions	266	73	89	90	232	232	232	232
Contract liabilities	4,289	4,150	4,390	5,357	5,026	5,199	4,516	4,495
Total current liabilities	14,462	12,868	16,050	17,452	14,576	15,814	15,761	16,055
-								
Trade and other payables	8	98	122	79	39	39	39	39
Tax liabilities	548	649	823	890	877	877	877	877
Financial liabilities	12,924	13,606	11,042	9,547	7,945	7,095	6,195	5,095
Other non-financial liabilities	799	768	860	705	698	698	698	698
Provisions	478	368	355	359	486	486	486	486
Deferred tax liabilities	80	158	285	242	272	472	672	672
Contract liabilities	89	36	13	33	33	33	33	33
Total non-current liabilities	14,927	15,684	13,499	11,855	10,350	9,700	9,000	7,900
Total liabilities	29,389	28,552	29,549	29,307	24,926	25,514	24,761	23,955
=								
Issued capital	1,229	1,229	1,229	1,229	1,229	1,229	1,229	1,229
Share premium	545	545	1,918	3,080	1,846	1,846	1,846	1,846
Retained earnings	28,798	32,022	37,334	36,368	42,417	42,783	48,574	55,637
Other components of equity	1,772	-1,011	1,551	3,800	2,366	2,244	2,244	2,244
Treasury shares	-1,580	-3,072	-3,072	-4,341	-4,741	-6,741	-8,792	-10,303
Equity attributable to owners of parent	30,764	29,713	38,960	40,136	43,116	41,361	45,100	50,652
Non-controlling interests	76	211	2,664	2,717	249	349	449	549
Total shareholders' equity	30,840	29,924	41,624	42,853	43,365	41,710	45,549	51,201
Total Equity and Liabilities	60,229	58,476	71,173	72,160	68,291	67,223	70,310	75,156
Net Debt	11,385	9,776	4,774	4,509	-1,792	-730	-4,432	-9,944

Source: BofA Global Research estimates, Company report



Glossary

API: application programming interface

BTP: Business Technology Platform

ECC: ERP Central Component

HR: Human Resources

ERP: Enterprise Resource Planning

CRM: Customer relationship management

SMB: Small Medium sized Business

SaaS: software as a Service

PaaS: Platform as a Service

S&M: Sales and marketing

SBC: Share-based compensation

Al: Artificial Intelligence

TAM: Total Addressable Market

PhD: Doctor of Philosophy

CCB: Current Cloud Backlog

B2B: Business-to-business

LLM: Large Language Model

SKU: Stock Keeping Unit

S4, RISE & GROW: these are SAP products

APJ: Asia Pacific and Japan

EMEA: Europe, Middle East and Africa

CX: Customer Experience

PP: Percentage Point

FTE: Full-time Equivalent

TCO: Total Cost of Ownership

AWS: Amazon Web Services

YTD: Year To Date



Price objective basis & risk

SAP SE (SAPGF / SAP)

Our price objective is based on Sum of the Parts model, valuing Cloud, on-prem and services separately. We use a 26x 2024E EV/EBITDA for the Cloud business, in line with US peers. We value the on-prem business using a DCF (-8% revenue growth to 2031, terminal growth 0%, 40% terminal EBIT margins, WACC 6.7%), while we value the services business at a 14x EV/EBITDA multiple, in line with IT Services peers. This results in a \$178 (US\$191) price objective.

Upside risks to our price objective are (1) a faster multiple re-rating as the market prices in a successful cloud transition, and (2) slower erosion in the core licence business. Downside risks are increased competition esp from Cloud native peers, and execution challenges leading to a weaker than expected growth or margin profile.

Analyst Certification

I, Frederic Boulan, CFA, 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.

EMEA - Technology Software Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Adyen	ADYEY	ADYEY US	Frederic Boulan, CFA
	Adyen N.V.	ADYYF	ADYEN NA	Frederic Boulan, CFA
	Alten	ABLGF	ATE FP	Aditya Buddhavarapu, CFA
	Amadeus	AMADF	AMS SQ	Victor Cheng, CFA
	Amadeus	AMADY	AMADY US	Victor Cheng, CFA
	Capgemini	CAPMF	CAP FP	Frederic Boulan, CFA
	Capgemini	CGEMY	CGEMY US	Frederic Boulan, CFA
	Nexi SpA	NEXPF	NEXI IM	Aditya Buddhavarapu, CFA
	PROS	PRO	PRO US	Victor Cheng, CFA
	Sage	SGGEF	SGE LN	Frederic Boulan, CFA
	SAP SE	SAPGF	SAP GY	Frederic Boulan, CFA
	SAP SE	SAP	SAP US	Frederic Boulan, CFA
	Sopra Steria	SPSAF	SOP FP	Aditya Buddhavarapu, CFA
	Temenos AG	TMNSF	TEMN SW	Frederic Boulan, CFA
	Temenos AG	TMSNY	TMSNY US	Frederic Boulan, CFA
	Wise	WPLCF	WISE LN	Aditya Buddhavarapu, CFA
	Worldline	WWLNF	WLN FP	Frederic Boulan, CFA
	Worldline	WRDLY	WRDLY US	Frederic Boulan, CFA
IEUTRAL				
	Dassault Systemes	DASTF	DSY FP	Frederic Boulan, CFA
	Dassault Systemes	DASTY	DASTY US	Frederic Boulan, CFA
	Netcompany	NTCYF	NETC DC	Aditya Buddhavarapu, CFA
	Sabre	SABR	SABR US	Victor Cheng, CFA
	TietoEVRY	TCYBF	TIETO FH	Aditya Buddhavarapu, CFA
JNDERPERFORM				
	Atos	AEXAF	ATO FP	Frederic Boulan, CFA
	Bechtle Ag	BHTLF	BC8 GY	Aditya Buddhavarapu, CFA
	Darktrace	DRKTF	DARK LN	Victor Cheng, CFA
	Kainos	KNNNF	KNOS LN	Aditya Buddhavarapu, CFA
	Nemetschek	NEMTF	NEM GY	Victor Cheng, CFA
	Paysafe	PSFE	PSFE US	Aditya Buddhavarapu, CFA
	Sinch	CLCMF	SINCH SS	James Pavey, CFA
	TeamViewer	TMVWF	TMV GY	Victor Cheng, CFA

IQmethod[™] Measures Definitions

Business Performance	Numerator	Denominator
Return On Capital Employed	NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization	Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill
		Amortization
Return On Equity	Net Income	Shareholders' Equity
Operating Margin	Operating Profit	Sales
Earnings Growth	Expected 5 Year CAGR From Latest Actual	N/A
Free Cash Flow	Cash Flow From Operations — Total Capex	N/A
Quality of Earnings	Numerator	Denominator
Cash Realization Ratio	Cash Flow From Operations	Net Income
Asset Replacement Ratio	Capex	Depreciation
Tax Rate	Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio	Net Debt = Total Debt — Cash & Equivalents	Total Equity
Interest Cover	EBIT	Interest Expense
Valuation Toolkit	Numerator	Denominator
Price / Earnings Ratio	Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value	Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield	Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield	Cash Flow From Operations – Total Capex	Market Cap = Current Share Price × Current Basic Shares
Enterprise Value / Sales	EV = Current Share Price × Current Shares + Minority Equity + Net Debt +	Sales
	Other LT Liabilities	

EV / EBITDA Enterprise Value Basic EBIT + Depreciation + Amortization

Menethod3*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.

Redatabase is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Global Research.

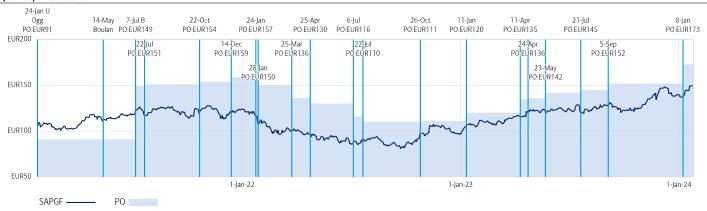
*IQ*profileSM, *IQ*methodSM are service marks of Bank of America Corporation. *IQ*database[®] is a registered service mark of Bank of America Corporation.



Disclosures

Important Disclosures

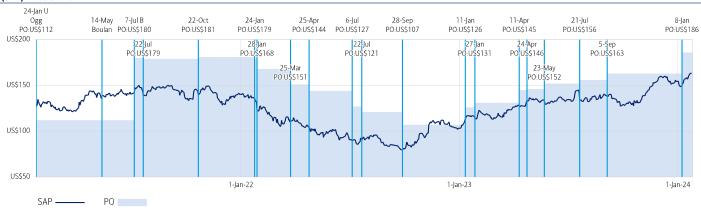
SAP (SAPGF) Price Chart



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.

SAP (SAP) 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%

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.

Price Charts for the securities referenced in this research report are available on the Price Charts website, or call 1-800-MERRILL to have them mailed.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: SAP.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: SAP SE.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: SAP SE.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: SAP SE.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: SAP SE.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: SAP SE. BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: SAP.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: SAP SE.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments. Refer to BofA Global Research policies relating to conflicts of interest.

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofaml.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch (Australia): Merrill Lynch (Hong Kong): Merrill (Hong Kong): Merr (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Ly de Bolsa, regulated by the Comisión Nacional Bancaría y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch (Israel): Merrill Lynch (Israel) intended by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS



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.

India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (BIFC) is accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and is sued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the Electronic Communications Disclaimers for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information. In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

BofA ESGMeter Methodology:

ESGMeter is a proprietary metric based on quantitative analysis and fundamental analyst inputs that reflects our assessment of a company's Environmental, Social and Governance-related attributes. The ESGMeter is intended to indicate a company's likelihood of experiencing stronger financial stability (higher return on equity and lower earnings and price volatility) over the next three years relative to peer group. There are three ESGMeter levels - Low, Medium, and High - which indicate whether a company has attributes most likely to translate into superior financial stability (in the case of a High level) or weaker financial stability (in the case of a Low level) over the next three years relative to its peer group. A Medium level suggests that a company exhibits ESG characteristics that are likely associated with financial stability results in line with its peer group over the next three years. Full details of our methodology, financial stability definition and disclaimers are available at BofA ESGMeter methodology. ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of the BofA Global Research fundamental equity analyst's investment rating, volatility risk rating, income rating or price objective for that company.

Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities. Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public inform



This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Securities policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

