Medical Technology

Medtech in 2024: focus on estimates after the big 2023 multiple reset

Price Objective Change

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At least bar lower for medtech in 2024 (a different setup)

We kick off 2024 at one of the lowest relative valuations in a decade (+2.8% vs S&P). This creates a much lower bar for stocks to work in 2024. EPS revisions likely drive stocks in 2024 as it's not clear what changes medtech multiples in 2024 outside of macro (soft vs hard landing). Medtech multiples would likely benefit the most with a hard landing. We don't see the GLP-1 overhang going away but we also think we are beyond GLP-1 data driving outsized stock moves (needs to impact estimates now).

We keep ISRG, BSX, SYK as best ideas even if consensus

We continue to stick with ISRG, BSX, and SYK as top ideas for 2024 (multi-year double digit EPS growth plus 2024 catalysts that drive 2025 upside). We admit these are so consensus, the bull thesis doesn't even need repeating. But they were consensus in 2023 and were also the few medtech stocks that kept up with the S&P in 2023.

But for some non-consensus ideas …

In large cap value, we prefer MDT as EPS can likely grow a little ex spin and there are a few pipeline items to help turn sentiment. BDX and SWAV are the two stocks where investor sentiment could shift significantly more positive over 2024. INSP, which we think trades more on estimates than GLP-1 data, can work if margins expand (we think better chance they do in 2024). AXNX and NARI both keep beating/raising/expanding margins and as long as this keeps happening, these stocks likely move higher.

Macro could be an important consideration in 2024

We are not making a macro call and our best ideas/stock thoughts above are independent of macro. But here's how we see macro scenarios impacting medtech.

Hard landing: medtech sees most relative multiple expansion. ABT/BDX more in favor. Cardio over ortho. SYK likely lag on capex exposure. We think large caps would initially outperform SMIDs until the macro was closer to bottoming.

Soft landing: Stocks likely move most with estimates so EPS growers can still work. But we think investors would have more appetite for large cap value (MDT/ZBH/BAX), and unprofitable SMIDs where there's a turnaround narrative (NVRO/TNDM).

Higher inflation/higher rates: medtech out of favor. Large cap growth could hold up better (BSX/SYK/ISRG) as these companies can grow fast enough to get margin expansion. Large cap value out of favor with more margin risk. SMIDs lag but profitable growth (PODD/SWAV) more in favor than unprofitable growth.

2023 wasn't great for medtech but starting point higher

Medtech started 2023 at a 22.4% premium to S&P with stocks priced for the good fundamentals we saw in 2023. But relative multiples compressed 19.6% over the course of 2023. We attribute about half of this multiple compression to GLP-1s and about a quarter of the compression to Fund flows into Mag 7/Tech. We attribute the other quarter of multiple compression to tools buy the dip, peak medtech growth fear, lack of major catalysts, and only a select few companies driving outsized EPS growth. We separately raise our PO on DXCM, INSP, and PODD given higher peer multiples.

Tickers mentioned in this report

ABT = Abbott Laboratories
AXNX = Axonics
BAX = Baxter
BDX = Becton Dickinson
BSX = Boston Scientific
CNMD = CONMED
DXCM = Dexcom
EMBC = Embecta
EW = Edwards Lifesciences
INSP = Inspire Medical
ISRG = Intuitive Surgical
MDT = Medtronic
NARI = Inari Medical
NVRO = Nevro
OM = Outset Medical
PODD = Insulet
SILK = Silk Road Medical
SWAV = Shockwave Medical
SYK = Stryker
TNDM = Tandem Diabetes
ZBH = Zimmer Biomet

Acronym glossary

GLP-1 = Glucagon-like peptide-1
SMID = small and mid

continues page 65

Timestamp: 02 January 2024 06:32AM EST

Contents

PO changes for DXCM, PODD, INSP

GLP-1 impacted stocks DXCM, PODD, and INSP have re-rated the most as these stocks have been impacted both from GLP-1 overhang partly reversing post-SELECT data and lower interest rates driving up growth stocks.

Dexcom (DXCM): Our new $170 PO (from $115) is based on 45x our 2025 EBITDA, about a 2x premium to the high-quality large cap medtech names (BSX/SYK) given DXCM is growing EBITDA about 2x faster than these more mature large caps. We maintain our Buy rating as we see multi-year, increasingly profitable revenue growth coming from basal with some potential new insights into TAM expansion over the next 1-2 years with the non-insulin product coming to market.

Insulet (PODD): Our new $255 PO (from $180) is based on 45x our 2025 EBITDA. We use the same multiple we use for DXCM, given PODD is also growing EBITDA at about the same rate vs more mature large caps. We maintain our Buy rating as PODD is the clear market leader in the fastest-growing segment of the pump market.

Inspire (INSP): Our new $230 PO (from $180) is based on 7x our 2025 rev. With INSP executing and revenue growth remaining strong there are reasons to believe that INSP can eventually achieve profitability. This allows us to assign INSP an EV/Sales at the high end of the medtech SMID group which trades in the 1-7x sales range.

Exhibit 1: Summary of price objective (PO) changes in this report
Summary of price objective (PO) changes in this report

Company	BofA Ticker	Last Price	Old PO	New PO
Dexcom	DXCM	$124.09	$115	$170
Inspire Medical	INSP	$203.43	$180	$230
Insulet	PODD	$216.98	$180	$255

Source: BofA Global Research

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More thoughts on BSX, ISRG, SYK, BAX

Boston Scientific (BSX)

Farapulse now Q124 and US launch likely faster than Europe

Just last week BSX's most important 2024 catalyst moved up by 6-9 months. Farapulse was expected to be approved in 2H24 and last week BSX noted that it now anticipates FDA approval in Q124. The lead investigator for the FDA approval study recently said he sees U.S. uptake being very quick noting in Europe some centers have switched to doing all procedures with PFA. We also see the US ramp moving even faster with better supply availability. The Europe Farapulse launch has been limited by console supply (not the catheter), which has limited account openings. The new Minnesota manufacturing site is up and validated. BSX should see a more meaningful ramp of consoles in the second half of Q423 and then even more in Q124.

BSX 2024 guide up next – initial guide likely a starting point and 2025>2024

When we consider the various puts and takes we see BSX's 2024 guide initially being around 8% organic revenue growth and 30-50bps of op margin expansion. Q1 guide is likely below the full year (maybe 6-7% organic?) given the tough Q1 comp. BSX also has continued to point to double digit EPS growth and has not come off that message. We see the initial 2024 EPS guide coming in around 10-11% EPS growth.

Technically, BSX's 8-10% revenue growth long-range plan (LRP) is a CAGR and thus the 2024 guide could technically be below the 8% level. However, we see this as less likely now that Farapulse timing just moved up. We'd also note the stock is likely trading more on 2025 upside over the course of 2024 given how the pipeline plays out and the initial 2024 guide will likely be seen as conservative however BSX decides to start the year and buyside models unlikely change on the 2024 guide.

BSX is very comfortable with 150bps of op margin over 2024-2026 but 2024 margins will have FX and favorable new product mix doesn't help 2024 as much. This means 50bps is harder to achieve in 2024 but not impossible. This is why we see a 30-50bps guide for 2024 initially. There will also be some investment early on in the strategic plan period because BSX is at capacity in certain areas (a great problem to have to be out of space with volume but its also expensive to ramp up so that will be a known gross margin headwind along with FX).

BSX 2024 CAGR same as 2023 despite pipeline

Below we look at BSX revenue CAGRs vs 2019 for each year (and quarter) by division. In total the 2023 vs 2019 CAGR is 7.1% and Street estimates have 2024 vs 2019 at 7.4%. We think 2024 could move up more with the pipeline. The base business ex the pipeline looks fairly stable but there's a few things to note. CRM is one area to watch because BSX has been growing core pacers nicely in the mid single digit range and this could revert to flattish as replacement tailwinds normalize. There will still be good growth on the diagnostic side but CRM is likely more low to mid single digits vs the mid to high single digits its been growing. Neuromod is not a worry area because it struggled in back half of 2023 and there's more opportunity ahead. Medsurg likely reverts back to high single digit growth as it has been running at double digit growth in 6-7% market (where you likely saw some nice catch up and backlog). Medsurg messaging is likely in line with the LRP goals of being a high single digit grower. Watchman – BSX said market will grow 20% ish in LRP (a little lower than historically because larger market size). BSX aims to grow and have vast majority of share.

Exhibit 2: BSX revenue 2, 3, 4, and 5-yr revenue CAGR by business segment using 2019 revenues as a base

In 2024 the Street is modeling a 5-year CAGR (2019 as the base) mostly in line with the 4-year CAGRs seen in 2023. The ~7% CAGR in MedSurg includes ~7% Endo CAGR, ~8% Uro CAGR, and low single digit Neuromod CAGR. The ~8% in Cardiovascular includes low single digit interventional cardiology (ICTx) CAGR, ~25% Watchman CAGR, 3% CRM CAGR, 23% EP CAGR and low double digits peripheral interventions (PI) CAGR. Overall, the Street is modeling total revenue 5-yr CAGR for BSX of 7%.

	2019-2021 2-yr CAGR					2019-2022 3-yr CAGR					2019-2023 4-yr CAGR					2019-2024E 5-yr CAGR				
	1Q	2Q	3Q	4Q	2021	1Q	2Q	3Q	4Q	2022	1Q	2Q	3Q	4Q	2023	1Q	2Q	3Q	4Q	2024
MedSurg	**5.4%**	**8.1%**	**3.3%**	**4.5%**	**5.3%**	**6.6%**	**6.9%**	**4.4%**	**4.4%**	**5.5%**	**7.7%**	**7.4%**	**5.9%**	**5.3%**	**6.5%**	**7.7%**	**7.5%**	**6.4%**	**5.8%**	**6.8%**
Endo	6.5%	8.3%	4.7%	5.8%	6.3%	6.5%	6.0%	4.8%	4.6%	5.4%	7.0%	7.6%	6.7%	5.9%	6.8%	7.3%	7.6%	6.9%	6.2%	7.1%
Uro	5.3%	6.8%	3.4%	7.9%	5.9%	8.2%	8.9%	6.4%	8.0%	7.9%	9.5%	8.7%	7.7%	7.7%	8.4%	9.1%	8.5%	7.7%	7.7%	8.3%
Neuromod	3.1%	10.0%	-0.2%	-3.3%	2.1%	4.0%	5.4%	-0.1%	-1.6%	1.7%	5.9%	4.6%	0.9%	-0.3%	2.5%	6.1%	5.3%	2.6%	1.4%	3.5%
Cardiovascular	**4.4%**	**8.2%**	**5.3%**	**5.0%**	**5.7%**	**6.7%**	**7.4%**	**6.6%**	**5.5%**	**6.5%**	**8.1%**	**8.6%**	**7.8%**	**6.5%**	**7.8%**	**8.1%**	**8.6%**	**8.0%**	**7.2%**	**8.0%**
Cardiology	0.7%	4.6%	3.2%	4.4%	3.3%	4.6%	5.6%	5.5%	5.4%	5.3%	6.9%	7.2%	7.0%	6.4%	6.9%	7.1%	7.5%	7.5%	7.3%	7.4%
ICTx	-2.3%	-0.9%	-3.2%	-2.8%	-2.3%	-0.4%	-0.6%	-1.2%	-2.6%	-1.2%	1.8%	1.8%	0.6%	-0.8%	0.9%	2.2%	2.5%	1.6%	0.7%	1.8%
Watchman	24.4%	33.6%	26.8%	29.0%	28.6%	27.1%	27.4%	26.3%	26.0%	26.7%	27.4%	27.1%	25.5%	25.2%	26.3%	26.3%	26.0%	24.9%	24.3%	25.3%
CRM	-2.3%	2.6%	3.5%	4.2%	2.0%	1.9%	2.8%	2.8%	3.3%	2.7%	2.8%	3.2%	3.7%	3.4%	3.2%	2.7%	3.0%	3.4%	3.5%	3.1%
EP	2.5%	6.3%	3.3%	9.1%	5.4%	14.3%	21.7%	22.3%	25.7%	21.2%	22.2%	23.0%	23.8%	24.4%	23.4%	21.4%	22.1%	23.3%	24.2%	22.8%
PI	17.9%	21.6%	12.4%	7.1%	14.3%	14.4%	14.3%	10.2%	5.7%	10.9%	12.8%	13.7%	10.7%	6.7%	10.8%	11.8%	12.4%	9.8%	6.9%	10.2%
Total Revenue	**5.0%**	**8.2%**	**4.1%**	**3.8%**	**5.2%**	**6.7%**	**7.2%**	**5.4%**	**3.7%**	**5.7%**	**8.0%**	**8.1%**	**6.8%**	**5.5%**	**7.1%**	**8.0%**	**8.1%**	**7.2%**	**6.2%**	**7.4%**

Source: Company financials. Visible Alpha. Note: 2024 5-year CAGR based on Street estimates.

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Watchman indication expansion…option (readout 1H2025) and champion (2026)

Watchman indication expansion will become a bigger catalyst over the next 2-3 years. The first trial is OPTION, the smaller opportunity. The trial completed in '21 and will read out in 1H'25, since it has 3 yr follow up with no interim look. This looks at post LAAC in ablation patients either concomitant to ablation procedure or later on. The other trial is CHAMPION which is head to head vs NOAC to move Watchman to first line so patients don't need to not well tolerate the drug to elect to get watchman. This trial finished enrolling end of '22, a year faster than expected, and will be done for follow up in '25 and read out in '26. These label expansion opportunities may continue until 2030 as it will take time to expand the label and establish reimbursement.

Intuitive Surgical (ISRG)

ISRG will provide 2024 procedure guidance in January and ISRG typically guides conservatively. We see the initial 2024 procedure guide being around 11-15%. The table below shows how ISRG has historically guided procedures initially vs where procedure growth ended the year. ISRG usually finishes the year 2-4 points higher than the high-end of the initial guide.

Exhibit 3: How ISRG has initially guided procedures historically vs ending procedure growth

Over the course of the year ISRG usually finishes the year 2-4 points higher than the high end of the initial procedure guide

	Initial Guide at JPM	Actual procedure growth for year
2016	9-12%	15%
2017	9-12%	16%
2018	11-15%	18%
2019	13-17%	18%
2020	13-16%	1%
2021	22-26%	28%
2022	11-15%	18%
2023	12-16%	21-22% guidance as of 3Q'23

Source: Company financials

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ISRG has a tougher comp given the 26% procedure growth in Q123 had about 6-7 points of "catch-up" (2 point benefit to full year 2023). ISRG likely calls out uncertainty with China and Bariatrics – each making up about 5% of total procedures. These could be a 2-point swing factor depending on how these two categories grow in 2024. Bariatrics has still grown double digits every quarter so far in 2023. China grew high teens in Q323, but ISRG continues to take a cautious stance on China (this isn't new though). ISRG has been noting China local competition/pricing pressure/and anticorruption campaign (noise level dying down but campaign expected to last, and effects could be persistent).

Exhibit 4: ISRG growth in China and commentary

ISRG China grew high teens in Q3'23, but ISRG continues to take a cautious stance (this isn't new though). ISRG has been noting China local competition/pricing pressure/anticorruption campaign (noise level dying down but campaign expected to last, effects could be persistent).

	Growth in China			
Ticker	**1Q23**	**2Q23**	**3Q23**	**Comment(s) on China during 3Q23 EPS call**
ISRG	Up	Strong growth	Up 19%	"**China procedure growth was in line with our global average in the quarter."** "Procedure growth in China was consistent with our expectations, **lower than last quarter due to a strong base period, given a recovery from COVID-related lockdowns in the year-ago quarter**." "Late in Q3, we started to see delays in tender processes in China, primarily as a result of anti-corruption efforts by the central government, resulting in lower system placements in China in Q3. We expect tender delays to continue to impact system placements in China in Q4." "In China, procedure growth was consistent with our expectations for the quarter. **Growth was driven primarily in neurology, notably by prostatectomy and kidney procedures**." "On the China side, I think the **procedure demand side remains robust. I think there's some government policy activity, that's putting a little bit of a chill on the market**. Some of that is economic, so price caps and value-based pricing. And some of it is an anti-corruption probe that is giving hospitals some pause moving forward with other new programs. ... **some pressure on the China side is likely to persist for several quarters**." "I would say that in China, we do see some competitive dynamics with respect to pricing, just given the number of lower -- local players. And so, there's been some competitive effect on system ASPs in China specifically. We don't really see that in other markets to this point." "With regard to the capital side in China, I'll jump into that. I think demand for our systems and for the procedures, they support in China. Raw demand is really high. So, it's really being limited or titrated by policy. I don't see -- I haven't heard anything that says, people want to go back and revisit or lower the quota. I think that that would be resisted by customers who are looking for purchases. So, I think it's more around delay and kind of a timing thing. And how long that is hard to predict, but months, not weeks."

Source: Company filings

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Still many positive drivers on 2024+ procedures

ISRG has been seeing better utilization growth in 2023 partly due to higher growth in benign indications (faster procedures/scheduled more closely together). This likely continues in 2024 as robotic surgery continues to move to standard of care at a faster rate. Bariatric surgery likely finds a bottom sometime in 2024 (likely at a good growth rate still). ISRG got approval for Appendectomy in May 2023 (a new 300k+ procedure category). Gallbladder disorders are a side effect of GLP-1s (1.2x higher rate in SELECT) and ISRG cholecystectomy is 2x bariatric. There were also some positive cost data published last month on robotic CABG. Ion is also an underappreciated long-term driver.

Appendectomy approval could be a new growth driver

In May 2023 ISRG got a new FDA approval for robotic appendectomy on X and Xi (300k+ procedure opportunity). Historically, appendectomy has not been a big area for robotics given most are already done laparoscopically, its typically a very simple/quick procedure, and is emergent (so harder to schedule robot time). However, as we've seen with hernia and chole there's been a bigger push in these easier/laparoscopic/benign procedure categories as younger surgeons are standardizing on the robot. Appendectomy, just like hernia, is a quintessential procedure for a first-year surgical resident to learn. We see appendectomy following the same trajectory as hernia and Chole over time.

How a new robot could impact the model

With investor expectations rising on a new ISRG system launch we looked back at the last four major launches to see how each one ramped (see table below). ISRG said in Jan 2023 it did not expect a new multiport launch in 2023. However, we do not see ISRG saying the same thing about 2024 and instead reverting to historical norms of just providing updates as they come. What's next and when it comes is hard to call but our recent ISRG CEO call was insightful (Transcript Here). Below we look at how a potential new system could impact the model whenever it does come. We estimate a potential new launch could add about $0.75 to ISRG's EPS in the first year. The EPS upside is likely more in 2025 if we see a mid-2024 launch as it could take time to get through any initial launch period and gross margin will be an initial headwind as the launch scales, but we think the stock will trade more on 2025/2026 EPS than on 2024 EPS.

Historical ramps...but not fully representative given leases

Xi installed base got to 299 systems in year 1 and 664 by year 2. Si had a similar trajectory with 332 in year 1 and 754 in year 2. The X and Sp ramps were slower (see below). However, all these launches were prior to leases. Today 2,064 systems are leased (25% of installed base). These leased systems generate $500m in recurring system rev as customers pay for the systems with usage or fixed operating leases.

Exhibit 5: Historical system launches

Below we show the installed base for Si, Xi, X, and Sp in the 16qtrs following the launch of each system.

	Launched 2Q'09 Si Installed Base	Launched 2Q'14 Xi Installed Base	Launched 2Q'17 X Installed Base	Launched 3Q'18 Sp Installed Base
1Q	53	54	11	3
2Q	146	125	27	15
3Q	243	224	78	21
4Q	332	299	107	34
5Q	431	375	154	38
6Q	531	465	218	44
7Q	644	579	269	47
8Q	754	664	327	52
9Q	875	763	377	58
10Q	992	865	423	70
11Q	1136	986	469	76
12Q	1268	1082	501	80
13Q	1410	1210	526	90
14Q	1549	1338	553	100
15Q	1716	1483	597	107
16Q	1878	1624	635	112

Exhibit 5: Historical system launches

Below we show the installed base for Si, Xi, X, and Sp in the 16qtrs following the launch of each system.

Launched 2Q'09	Launched 2Q'14	Launched 2Q'17	Launched 3Q'18

Source: Company financials, BofA Global Research

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Cycle could move faster with leases but revenue smoother

We could see many of the 2k leased systems upgrade in 1-2 years so the ramp might be 3-4x faster (good for moat right before Hugo launches; but could hit ISRG gross margin more pre-launch than it did in prior launches as more capacity is needed at the start). A new launch also re-extends the lease recurring revenue as leases typically last 5-7 years and we estimate 30-40% of current leases are about halfway to maturity. It also lets newer systems upgrade to the new technology right away (keeping average age of installed base lower).

Leased system upgrade could add $0.25 in EPS

Despite a much faster upgrade cycle the benefit to revenue from these leased systems would be smoother than prior cycles (benefit of the recurring model). The revenue impact would likely just be higher lease payments to capture whatever the higher value is for the new system. If we assume a 40-50% higher value, then this could add $200-250m in lease revenue on the current 2k leased systems (worth about $0.25 in EPS).

Trade-in of non-leased systems could add $0.50 in EPS

The non-leased installed base is still large (and older on average). If we look at 2017 there were only 164 systems leased in the 4409 system installed base. This suggests 4,245 non-leased systems that are 7+ years old that could be ripe for trade-ins. In a historical product cycle annual trade-ins typically go to 8% of the installed base vs 4% of the installed base during non-product cycle years. Using a 4% higher rate just on these 4,245 systems suggests trade-ins could increase by about 170 systems/year. Depending on ASP of $1.5-2.5m this is $250-$425m in incremental revenue or $0.25-0.50 in EPS.

Exhibit 6: Change in mix of leased systems and revenue over time

In 2016 da Vinci leased systems were 2% of the Da Vinci worldwide installed base and in 3Q23 they were 25%. Revenue of operating leases has increased from $17m in 2016 to $362m in YTD2023 (1Q23-3Q23).

	2016	2017	2018	2019	2020	2021	2022	Q1'23	Q2'23	Q3'23
Key Metrics:										
Da Vinci worldwide lease installed base	79	164	350	658	901	1,294	1,683	1,780	1,925	2,064
% of da Vinci worldwide installed base	2%	4%	7%	12%	15%	19%	22%	23%	24%	25%
Revenue of operating lease ($m)	$16.6	$25.9	$51.4	$106.9	$176.3	$276.9	$376.4	$112.0	$122.7	$127.1
System Revenue Build:										
% Systems shipped under operating leases	12%	16%	25%	34%	34%	38%	39%	42%	50%	52%
Systems shipped under operating leases	62	108	229	384	317	517	492	131	164	163
New Systems Sold	475	576	697	735	619	830	772	181	167	149
System ASP	$1.52	$1.47	$1.45	$1.52	$1.50	$1.55	$1.49	$1.47	$1.39	$1.40
System ASP y/y growth	0%	-3%	-1%	4%	-1%	3%	-4%	-5%	-7%	-7%
New System Revenue	**$720**	**$844**	**$1,013**	**$1,116**	**$929**	**$1,283**	**$1,151**	**$266**	**$232**	**$209**
Revenue of operating leases	$16.6	$25.9	$51.4	$106.9	$176.3	$276.9	$376.4	$112.0	$122.7	$127.1
Revenue of lease buyouts	$38.1	$39.6	$48.8	$92.8	$52.4	$94.0	$72.0	$24.0	$12.0	$17.0
Deferred revenue for new system launches	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Ion System Revenue	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$57.5	$16.0	$14.5	$23.0
Other System Revenue	$16.9	$0.5	$13.8	$30.4	$20.8	$39.2	$23.1	$9.3	$11.4	$3.7
Total Systems Revenue	**$792**	**$910**	**$1,127**	**$1,346**	**$1,179**	**$1,693**	**$1,680**	**$427**	**$393**	**$379**
Lease Installed Base	79	164	350	658	901	1,294	1,683	1,780	1,925	2,064
Annual Revenue per leased System	$0.21	$0.20	$0.20	$0.20	$0.22	$0.24	$0.25	$0.25	$0.25	$0.25
Lease installed base as % of total installed base	2%	4%	7%	12%	15%	19%	22%	23%	24%	25%
Systems bought out of lease	32	20	43	76	74	124	103	34	19	24
Revenue per buyout per system	$1.19	$1.98	$1.13	$1.22	$0.71	$0.76	$0.70	$0.71	$0.63	$0.71
Y/Y Systems Revenue Growth	10%	15%	24%	19%	-12%	44%	-1%	0%	5%	-11%

Source: Company financials, BofA Global Research

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Stryker (SYK)

2024 guide up next for SYK

We could see SYK guide revenue for 2024 7-8% growth initially. If medtech is at 5% market growth then this would be 200-300bps above the market growth rate. SYK has already pointed to 200bps of margin expansion over 2024 and 2025 but this shouldn't be considered a best case scenario either (even though it's a lot more expansion than SYK has historically accomplished).

We do think the 200bps of margin expansion is likely a bit more weighted to 2025 but it doesn't sound like SYK is backing off real margin expansion in 2024 either. Our guess is SYK guides somewhere around 80bps of margin expansion in 2024. Pricing is a positive for margins in 2024. Until SYK laps the new product launches, better price on new products will show up in positive mix (but still a very positive driver). SYK will no longer be buying in the spot market. Medsurg growth vs ortho/spine growth is a consideration as well as Medsurg has lower gross margin than ortho/spine.

As it relates to SG&A, SYK has said back to 2019 levels as a percent of sales in 2023. SYK is still planning to get leverage though the SG&A lines in 2024 and that's a positive that should show up in op margin expansion as well in 2024.

Regarding ortho, we think Q4 will show better hip/knee results than Q3. SYK saw more seasonality than typical in Q3 with vacations but Q4 should be back to normal seasonality. Q4 is a very busy quarter for SYK and the element of patient backlog continues to work through and staffing back to olden days.

What could the product super-cycle add to SYK growth?

Throughout 2023 and into 2024, SYK has multiple flagship products launching in an 18-month period, a 'product super-cycle.' This super-cycle includes the System 9 power tool in Instruments which launched in 4Q22, the Neptune S waste management system in Instruments which launched in 1Q23, the 1788 camera in Endoscopy which had a limited launch late in 2Q23 with a full launch expected in Q3, and the LIFEPAK 35 defibrillator in Medical which SYK expects to launch internationally in 4Q23 and in the US in early 2024.

To get a sense for what SYK's super-cycle could add to growth in the first two years of launch, we looked at prior-generation products' dollar-contribution to growth following launch. Excluding LIFEPAK from our analysis (because the prior generation launched before SYK's acquisition of the product line in 2016), we estimate that the super-cycle launches could add $77m (+42bps) to SYK growth in the 1st year and $128m (+63bps) in the 2nd year. See "Super-cycle math" section for more detail on the historical launches.

Exhibit 7: What could the product super-cycle add to SYK growth?
We estimate that the product super-cycle could add $77m in the first year and $128m in the second year, excluding any potential contribution from LIFEPAK 35

	Year 1	Year 2
Instruments: System 9 & Neptune S	$43	$70
Endoscopy: 1788 Camera	$33	$58
LIFEPAK 35	NA	NA
+ dollars ($m) to SYK growth	**$77**	**$128**
+ bps to SYK growth	**42 bps**	**63 bps**

Source: BofA Global Research. *Note: The prior-generation LIFEPAK, LIFEPAK 15, launched in 2014 and SYK later acquired the product as part of Physio-Control in 2016. As a result, we exclude LIFEPAK 15 and its implications for the launch of LIFEPAK 35 from our analysis.
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If 1x is worth $128m (+63bps) to SYK growth in the second year of super-cycle launches, then 2x would be $257m (+127bps) and 3x would be $385m (+190bps):

Exhibit 8: We think SYK's super-cycle launches could add 2x more $ growth than prior launches
2x would be $257m (+127bps) and 3x would be $385m (+190bps)

		Year 1	Year 2
+ dollars ($m) to SYK growth		**$77**	**$128**
	2x	$154	$257

Exhibit 8: We think SYK's super-cycle launches could add 2x more $ growth than prior launches
2x would be $257m (+127bps) and 3x would be $385m (+190bps)

	3x	$257	$385
+ bps to SYK growth		**42 bps**	**63 bps**
	2x	83 bps	127 bps
	3x	125 bps	190 bps

Source: BofA Global Research

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Reasons to believe that these launches could be bigger

Including LIFEPAK 35, a bigger installed base, better pricing, new markets, and a more specialized sales force, we think this generation could add 2-3x more dollar growth than the prior-generation product launches:

- **System 9** requires new batteries (vs with System 8, could use existing batteries), which suggests higher price; and is being supported by a specialized sales force (vs same rep selling System 9 and Neptune S, prior), which suggests better scale.
- **Neptune S** is smaller, which is better for ASCs; is used in GI procedures, a new and high-volume submarket for SYK; and is being supported by a specialized sales force (vs same rep selling System 9 and Neptune S, prior), which suggests better scale.
- **1788 camera** is used in lung/cancer procedures, a new submarket for SYK (vs 1588 was only "an upgrade" from 1488); and incudes NOVADAQ (vs 1588 launch did not). 1688's launch included NOVADAQ, but we compare 1788 to 1588 (see detail below).

Super-cycle math…looking at history of launches

To get a sense for what SYK's super-cycle could add to growth, we looked at prior-generation products' dollar contribution to growth following launch. Products we looked at include 1588 camera (launched in Dec 2015), Neptune 3 (launched in July 2016), and System 8 (fully launched in ~3Q17). We exclude LIFEPAK from our analysis because its predecessor launched at Physio-Control before SYK acquired it in 2016. We look at 1588 (vs 1688) because 1688 launched in late 1Q19, so covid impacted out-year growth rates.

Exhibit 9: SYK has multiple flagship products launching
Prior-generation (past) and super-cycle (present / upcoming) product launches by business

Segment	Super-cycle product	Launch	Predecessor product	Launch
Instruments	System 9	4Q22	System 8	1Q17*
Instruments	Neptune S	1Q23	Neptune 3	3Q16
Endoscopy	1788 Camera	Late-2Q23 (~3Q23)	1588 Camera**	Late-4Q15 (~1Q16)
Medical	LIFEPAK 35	4Q23 OUS, 1H24 in US	LIKEPAK 15	2014

Source: Company filings, BofA Global Research. *Limited launch in March 2017 and full launch by July 2017. **We use 1588, rather than 1688, as the comparator for 1788 because 1688 launched late in 1Q19 so the pandemic impacted out-year growth rates.

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Instruments: System 9 and Neptune S

Neptune 3 launched in 3Q16. System 8 began a limited launch fewer than two quarters later, in Mar 2017, followed by a full launch around 3Q17. Given their launches' overlap, we look at both products' contribution to Instruments growth in tandem. Over the 12mo. ended 2Q17, ahead of both products being in full launch as of 3Q17, Instruments grew 6.2%. In the 1st year of launch, Instruments grew 8.9%, a step-up of 270bps ($43m). In the 2nd year of launch, Instruments grew 12.9%, a step-up of 400bps ($70m).

Similarly, System 9 launched in 4Q22. Neptune S launched one quarter later, in 1Q23. Given their launches' overlap, we estimate both products' contribution to Instruments growth in tandem. We assume the same dollar contribution (as predecessor launches) to Instruments growth after System 9 and Neptune S launched around 1Q23. This suggests that System 9 and Neptune S together can add $43m to SYK growth in their 1st year of launch and $70m to SYK growth in their 2nd year of launch.

Exhibit 10: Growth in Instruments before and after the full launch of both System 8 and Neptune 3 around 3Q17

We estimate System 9 and Neptune S could add the same $43m and then $70m to Instruments growth

System 8 & Neptune 3		Year 1	Year 2
Instruments	12mo Ended 2Q17	12mo Ended 2Q18	12mo Ended 2Q19
Organic Growth	6.2%	8.9%	12.9%
+ bps to SYK growth		272 bps	404 bps
+ dollars ($m) to SYK growth		**$43**	**$70**

Source: Company filings, BofA Global Research

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Exhibit 11: SYK commentary on System 9 over the last year

SYK has said that System 9 could provide more of a lift to the top-line than System 8 due to the need to buy new batteries; and that present-day System 9 and Neptune S launches are supported by specialized sales reps (vs the same rep trying to sell both products for prior-generation launches, previously)

Date	Comment(s)
5/1/23	"Our product super cycle is underway and driving positive momentum. This began in **late 2022 with the US launch of our System 9 power tools, which gained momentum in the quarter and is getting great customer feedback** regarding ergonomics and quality."
1/31/23	"System 9, our new power tool and Instruments launched just at the end of last year. So, we are going to see the first real year of impact here in 2023, **initial feedback, extremely positive**. We know how to do these. As you know, we have -- from System 6 to 7 to 8 to now 9" "have a **new Neptune and we have a new power tool. <u>In the old days, it was the same rep trying to sell both of those. Now we have different reps selling them. So, our ability to scale those launches is so much better</u>** with specialization and dedication"
12/1/22	"we have high-adoption, customers are used to it ... moving from system 6 to 7 to 8 to 9. And typically, year two tends to be the largest spikes, but **<u>you get a nice lift in year one and then an even bigger lift in year two, that's kind of typically how our two launches have gone ... What's a little bit different with this launch is ... need to buy new batteries</u>**. So in the past ... you've been able to use the old batteries ... **<u>it does provide a little bit more of a lift, probably</u>** on the top-line than we've had historically because historically you could buy the handsets, but still use the old batteries. This time you have to buy a new battery set as you buy the new pieces ... So it will be a very successful launch as they have been in the past"
10/31/22	"new products. So, as we move to **System 9 and as we move to 1788, we're using new-generation chips. And the supply availability is actually quite high for new-generation chips. And so, the faster we can migrate to new products, it actually helps secure our ability to have a supply**. ... challenge is -- frankly, the older generation chips and that's why emergency care is so pressured. Emergency care being defibrillators primarily, because they're PMA products, we can't just swap the chip out. ... and those are older-generation chips. So, **the faster we can migrate to new products, the faster that secures our chip availability.** ... because new chips aren't a problem. Our problem is really getting the old electronics"
9/8/22	"**System 9.0 ... and then the 1788 will launch next year. And both those products, they bring along a suite of products with them**. And so, those are both very big launches ... **and they usually do command premium prices and drive good volumes. ... in the launch [year],** obviously there's training and there's sales, things to work through ... **impact is noticeable but not as big. It's really the next year when we really hit sort of the large stride of the full impact** of that product [System 9]. And that would hold true for Endoscopy [1788] as well. **... customers are expecting those launches.** So, there is sort of those early adopter customers that really provide a nice little spike for us, at least in the launch ... **we work with our sales force pretty strongly to make sure that they understand what their quotas are and what they have to go through. And that is going to include selling legacy product**" "we're pretty under-sized in Europe ... we absolutely are taking market share, because the European market is only been growing at 1% to 2%. We continue to invest in our sales forces there ... launched System 9 in Europe ahead of the US ... seeing really good outcomes there"

Source: Company filings, BofA Global Research

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Exhibit 12: SYK commentary on Neptune S over the last year

SYK has said that Neptune S is used in gastrointestinal (GI), a new market for SYK; and that present-day System 9 and Neptune S launches are supported by specialized sales reps (vs the same rep trying to sell both products for prior-generation launches, previously)

Date	Comment(s)
5/1/23	"in mid-Q1, we launched the Neptune S waste management system. **We've seen significant trialing already with positive customer feedback** related to workflow advantages and environmental benefits"
1/31/23	"**Neptune S, which is a small footprint Neptune product designed really for GI that is terrific new market for us. ... today Neptune's are not really being used in GI**. It's designed special purpose for that to catch the polyps. Nurses are going to absolutely love this. We actually believe it could increase the procedures that they can do in a day, which, of course, the GI teams are going to love. So that's also another really powerful product that we are excited about" "have a **new Neptune and we have a new power tool. <u>In the old days, it was the same rep trying to sell both of those. Now we have different reps selling them. So, our ability to scale those launches is so much better</u>** with specialization and dedication"

Source: Company filings, BofA Global Research

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Endoscopy: 1788 Camera

1588 launched in 1Q16. (We compare 1788 to 1588, vs 1688, because 1688 launched in 1Q19 so covid impacted out-year growth rates). Over the 12mo. ended 4Q15, Endoscopy grew 3.9%. In the 1st year of 1588's launch, Endoscopy grew 6.3%, a step-up of 240bps ($33m). In the 2nd year of launch, Endoscopy grew 10.3%, a step-up of 390bps ($58m).

We assume the same dollar contribution to growth after 1788 launch. This suggests that 1788 can add $33m to SYK growth in the 1st year of launch and $58m in the 2nd year.

Exhibit 13: Growth in Endoscopy before and after the launch of 1588 around 1Q16
We estimate 1788 could add the same $33m and then $58m to Endoscopy growth

1588 Camera		**Year 1**	**Year 2**
Endoscopy	12mo Ended 4Q15	12mo Ended 4Q16	12mo Ended 4Q17
Organic Growth	3.9%	6.3%	10.3%
+ bps to SYK growth		241 bps	394 bps
+ dollars ($m) to SYK growth		**$33**	**$58**

Source: Company filings, BofA Global Research

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Exhibit 14: SYK commentary on the 1788 camera over the last year
SYK has said that 1788 will be used in visualization for lung and other cancer procedures, a new market for SYK; and that lift will be more noticeable in year two of launch

Date	Comment(s)
8/3/23	"limited launch of the 1788 camera late in the Q2. Consistent with prior camera launches and the related transition period between the legacy camera and the new camera, this also **contributed to muted growth in Q2**" "launches of 1788 that's also really exciting for the international market"
5/1/23	"received 510(k) clearance on our **1788 camera platform which will expand our Endoscopy's division addressable market in the new procedures, including the ability to visualize lung and other cancers**. ... continue to see steady progress with these launches and expect them to be a t/w for growth in the coming qtrs and years" "wouldn't think so much about the expansion of TAM. I would **think much more about share gain ... not creating new visualization for new procedures but ... we have much better solutions for both sports medicine as well as neuro procedures**. We were always fabulous with abdominal surgery and general surgery, but not quite as strong in those two specialties. ... **We will be first to the market and being able to identify new forms of cancer** ... that will be tremendous catalyst to drive share gain, when you can identify critical parts of the anatomy much more precisely than the human eye can and so we're very bullish on the long-term future for 1788"
10/31/22	"new products. So, as we move to System 9 and as we move to **1788, we're using new-generation chips. And the supply availability is actually quite high for new-generation chips. And so, the faster we can migrate to new products, it actually helps secure our ability to have a supply**. ... challenge is -- frankly, the older generation chips and that's why emergency care is so pressured. Emergency care being defibrillators primarily, because they're PMA products, we can't just swap the chip out. ... and those are older-generation chips. So, **the faster we can migrate to new products, the faster that secures our chip availability**. ... because new chips aren't a problem. Our problem is really getting the old electronics"
9/8/22	"System 9.0 ... and then the **1788 will launch next year. And both those products, they bring along a suite of products with them**. And so, those are both very big launches **... and they usually do command premium prices and drive good volumes. ... in the launch [year],** obviously there's training and there's sales, things to work through ... **impact is noticeable but not as big. It's really the next year when we really hit sort of the large stride of the full impact** of that product [System 9]. And that would hold true for Endoscopy [1788] as well. ... **customers are expecting those launches**. So, there is sort of those early adopter customers that really provide a nice little spike for us, at least in the launch ... **work with our sales force pretty strongly to make sure that they understand what their quotas are and what they have to go through. And that is going to include selling legacy product**"

Source: Company filings, BofA Global Research

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LIFEPAK 35

LIFEPAK 35, which SYK expects to launch OUS in 4Q23 and in the US in early 2024, is for professional use, so we think the best prior-generation comparator is LIFEPAK 15. LIFEPAK 15 is for emergency medical services and hospitals (vs e.g., LIKEPAK 1000, for workplaces and communities, at a lower price). LIFEPAK 15 launched in 2014, and SYK later acquired the product as part of Physio-Control in 2016. As a result, we exclude LIFEPAK 15 and its implications for the launch of LIFEPAK 35 from our analysis.

Exhibit 15: SYK commentary on LIFEPAK over the last year
SYK has said that LIFEPAK professional products were the largest part of Physio-Control's $500m annual revenue in 2016, and SYK has grown that $500m double-digits

Date	Comment(s)
8/3/23	"on track for the launch of our LIFEPAK 35 defibrillator OUS in Q4 of this year and in the US in early 2024. These launches will continue to support growth over multiple years"
12/1/22	"**LIFEPAK defibrillator end of the year**. So we're not going to see a lot of benefit in '23. We'll launch in Q4 OUS and then in the US, hopefully at the beginning of '24. It's a **little harder to predict because it's a PMA and it goes through a different FDA process. So it's less predictable than the 510(k)**" "talking about the big LIFEPAK defibrillators that's used in the back of the ambulance and a little bit in hospitals, not the ones that are on the walls in gyms and those are also defibrillators but those are lower priced ones. ... I'm talking about is the big professional defibrillator. ... **Physio-Control we bought it was about $500m of revenue ... add DD growth since we've owned it, LIFEPAK, the professional is the largest portion of that $500m"**
10/31/22	"as we move to System 9 and as we move to 1788, we're using new-generation chips. And the **supply availability is actually quite high for new-generation chips. And so, the faster we can migrate to new products, it actually helps secure our ability to have a supply**. ... challenge is -- frankly, the older generation chips and that's **why emergency care is so pressured. Emergency care being defibrillators primarily, because they're PMA products, we can't just swap the chip out.** ... and those are older-generation chips. So, the faster we can migrate to new products, the faster that secures our chip availability. ... because new chips aren't a problem. Our problem is really getting the old electronics"

Source: Company filings, BofA Global Research

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Baxter

BAX will initially give guidance including Renal (pre-spin). On this basis, we model $2.86 in 2024 EPS (accounts for a conservative guide) and $3.17 in 2025. BAX has not given much clarity yet on the spin; but, at this stage we estimate the spin is $0.30 dilutive. Post-spin 2025 we model RemainCo at $2.66 and KidneyCo at $0.22 for a total of $2.88 ($0.30 less than $3.17 pre-spin EPS). The spin could reduce BAX debt leverage to 2x and give BAX a much better platform to accelerate rev growth, but dilution could take away a year of EPS growth. However, our math suggests KidneyCo absorbs the dilution and if looked just through the lens of RemainCo, the spin looks much more value creative.

If our estimates are in the ballpark (BAX has not given much yet) then standup costs, TSAs, and higher interest rates on KidneyCo debt are about $0.40 dilutive to the pre spin BAX picture. We estimate $90m in standup costs (2% of KidneyCo sales), $30m in TSAs (vs Embecta $70m first 12 mo), and 300bps higher rates on KidneyCo debt. We estimate 2025 op margins are 8.5% but after standup costs and TSAs, these margins move down to 5.8%. We estimate KidneyCo takes on $1.5bn net debt and is at 3.4x net leverage.

We estimate extra debt paydown allowed by the spin offset by some stranded costs is about $0.10 accretive to the overall BAX picture. We estimate RemainCo could get around $2bn of net cash from the spin from a dividend back and/or a retained stake. This could put BAX leverage at 1.9x after also accounting for other regular scheduled debt payments in 2024 and 2025. We estimate $100m in stranded costs (Zimmer saw $70-75m for ZimVie). We assume BAX recognizes the $30m of TSA income but note that Zimmer excluded this from Adj EPS because it was not recurring. If BAX excludes TSA income, then the overall spin would be about $0.04 more dilutive, by our math.

Exhibit 16: BAX SOTP

Post-spin 2025, we model RemainCo at $2.66 and KidneyCo at $0.22 for a total of $2.88 ($0.30 less than $3.17 pre-spin EPS).

	2024 ex spin			2025 post spin (assumes Jan 1 spin)		
	RemainCo	KidneyCo (unlevered)	Total	RemainCo	KidneyCo	Total
Revenue	**10,701**	**4,415**	**15,116**	**11,096**	**4,520**	**15,616**
Revenue growth				3.7%	2.4%	3.3%
Pre-spin Op Income	**1,958**	**331**	**2,289**	**2,097**	**384**	**2,481**
Pre-spin Op Margin	18.3%	7.5%	15.1%	18.9%	8.5%	15.9%
Spin Items						
Stand up costs					(90)	(90)
Stranded Costs				(100)		(100)
TSAs				30	(30)	0
Post-spin Op Income	**1,958**	**331**	**2,289**	**2,027**	**264**	**2,291**
Post-spin Op Margin	18.3%	7.5%	15.1%	18.3%	5.8%	14.7%
Depreciation	428	177	605	444	181	625
EBITDA	**2,386**	**508**	**2,893**	**2,471**	**445**	**2,916**
EBITDA margin	22.3%	11.5%	19.1%	22.3%	9.8%	18.7%
Int/other	(400)		(400)	(241)	(120)	(361)
Effective interest rate	5.2%		5.2%	5.2%	8.0%	5.9%
Pretax income	1,558	331	1,889	1,786	144	1,930
Tax expense	(343)	(73)	(416)	(411)	(33)	(444)
Tax rate	(22.0%)	(22.0%)	(22.0%)	(23.0%)	(23.0%)	23.0%
Net income	1,215	258	1,473	1,375	111	1,486
Non-controlling interest	(8)	0	(8)	(8)	0	(8)
Net income to shareholders	1,207	258	1,465	1,367	111	1,478
EPS	**2.36**	**0.50**	**2.86**	**2.66**	**0.22**	**2.88**
Shares	512	512	512	515	515	515
EPS growth				*12.6%*	*(57.4%)*	*0.3%*
Total Cash	1,261		1,261	1,489	500	
Scheduled debt paydown				*(642)*		
Dividend from KidneyCO				*(1,500)*		
Retained Stake 20% of 8x EBITDA				*(711)*		

Exhibit 16: BAX SOTP

Post-spin 2025, we model RemainCo at $2.66 and KidneyCo at $0.22 for a total of $2.88 ($0.30 less than $3.17 pre-spin EPS).

	2024 ex spin		2025 post spin (assumes Jan 1 spin)	
Total Debt	8,977	8,977	6,124	2,000
Net Debt	7,716	7,716	4,634	1,500
Net Debt/EBITDA	3.2x	2.7x	1.9x	3.4x

Source: Company filings, BofA Global Research

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Exhibit 17: Data points on stand-up, transition services agreement (TSA), and stranded costs from recent spin-offs

Below we review company commentary on stand-up, TSA, and stranded costs from recent spin-offs

ZBH /ZIMV	GE /GEHC	BDX /EMBC
Stand-up costs: ZIMV talked about $61m in stand-up costs: "there's about $61m stand-up cost at corporate. And what that $61m represents is, it represents obviously standing up the business as a standalone company including of course, executive management, public company costs, and then also the cost of standing up insurance. And so, in that $61m that number just from like a high-level perspective, is probably about $10m to $13m higher than what it would be under Zimmer Biomet embedded in that company" - 2/7/22 **TSAs:** ZBH talked about ZIMV TSAs being lower than the stranded costs: "[Q:] TSA should be equal to the stranded cost, right, 75-ish, Suky? [A:] I wouldn't say it's a complete one-for-one there ... It'll be substantially lower than their stranded cost" - 2/7/22 **Stranded costs:** ZBH talked about $70-75m stranded costs for $1bn-revenue ZIMV	**Stand-up costs:** GEHC estimated $228m in stand-up costs for 2022 and $200m for 2023; in addition, GEHC estimated $113m in recurring costs for 2022 and $200m for 2023: "incur approximately $341m of total expenses (including one-time expenses of approximately $228m and recurring expenses of $113m) for the year ended December 31, 2022" - 6/8/23; and " $200m of standalone costs, in 2023, we expect an estimated $200m of those recurring incremental expenses ... expect we'll see leverage against these $200m of incremental recurring spin costs as we go into 2025 and '26, as we have fully exited on the TSA side" - 4/25/23	**TSAs:** EMBC expected TSAs of $70m in the first 12mos (4/1/22-4/1/23), weighted $35m in fiscal 2H22 and $35m in fiscal 1H23: "assuming we maintain every TSA during the first 12-month period, we will be charged a total of $70m or approximately $35m during the second half of 2022" - 5/13/22. EMBC disclosed $63m in TSAs in FY23 and guided for $30m-$35m in TSAs for FY24: "we incurred about $63m worth of TSA expense in 2023. And then our guidance assumes for 2024, inclusive of an extension being granted, that we would incur somewhere between, let's call it $30m to $35m worth of TSA expense in 2024" - 11/21/23; and "from a stand-up cost standpoint, I think we're not necessarily going to provide specific dollar amounts associated with each individual line item. ... obviously, from a TSA standpoint, as we begin to kind of stand up the company. Some of the TSAs could fall off" – 8/15/22 **Stranded costs:** BDX talked about TSAs offsetting BDX stranded costs: "Diabetes Care business ... we are establishing TSAs that will offset stranded costs" - 11/4/21

Source: Company filings, BofA Global Research

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What companies have said on 2024 and scrubbing 2024 Street estimates

Company commentary on 2024

Large cap commentary on 2024

Exhibit 18: Large cap medtech color on 2024 - summary

We have a decent amount of color already for 2024 from management teams

	ABT	BAX	BDX	BSX	COO
Revenue	7.5-8% base ex Covid; 9-10% total devices; 6% devices ex libre	2-3% growth not a bad place to be	5.25-6.25% organic	8-10% organic 2024E-2026E CAGR with 2025 growth higher than 2024	COO (6-8%), Vision (7-9%) and Surgical (4-6%).
Margins	Comfortable with GM 56.2%; R&D $2.6b-$2.7b; SG&A $11.3b-$11.4b	Improving margins in '24; OM +60-80bps but with fx, 60bps to start	Reported GM flat, ex-FX GM improving; OM around 50bps	Margin expansion, more GM opportunity as go through the LRP; FX is a headwind to GM in '24	Gross margin slightly up; 10-13% constant currency operating income growth
Tax	14.3-14.5%	Closer to 22%	13-15%	Can hold historical 14% operational, 13% all-in tax rate	15%
EPS	Around $4.60	Likely double digits growth off restated base	$12.70-$13		$13.60-14.00 (+6-9%)
FX	-1.5% headwind to top-line	Translational FX less than $0.05 headwind to EPS	-75bps headwind to revenue, -375bps to EPS	Headwind to GM	1% h/w to revenue; $0.65 or 5% h/w to EPS

Source: Company filings. *Note: GM = gross margin. OM = operating margin. EPS = earnings per share. CAGR = compound annual growth rate. FX = foreign exchange. LDD = low double digit. Qtrs = quarters. MSD = mid-single digit. LRP = long-range plan

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Exhibit 19: Large cap medtech color on 2024 – summary, continued

We have a decent amount of color already for 2024 from management teams

	EW	ISRG	JNJ	SYK	TFX	ZBH
Revenue	TAVR growth 8-10% organic; Total company 8-10% organic	Procedures: China pressure to persist for several qtrs; bariatric, find new normal in next few qtrs	Medtech in upper range of its markets which are growing 5-7% for 2022-2027	High end of MedTech, outperform by 200-300bps	~50bps headwind from net impact of MSA roll off ($70m) and Palette acquisition ($55m)	MSD growth ex-FX
Margins	Gross margin 76-78%; OM 29-30%	Variability in GM over next several qtrs	Expect continued improvement as it relates to actual margins	Accelerate OM expansion	Margins a little bit better versus 2023	Grow margins
Tax	14-17%			14% is a little bit low but it won't be materially higher	Higher tax rate in 2024 (likely in 12-12.5% range)	About 150bps increase vs '23
EPS	$2.70-$2.80				Headwind from Palette acquisition ($0.35), MSA roll-off ($0.25) and higher tax rate ($0.30) but expect EPS to grow over 2023	EPS growing faster than revenue
FX	1% headwind to revenue; $0.08 headwind to eps			Little bit of headwind in Q4'23 and going to stay where it is		Additional FX pressure into '24 vs '23

Source: Company filings. *Note: GM = gross margin. OM = operating margin. EPS = earnings per share. CAGR = compound annual growth rate. FX = foreign exchange. LDD = low double digit. Qtrs = quarters. MSD = mid-single digit. LRP = long-range plan

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SMID cap commentary on 2024

Exhibit 20: SMID cap medtech color on 2024 - summary

Smidcaps

	BLCO	CNMD	DXCM	INSP	ITGR	NARI
Revenue		Growing organically DD. In a healthy stable market, can stay in that DD growth area.				
Margins		GM tailwind to pick up as move from '24 to '25	Greater economies of scale over course of '24	Improve operating leverage as progress through '23 and '24	Greater efficiencies into '24	Operating profit may have fluctuations in Q4 and Q1
Tax	15%	Around 25% going forward				
FX	$100m headwind to revenue	Not as big of an issue vs '23				
	OM	**PODD**	**SIBN**	**SWAV**	**TNDM**	**AXNX**
Revenue	Mid-teens growth	US Omnipod growth mid-20% range. OUS Omnipod HSD growth with 2H accelerating to HSD-LDD		Comfortable with $920m, ~25% rev growth; US peripheral will grow below corp. avg, US coronary and OUS coronary will grow well above corp. avg.	Baseline 10% growth	Comfortable with '24 Consensus at 22% y/y growth
Margins	GM low-30% for FY24, exit Q4'24 mid-30%; OpEx $140m-$145m	Improving margins	GM exiting Q4 is decent proxy; OpEx leverage linear to revenue growth	Modest margin improvement		
Tax						
FX						

Source: Company filings *Note: GM = gross margin. OM = operating margin. EPS = earnings per share. FX = foreign exchange. LDD = low double digit. HSD = high single digit. Corp. = corporate. Avg = average.

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Scrubbing 2024 Street estimates

SMID y/y dollar growth always a helpful gut check

The exhibit below shows y/y dollar growth by year for each SMID. For DXCM, Street only models $43m in 2024 y/y dollar growth despite the basal launch. For PODD, Street has $12m less in y/y dollar growth in 2024 despite 2023 new starts near record levels and international Omnipod 5 launching. For INSP, Street is modeling $38m less dollar growth (similar growth as 2 years ago) which likely more than accounts for any pre-auth/sales force disruption carrying over. SWAV is modeled with $45m less dollar growth in 2024 which leaves room for upside if peripheral doesn't get worse. However, Street models significantly more dollar growth for TNDM in 2024 and an acceleration for NVRO.

Exhibit 21: SMID cap revenue ($m) and % growth

On average, the Street is modeling 18% revenue growth for SMID caps in 2024, versus 26% revenue growth in 2023.

		Sales					Sales $ Y/Y Growth					Sales % Y/Y Growth				
Company	**Ticker**	**CY21**	**CY22**	**CY23E**	**CY24E**	**CY25E**	**CY21**	**CY22**	**CY23E**	**CY24E**	**CY25E**	**CY21**	**CY22**	**CY23E**	**CY24E**	**CY25E**
Diabetes																
Dexcom Inc	DXCM	$2,449	$2,910	$3,592	$4,318	$5,134	$522	$461	$683	$726	$816	27%	19%	23%	20%	19%
Insulet Corp	PODD	$1,099	$1,305	$1,648	$1,979	$2,348	$194	$207	$343	$331	$368	21%	19%	26%	20%	19%
Tandem Diabetes Care Inc	TNDM	$703	$805	$764	$842	$940	$204	$102	-$40	$78	$98	41%	15%	-5%	10%	12%
Average		**$1,417**	**$1,673**	**$2,002**	**$2,380**	**$2,807**	**$307**	**$257**	**$328**	**$378**	**$427**	**30%**	**17%**	**15%**	**17%**	**16%**
Stimulation																
Axonics Inc	AXNX	$180	$274	$362	$442	$530	$69	$93	$89	$80	$89	62%	52%	32%	22%	20%
Inspire Medical Systems Inc	INSP	$233	$408	$610	$775	$953	$118	$174	$202	$165	$178	102%	75%	50%	27%	23%
Nevro Corp	NVRO	$387	$406	$418	$443	$478	$25	$19	$12	$25	$35	7%	5%	3%	6%	8%
Average		**$267**	**$363**	**$464**	**$553**	**$654**	**$71**	**$96**	**$101**	**$90**	**$101**	**57%**	**44%**	**28%**	**18%**	**17%**
Stroke/ Clot Mgt/ Peripheral/ Cardio																
Inari Medical Inc	NARI	$277	$383	$493	$586	$688	$137	$106	$109	$93	$102	98%	38%	29%	19%	17%
Silk Road Medical Inc	SILK	$101	$139	$172	$192	$216	$26	$37	$33	$20	$24	35%	37%	24%	11%	12%
Shockwave Medical Inc	SWAV	$237	$490	$727	$919	$1,123	$169	$253	$237	$192	$204	250%	107%	48%	26%	22%
Average		**$205**	**$337**	**$464**	**$565**	**$675**	**$111**	**$132**	**$127**	**$101**	**$110**	**128%**	**61%**	**34%**	**19%**	**17%**
Spine / Ortho																
CONMED Corp	CNMD	$1,011	$1,045	$1,249	$1,345	$1,458	$148	$35	$203	$96	$114	17%	3%	19%	8%	8%
Globus Medical (including NuVasive)	GMED	$2,097	$2,225	$2,380	$2,470	$2,654	$257	$128	$155	$90	$184	14%	6%	7%	4%	7%
SI-BONE Inc	SIBN	$90	$106	$137	$161	$190	$17	$16	$30	$24	$29	23%	18%	29%	18%	18%
Paragon 28 Inc	FNA	$147	$181	$216	$256	$304	$36	$34	$35	$40	$48	33%	23%	19%	19%	19%

Exhibit 21: SMID cap revenue ($m) and % growth

On average, the Street is modeling 18% revenue growth for SMID caps in 2024, versus 26% revenue growth in 2023.

		Sales					Sales $ Y/Y Growth					Sales % Y/Y Growth				
Average		**$836**	**$890**	**$996**	**$1,058**	**$1,152**	**$115**	**$53**	**$106**	**$62**	**$94**	**22%**	**13%**	**19%**	**12%**	**13%**
Ophtho																
Bausch Health Cos Inc	BLCO	$3,765	$3,768	$4,072	$4,517	$4,774	$350	$3	$304	$445	$257	10%	0%	8%	11%	6%
RxSight Inc	RXST	$23	$49	$86	$122	$159	$8	$26	$37	$35	$37	54%	117%	76%	41%	31%
Average		**$1,894**	**$1,909**	**$2,079**	**$2,319**	**$2,466**	**$179**	**$15**	**$171**	**$240**	**$147**	**32%**	**58%**	**42%**	**26%**	**18%**
Other																
Embecta Corp	EMBC	$1,169	$1,116	$1,110	$1,097	NA	NA	-$53	-$6	-$13	NA	NA	-5%	-1%	-1%	NA
Integra LifeSciences Holdings	IART	$1,542	$1,558	$1,544	$1,629	$1,734	$171	$15	-$14	$85	$105	12%	1%	-1%	6%	6%
Integer Holdings Corp	ITGR	$1,221	$1,376	$1,588	$1,719	$1,845	$148	$155	$212	$131	$126	14%	13%	15%	8%	7%
Outset Medical Inc	OM	$103	$115	$130	$149	$174	$53	$13	$15	$19	$25	105%	12%	13%	15%	17%
PROCEPT BioRobotics Corp	PRCT	$35	$75	$134	$205	$293	$27	$40	$59	$71	$89	347%	117%	78%	53%	43%
Average (excluding EMBC)		**$725**	**$781**	**$849**	**$925**	**$1,012**	**$99**	**$56**	**$68**	**$76**	**$86**	**120%**	**36%**	**26%**	**20%**	**18%**
Small Cap Average (excluding EMBC)		**$826**	**$927**	**$1,070**	**$1,214**	**$1,368**	**$141**	**$101**	**$142**	**$144**	**$154**	**67%**	**36%**	**26%**	**18%**	**17%**

Source: Bloomberg, Visible Alpha, Company filings, BofA Global Research. *Note: GMED actuals and estimates include NUVA. For 2023 GMED Street estimate, we include 8 months or $827m of NUVA sales for Jan to Aug 2023 (NUVA merger completed 9/1/23). CNMD's 2022 and 2023 revenues were impacted by warehouse issues which make historical trends harder to compare. The meaningful step up in IART's Street revenue numbers in 2024 likely assumes that the company's shut down Boston facility starts shipping product again in Q2 2024 (products manufactured in the Boston facility represent ~5% of total revenue or $80m in annual sales) and the recalled product, Cerelink, is fully back on the market globally. BLCO's Street revenue estimates are significantly higher in 2024 due to its acquisition of Xiidra which closed Sep 29 this year. We estimate that Xiidra adds approximately $270m of incremental revenue in 2024 compared to 2023 (our estimate of $355m of Xiidra sales in 2024 less $85m in Q4 2023).

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SMID margins – what stands out to us

Below we show GM and OM expansion for SMIDs. We'd highlight Street only models 80bps of OM expansion for DXCM in 2024 (and 2024 OM is 470bps below Q323). PODD at 130bps of OM expansion also likely proves conservative. AXNX margins also look too low for 2024. SWAV is at 200bps of 2024 OM expansion vs LRP guide that most of the 500bps of expansion would be in 2025/2026. Street also has significant expansion modeled for TNDM when Mobi will be a headwind initially to 2024 margins.

Exhibit 22: SMID cap gross margin (green is consensus)

In general, the Street is modeling more GM expansion for SMID caps in 2025 versus 2024

	Gross Margin														Y/Y Expansion / Contraction						
	2019	2020	2021	2022	1Q23	2Q23	3Q23	4Q23E	2023E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	
AXNX	53.0%	60.2%	64.2%	72.2%	74.3%	75.6%	74.2%	74.4%	74.6%	74.6%	75.2%	75.0%	75.1%	75.0%	24bps	-40bps	74bps	67bps	34bps	75.5%	52bps
BLCO	65.0%	62.4%	61.0%	59.7%	60.0%	59.7%	61.3%	61.2%	60.6%	61.3%	61.1%	62.1%	61.8%	61.6%	125bps	141bps	79bps	60bps	99bps	61.9%	31bps
CNMD	55.4%	55.3%	56.2%	55.3%	54.0%	54.4%	55.9%	56.9%	55.5%	56.1%	56.6%	57.2%	57.8%	57.0%	216bps	216bps	134bps	85bps	147bps	59.2%	225bps
DXCM	63.1%	66.9%	68.6%	64.8%	63.4%	63.5%	64.7%	64.4%	63.9%	63.7%	64.0%	64.5%	64.8%	64.3%	31bps	46bps	-16bps	44bps	47bps	65.2%	83bps
EMBC	NA	NA	69.5%	68.1%	68.6%	66.3%	64.8%	63.9%	65.9%	62.6%	63.4%	64.0%	62.8%	63.2%	-600bps	-292bps	-77bps	-105bps	-269bps	63.0%	-16bps
FNA	82.3%	77.4%	80.9%	82.1%	82.9%	82.6%	80.3%	81.3%	81.7%	81.3%	81.4%	80.8%	81.2%	81.2%	-156bps	-123bps	47bps	-6bps	-56bps	81.3%	10bps
IART	67.5%	68.0%	67.7%	67.2%	67.3%	67.6%	64.6%	66.0%	66.4%	66.4%	66.8%	67.3%	67.6%	67.1%	-91bps	-79bps	266bps	163bps	73bps	68.0%	85bps
INSP	83.4%	84.7%	85.7%	83.8%	84.4%	83.9%	84.1%	84.2%	84.2%	84.4%	84.3%	84.4%	84.5%	84.4%	-6bps	38bps	35bps	37bps	24bps	84.6%	18bps
ITGR	31.0%	27.9%	28.7%	27.4%	26.7%	27.7%	27.4%	27.1%	26.6%	26.0%	26.9%	26.6%	26.9%	26.6%	-67bps	-76bps	-79bps	-20bps	0bps	27.9%	125bps
NARI	88.4%	90.6%	91.1%	88.4%	88.2%	88.4%	88.5%	88.0%	88.3%	87.4%	87.0%	86.7%	86.5%	87.2%	-75bps	-142bps	-184bps	-151bps	-108bps	86.2%	-99bps
NVRO	68.8%	69.0%	68.8%	68.0%	67.1%	68.4%	66.9%	68.3%	67.7%	68.4%	69.0%	69.0%	69.6%	69.1%	132bps	56bps	210bps	127bps	143bps	70.1%	93bps
OM	NA	-25.7%	7.7%	16.1%	20.3%	22.5%	25.6%	25.3%	23.1%	28.6%	30.0%	32.0%	34.5%	31.4%	832bps	747bps	639bps	922bps	831bps	38.3%	693bps
PODD	65.1%	64.4%	68.4%	66.2%	64.9%	66.6%	67.3%	66.3%	66.6%	66.6%	66.8%	67.0%	67.4%	67.0%	168bps	21bps	-31bps	110bps	45bps	67.5%	47bps
PRCT	-30.6%	-16.3%	46.2%	49.4%	51.2%	55.7%	53.8%	56.1%	54.5%	56.5%	58.6%	59.5%	61.0%	59.4%	536bps	297bps	569bps	489bps	492bps	63.7%	426bps
RXST	-81.2%	11.6%	20.0%	43.5%	59.3%	57.7%	61.9%	62.2%	60.4%	63.6%	64.4%	64.2%	66.1%	64.5%	431bps	668bps	236bps	386bps	409bps	67.3%	275bps
SIBN	89.9%	87.9%	88.4%	85.2%	81.9%	81.0%	79.3%	78.0%	80.0%	78.6%	78.7%	78.4%	78.6%	78.6%	-326bps	-234bps	-86bps	59bps	-141bps	79.6%	103bps
SILK	74.9%	71.7%	74.9%	72.7%	68.8%	71.3%	72.9%	72.1%	71.4%	71.2%	71.8%	72.6%	72.9%	72.1%	246bps	56bps	-23bps	75bps	79bps	73.8%	169bps
SWAV	60.0%	69.0%	82.5%	86.7%	86.9%	86.4%	86.8%	86.7%	86.7%	86.6%	86.6%	86.7%	86.6%	86.6%	-29bps	18bps	-15bps	-15bps	-7bps	86.8%	15bps
TNDM	53.6%	52.2%	53.5%	51.8%	49.5%	52.0%	50.5%	51.4%	50.8%	51.1%	52.0%	52.3%	53.4%	52.4%	157bps	2bps	173bps	199bps	164bps	53.9%	153bps

Source: Bloomberg, Company filings, BofA Global Research. *EMBC on CY basis. NA if not available or less than -100%. Average of margins >0%, only.

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Exhibit 23: SMID cap operating margin (green is consensus)

In general, the Street is modeling more OM expansion for SMID caps in 2025 versus 2024

	Operating Margin														Y/Y Expansion / Contraction						
	2019	2020	2021	2022	1Q23	2Q23	3Q23	4Q23E	2023E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	
AXNX	NA	-48.2%	-39.8%	-23.7%	-20.3%	-13.0%	-0.7%	-0.9%	-7.0%	-7.2%	5.5%	3.8%	4.8%	3.6%	1314bps	1846bps	457bps	569bps	1061bps	6.6%	302bps
BLCO	22.2%	18.7%	17.3%	13.8%	9.8%	13.0%	13.9%	15.5%	13.2%	11.8%	14.4%	15.1%	16.5%	14.4%	200bps	136bps	118bps	94bps	124bps	15.2%	75bps

Exhibit 23: SMID cap operating margin (green is consensus)

In general, the Street is modeling more OM expansion for SMID caps in 2025 versus 2024

	Operating Margin															Y/Y Expansion / Contraction						
CNMD	13.4%	12.1%	14.2%	12.6%	12.3%	13.2%	14.6%	16.6%	14.2%	14.6%	15.3%	15.8%	17.2%	15.8%	235bps	214bps	126bps	56bps	155bps	18.2%	241bps
DXCM	10.9%	16.6%	15.1%	16.7%	10.6%	18.2%	24.5%	20.6%	19.0%	14.3%	18.8%	22.6%	22.0%	19.8%	372bps	57bps	-188bps	146bps	82bps	21.6%	178bps
EMBC	NA	NA	41.5%	26.3%	30.6%	27.9%	23.1%	23.9%	26.4%	23.4%	24.6%	24.3%	24.3%	24.2%	-719bps	-328bps	118bps	39bps	-223bps	NA	NA
FNA	2.6%	1.9%	-7.5%	-19.3%	-14.9%	-18.3%	-17.0%	-8.3%	-14.4%	-11.1%	-11.6%	-9.8%	-1.7%	-9.3%	381bps	675bps	724bps	660bps	509bps	-5.1%	420bps
IART	21.5%	21.7%	23.4%	23.8%	21.5%	20.7%	20.5%	23.5%	21.6%	21.1%	21.6%	23.1%	24.1%	22.4%	-44bps	91bps	261bps	63bps	86bps	23.3%	87bps
INSP	-42.5%	-48.7%	-17.1%	-11.7%	-15.2%	-11.0%	-8.8%	-5.9%	-9.9%	-10.8%	-5.8%	-3.8%	2.0%	-4.1%	449bps	520bps	495bps	793bps	572bps	1.1%	520bps
ITGR	18.8%	13.4%	15.3%	13.9%	13.2%	15.0%	15.9%	16.2%	15.1%	15.9%	15.9%	15.9%	15.9%	15.9%	277bps	98bps	6bps	-27bps	85bps	16.5%	60bps
NARI	1.6%	13.2%	3.9%	-7.3%	-4.6%	-1.3%	1.7%	-3.4%	-1.6%	-4.8%	-4.1%	-2.9%	-1.6%	-2.9%	-20bps	-286bps	-461bps	183bps	-128bps	0.8%	375bps
NVRO	-24.7%	-17.4%	-28.7%	1.5%	-37.7%	-23.6%	-24.6%	-18.6%	-25.8%	-30.4%	-20.1%	-21.9%	-14.6%	-20.7%	732bps	347bps	266bps	395bps	506bps	-16.2%	449bps
PODD	6.8%	5.7%	11.5%	9.5%	5.5%	7.6%	12.2%	11.4%	9.9%	9.6%	10.6%	11.5%	12.6%	11.2%	415bps	300bps	-69bps	114bps	129bps	13.1%	194bps
PRCT	NA	NA	NA	NA	NA	-77.4%	-73.0%	-55.7%	-76.7%	-66.8%	-53.9%	-47.1%	-31.4%	-47.8%	NA	2352bps	2588bps	2428bps	2886bps	-21.7%	2611bps
RXST	NA	NA	NA	NA	-74.9%	-65.5%	-56.4%	-57.7%	-62.7%	-50.3%	-39.1%	-38.9%	-28.0%	-38.2%	2455bps	2638bps	1749bps	2971bps	2450bps	-20.9%	1732bps
SIBN	-53.5%	-52.6%	-57.3%	-56.0%	-34.5%	-35.9%	-32.8%	-33.2%	-34.4%	-32.5%	-29.9%	-30.4%	-21.1%	-27.5%	205bps	598bps	242bps	1207bps	697bps	-20.4%	709bps
SILK	-44.3%	-57.0%	-46.8%	-37.5%	-42.1%	-31.6%	-30.8%	-42.6%	-36.5%	-37.9%	-34.3%	-33.4%	-29.4%	-33.6%	424bps	-270bps	-264bps	1320bps	296bps	-27.0%	655bps
SWAV	NA	-96.9%	-0.4%	25.3%	24.7%	18.0%	23.5%	21.7%	21.9%	22.4%	23.7%	24.0%	25.0%	23.8%	-234bps	573bps	58bps	336bps	195bps	26.3%	250bps
TNDM	-4.6%	-1.6%	3.2%	-5.7%	-25.9%	-11.3%	-12.0%	-8.7%	-28.5%	-18.9%	-14.6%	-12.7%	-7.3%	-10.4%	703bps	-325bps	-68bps	135bps	1807bps	-7.6%	285bps

Source: Bloomberg, Company filings, BofA Global Research. *EMBC on CY basis. NA if not available or less than -100%. Average of margins >0%, only.

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Large cap revenue growth – 2024 looks mostly fine

The table below shows organic revenue growth with 2 and 3 year avg growth rates. When comparing these averages (to adjust for comps) we see on average the street is not modeling an acceleration in 2024 (a good starting point). BSX stands out with no acceleration despite a big pipeline. SYK also has a 90bps deceleration with new product launches. However, there is an acceleration modeled for MDT, ABT devices, EW total company, and EW TAVR. When we look at Q124 specifically there's some acceleration modeled but it's not outsized.

Exhibit 24: Large cap Medtech organic growth (green is consensus)

For large cap medtech, the Street on average is modeling 120bps acceleration in 2023 and 10bps acceleration in 2024 on a 2-year stacked basis. When we look at Q124 specifically, there's some acceleration modeled but it's not outsized.

	Organic Growth vs 2019				Organic Growth					Consensus Organic Growth					Consensus Organic Growth				
WW Device Businesses	1Q21A	2Q21A	3Q21A	4Q21A	1Q22A	2Q22A	3Q22A	4Q22A	2022A	1Q23A	2Q23A	3Q23A	4Q23E	2023E	1Q24E	2Q24E	3Q24E	4Q24E	2024E
ABT devices (ex-Diabetes)	-1.6%	2.9%	2.9%	1.8%	7.8%	2.7%	3.5%	2.9%	4.2%	8.5%	10.9%	10.1%	10.9%	10.1%	8.0%	7.2%	6.7%	6.4%	7.1%
2 yr avg	1.0%	4.3%	4.2%	4.1%	3.1%	2.8%	3.2%	2.4%	2.9%	8.2%	6.8%	6.8%	6.9%	7.2%	8.3%	9.0%	8.4%	8.6%	8.6%
3 yr avg					3.3%	3.8%	4.0%	3.7%	3.7%	4.9%	5.5%	5.5%	5.2%	5.3%	8.1%	6.9%	6.8%	6.7%	7.1%
MDT (adj for calendar basis)	-1.1%	4.5%	0.7%	0.6%	1.4%	-3.6%	2.2%	4.1%	1.0%	5.6%	6.0%	5.0%	4.4%	5.2%	4.2%	4.9%	4.7%	4.6%	4.6%
2 yr avg	1.3%	4.0%	2.4%	1.6%	0.2%	0.4%	1.4%	2.4%	1.1%	3.5%	1.2%	3.6%	4.2%	3.1%	4.9%	5.5%	4.8%	4.5%	4.9%
3 yr avg					1.3%	1.5%	2.3%	2.4%	1.9%	2.0%	2.3%	2.6%	3.0%	2.5%	3.7%	2.4%	4.0%	4.3%	3.6%
BSX	3.0%	8.9%	4.1%	6.7%	9.7%	6.6%	11.5%	7.1%	8.7%	14.0%	11.6%	10.2%	9.6%	11.3%	7.7%	8.4%	8.8%	9.4%	8.6%
2 yr avg	4.7%	7.6%	6.7%	7.0%	6.4%	7.8%	7.8%	6.9%	7.2%	11.9%	9.1%	10.9%	8.3%	10.0%	10.8%	10.0%	9.5%	9.5%	10.0%
3 yr avg					6.3%	7.3%	8.3%	7.0%	7.2%	8.9%	9.0%	8.6%	7.8%	8.6%	10.5%	8.9%	10.2%	8.7%	9.5%
EW	19.2%	24.5%	18.1%	12.4%	12.7%	4.5%	6.7%	7.3%	7.8%	12.6%	12.1%	10.9%	11.4%	11.7%	6.8%	8.3%	8.7%	12.1%	9.0%
2 yr avg	14.1%	19.1%	18.5%	15.9%	15.9%	14.5%	12.4%	9.9%	13.2%	12.7%	8.3%	8.8%	9.3%	9.8%	9.7%	10.2%	9.8%	11.7%	10.3%
3 yr avg					13.6%	14.2%	14.6%	13.0%	13.9%	14.8%	13.7%	11.9%	10.4%	12.7%	10.7%	8.3%	8.8%	10.3%	9.5%
EW WW TAVR	30.4%	30.7%	20.9%	13.4%	13.7%	4.9%	6.1%	4.8%	7.2%	10.8%	9.8%	9.9%	11.0%	10.4%	7.3%	8.0%	8.2%	10.6%	8.5%
2 yr avg	20.1%	24.4%	23.8%	21.5%	22.0%	17.8%	13.5%	9.1%	15.3%	12.3%	7.4%	8.0%	7.9%	8.8%	9.0%	8.9%	9.0%	10.8%	9.4%
3 yr avg					18.0%	17.9%	17.9%	15.9%	17.2%	18.3%	15.1%	12.3%	9.7%	13.6%	10.6%	7.6%	8.1%	8.8%	8.7%
ISRG Procedures	27.5%	35.7%	28.8%	27.7%	19.0%	14.0%	20.0%	18.0%	17.8%	26.0%	22.0%	19.0%	18.6%	21.4%	14.2%	15.1%	16.0%	16.4%	15.4%
2 yr avg	22.8%	26.4%	24.2%	23.4%	23.3%	24.9%	24.4%	22.8%	23.8%	22.5%	18.0%	19.5%	18.3%	19.6%	20.1%	18.5%	17.5%	17.5%	18.4%
3 yr avg					21.6%	22.3%	22.8%	21.6%	22.1%	24.2%	23.9%	22.6%	21.4%	23.0%	19.7%	17.0%	18.3%	17.7%	18.2%
JNJ Devices	3.0%	7.0%	4.0%	4.5%	8.6%	3.4%	8.1%	3.8%	6.0%	6.6%	10.0%	6.0%	6.7%	7.3%	5.7%	5.0%	6.5%	5.7%	5.7%
2 yr avg	3.7%	5.2%	4.6%	3.6%	5.8%	5.2%	6.1%	4.2%	5.3%	7.6%	6.7%	7.1%	5.3%	6.7%	6.1%	7.5%	6.2%	6.2%	6.5%
3 yr avg					5.3%	4.6%	5.7%	3.7%	4.8%	6.1%	6.8%	6.0%	5.0%	6.0%	7.0%	6.1%	6.9%	5.4%	6.3%
SYK	4.7%	9.3%	8.4%	6.2%	9.2%	6.1%	9.9%	13.2%	9.6%	12.6%	11.9%	10.2%	7.5%	10.5%	7.5%	7.8%	7.8%	8.0%	7.8%
2 yr avg	6.0%	8.9%	8.0%	7.1%	7.0%	7.7%	9.2%	9.7%	8.4%	10.9%	9.0%	10.1%	10.3%	10.1%	10.1%	9.8%	9.0%	7.7%	9.2%
3 yr avg					7.1%	8.0%	8.6%	9.1%	8.2%	8.8%	9.1%	9.5%	9.0%	9.1%	9.8%	8.6%	9.3%	9.6%	9.3%
ZBH adj for spin	-8.7%	-0.7%	0.6%	-4.6%	5.5%	6.0%	5.0%	10.1%	6.6%	12.2%	6.4%	6.2%	4.6%	7.4%	4.0%	4.8%	4.8%	4.9%	4.6%
2 yr avg	-3.6%	0.6%	1.4%	-0.6%	-1.6%	2.7%	2.8%	2.7%	1.6%	8.9%	6.2%	5.6%	7.3%	7.0%	8.1%	5.6%	5.5%	4.8%	6.0%
3 yr avg					-0.6%	2.4%	2.6%	3.0%	1.9%	3.0%	3.9%	3.9%	3.4%	3.5%	7.2%	5.7%	5.3%	6.5%	6.2%

Exhibit 24: Large cap Medtech organic growth (green is consensus)

For large cap medtech, the Street on average is modeling 120bps acceleration in 2023 and 10bps acceleration in 2024 on a 2-year stacked basis. When we look at Q124 specifically, there's some acceleration modeled but it's not outsized.

	Organic Growth vs 2019			Organic Growth					Consensus Organic Growth					Consensus Organic Growth				
2 Yr Stacked Sequential Accel/ Decel	2Q21A	3Q21A	4Q21A	1Q22A	2Q22A	3Q22A	4Q22A	2022A	1Q23A	2Q23A	3Q23A	4Q23E	2023E	1Q24E	2Q24E	3Q24E	4Q24E	2024E
ABT devices (ex-Diabetes)	3.3%	0.0%	-0.2%	-1.0%	-0.3%	0.4%	-0.9%	-0.5%	5.8%	-1.4%	0.0%	0.1%	4.3%	1.4%	0.8%	-0.6%	0.2%	1.4%
MDT (adj for calendar basis)	2.7%	-1.6%	-0.8%	-1.4%	0.3%	1.0%	0.9%	-1.2%	1.1%	-2.3%	2.4%	0.6%	2.0%	0.6%	0.6%	-0.6%	-0.4%	1.8%
BSX	3.0%	-0.9%	0.3%	-0.7%	1.4%	0.1%	-0.9%	0.7%	5.0%	-2.8%	1.8%	-2.5%	2.8%	2.5%	-0.8%	-0.5%	0.0%	-0.1%
EW	5.0%	-0.5%	-2.6%	0.1%	-1.4%	-2.1%	-2.5%	-3.7%	2.8%	-4.4%	0.5%	0.5%	-3.4%	0.3%	0.5%	-0.4%	1.9%	0.6%
EW WW TAVR	4.3%	-0.7%	-2.3%	0.5%	-4.3%	-4.3%	-4.4%	-6.9%	3.2%	-4.9%	0.6%	-0.1%	-6.5%	1.1%	-0.2%	0.2%	1.8%	0.7%
ISRG Procedures	3.6%	-2.2%	-0.8%	-0.1%	1.6%	-0.5%	-1.6%	-0.4%	-0.3%	-4.5%	1.5%	-1.2%	-4.3%	1.8%	-1.6%	-1.0%	0.0%	-1.2%
JNJ Devices	1.6%	-0.7%	-1.0%	2.2%	-0.6%	0.8%	-1.9%	1.1%	3.5%	-0.9%	0.4%	-1.8%	1.4%	0.9%	1.4%	-1.3%	0.0%	-0.1%
SYK	2.9%	-0.9%	-0.9%	-0.2%	0.7%	1.5%	0.6%	0.9%	1.2%	-1.9%	1.1%	0.3%	1.7%	-0.3%	-0.2%	-0.8%	-1.2%	-0.9%
ZBH adj for spin	4.2%	0.8%	-2.0%	-1.1%	4.3%	0.2%	-0.1%	2.2%	6.1%	-2.7%	-0.6%	1.7%	5.4%	0.8%	-2.5%	-0.1%	-0.7%	-1.0%
Average (excl EW WW TAVR)	3.3%	-0.8%	-1.0%	-0.3%	0.7%	0.2%	-0.8%	-0.1%	3.1%	-2.6%	0.9%	-0.3%	1.2%	1.0%	-0.2%	-0.7%	0.0%	0.1%
3 Yr Stacked Sequential Accel/ Decel									1Q23A	2Q23A	3Q23A	4Q23E	2023E	1Q24E	2Q24E	3Q24E	4Q24E	2024E
ABT devices (ex-Diabetes)									1.2%	0.6%	0.0%	-0.3%	1.6%	2.9%	-1.2%	-0.2%	0.0%	1.9%
MDT (adj for calendar basis)									-0.5%	0.3%	0.3%	0.4%	0.6%	0.7%	-1.3%	1.5%	0.4%	1.1%
BSX									1.9%	0.1%	-0.4%	-0.8%	1.3%	2.7%	-1.6%	1.3%	-1.5%	1.0%
EW									1.8%	-1.1%	-1.8%	-1.5%	-1.2%	0.3%	-2.4%	0.5%	1.5%	-3.2%
EW WW TAVR									2.4%	-3.2%	-2.8%	-2.6%	-3.6%	0.9%	-3.0%	0.5%	0.8%	-4.9%
ISRG Procedures									2.6%	-0.3%	-1.3%	-1.2%	1.0%	-1.7%	-2.7%	1.3%	-0.6%	-4.8%
JNJ Devices									2.4%	0.7%	-0.8%	-1.0%	1.2%	2.0%	-0.8%	0.7%	-1.4%	0.4%
SYK									-0.3%	0.3%	0.4%	-0.5%	0.9%	0.8%	-1.2%	0.7%	0.3%	0.2%
ZBH adj for spin									0.0%	0.9%	0.0%	-0.6%	1.7%	3.9%	-1.5%	-0.4%	1.2%	2.7%
Average (excl EW WW TAVR)									1.1%	0.2%	-0.4%	-0.7%	0.9%	1.4%	-1.6%	0.7%	0.0%	-0.1%

Source: Company filings, BofA Global Research, Visible Alpha. *MDT on CY basis. Adjusted for selling days.

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Large cap margins/EPS – what stands out to us

ABT GM looks very achievable as Street only has ~60bps of 2024 GM expansion modeled but ABT's GM are 400bps below 2019 levels. Street has BAX modeled with 140bps of OM expansion and 15% EPS growth in 2024 – we doubt BAX's initial 2024 guide would be this strong. SYK OM expansion is ~80bps in 2024 (likely in right place) but 2025 Street margins are still 50bps below its long-range guide (26.3%).

Exhibit 25: Large cap gross margin (green is consensus)

The Street on average is modeling 25bps of GM expansion for large cap medtech in 2024. Excluding BDX and COO, the Street on average is modeling ~35bps of GM expansion in 2024 and ~45bps of GM expansion in 2025.

	Gross Margin														Y/Y Expansion / Contraction						
	2019	2020	2021	2022	1Q23	2Q23	3Q23E	4Q23E	2023E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	
ABT	59.2%	57.6%	58.0%	56.9%	55.9%	55.4%	55.1%	56.0%	55.5%	55.8%	56.1%	56.0%	56.6%	56.2%	-5bps	67bps	98bps	55bps	64bps	56.6%	38bps
BAX	44.9%	42.4%	43.3%	43.0%	41.2%	40.4%	41.7%	42.4%	41.3%	41.3%	41.5%	41.9%	42.5%	41.8%	5bps	108bps	16bps	9bps	47bps	42.3%	50bps
BDX	NA	NA	52.2%	53.4%	54.2%	52.6%	52.6%	49.5%	52.3%	51.9%	53.1%	53.8%	49.5%	52.1%	-234bps	46bps	116bps	-4bps	-19bps	NA	NA
BSX	72.4%	67.1%	70.3%	70.5%	70.5%	71.9%	70.2%	70.4%	70.7%	70.8%	71.2%	70.9%	71.2%	71.0%	31bps	-73bps	74bps	80bps	25bps	71.2%	23bps
COO	67.2%	66.9%	67.7%	65.9%	67.1%	66.1%	66.6%	66.1%	66.5%	66.5%	66.4%	66.7%	66.2%	66.5%	-60bps	26bps	16bps	18bps	0bps	NA	NA
GEHC	40.3%	40.2%	41.6%	40.1%	40.9%	41.1%	41.0%	41.0%	40.6%	40.7%	40.8%	40.9%	41.0%	41.1%	-18bps	-33bps	-8bps	-5bps	43bps	41.5%	42bps
MDT	69.5%	64.3%	68.7%	67.2%	65.9%	66.4%	65.9%	65.3%	65.9%	65.2%	65.7%	65.9%	65.7%	65.6%	-62bps	-71bps	-9bps	33bps	-27bps	66.1%	52bps
SYK	65.9%	63.8%	65.9%	63.1%	63.2%	63.9%	64.7%	64.5%	64.0%	64.1%	64.4%	64.8%	65.0%	64.5%	91bps	53bps	2bps	47bps	48bps	65.0%	49bps
TFX	58.1%	56.7%	59.4%	59.2%	59.4%	59.0%	59.4%	59.5%	59.3%	60.0%	60.1%	60.2%	60.4%	60.2%	57bps	109bps	87bps	85bps	86bps	61.0%	85bps
ZBH	73.0%	71.1%	71.4%	71.2%	72.8%	72.0%	70.9%	72.3%	72.0%	71.8%	71.8%	71.4%	72.3%	71.8%	-102bps	-20bps	54bps	5bps	-17bps	72.0%	17bps
Average	61.2%	58.9%	59.8%	59.0%	59.1%	58.9%	58.8%	58.7%	58.8%	58.8%	59.1%	59.2%	59.0%	59.1%	-30bps	21bps	44bps	32bps	25bps	59.5%	40bps
EW	76.2%	75.5%	76.3%	80.1%	77.5%	77.7%	76.4%	76.8%	77.1%	77.0%	76.9%	77.0%	77.1%	77.0%	-49bps	-73bps	56bps	36bps	-4bps	77.2%	18bps
ISRG	71.7%	68.4%	71.2%	69.2%	67.2%	68.5%	68.8%	68.6%	68.3%	68.1%	68.6%	68.7%	68.8%	68.5%	91bps	4bps	-16bps	23bps	15bps	68.8%	38bps
Average	63.5%	61.3%	63.1%	62.4%	62.0%	62.0%	61.9%	62.1%	61.9%	61.9%	62.1%	62.2%	62.4%	62.2%	-2bps	9bps	34bps	35bps	26bps	62.2%	-2bps

Source: Bloomberg, Company filings, BofA Global Research. *BDX, COO and MDT on CY basis. Avg expansion /contraction represents change in the Average, versus the average of the Change.

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Exhibit 26: Large cap operating margin (green is consensus)

The Street on average is modeling ~60bps of OM expansion for large cap medtech in 2024 and ~80bps of OM expansion in 2025.

	Operating Margin														Y/Y Expansion / Contraction					
	2019	2020	2021	2022	1Q23	2Q23	3Q23E	4Q23E	2023E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E

Exhibit 26: Large cap operating margin (green is consensus)

The Street on average is modeling ~60bps of OM expansion for large cap medtech in 2024 and ~80bps of OM expansion in 2025.

	Operating Margin														Y/Y Expansion / Contraction						
ABT	22.3%	23.1%	26.3%	25.7%	21.1%	21.7%	22.5%	23.5%	22.6%	20.9%	22.4%	23.1%	23.9%	23.1%	-25bps	74bps	63bps	33bps	49bps	23.9%	85bps
BAX	18.7%	18.0%	18.8%	17.1%	13.8%	13.2%	15.2%	16.6%	13.7%	13.4%	14.7%	15.5%	17.0%	15.2%	-43bps	146bps	25bps	41bps	142bps	15.9%	76bps
BDX	NA	NA	20.4%	22.4%	22.7%	23.0%	25.4%	19.9%	22.7%	22.9%	25.2%	26.8%	22.2%	24.3%	26bps	225bps	140bps	230bps	155bps	25.1%	78bps
BSX	26.1%	19.3%	25.3%	25.6%	25.5%	26.8%	26.1%	26.5%	26.0%	25.9%	26.3%	26.6%	27.3%	26.6%	34bps	-48bps	48bps	80bps	60bps	27.4%	79bps
COO	27.3%	23.6%	25.7%	23.2%	23.6%	23.9%	24.4%	23.2%	23.8%	23.5%	24.3%	24.8%	24.1%	24.1%	-19bps	32bps	46bps	86bps	36bps	25.1%	100bps
GEHC	14.6%	16.6%	17.4%	14.0%	14.0%	14.4%	14.8%	16.1%	15.1%	15.1%	15.4%	15.6%	16.5%	15.7%	101bps	100bps	81bps	40bps	58bps	16.5%	76bps
MDT	29.5%	20.4%	28.0%	26.5%	29.4%	24.8%	25.2%	25.1%	26.1%	27.5%	24.1%	24.9%	25.3%	25.5%	-188bps	-70bps	-25bps	24bps	-65bps	26.1%	66bps
SYK	26.3%	24.4%	25.6%	23.8%	21.1%	24.3%	23.4%	27.4%	24.2%	22.9%	24.9%	24.5%	27.5%	25.0%	187bps	54bps	110bps	8bps	84bps	25.8%	77bps
TFX	25.8%	24.9%	28.0%	27.0%	25.8%	26.6%	27.6%	25.7%	26.3%	26.3%	26.9%	27.4%	27.3%	27.0%	50bps	38bps	-17bps	156bps	67bps	28.1%	112bps
ZBH	29.6%	25.0%	26.9%	27.3%	28.4%	27.5%	26.4%	30.5%	28.3%	28.1%	28.1%	27.6%	30.6%	28.7%	-33bps	60bps	114bps	13bps	41bps	29.2%	49bps
Average	24.4%	21.7%	24.2%	23.3%	22.5%	22.6%	23.1%	23.5%	22.9%	22.6%	23.2%	23.7%	24.2%	23.5%	9bps	61bps	58bps	71bps	63bps	24.3%	80bps
EW	30.3%	30.1%	30.5%	33.4%	29.7%	29.4%	28.5%	29.8%	29.3%	29.6%	29.5%	29.5%	30.0%	29.8%	-17bps	14bps	101bps	11bps	55bps	30.4%	64bps
ISRG	39.9%	34.8%	40.5%	34.5%	31.5%	35.2%	35.8%	33.4%	34.0%	33.2%	34.9%	35.3%	34.6%	34.4%	168bps	-23bps	-43bps	116bps	46bps	35.0%	60bps
Average	26.4%	23.7%	26.6%	25.3%	24.0%	24.3%	24.5%	25.3%	24.5%	24.2%	24.7%	25.0%	25.8%	25.0%	20bps	34bps	46bps	55bps	52bps	25.8%	77bps

Source: Bloomberg, Company filings, BofA Global Research. *BDX, COO and MDT on CY basis. Avg expansion /contraction represents change in the Average, versus the average of the Change.

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Exhibit 27: Large cap eps and eps growth (green is consensus)

The Street on average is modeling 8% eps growth for large cap medtech in 2024. Excluding BDX and COO, the Street on average is modeling 7% eps growth in 2024 and 11% in 2025.

	EPS														Y/Y Growth						
	2019	2020	2021	2022	1Q23	2Q23	3Q23E	4Q23E	2023E	1Q24	2Q24	3Q24E	4Q24E	2024E	1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	
ABT	$3.24	$3.65	$5.21	$5.34	$1.03	$1.08	$1.14	$1.19	$4.44	$1.00	$1.15	$1.20	$1.28	$4.62	-3.2%	6.6%	5.1%	7.6%	4.1%	$5.13	11.0%
BAX	$3.31	$3.09	$3.61	$3.03	$0.49	$0.55	$0.68	$0.86	$2.60	$0.63	$0.71	$0.76	$0.86	$2.98	29.0%	29.0%	12.5%	-0.8%	14.6%	$3.38	13.5%
BDX	NA	NA	$10.34	$11.17	$2.86	$2.96	$3.42	$2.40	$11.64	$2.99	$3.46	$3.97	$2.96	$13.39	4.6%	17.0%	16.1%	23.5%	15.0%	NA	NA
BSX	$1.58	$0.96	$1.63	$1.71	$0.47	$0.53	$0.50	$0.51	$2.01	$0.52	$0.57	$0.56	$0.60	$2.24	11.7%	6.3%	13.6%	16.0%	11.6%	$2.53	12.7%
COO	$12.16	$10.12	$13.31	$12.08	$3.08	$3.35	$3.47	$3.14	$13.04	$3.29	$3.65	$3.76	$3.50	$14.20	6.8%	9.0%	8.3%	11.4%	8.9%	NA	NA
GEHC	NA	NA	$5.16	$3.38	$0.85	$0.92	$0.99	$1.07	$3.82	$0.91	$1.00	$1.05	$1.26	$4.24	7.3%	8.9%	6.8%	17.4%	11.0%	$4.78	12.8%
MDT	$5.55	$3.51	$5.59	$5.23	$1.57	$1.20	$1.25	$1.26	$5.28	$1.46	$1.26	$1.32	$1.33	$5.36	-7.2%	5.6%	5.3%	5.2%	1.6%	$5.67	5.7%
SYK	$8.26	$7.43	$9.09	$9.34	$2.14	$2.54	$2.46	$3.27	$10.41	$2.49	$2.84	$2.77	$3.51	$11.55	16.5%	11.7%	12.7%	7.2%	11.0%	$12.80	10.8%
TFX	$11.15	$10.67	$13.34	$13.06	$3.09	$3.41	$3.70	$3.26	$13.39	$3.14	$3.45	$3.53	$3.67	$13.87	1.5%	1.2%	-4.6%	12.8%	3.6%	$15.65	12.8%
ZBH	$7.43	$5.38	$6.56	$6.89	$1.89	$1.82	$1.65	$2.15	$7.51	$1.91	$1.97	$1.82	$2.24	$7.93	1.2%	8.0%	10.5%	4.1%	5.6%	$8.51	7.3%
Average	$6.59	$5.60	$7.38	$7.12	$1.75	$1.84	$1.92	$1.91	$7.41	$1.83	$2.01	$2.07	$2.12	$8.04	5.0%	9.3%	7.8%	10.9%	8.4%	$7.31	-9.1%
EW	$1.86	$1.86	$2.22	$2.48	$0.62	$0.66	$0.59	$0.64	$2.50	$0.66	$0.69	$0.67	$0.71	$2.76	6.9%	5.8%	13.9%	11.0%	10.3%	$3.09	11.7%
ISRG	$4.26	$3.39	$4.96	$4.68	$1.23	$1.42	$1.46	$1.47	$5.58	$1.46	$1.61	$1.63	$1.71	$6.27	19.0%	13.7%	11.4%	16.1%	12.3%	$7.22	15.2%
Average	$5.88	$5.01	$6.75	$6.53	$1.61	$1.70	$1.77	$1.77	$6.85	$1.71	$1.86	$1.92	$1.97	$7.45	6.0%	9.5%	8.2%	11.2%	8.7%	$6.88	-7.7%

Source: Bloomberg, Company filings, BofA Global Research. *BDX, COO and MDT on CY basis. Avg expansion /contraction represents change in the Average, versus the average of the Change.

BofA GLOBAL RESEARCH

Medtech markets – Afib ablation, ISRG soft tissue robotic procedures, LAAC, and diabetes top 4 large growth markets

Post Q3 reports we looked back at all the major medtech markets and updated our market models. Medtech Q3 revenue grew high single digits on average (similar as Q2). Street models 2024 revenue growth more mid-single digits (stable comp adjusted growth) which seems like a good place to start the year with a few nuances to note as noted in the above "Scrubbing 2024 Street estimates and what companies have said on 2024" section. Afib ablation, ISRG soft tissue robotic procedures, LAAC (watchman/amulet), and diabetes are the top four large growth markets in medtech. See a summary below and full details by market in our previously published note: [Medical Technology: Medtech market by market - what's driving growth 30 November 2023]

Medtech market growth summary tables

Exhibit 28: Worldwide (WW) Medtech market growth

On average* WW medtech markets grew 15% y/y in Q3, same as in Q2. On a 2-yr stacked basis, WW medtech markets grew 13%, an acceleration from Q2's 2-yr stacked growth of 12%.

WW Markets	1Q21A	2Q21A	3Q21A	4Q21A	2021A	1Q22A	2Q22A	3Q22A	4Q22A	2022A	1Q23A	2Q23A	3Q23A
Hips	$1,267	$1,381	$1,283	$1,364	$5,294	$1,316	$1,388	$1,303	$1,400	$5,407	$1,410	$1,446	$1,343
y/y	1%	51%	(3%)	2%	9%	6%	5%	7.5%	9%	7%	10%	6%	4%
2-year average	0%	9%	(0%)	(2%)	(0%)	4%	28%	2%	5%	8%	8%	5%	6%
Knees	$1,555	$1,716	$1,610	$1,817	$6,698	$1,697	$1,777	$1,665	$1,894	$7,032	$1,934	$1,934	$1,782
y/y	(7%)	79%	(1%)	5%	12%	11%	8%	8.5%	9.5%	9%	16%	10%	8%
2-year average	(7%)	16%	(2%)	(3%)	(3%)	2%	44%	4%	7%	11%	14%	9%	8%
Spine	$1,992	$2,048	$1,934	$2,045	$8,020	$2,002	$1,957	$1,983	$2,055	$7,997	$2,110	$2,071	$2,077
y/y	17%	39%	(5%)	2%	11%	2%	(2%)	6%	3%	2%	7%	6%	4%
2-year average	2%	6%	(1%)	(0%)	1%	10%	19%	0%	3%	7%	4%	2%	5%
Low Power	$829	$849	$838	$785	$3,301	$864	$835	$829	$800	$3,328	$897	$901	$910
y/y	33%	25%	7%	7%	17%	7%	3%	5%	8%	6%	7%	9%	9%
2-year average	7%	6%	3%	1%	4%	20%	14%	6%	7%	11%	7%	6%	7%
High Power	$1,151	$1,140	$1,132	$1,087	$4,510	$1,146	$1,067	$1,047	$1,062	$4,322	$1,155	$1,103	$1,069
y/y	20%	23%	4%	2%	12%	3%	(2%)	(2%)	3%	1%	4%	4%	1%
2-year average	(1%)	1%	0%	(1%)	(1%)	11%	11%	1%	3%	6%	3%	1%	(0%)
Transcatheter Aortic Valve Replacement (TAVR)	$1,212	$1,347	$1,260	$1,319	$5,138	$1,362	$1,361	$1,335	$1,373	$5,431	$1,482	$1,529	$1,482
y/y	14%	44%	11%	14%	20%	14%	5%	11%	8%	9%	11%	13%	10%
2-year average	10%	15%	6%	6%	9%	14%	24%	11%	11%	14%	13%	9%	10%
Transcatheter Mitral and Tricuspid Therapies (TMTT)	$215	$252	$229	$237	$933	$233	$249	$235	$245	$961	$268	$295	$289
y/y	16%	92%	9%	18%	28%	11%	2%	7%	8%	7%	18%	19%	22%
2-year average	16%	31%	10%	9%	14%	14%	47%	8%	13%	18%	14%	11%	15%
Left Atrial Appendage Closure (LAAC)	$180	$228	$224	$250	$882	$253	$280	$297	$316	$1,146	$324	$352	$360
y/y	33%	181%	45%	43%	62%	41%	24%	36%	27%	31%	29%	26%	21%
2-year average	24%	72%	28%	29%	31%	37%	103%	41%	35%	46%	35%	25%	28%
Atrial Fibrillation	$1,608	$1,687	$1,638	$1,703	$6,636	$1,831	$1,739	$1,774	$1,782	$7,127	$2,070	$2,205	$2,145
y/y	24%	61%	11%	16%	28%	15%	5%	12%	9%	10%	12%	21%	18%
2-year average	8%	18%	8%	9%	11%	20%	33%	12%	13%	19%	14%	13%	15%
Continuous Glucose Monitoring (CGM)	$1,578	$1,734	$1,843	$1,939	$7,094	$1,850	$1,988	$2,033	$2,193	$8,064	$2,185	$2,441	$2,607
y/y	28%	36%	30%	24%	29%	17%	15%	10%	13%	14%	18%	23%	28%
2-year average	34%	33%	29%	25%	30%	23%	25%	20%	18%	22%	18%	19%	19%
Insulin Pumps	$778	$753	$790	$838	$3,158	$802	$788	$841	$903	$3,334	$876	$900	$941
y/y	22%	15%	16%	6%	14%	3%	5%	7%	8%	6%	9%	14%	12%
2-year average	13%	9%	10%	12%	11%	13%	10%	11%	7%	10%	6%	9%	9%
Left Ventricular Assist Device (LVAD)	$171	$155	$156	$167	$649	$157	$168	$154	$152	$631	$175	$183	$171
y/y	(6%)	5%	(13%)	0%	(4%)	(8%)	8%	(1%)	(9%)	(3%)	12%	9%	11%
2-year average	(7%)	(10%)	(11%)	(7%)	(9%)	(7%)	7%	(7%)	(4%)	(3%)	2%	9%	5%
ISRG Da Vinci Procedures													
y/y	16%	68%	20%	19%	31%	19%	14%	20%	18%	18%	26%	22%	19%
2-year average	13%	25%	14%	13%	16%	18%	41%	20%	19%	24%	23%	18%	20%
Sleep Apnea Stimulation	$40	$53	$62	$78	$233	$69	$91	$109	$138	$408	$128	$151	$153
y/y	89%	335%	72%	71%	102%	72%	73%	77%	76%	75%	84%	65%	40%
2-year average	60%	151%	72%	71%	71%	80%	204%	75%	73%	89%	78%	69%	59%
Peripheral Intravascular Lithotripsy (IVL)	$16	$19	$18	$21	$74	$23	$32	$37	$41	$132	$46	$52	$48
y/y	78%	189%	44%	52%	76%	42%	70%	109%	89%	79%	102%	64%	29%
2-year average	92%	97%	60%	57%	68%	60%	129%	76%	71%	77%	72%	67%	69%
Coronary Intravascular Lithotripsy (IVL)	$15	$37	$47	$62	$161	$70	$88	$93	$103	$354	$114	$126	$136
y/y	165%	905%	575%	661%	557%	359%	139%	97%	65%	119%	62%	43%	47%
2-year average	140%	455%	321%	358%	307%	262%	522%	336%	363%	338%	211%	91%	72%
Spinal Cord Stimulation (SCS)	$511	$573	$535	$559	$2,179	$516	$549	$545	$593	$2,203	$557	$589	$593
y/y	16%	65%	(6%)	(5%)	12%	1%	(4%)	2%	6%	1%	8%	7%	9%
2-year average	(2%)	14%	(3%)	(5%)	(1%)	9%	31%	(2%)	1%	7%	4%	2%	5%
Peripheral Thrombectomy	$106	$112	$125	$136	$480	$158	$158	$167	$185	$668	$207	$216	$244
y/y	101%	138%	66%	44%	78%	49%	40%	34%	36%	39%	30%	37%	46%
2-year average	92%	90%	79%	73%	80%	75%	89%	50%	40%	59%	40%	39%	40%

Source: Company filings, BofA Global Research. *Average excludes Peripheral IVL, Coronary IVL and Sleep Apnea Stimulation.

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Exhibit 29: US Medtech Market Growth

On average* US medtech markets grew 11% y/y in Q3 vs 13% y/y growth in Q2. On a 2-yr stacked basis, US medtech markets grew 12%, an acceleration from Q2's 2-yr stacked growth of 9%.

US Markets	1Q21A	2Q21A	3Q21A	4Q21A	2021A	1Q22A	2Q22A	3Q22A	4Q22A	2022A	1Q23A	2Q23A	3Q23A
Hips	**$687**	**$777**	**$705**	**$749**	**$2,918**	**$727**	**$796**	**$764**	**$812**	**$3,099**	**$811**	**$835**	**$790**
y/y	0%	58%	(9%)	1%	8%	5%	3%	8%	9%	6%	11%	5%	4.5%
2-year average	(3%)	12%	(0%)	(2%)	(0%)	3%	30%	(0%)	5%	7%	8%	4%	6%
Knees	**$917**	**$1,060**	**$966**	**$1,119**	**$4,061**	**$1,035**	**$1,104**	**$1,066**	**$1,222**	**$4,428**	**$1,211**	**$1,190**	**$1,113**
y/y	(9%)	86%	(6%)	3%	10%	12%	4%	10%	10%	9%	16%	8%	5%
2-year average	(7%)	20%	(2%)	(3%)	(2%)	2%	45%	2%	6%	9%	14%	6%	8%
Spine	**$1,436**	**$1,480**	**$1,402**	**$1,505**	**$5,823**	**$1,451**	**$1,453**	**$1,528**	**$1,586**	**$6,019**	**$1,593**	**$1,546**	**$1,605**
y/y	19%	42%	(7%)	2%	11%	1%	(2%)	9%	5%	3%	10%	6%	5%
2-year average	3%	8%	(1%)	(0%)	1%	10%	20%	1%	4%	7%	5%	2%	7%
Low Power	**$346**	**$356**	**$348**	**$316**	**$1,366**	**$378**	**$350**	**$368**	**$335**	**$1,431**	**$396**	**$367**	**$392**
y/y	40%	27%	4%	4%	17%	9%	(2%)	6%	6%	5%	5%	5%	6.5%
2-year average	8%	7%	1%	(1%)	3%	24%	13%	5%	5%	11%	7%	2%	6%
High Power	**$656**	**$648**	**$653**	**$604**	**$2,561**	**$662**	**$604**	**$634**	**$632**	**$2,532**	**$669**	**$609**	**$622**
y/y	28%	22%	2%	(1%)	12%	1%	(7%)	(3%)	5%	(1%)	1%	1%	(2%)
2-year average	(0%)	1%	(1%)	(4%)	(2%)	15%	8%	(0%)	2%	5%	1%	(3%)	(2%)
Transcatheter Aortic Valve Replacement (TAVR)	**$650**	**$748**	**$704**	**$705**	**$2,806**	**$714**	**$730**	**$763**	**$761**	**$2,969**	**$781**	**$814**	**$820**
y/y	11%	48%	6%	10%	17%	10%	(2%)	8%	8%	6%	9%	11%	7%
2-year average	10%	16%	3%	1%	7%	10%	23%	7%	9%	11%	10%	5%	8%
Transcatheter Mitral and Tricuspid Therapies (TMTT)	**$97**	**$117**	**$104**	**$107**	**$425**	**$101**	**$110**	**$107**	**$112**	**$430**	**$116**	**$120**	**$122**
y/y	16%	117%	1%	9%	26%	4%	(6%)	3%	5%	1%	14%	9%	14%
2-year average	14%	39%	5%	0%	9%	10%	55%	2%	7%	13%	9%	2%	8%
Left Atrial Appendage Closure (LAAC)	**$149**	**$192**	**$185**	**$214**	**$740**	**$219**	**$244**	**$259**	**$279**	**$1,001**	**$288**	**$309**	**$318**
y/y	39%	289%	62%	53%	80%	47%	27%	40%	30%	35%	32%	26%	23%
2-year average	27%	119%	33%	35%	38%	43%	158%	51%	41%	58%	39%	27%	31%
Continuous Glucose Monitoring (CGM)	**$702**	**$809**	**$870**	**$925**	**$3,306**	**$842**	**$966**	**$1,051**	**$1,128**	**$3,987**	**$1,050**	**$1,167**	**$1,318**
y/y	28%	27%	26%	20%	25%	20%	19%	21%	22%	21%	25%	21%	25%
2-year average	29%	29%	25%	19%	25%	24%	23%	24%	21%	23%	22%	20%	23%
Insulin Pumps	**$417**	**$410**	**$449**	**$499**	**$1,775**	**$420**	**$446**	**$501**	**$548**	**$1,916**	**$510**	**$533**	**$568**
y/y	20%	11%	13%	7%	12%	1%	9%	12%	10%	8%	21%	19%	13.5%
2-year average	11%	8%	11%	12%	11%	11%	10%	12%	8%	10%	11%	14%	13%
Left Ventricular Assist Device (LVAD)	**$112**	**$107**	**$104**	**$105**	**$428**	**$109**	**$112**	**$109**	**$100**	**$430**	**$118**	**$120**	**$110**
y/y	(5%)	11%	(14%)	(1%)	(3%)	(3%)	5%	5%	(5%)	0%	8%	7%	1%
2-year average	(9%)	(8%)	(11%)	(10%)	(10%)	(4%)	8%	(4%)	(3%)	(1%)	3%	6%	3%
ISRG Da Vinci Procedures													
y/y	14%	77%	16%	16%	27%	16%	11%	18%	18%	16%	26%	19%	17%
2-year average	12%	27%	12%	11%	13%	15%	44%	17%	17%	21%	21%	15%	18%
Sleep Apnea Stimulation	**$38**	**$49**	**$58**	**$76**	**$221**	**$66**	**$88**	**$106**	**$134**	**$395**	**$124**	**$145**	**$148**
y/y	96%	349%	76%	77%	108%	76%	78%	82%	78%	79%	87%	65%	39%
2-year average	65%	160%	77%	74%	76%	86%	214%	79%	77%	93%	82%	71%	61%
Sacral Neuromodulation (SNM)	**$183**	**$197**	**$177**	**$196**	**$753**	**$174**	**$203**	**$191**	**$231**	**$800**	**$191**	**$218**	**$207**
y/y	123%	140%	0%	0%	40%	(5%)	3%	8%	18%	6%	10%	7%	10%
2-year average	43%	49%	14%	16%	18%	59%	72%	4%	9%	23%	3%	5%	9%
Peripheral Intravascular Lithotripsy (IVL)	**$14**	**$16**	**$16**	**$19**	**$65**	**$21**	**$28**	**$33**	**$36**	**$117**	**$41**	**$46**	**$43**
y/y	85%	200%	41%	49%	76%	42%	68%	111%	90%	79%	98%	65%	31%
2-year average	99%	103%	60%	58%	70%	64%	134%	76%	70%	78%	70%	67%	71%
Coronary Intravascular Lithotripsy (IVL)	**$7**	**$26**	**$37**	**$51**	**$121**	**$58**	**$72**	**$77**	**$82**	**$289**	**$91**	**$99**	**$104**
y/y						777%	174%	109%	62%	140%	57%	37%	34%
2-year average											417%	106%	72%
Transcarotid Artery Revascularization (TCAR)	**$22**	**$26**	**$25**	**$28**	**$101**	**$28**	**$33**	**$37**	**$40**	**$139**	**$40**	**$45**	**$45**
y/y	16%	75%	23%	34%	35%	27%	25%	51%	42%	37%	43%	37%	19%
2-year average	32%	38%	20%	24%	27%	22%	50%	37%	38%	36%	35%	31%	35%
Spinal Cord Stimulation (SCS)	**$415**	**$458**	**$435**	**$459**	**$1,767**	**$421**	**$444**	**$446**	**$484**	**$1,795**	**$454**	**$481**	**$492**
y/y	18%	62%	(7%)	(5%)	11%	1%	(3%)	3%	6%	2%	8%	8%	10%
2-year average	(1%)	13%	(4%)	(5%)	(2%)	10%	29%	(2%)	0%	6%	5%	3%	6%

Source: Company filings, BofA Global Research. *Average excludes Peripheral IVL, Coronary IVL and Sleep Apnea Stimulation.

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Exhibit 30: Large cap Medtech organic growth (green is consensus)

On average, the Street is modeling 10% y/y growth in 2023, 8% y/y growth in 2024, and 8% y/y growth in 2025.

Organic CC Growth Rates - Calendar Quarters / Years													
Company	2017A	2018A	2019A	2020A	2021A	2022A	1Q23A	2Q23A	3Q23A	4Q23E	2023E	2024E	2025E
Alcon	3.0%	5.0%	5.3%	-7.5%	20.0%	11.0%	11.0%	12.0%	9.0%	8.2%	8.7%	6.3%	5.9%

Exhibit 30: Large cap Medtech organic growth (green is consensus)

On average, the Street is modeling 10% y/y growth in 2023, 8% y/y growth in 2024, and 8% y/y growth in 2025.

Organic CC Growth Rates - Calendar Quarters / Years													
2-Yr Avg	1.0%	4.0%	5.1%	-1.1%	6.3%	15.5%	14.5%	11.0%	9.0%	7.6%	9.8%	7.5%	6.1%
Zimmer Biomet	0.2%	0.9%	2.3%	-12.6%	10.6%	6.7%	12.2%	6.4%	6.2%	4.9%	7.3%	4.9%	4.6%
2-Yr Avg	1.2%	0.5%	1.6%	-5.2%	-1.0%	8.6%	8.9%	6.2%	5.6%	7.5%	7.0%	6.1%	4.7%
JNJ Medical Devices Segment	1.9%	2.6%	3.9%	-11.5%	19.6%	6.0%	6.6%	10.0%	6.0%	6.7%	8.3%	5.7%	5.6%
2-Yr Avg	2.8%	2.2%	3.2%	-3.8%	4.1%	12.8%	7.6%	6.7%	7.1%	5.3%	7.1%	7.0%	5.6%
Abbott Medical Devices	5.7%	9.1%	10.5%	-3.7%	20.7%	8.1%	12.4%	14.2%	14.7%	14.9%	14.5%	11.1%	9.6%
2-Yr Avg		7.4%	9.8%	3.4%	8.5%	14.4%	12.0%	10.9%	10.6%	11.2%	11.3%	11.7%	11.9%
Intuitive Surgical	15.5%	18.5%	20.3%	-2.5%	31.0%	11.5%	17.0%	16.7%	12.0%	12.8%	14.4%	14.2%	13.6%
2-Yr Avg	14.6%	17.0%	19.4%	8.9%	14.3%	21.3%	16.1%	11.4%	13.5%	11.4%	13.0%	14.3%	13.9%
Boston Scientific	6.5%	7.2%	7.3%	-11.3%	18.9%	8.7%	14.0%	11.6%	10.2%	9.6%	11.3%	8.7%	9.2%
2-Yr Avg	7.8%	6.9%	7.3%	-2.0%	3.8%	13.8%	11.9%	9.1%	10.9%	8.3%	10.0%	10.0%	8.9%
Becton Dickinson	5.2%	6.4%	4.5%	-2.9%	9.1%	7.1%	7.0%	6.3%	7.0%	5.3%	6.4%	6.1%	5.9%
2-Yr Avg	5.4%	5.8%	5.4%	0.8%	3.1%	8.1%	8.3%	7.6%	6.9%	4.1%	6.7%	6.2%	6.0%
Stryker	8.0%	7.9%	7.8%	-5.1%	12.6%	9.7%	12.6%	11.9%	10.2%	7.5%	10.1%	7.9%	7.4%
2-Yr Avg	7.1%	7.9%	7.9%	1.4%	3.7%	11.1%	10.9%	9.0%	10.1%	10.3%	9.9%	9.0%	7.7%
Baxter	4.5%	3.8%	5.0%	2.8%	7.0%	2.0%	2.0%	4.0%	2.0%	-0.1%	1.4%	3.1%	3.8%
2-Yr Avg	4.8%	4.1%	4.4%	3.9%	4.9%	4.5%	2.5%	3.5%	1.0%	1.0%	1.7%	2.2%	3.4%
Edwards LifeSciences	15.7%	10.1%	15.1%	0.9%	17.8%	7.7%	12.6%	12.1%	10.9%	11.4%	11.7%	9.7%	9.8%
2-Yr Avg	17.1%	12.9%	12.6%	8.0%	9.3%	12.7%	12.7%	8.3%	8.8%	9.3%	9.7%	10.7%	9.8%
Medtronic	4.2%	6.3%	3.5%	-11.1%	13.8%	1.0%	5.6%	6.0%	5.0%	4.4%	5.2%	4.6%	4.6%
2-Yr Avg	4.1%	5.3%	4.9%	-3.8%	1.3%	7.4%	3.5%	1.2%	3.6%	4.2%	3.1%	4.9%	4.6%
Teleflex	3.5%	3.1%	8.1%	-2.8%	6.6%	4.3%	7.1%	5.3%	6.8%	2.5%	6.0%	5.2%	5.4%
2-Yr Avg	3.8%	3.3%	5.6%	2.6%	1.9%	5.4%	6.5%	4.4%	5.3%	3.4%	5.2%	5.6%	5.3%
Dexcom	25.0%	42.1%	44.7%	32.3%	26.0%	20.0%	19.0%	26.0%	26.0%	23.6%	24.0%	19.6%	20.6%
2-Yr Avg	34.9%	33.6%	43.4%	38.5%	29.1%	23.0%	20.5%	21.0%	23.0%	21.8%	22.0%	21.8%	20.1%
Average, Excl. ISRG, DXCM, ABMD and EW	4.3%	5.2%	5.8%	-6.6%	13.9%	6.5%	9.0%	8.8%	7.7%	6.4%	7.9%	6.3%	6.2%
2-Year Avg, Excl. ISRG, DXCM, ABMD and EW	4.4%	4.7%	5.5%	-0.4%	3.7%	10.2%	8.6%	6.9%	7.0%	6.3%	7.2%	7.1%	6.3%
Overall Average	**9.3%**	**11.3%**	**10.9%**	**-2.7%**	**17.0%**	**8.0%**	**10.7%**	**11.0%**	**9.7%**	**8.6%**	**10.0%**	**8.2%**	**8.1%**
Overall 2-Year Avg	9.2%	10.3%	11.1%	4.1%	7.1%	12.5%	10.5%	8.7%	8.9%	8.1%	9.0%	9.1%	8.2%

Source: Company filings, Visible Alpha, BofA Global Research. *MDT on CY basis. Adjusted for selling days.

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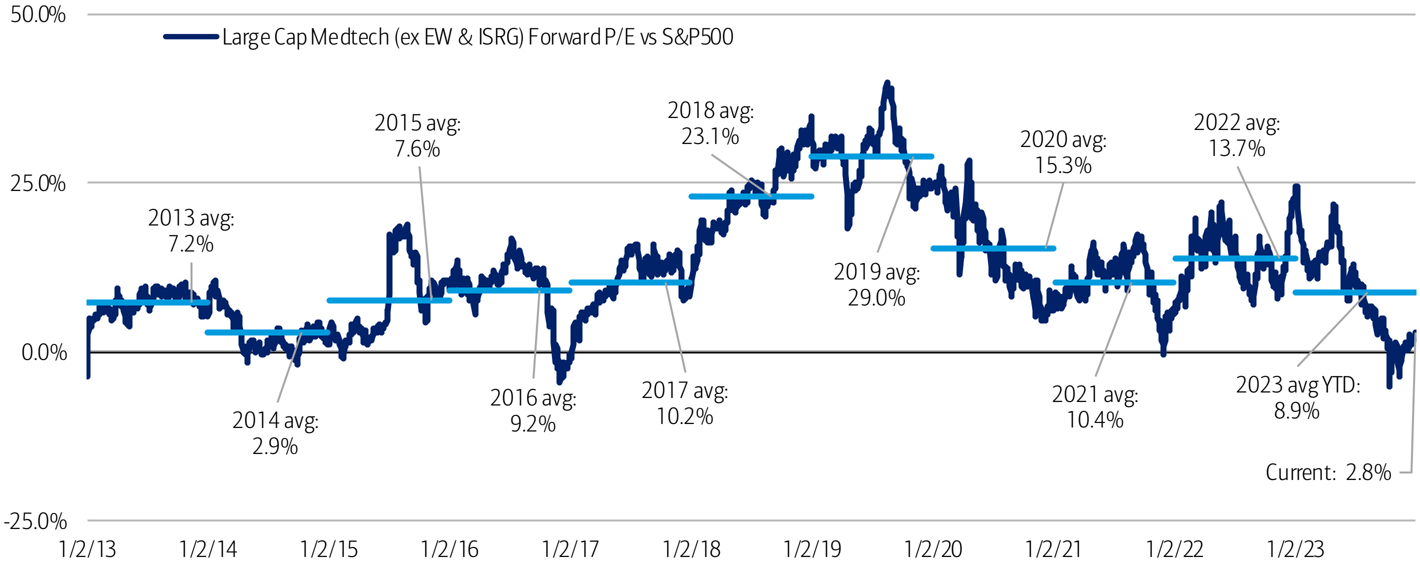
Medtech relative valuation

Medtech relative valuation: Forward P/E Vs S&P 500 (SPX Index)

Exhibit 31: Large cap medtech (excluding EW & ISRG) forward P/E relative to S&P 500 – 10 Years

We kick off 2024 at one of the lowest relative valuations in a decade (2.8%). Other year-end lows include 12/30/16 (-0.3%), 12/31/14 (1.4%) and 12/31/13 (5.2%).



Source: Bloomberg ; Medtech names: ABT, BAX, BDX, BSX, COO, MDT, SYK, TFX, and ZBH.

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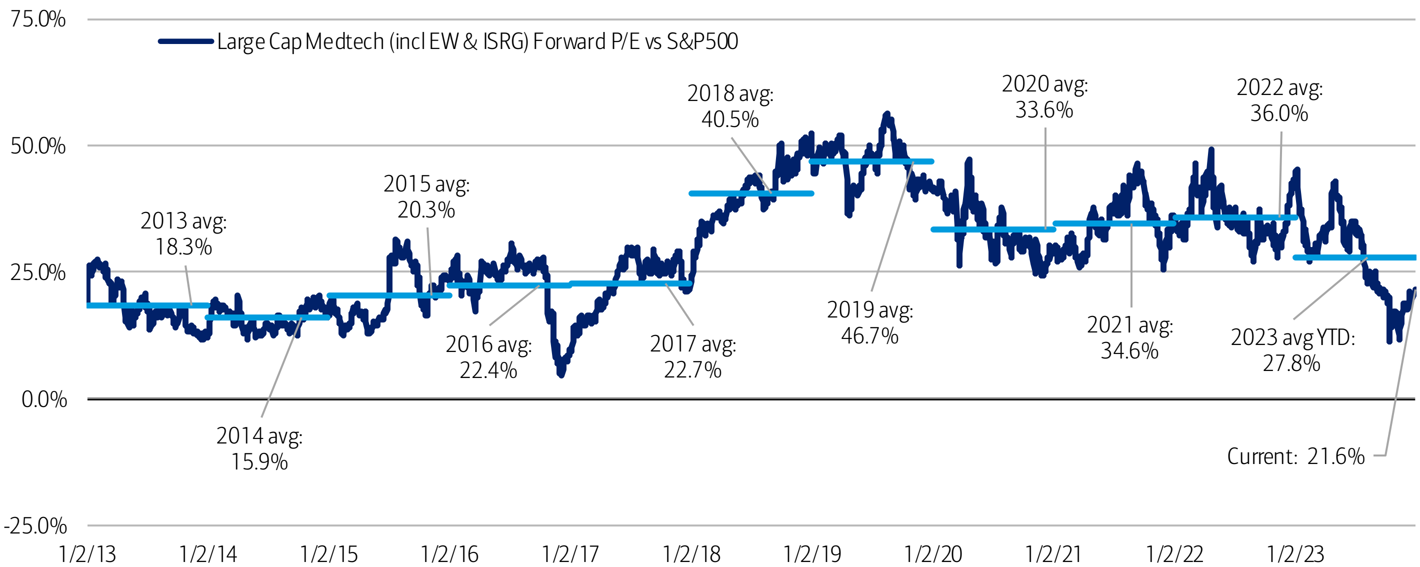
Exhibit 32: Large cap medtech (including EW & ISRG) forward P/E relative to S&P 500 – 10 Years

Large cap medtech (incl EW & ISRG) at 21.6% vs S&P. Other year-end lows include 12/30/16 (10.0%), 12/31/13 (12.3%), 12/31/14 (16.6%) and 12/29/17 (21.5%).



Source: Bloomberg; Medtech names: ABT, BAX, BDX, BSX, COO, EW, ISRG, MDT, SYK, TFX, ZBH.

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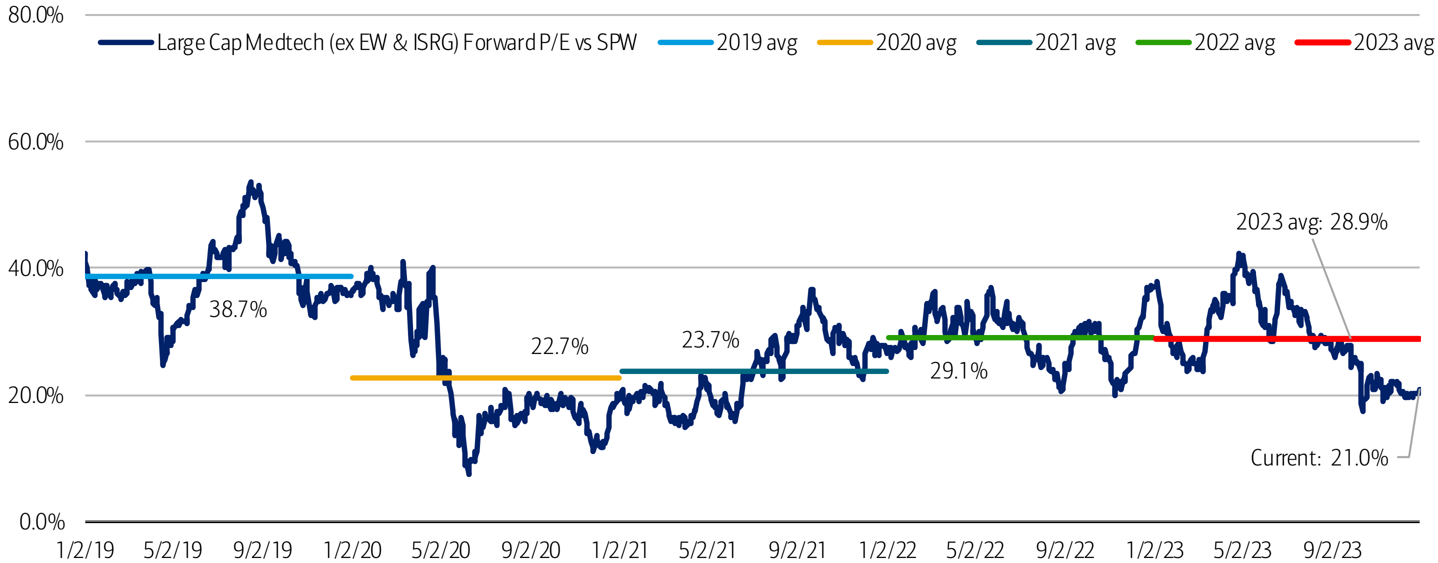
Medtech relative valuation: Forward P/E Vs equal-weight S&P 500 (SPW Index)

Exhibit 33: Large cap Medtech (excluding EW & ISRG) forward P/E vs S&P equal-weighted (SPW) Index since 2019

Large cap medtech (excluding EW & ISRG) at 21.0% vs SPW Index



Source: Bloomberg; Medtech names: ABT, BAX, BDX, BSX, COO, MDT, SYK, TFX, ZBH.

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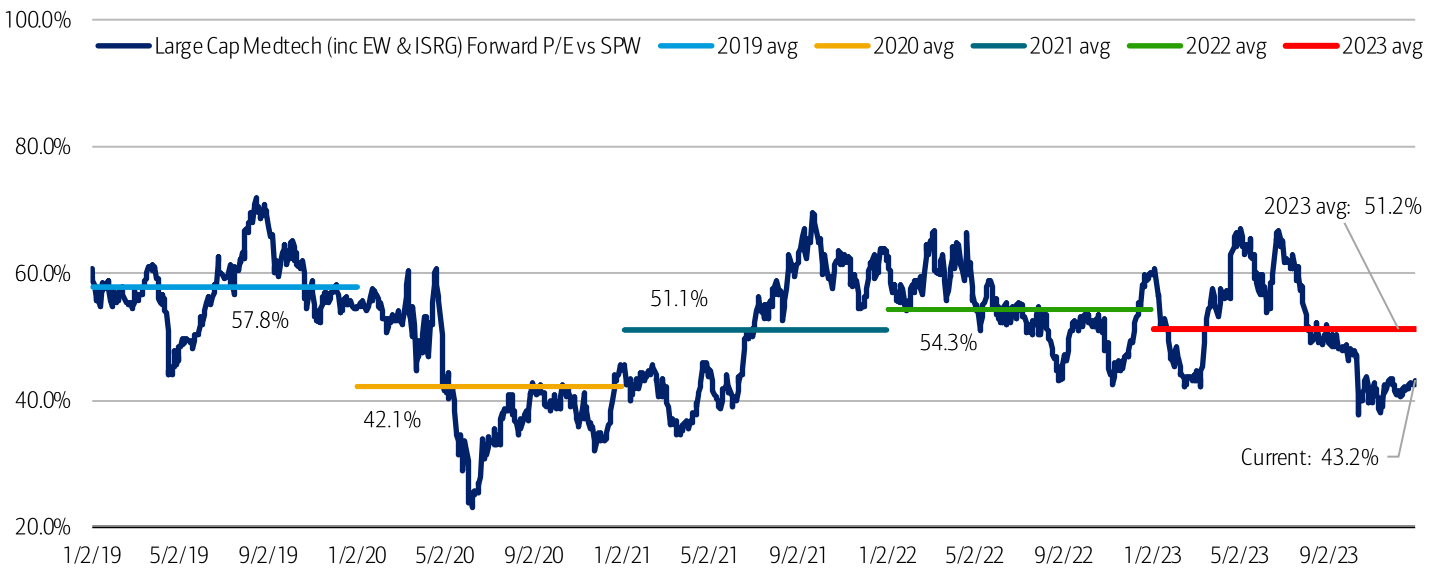
Exhibit 34: Large cap Medtech (including EW & ISRG) forward P/E vs S&P equal-weighted (SPW) Index since 2019

Large cap medtech (including EW & ISRG) at 43.2% vs SPW Index



Source: Bloomberg; Medtech names: ABT, BAX, BDX, BSX, COO, EW, ISRG, MDT, SYK, TFX, ZBH

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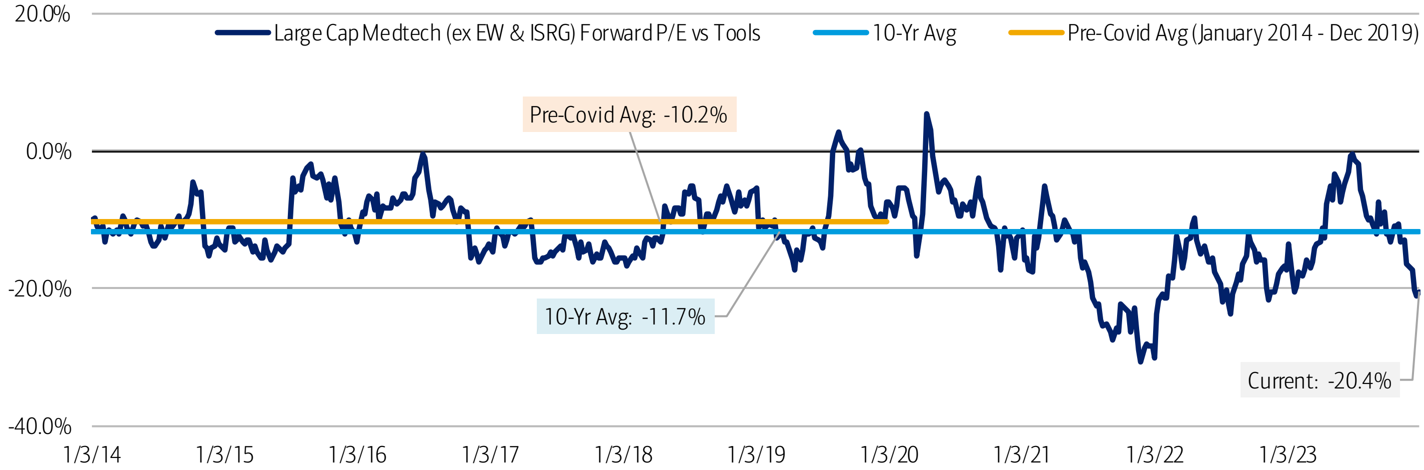
Medtech relative valuation: Forward P/E Vs Tools

Exhibit 35: 10-Year Relative Valuation Medtech (ex EW & ISRG) Forward P/E vs Tools

Large cap medtech (excluding EW & ISRG) at -20.4% discount vs Tools



Source: Bloomberg, BofA Global Research; Tools names: TMO, DHR, AVTR, A, WAT, MTD, RVTY, BRKR, TECH. Note: Excludes AVTR through May 2019.

BofA GLOBAL RESEARCH

Interest could go higher when low-rate fixed debt is refinanced at higher rates

Scrubbing interest in 2024

We looked through our coverage to see who has debt coming due in 2024 and 2025 as we think about potential below the line items for 2024. Interest expense could potentially go higher when low-rate fixed debt is refinanced at higher rates. Floating debt may also see a modest headwind depending on where rates go. Below we include a rough analysis estimating what EPS headwind might need offsetting, assuming fixed debt coming due gets refinanced at 300bps higher rates and floating debt goes 100bps higher, and excluding any offset from interest income. Reducing overall leverage is a potential offset to higher rates and this was a well-known variable as companies gave some early 2024 commentary (see above "Company commentary on 2024").

A few things to note that are company specific

Zimmer Biomet (ZBH) has $850m of 1.45% fixed debt maturing in 2024. On Dec 1, 2023, ZBH issued $500m of 5.35% fixed debt (2028 maturity). All else equal, this $500m at a 390bps higher rate is a $0.08 (or 1%) headwind on 2024 EPS that needs offsetting. However, If ZBH just pays down the $350m remaining, it could offset half of this $0.08. ZBH also has another $863m coming due in 2025.

Stryker (SYK) has $2bn of debt due in 2024 ($1.5bn fixed at 1.5%). On Dec 8, 2023, SYK issued $600m of 4.85% fixed debt (2028 maturity) and on Dec 11, 2023 issued €600m of 3.375% fixed debt (2028 maturity). But a refi of this $2bn at a 300bps higher rate could be about a 1% EPS headwind that SYK needs to offset elsewhere (likely revenue & margins) to get to its double-digit EPS growth goal.

Baxter (BAX) had $1.1bn of debt due on Dec 1, 2023. It has $4bn coming due in 2024 but BAX said it already paid off $950m of this $4bn in Oct 2023 suggesting BAX has roughly $3bn left to pay in 2024. BAX is paying off debt as it comes due with cash from the Biopharma sale. BAX interest expense could go down $80m y/y in 2024 given the debt paydown. BAX has $642m coming due in 2025 but at that point may have access to proceeds from a retained stake in the Renal Spin.

GE Healthcare (GEHC) has $1bn in debt coming due in Nov 2024 but we'd note this debt is already at a 5.5% interest rate and GEHC's top capital allocation strategy over the next 18 months is to pay down debt.

2025 debt refi's that could come sometime in 2024

In 2025 ABT has $1.5bn of fixed debt due, BDX has $1.7bn of fixed debt due, BSX has $1.6bn of fixed debt due, DXCM has $1.2bn due, GEHC has $3.5bn due (almost half fixed), COO has $1bn due, ZBH has $863m due, and SYK has $1.4bn due. In SMIDs, IART has $600m due, GMED has $450m convert due, and TNDM has its $288m convert due. NVRO just addressed the $190m it had due in 2025 with a financing on Dec 1, 2023.

Exhibit 36: Debt outstanding ($m) as of fiscal quarter-end, and debt coming due ($m) in FY24 or FY25

BAX, SYK, and ZBH have the most debt due in '24 as a % of debt outstanding. TNDM, GMED, and NVRO have the most debt due in '25 as a % of debt outstanding.

	Total debt ($m)			Due in FY24 ($m)				Due in FY25 ($m)			
Ticker	Principal	% Fixed	% Floating	Principal	% of Total	% Fixed	% Floating	Principal	% of Total	% Fixed	% Floating
ABT	**15,785**	97%	3%	1,027	**7%**	61%	39%	1,500	**10%**	100%	0%
BAX*	**16,595**	75%	25%	3,990**	**25%**	56%	44%	642	**4%**	100%	0%
BDX	**16,096**	100%	0%	1,141	**7%**	100%	0%	1,717	**11%**	100%	0%
BLCO	**4,363**	0%	100%	41	**1%**	0%	100%	41	**1%**	0%	100%
BSX	**9,000**	100%	0%	504	**6%**	100%	0%	1,571	**17%**	100%	0%
CNMD	**1,005**	87%	13%	91	**9%**	77%	23%	24	**2%**	0%	100%
COO	**2,676**	0%	100%	0	**-**	-	-	1,014	**38%**	0%	100%
DXCM*	**2,572**	100%	0%	0	**-**	-	-	1,208	**47%**	100%	0%
EMBC	**1,636**	43%	57%	10	**1%**	0%	100%	10	**1%**	0%	100%
GEHC	**10,250**	80%	20%	1,000	**10%**	100%	0%	3,500	**34%**	43%	57%
GMED*	**450**	100%	0%	0	**-**	-	-	450	**100%**	100%	0%
IART	**1,440**	40%	60%	15	**1%**	0%	100%	609	**42%**	94%	6%
ITGR	**956**	52%	48%	12	**1%**	0%	100%	22	**2%**	0%	100%
MDT	**25,024**	100%	0%	0	**-**	-	-	1,339	**5%**	100%	0%
NVRO*	**190**	100%	0%	0	**-**	-	-	190	**100%**	100%	0%
PODD	**1,289**	62%	38%	5	**0%**	0%	100%	5	**0%**	0%	100%
SILK	**75**	0%	100%	6	**8%**	0%	100%	6	**8%**	0%	100%
SYK*	**12,833**	96%	4%	2,045	**16%**	74%	26%	1,400	**11%**	100%	0%
TNDM	**288**	100%	0%	0	**-**	-	-	288	**100%**	100%	0%
ZBH*	**5,358**	100%	0%	850	**16%**	100%	0%	863	**16%**	100%	0%

Source: Bloomberg, Company filings, BofA Global Research. *Note: Total debt is as of fiscal quarter-end and '24 and '25 debt due is on fiscal year (FY) basis for companies that don't report on calendar basis.

*BAX had $800m in fixed debt due 12/1/23 and $300m in floating debt due 12/1/23. BAX paid down $514m of commercial paper in Oct '23.

**BAX paid down $950m in floating debt due in 2024 in Oct '23. Also, BAX has said that it will use BPS divestiture proceeds to pay down another ~$500m in floating debt due in 2024 and ~$800m in fixed debt due in 2024.

*DXCM had a $114m fixed convert expire 12/1/23.

*NVRO issued $200m in floating debt 11/30/23 that addresses the debt it has coming due in FY25

*SYK had $580m in fixed debt due 11/30/23 and $600m in fixed debt due 12/1/23. SYK issued ~$1250m in debt in Dec'23.

*GMED includes $450m fixed convert issued to NUVA that expires 3/15/25.

*ZBH issued $500m in fixed debt on 12/1/23.

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Below we illustrate at a high-level the potential impact of rising rates on companies that have 1) floating debt due in FY24 which we assume takes on a 100bps higher rate at the start of FY24 and 2) fixed debt due in FY24 which we assume is refinanced at the start of FY24 at a 300bps higher rate.

Exhibit 37: Potential interest headwind (h/w) ($m) to FY24E EPS

BAX, SYK, BDX and ZBH FY24E EPS could be at greatest risk from rising rates

	Due in FY24 ($m)				'24E Interest h/w – if 300bps higher fixed rate and 100bps higher floating rate				
Ticker	Principal	% of Total	% Fixed	% Floating	Refi h/w ($m)	Floating h/w ($m)	Total h/w ($m)	'24E EPS impact $	'24E EPS impact %
ABT	1,027	**7%**	61%	39%	(19)	(4)	(23)	**-0.01**	0%
BAX	3,990	**24%**	56%	44%	(66)	(18)	(84)	**-0.13**	-5%
BDX	1,141	**7%**	100%	0%	(34)	0	(34)	**-0.10**	-1%
BSX	504	**6%**	100%	0%	(15)	0	(15)	**-0.01**	0%
CNMD	91	**9%**	77%	23%	(2)	(0)	(2)	**-0.06**	-2%
EMBC	10	**1%**	0%	100%	0	(0)	(0)	**0.00**	0%
GEHC	1,000	**10%**	100%	0%	(30)	0	(30)	**-0.05**	-1%
IART	15	**1%**	0%	100%	0	(0)	(0)	**0.00**	0%
ITGR	12	**1%**	0%	100%	0	(0)	(0)	**0.00**	0%
PODD	5	**0%**	0%	100%	0	(0)	(0)	**0.00**	0%

Exhibit 37: Potential interest headwind (h/w) ($m) to FY24E EPS

BAX, SYK, BDX and ZBH FY24E EPS could be at greatest risk from rising rates

	Due in FY24 ($m)				'24E Interest h/w – if 300bps higher fixed rate and 100bps higher floating rate				
SYK	2,045	**16%**	74%	26%	(45)	(5)	(51)	**-0.11**	-1%
ZBH	850	**16%**	100%	0%	(26)	0	(26)	**-0.10**	-1%

Source: Bloomberg, Company filings, BofA Global Research. *Note: h/w = headwind. BAX paid down $950m in floating debt due in 2024 in Oct '23. Also, BAX has said that it will use BPS divestiture proceeds to pay down another ~$500m in floating debt due in 2024 and ~$800m in fixed debt due in 2024.

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Exhibit 38: Low-to-no profit SMIDs' cash on the balance sheet ($m), Vs TTM FCF and Consensus '24E FCF ($m)

Low-to-no profit SMIDs' trailing-twelve-month (TTM) free cash flow (FCF) and what Street is modeling for '24E FCF, vs cash and debt on the balance sheet.

Ticker	Trailing Twelve Month FCF	Consensus '24 FCF	Cash on Balance Sheet	Cash + Consensus '24 FCF	Cash runway in years, given '24E cash burn	Debt on Balance Sheet
FNA*	(90)	(23)	97	74	**4.2***	115
PRCT	(126)	(90)	291	201	**3.2**	51
RXST	(51)	(37)	132	95	**3.5**	0
SIBN	(32)	(23)	167	144	**7.3**	36
OM*	(116)	(82)	194	112	**2.4***	97
SILK	(29)	(33)	193	160	**5.9**	75
NVRO	(72)	(26)	320	294	**12.1**	188
TNDM	(46)	2	498	500	-	285

Source: *Note: Cash and debt balances are on-balance-sheet balances and therefore do not reflect untapped debt capacity.

*OM has access to a $100m debt facility which could increase its cash runway. NVRO excludes $200m term loan priced 11/30/23. FNA cash and debt balances are pro forma given credit facility announced in 4Q'23.

BofA GLOBAL RESEARCH

Medtech M&A in 2024…big appetites… but bar seems high for public SMID takeouts

One thing hasn't changed – large cap appetite for M&A. MDT, BSX, ABT, BDX, SYK, TFX, JNJ and ZBH all say they're buyers. However, large caps have only bought private companies in last 6 mo (all <$1bn deals; most $200-500m with earnouts). SMIDs have also been buying companies instead of getting bought. Outside of a one-off here or there, we do not see much changing in medtech M&A in 2024. JNJ and ZBH seem the most motivated to reposition their portfolios and BDX is talking about bigger tuck-ins

The most likely $1bn+ SMID deals in 2024 (if there are any) would be companies that have mid-teens+ margins and have a willingness to sell at a reasonable multiple. In other words, have made the strategic call that value today is better than the work/risk to remain independent. However, we've seen more public SMIDs do M&A themselves which to us, seems like these companies would rather build businesses than sell at a lower valuation (or they just have a lack of willing buyers at any price).

We've tracked 6 new divestitures/spins announced in 2024. The common theme has been divesting assets that are lower growth businesses with call points that are different than the core business. This is likely a result of new management teams coming in and even existing ones reevaluating the core strategy post COVID. There's probably more of these coming and these assets could end up being potential targets too (usually a more willing seller) but deal hurdles can be high with tax implications.

A list of private, later-stage companies by major medtech end-market

Privates offer easier earn-out structures (helps close bid/ask spread; reduces upfront financing dilution). The bid/ask spread is also likely narrower for privates given they are more likely to have a defined financing window and public market financing remains uncertain. The smaller upfront cash is likely easier to Boards comfortable with deal risk. And 5-year deal returns can look attractive with a low/no rev product moving into an existing global sales force. Structural heart, neuromodulation, and higher growth ortho all seem like areas with good overlap and interest. Our private co tracker is below.

Exhibit 39: Private, later-stage companies in major medtech end-markets

Below we identify private, later-stage (Series B or later) companies and sort them by major medtech end-market

AI / Imaging
Augmedics
Burl Concepts
CapsoVision
CorVista Health
EchoNOUS
Eko
Exo Imaging
Genetesis
Healthy.io
HeartFlow
Insightec
Lumitron
Medasense
Medivis
Mendaera
Neurophet
NovaSignal
Positrigo
Pristine Surgical
Proprio
Synaptive
Trice Medical
Viz.ai

Neuromodulation
Bluewind
Mainstay
Nalu
Neuros Medical
Presidio Medical
Saluda Medical
SceneRay
SetPoint Medical
Valencia

Sleep / ENT
3NT Medical
Apnea Sciences
Olive Union
Signifier Medical
Somnera

Stroke / Peripheral / Cardio
Ablative Solutions
Adagio Medical
Alleviant Medical
AliveCor
AngioSlide
AtaCor
Balt
CardioFocus
CathWorks
Ceribell
Contego
Corvia
CorWave
Element Science
Emboline
Endologix
Flow Medical
Galvanize
Imperative Care
Impulse Dynamics
Kardium
Kestra Medical
Mercator MedSystems
Miracor Medical
NeuWave Medical
Q'Apel Medical
Route 92 Medical
S4 Medical
Saphena Medical
Sensydia
SoniVie
Supira Medical
Verve Medical
V-Wave
VytronUS

Urology
Cerene
Contraline
Gynesonics

Remote Monitoring / Wearables
Canary Medical
Levels Health
LifeSignals
NeoSensory
Notal Vision
Nuvo
Sky Labs
Valencell
VitalConnect

Diabetes
Beta Bionics
CeQur
Glooko
GlySens
Kaleido (ViCentra BV)
LifeScan
Luna Diabetes
OneDrop
Tidepool

Robotics
CMR Surgical
Distalmotion
HistoSonics
Moon Surgical
Noah Medical
Think Surgical
Virtual incision

Other
Diality
Enable Injections
Endomag
Nuvaira
OmniGuide
Quanta Dialysis
RedDress Medical
SpyGlass
TISSIUM
Willow

Spine / Ortho
Barricaid
Carlsmed
Centinel Spine
Cerapedics
Exactech
Expanding Innovations
Miach
Onkos Surgical
Premia Spine
Restor3d
Shoulder Innovations
Zavation

Structural Heart
BioStable
BioVentrix
Cardiac Dimensions
Cardiawave
CardioKinetix
Conformal
Foldax
Hanyu Medical
HighLife
JenaValve
Micro Interventional
NeoChord
Occlutech
Tioga Cardiovascular

Source: BofA Global Research. *Note: AI = Artificial intelligence. ENT = Ear, Nose & Throat. List is not exhaustive

BofA GLOBAL RESEARCH

A look at implied EBIT margin, given EV/Sales paid, to achieve a certain ROIC

The conundrum we see with public SMIDs is the most profitable targets are the ones where deal math works best, but these are the exact companies that have less motivation to sell at valuations many have not seen since being public. Our generic deal math below shows a 5-6x rev multiple deal needs 10-15%+ margins initially to really work. If interest rates move lower in 2024, this likely just widens the bid/ask spread. Large caps also seem hesitant to take on EPS dilution outside of JNJ and ZBH.

Exhibit 40: Implied EBIT margin (after synergies), given EV /Sales paid, to achieve a certain ROIC – assume lower ROIC in Year 1

Below we look at what EBIT margins (including synergies) would need to be, for a given EV /Sales multiple paid, to achieve a certain return on invested capital (ROIC). We use a lower ROIC in this table, as compared to the tables that follow (Exhibits 3 & 4), for Year 1.

	ROIC - Year 1					
EV /Sales	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**
3.0x	4%	7%	11%	14%	18%	21%
4.0x	5%	9%	14%	19%	24%	28%
5.0x	6%	12%	18%	24%	29%	35%

Exhibit 40: Implied EBIT margin (after synergies), given EV /Sales paid, to achieve a certain ROIC – assume lower ROIC in Year 1

Below we look at what EBIT margins (including synergies) would need to be, for a given EV /Sales multiple paid, to achieve a certain return on invested capital (ROIC). We use a lower ROIC in this table, as compared to the tables that follow (Exhibits 3 & 4), for Year 1.

	ROIC - Year 1					
6.0x	7%	14%	21%	28%	35%	42%

Source: BofA Global Research. *Note: assumes tax rate = 15%. EV = enterprise value, ROIC = return on invested capital, CAGR = compound annual growth rate. We solve for EBIT using ROIC = EBIT*(1 – tax rate) /EV. We solve for Sales given the EV /Sales multiple.

BofA GLOBAL RESEARCH

Exhibit 41: Implied EBIT margin (after synergies), given EV /Sales paid, to achieve a certain ROIC – assume higher ROIC in Year 3, and sales CAGR of 20%

Below we look at what EBIT margins (including synergies) would need to be, for a given EV /Sales multiple paid, to achieve a certain return on invested capital (ROIC). We use a higher ROIC in this table, as compared to Exhibit 2, for Year 3. We assume a Sales CAGR of 20% through Year 3.

	ROIC - Year 3 @ 20% Sales CAGR					
EV /Sales	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**
3.0x	10%	12%	14%	16%	18%	20%
4.0x	14%	16%	19%	22%	25%	27%
5.0x	17%	20%	24%	27%	31%	34%
6.0x	20%	25%	29%	33%	37%	41%

Source: BofA Global Research. *Note: assumes tax rate = 15%. EV = enterprise value, ROIC = return on invested capital, CAGR = compound annual growth rate. We solve for EBIT using ROIC = EBIT*(1 – tax rate) /EV. We solve for Sales given the EV /Sales multiple.

BofA GLOBAL RESEARCH

Exhibit 42: Implied EBIT margin (after synergies), given EV /Sales paid, to achieve a certain ROIC – assume higher ROIC in Year 5, and sales CAGR of 20%

Below we look at what EBIT margins (including synergies) would need to be, for a given EV /Sales multiple paid, to achieve a certain return on invested capital (ROIC). We use a higher ROIC in this table, as compared to Exhibit 2, for Year 5. We assume a Sales CAGR of 20% through Year 5.

	ROIC - Year 5 @ 20% Sales CAGR					
EV /Sales	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**
3.0x	7%	9%	10%	11%	13%	14%
4.0x	9%	11%	13%	15%	17%	19%
5.0x	12%	14%	17%	19%	21%	24%
6.0x	14%	17%	20%	23%	26%	28%

Source: BofA Global Research. *Note: assumes tax rate = 15%. EV = enterprise value, ROIC = return on invested capital, CAGR = compound annual growth rate. We solve for EBIT using ROIC = EBIT*(1 – tax rate) /EV. We solve for Sales given the EV /Sales multiple.

BofA GLOBAL RESEARCH

Mgt commentary on M&A over last 6mos

Exhibit 43: Company commentary on M&A since 6/1/23

M&A remains a focus for capital deployment in medtech. We think BDX, BSX, ITGR, JNJ, MDT, SYK, TFX and ZBH sound most positive on M&A. SYK has talked about picking up the size and pace of its deal activity in 2024, and ZBH has highlighted its appetite for larger (up to ~$2b range) deals. CNMD (acquired Biorez and In2Bones in '22) and COO (acquired certain Cook Medical women's health products in Nov'23) sound more focused on debt paydown. BLCO (acquired XIIDRA June '23), EW, and IART (focused on Boston facility), sound more interested in smaller tuck-in deals Vs larger deal activity.

Ticker	Date	Comment(s)
ABT	10/18/23	"we've completed three transactions over the last six months ... valuations have come down ... we're in a great strategic position to be able to execute on our M&A strategy ... If there is the right opportunity that comes along ... we'll be ready"
AXNX	10/30/23	"In terms of adjacencies, if that means what else could we do with neurostimulation, I think that we've said numerous times that **we do not anticipate getting into an adjacent business utilizing neurostimulation as a platform** that does not make sense, different call points different businesses completely. So, we're going to stick to our knitting and just kind of stay straight ahead. We got a good business."
BAX	6/8/23	"what portfolio to invest and what not to invest, what to stay and what to exit. So that is going to be more clear when we have ... Market Day in probably early 2024"
	11/2/23	"M&A space ... continue to rotate the portfolio of Baxter, look at opportunities to transform Baxter's WAMGR into a higher WAMGR"
BDX	8/3/23	"our **tuck-in acquisition strategy** continues to enable profitable growth" "net proceeds from the divestiture of our SI platform, which will increase our capacity to deploy cash towards tuck-in M&A"
	9/6/23	"continue to again be very active. We have shared that the first couple of years of BD 2025, we were focused on kind of rounding out the portfolio across our businesses. And so you saw us do smaller tuck-in M&A ... **We expect more Parata sized acquisitions, mid-size tuck-in M&A, we're still not looking at transformative M&A, we're looking at tuck-in M&A ...** looking at those kind of more solid sized tuck-in acquisitions as we go forward. We'll still do smaller tuck-ins, we've said think maybe **70% of our M&A capital would go towards the -- the beefier tuck-ins with 30% still rounding out the portfolio, particularly in areas like BD Interventional** which has always been the legacy Bard business"

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Ticker	Date	Comment(s)
	9/8/23	"inorganic activities and opportunity, which we continue to assess, which would include partnerships or acquisitions in high growth and strategic spaces" "within our core space of instruments and reagents and informatics, within flow and single cell, there are adjacencies by which we're investing in ... **cell analysis is an area that continues to be exciting and many others are excited about it. So there are new technologies and applications that are adjacent** to even flow psychometry and single cell multiomics that emerge and it's something that we continue to dedicate some of our time from a business development perspective"
	11/9/23	"we ended '23 at strong leverage, 2.6x leverage, strong cash flow, increasingly strong cash flow as we go into '24. And so we have a strong, robust M&A pipeline. We're still **focused on larger size tuck-in M&A ...** make sure that they drive accretive growth and profitability for the company, and we see a number of opportunities to do that"
	11/28/23	"look for us to do more **tuck-in M&A. I would say we're trying to find these ones that are a little chunkier, like a Parata. With that said ... we don't want to take on dilution** or do things where it completely changes like the risk profile"
BLCO	9/6/23	"[Q:] And after the XIIDRA deal ... guessing that your firepower for M&A is relatively limited. So we would expect maybe small tuck-in deals. [A:] I think that's right. ... would take about 12 months to get to a de-levering position where you – we'd feel comfortable doing something. So yes, **small things, a few million dollars here, $10m there ... a little lower-risk, R&D base fields**"
BSX	7/27/23	"continue to look to be active in the M&A space, and that remains our number one capital allocation priority" "M&A continues to be a focus area for us. Just to reinforce it, category leadership and moving ourselves into faster growth markets"
	9/20/23	"**tuck-in M&A strategy**" "we've been very active over many, many years. We'll continue to do so with strategic M&A. We have a very active VC portfolio that will continue to make the company stronger beyond this LRP period" "capital allocation has been clear and consistent ... **number one priority, high quality, innovative, tuck-in, M&A**" "**38 or 40 VC investments really span across the portfolio ... more heavily weighted in Joe's businesses, Jeff Mirviss's, and some in Endo and Uro. ... We get a lot of questions about robotics. ...** We are taking the approach of more of a deconstructed robotic solution, which is to say, how do we deliver the functionality that's really needed ... **there are different ways you can think about robotics, particularly in the MedSurg space versus the traditional large robot kind of a concept**" "**bigger balance sheet helps us and we can do larger M&A and still maintain the same investment grade** ratings that we want and buyback shares to not have dilution" "we've called out **three priority adjacencies for us that we have some very smart venture capital bets in. Urologic cancers, voiding dysfunction, and enabling technologies** that ultimately help make a lot of these procedures and approaches go more smoothly and bring efficiency into the marketplace"
	11/14/23	"number one priority is **high-quality tuck-in, adjacent, innovative M&A**. That's what we've done for the last 10 years. ... subtle tweak we made at Investor Day was we added in a goal of keeping our share count flat relative to our capital allocation, so effectively offsetting the employee stock issuances ... but it still provides us plenty of firepower" "35 companies we have in the VC portfolio now and as you would imagine in the portfolio like that, the green shoots don't come perfectly every quarter and every year ... an important part of feeding the overall M&A pipeline"
CNMD	9/7/23	"**our leverage, we need to digest the last couple of deals, and so it would take something incredibly compelling** ... bar is pretty high to get something done before the leverage comes down, but the leverage will be down soon" "**it's always about platforms, right? You don't want to buy single product lines** that might have a splash and then kind of slow down ... have a wide field to choose from. ... **we prefer things kind of close to what we do today, either a market or a call point or a technology that we feel like we're experts at ... have strength at least two of the three of those ... if you find something that's $10m, growing to $20m, growing to $30m or $40m, for us, that moves the needle, and that's worth our time**" "ROIC, clearly DDs, but it has to be above our WACC, obviously, which is going up currently because of interest rates"
COO	61/23	"capital focus ... very similar to what it's been over the last couple of years. We're going to look at paying down debt. We're going to look at **acquisitions ... they've got to be strategic or creative acquisitions that fit well into what we want to accomplish at CooperSurgical or CooperVision**"
	6/8/23	"on M&A, we have targets on both sides. There's obviously **more things to buy on the surgical side with a fairly concentrated industry on the vision side**. It's more difficult to get acquisitions done. So **we'll continue to be active in M&A ideally more towards fertility, but both sides of the surgical business**. Size of deals, obviously we have higher levels of debt and interest rates are higher. So the hurdle rate and that any acquisition needs to make is going to be higher ... uses of capital, investing in the business and debt paydown are kind of our top two priorities, but M&A is still going to be a piece of what we do"
	9/6/23	"**we have a decent amount of debt. There's not a lot we can do in the vision space or obviously in the fertility space**. We'll continue to look at acquisitions and tuck-in acquisitions. If they make sense, right? They've got to be strategic. They've got to offer a good return."
DXCM	6/23/23	"CapEx is around $200m-$300m. So, you'll find **when we get back to normal CapEx investment, that FCF continues to drive even further. We use that cash flow to look for opportunistic M&A**, share buybacks, addressing dilution associated with our debt, and also funding future organic growth"
EMBC	6/8/23	"**we are seeking partnerships and M&A opportunities** ... we've struck five partnerships in five different countries. Again with the idea of is there a product that's approved in those markets that we can leverage our commercial channels for and give patients access to the products, again **leveraging one of the strengths that we have ... how can we improve and tailor the user experience for a type 2?**"
EW	9/7/23	"have this healthy balance sheet and P&L. We have been very active, because most of our deals are pre-market approval, because they are small in nature, we have not been public about it. ... **have been very active in acquiring small companies, technologies to complement our pipeline. ... going to continue doing that. Pre-market acquisitions, small acquisitions** to make sure we have this differentiated pipeline to drive the topline"
	12/7/23	"what can we do to drive long-term organic durable growth? ... over time, we're going to have sufficient capacity to both accommodate additional clinical trial activity for our current Valvular Structural Heart businesses, as well as accommodate **investments and trialing in other adjacencies like the heart -- the Structural Heart Failure initiatives we talked about**. ... we expect our top line to outgrow our spend over time.
FNA	11/15/23	"**looking at tuck-in deals that are technology oriented ... not really interested in buying, distribution, channels, or companies for additional products that would have overlap** with ours ... interested in just continuing to feed our engine in the field of leading sales force in the US and OUS"
GEHC	9/7/23	"**very excited about the idea of bolt-ons.** When we do, we're very focused on ROI in years three, four, five, and six. We want to have a very robust return on the investment. And then **we don't rule out larger deals, but it's just that, given that the strategies that we have in place, there are a lot more smaller targets that represent opportunities for us than the big large deals**. ... capital allocation standpoint, as you know, we spun out

Exhibit 43: Company commentary on M&A since 6/1/23

M&A remains a focus for capital deployment in medtech. We think BDX, BSX, ITGR, JNJ, MDT, SYK, TFX and ZBH sound most positive on M&A. SYK has talked about picking up the size and pace of its deal activity in 2024, and ZBH has highlighted its appetite for larger (up to ~$2b range) deals. CNMD (acquired Biorez and In2Bones in '22) and COO (acquired certain Cook Medical women's health products in Nov'23) sound more focused on debt paydown. BLCO (acquired XIIDRA June '23), EW, and IART (focused on Boston facility), sound more interested in smaller tuck-in deals Vs larger deal activity.

Ticker	Date	Comment(s)
		with some debt, also some unfunded pension liabilities, and so I think one of our priorities in the near term is to use some of this FCF that we're generating in 2023, along with 2024, and start to pay down some of that ... **next 18 months or so, a priority is some of that debt pay down**"
IART	7/27/23	"thinking about M&A ... two types of deals on that game board. There's deals where we pretty much control the timing. And we definitely are taking a push out mindset specifically in Tissue Technologies, given that ... fully engaged on the Boston execution. But also there are some **deals on there which are strategically important and where we may not control the timing ... those opportunities will come on the radar screen, we will evaluate them ... balance sheet remains strong with available liquidity** to execute in the event we do find those strategic opportunities"
	9/6/23	"So M&A remains a strategic priority for us ... think leverage of 2.5x to 3.5x is appropriate for our size business, so we still have some room ... **not necessarily focused on a particular segment per se.** We want to keep our options open and evaluate opportunities across but evaluate more on its merit. So to that end, we're **looking for tuck-in opportunities that offer breadth, food scale that allow for technology acceleration that allow us to continue to advance our digital strategy and maybe even some that look -- to take on a little bit more risk in the form of kind of pre-revenue opportunities.** ... deals that afford us an opportunity to realize a return on invested capital by year 5 with a floor of 10% ... if and when those opportunities become available at the right price, then we'll take action. And so for right now, we're still evaluating."
	11/28/23	"[Tissue tech] we got a lot on our hands, leadership focus on Boston. On the CSS side, the Codman side, looking at opportunities, we may be at this point a bit less aggressive than we typically would be if Boston would be back. ... So **between now and Boston, if something happens, it would be on the CSS side with deals that are clear strategic adjacencies or tuck-ins. ... this is not the time to do something that's really big, transformational**"
ISRG	7/20/23	"first priority is to invest in the business ... second is to **acquire technology externally that gives us a differentiated capability or accelerates us in the marketplace. That's generally license arrangements, IP acquisition, or tuck-in acquisitions**"
ITGR	7/27/23	"committed to our 2.5x-3.5x leverage. And as you noted, we're at 3.5 ... as we continue to grow EBITDA and we continue to pay down debt ... creates capacity, we still think **we have between $200m-$250m a year on average for acquisition capital ... near term, we wouldn't be doing anything substantive** ... valuations, we still think that premium assets still trading and being acquired at premium values. We're not looking at those sized acquisitions ... **looking for acquisitions that are more tuck-in in nature ... that bring additional capability that allows us to accelerate our development work in partnership with our customers in those faster-growing end markets. ... structural heart, EP, neurovascular, neuromodulation, peripheral vascular**"
	10/26/23	"at year-end, we still expect to be at midpoint at 3.1x leverage. And so we feel like we have the capacity to spend $250m a year on tuck-in acquisitions. We have a robust pipeline of tuck-in acquisitions that we are nurturing at any point ... **opportunities in front of us for additional tuck-ins**"
JNJ	7/20/23	"our appetite is pretty voracious ... **whether it's big or small**, it has to be a really good strategic fit utilizing the expertise and capabilities that we have and has to provide financial value" "**MedTech strategy in becoming a leader in heart recovery**. ... number 1 criteria in looking for opportunities is the medical innovation, how they improve patient care, how do we see the science behind the product ... **opportunities to grow into areas that are close to where we are today. Vision, cardiovascular obviously, surgery too and also opportunities in certain high-growth segments of Orthopaedics ... good return on capital, as well as things that are close to our existing expertise"**
	8/15/23	"we are agnostic to the source of innovation ... **ablation does address the stroke risks, but there's other mechanisms of action to address stroke. And we're keenly interested in the LAAC category** as one adjacency that we believe is critical to play in ... **Second, imaging**. We acquired NuVision as a company two years ago, and we believe that NuVision has the **potential to expand within the sphere of EP, AF, but also potentially other adjacencies in the ICE category. Next to that, I'm thinking heart failure and I'm thinking structural heart as natural adjacencies** to leverage and capitalize on the [CV] presence we have as J&J. ... [LAAC] we're now in the product development stage, and we'll share some news in the near future about how we're approaching this category. It's an exciting space. And I would say it's one that, from my standpoint, deserves multiple shots on goal"
	9/7/23	"**if you look at history, 90% of our deals are less than $1b** ... **we're betting big in the world of heart recovery ... we're very interested in fast-growing areas like robotics, like all things interventiona**l, and to make sure that we all have really robust tuck-ins ... We love all of our businesses, franchise. We're a world leader in ortho, world leader in surgery, interventional, we're adding to. Neurovascular, we don't have scale. We have a **small, but mighty neurovascular business ... We like stroke a lot, so we're looking at how we could be more meaningful in the area of stroke**"
	9/13/23	**"in MedTech, we want to be able to go earlier on, too ... if we see the right opportunity, expand into markets that are faster growing, that are the adjacency where we are**. For example, what we did with Abiomed. ... while we are open for M&A, as we have been with Abiomed, we remain focused in making sure that we do very well with our existing business because that's the core of the growth that we'll deliver"
	12/5/23	"With nearly 40 VC investments we're **working aggressively to identify new opportunities ... CV is one of healthcare's highest unmet needs**. And one of the fastest-growing global markets in MedTech. This is an area of focus for us within our Interventional Solutions portfolio and we have now successfully integrated Abiomed ... announced last week the acquisition of Laminar" "**shifting the portfolio into higher growth segments is an absolute priority ... typically focused on more tuck-in deals ... opportunities that allow us to get into adjacent opportunities**" "if a great opportunity presents itself for an earlier-stage asset, we will act"
MDT	9/13/23	"might be entering a phase here where **with the interest rates being high, that some of these pure play companies that we focus on smaller might be more affordable. But where we're focused is on tuck-ins ... which we define from a dollar size, MSD billions and below**. ... **focused on businesses that -- areas that we're in, either dead center like ENT, where it goes right into our bag or like a near adjacency**. At least we might have to build up some incremental salespeople, but the less the better ... **looking for time to revenue to be short**. Either there is already revenue or the like Affera, we closed and like within six months, you started getting regulatory approvals when we launched"
	11/21/23	"seeing asset prices come down ... we definitely have the capabilities, as you pointed out, to do bigger deals. All that being said, our focus still is on tuck-ins and ... **big organic pipeline** going up against these high-growth markets that we're really focused on. And then, I would augment that with the appropriate tuck-ins. So we're **not going to signal that we're focused on any kind of bigger deals at this point**"
NVRO	6/8/23	"**M&A and diversifying businesses** and doing the right thing to be able to help leverage the P&L. You **drop a new product in your sales force that you already have, that's how you get really significant leverage**, right? If it's the same sales reps that's going to the same physician, and you're just staying for one more surgery, one more case, because you now have something else in your bag, that's what we're looking at ... We have opportunities to be able to do that with a really nice balance sheet, as well as opportunities to finance that in other ways as well"

Exhibit 43: Company commentary on M&A since 6/1/23

M&A remains a focus for capital deployment in medtech. We think BDX, BSX, ITGR, JNJ, MDT, SYK, TFX and ZBH sound most positive on M&A. SYK has talked about picking up the size and pace of its deal activity in 2024, and ZBH has highlighted its appetite for larger (up to ~$2b range) deals. CNMD (acquired Biorez and In2Bones in '22) and COO (acquired certain Cook Medical women's health products in Nov'23) sound more focused on debt paydown. BLCO (acquired XIIDRA June '23), EW, and IART (focused on Boston facility), sound more interested in smaller tuck-in deals Vs larger deal activity.

Ticker	Date	Comment(s)
	9/7/23	"looking at some tuck-in M&A .. **really small bite size type M&A opportunities that we're going to be able to have**" "more important about call point than it is technology. So, I spent a ton of time out in the field ... **all these doctors are doing a new procedure and it's the same people that we already know. Why wouldn't we want to add that product to our bag?** So, it's going to be somewhere with the call point that we're already going to today because we need to leverage our biggest asset as the company which is our 500 people out in the field" "**deals that were we're considering we could fund right off of our balance sheet right now. If they get a little bit bigger then we'll look at either extending the maturity or refinancing**" "**definitely something that's already has established revenue ... can move the needle and buy something that maybe it's doing $8m-$10m** and you double it to $20m, then you go to $40m and then you go to $60m, that's a fun hockey stick ride to be on. And it helps all the business come together because you're now more valuable to those -- each of those offices that you're calling out"
	9/11/23	**"would love to diversify our portfolio a bit ... to drop something into our bag that our reps can call on the same -- have the same call point**, so we can leverage our sales force ... give reps another opportunity to go into a doctor and say, hey doc, check this out, we just got this. It's really cool. Perhaps train them on another procedure ... creates a Halo effect around your other products ... to be a significant part of our options going forward"
SWAV	9/12/23	"**we're receptive to something that is commercial and profitable now. ... either very, very early commercial now or still have some development time left that sort of a more typical med tech M&A**. What we realized was there is this sort of unusual window in time right now where private companies are just getting hammered ... And the IPO window for med tech, at least as of yet, hasn't opened. ... in a position where if we find something that is the kind of property we really like where it's **highly differentiated, substantially sort of underpenetrated market or completely unmet clinical need, where we think we can lean in and use the skills that we've developed with IVL**" "**we know we're probably smarter in cardiovascular than in non-cardiovascular**. So, we'd have to be pretty compelled that it was like you could create essentially a non-cardiovascular IVL stand-alone ... **we don't like commodity things. We don't like entering into markets where companies are doing an exceptionally good job already** ... Like can I really beat Edwards and Medtronic and BSC and TAVR, and probably not, so let's not do that"
	10/23/23	"**look at things that are already existing markets, that already have sort of existing payments, et cetera** ... we did want to put ourselves in a position where if something was demonstrably better than anything on the market or demonstrably better than nothing as we have ... we could move strategically" "**don't have a sort of dilution threshold** that we're applying to things we're looking at. Before we did this convert ... had to either be tiny, which is not interesting or needing many years of development just because of the price we could have paid for them. **Now that we have more financial latitude, we've actually broadened our purview a little bit to think about things that are maybe closer to market in the US ... open to things that are more mature** ... Whether that means we buy something that has a separate sales channel or like if you think about it, a lot of CV companies have somebody who sells coronary products and then somebody else who sells structural products. So just because it's in cardiology or CV doesn't necessarily mean it would be the same sales channel anyway ... **We look outside of CV ... to move outside of the CV space, we'd better be really, really, really sure that it's the right thing ... It's an incredibly high hurdle for us to buy anything that's outside of CV"**
	11/15/23	"to be the premier growth company in Medtech. We believe we have a good shot at achieving that on our own ... feel no obligation to buy something else, but ... wanted to make sure we put ourselves in a position that if there was something else as compelling as a Reducer was, shame on us if we don't have the financial wherewithal to add it ... stop sending us this sort of coronary stent that you think we should acquire ... **don't want to get into commodities ... whatever we do, we'd want to make sure there's adequate scale. And if we get in, we're going to be so highly differentiated that we can be a very significant if not a primary player in therapy. ... we're reasonably intelligent on CV disease. We have diminishing intelligence outside of CV disease ... don't want to constrain ourselves by saying it's got to be the exact same sales channel**"
	11/29/23	"**not interested in commoditized multiplayer markets where we're going to enter with the 10% market share position just to put stuff in our sales bag**. ... If at the end of this decade, we're selling only things that we have created, we think it -- we love our prospects to have a sustained growth platform. But if we can find growth assurance by finding something on the outside that we didn't invent. We're open to doing that"
SYK	8/3/23	"first focused on capital allocation, right now is paying down debt ... **still looking at tuck-ins primarily this year** ... as our cash position gets strong again, we'll be back on offense, that will be the first use of our cash" "**job one is looking at those near-term targets that tuck-in, those create tremendous financial returns for Stryker. They don't always move the needle for the overall growth** but they're really terrific financial deals for us to do and when you feed our existing sales force ... **no change to the adjacencies that we're interested in** ... within neuromodulation ... there's SCS, there's DBS, there is PNS and there's even stimulation that's as you know in sleep apnea ... **hot, cold on SCS. I would tell you right now, we're probably a little bit more cold on it** ... as our cash frees up, probably more **into next year, if the tuck-ins aren't at a significant size and we have cash starting to buildup on our debt position better, hopefully, we'll be able to make a move in one of those adjacencies**"
	9/7/23	"we have done a couple of deals this year. There'll **probably be another little one before we finish out the year, but small**. ... range from tuck-ins to maybe smaller adjacencies. And so I think **once we get back to opening sort of the capital flood gates for M&A**. There's a pretty known lineup of companies that we would target initially for an M&A. And they're generally on the **singles and doubles side of things, maybe $200m, $300m, $400m type acquisitions** ... in the immediate future for 2024, I think you'll see more of these sort of midsized tuck-in deals than anything else"
	11/2/23	"The landscape is pretty rich with targets. Valuations in some cases have come down ... on the other hand, interest rates have gone up. So, the hurdle rate to achieve the right level of financials is raised a little bit, but we're feeling good ... M&A is a big part of our growth strategy moving forward, and **I'm certain that we'll pick up the pace in 2024**" "**debt-to-equity ratio is getting right around close to that 2.5 level ... once we hit that level, then we have the freedom to be able to do what I call main course size deals. We've been on an appetizer diet towards the end of last year and into this year. And we have the capacity to be able to do a $1b dollar deals**"
	11/8/23	"**majority of our acquisitions have been in the core and that will remain true** as we really think about gap fillers as our strongest returns and fastest ways to make an impact" "looking at accelerated growth markets. We want to make sure that we're playing in places that we can see a pathway to category leadership. We **love the idea of investing in our core through these gap fillers, but we're constantly assessing the adjacencies as well**" "pay down that term loan borrowing that we had for Vocera, and we will have that completed at the end of this year, and that really frees up more of our FCF to really direct to M&A"
TFX	9/13/23	"what makes it a great asset is the growth profile, the channel that we have into it and the margin profile. If you think about it having a **margin profile in excess of UroLift margins is pretty compelling**. ... number of assets that have come to the market that have not actually executed on their exit

Exhibit 43: Company commentary on M&A since 6/1/23

M&A remains a focus for capital deployment in medtech. We think BDX, BSX, ITGR, JNJ, MDT, SYK, TFX and ZBH sound most positive on M&A. SYK has talked about picking up the size and pace of its deal activity in 2024, and ZBH has highlighted its appetite for larger (up to ~$2b range) deals. CNMD (acquired Biorez and In2Bones in '22) and COO (acquired certain Cook Medical women's health products in Nov'23) sound more focused on debt paydown. BLCO (acquired XIIDRA June '23), EW, and IART (focused on Boston facility), sound more interested in smaller tuck-in deals Vs larger deal activity.

Ticker	Date	Comment(s)
		strategy because of the valuation dynamic out there. The IPO market, I believe, remains closed. ... **were looking at a number of assets at the time we executed on Palette, and we're still looking at them ... there's a few up at the top end that I like better ... working to execute against that**"
	11/2/23	"pro forma, we're at 2.1 times levered. So, we have lots of firepower. Depending on what EBITDA the asset would bring, that would put you up towards the **$2b mark of firepower available** ... we're talking to more than a handful of companies. They r**ange from anything from $100m potential price to over $1b in potential purchase price**. ... Obviously, interest rates, we'll remain disciplined"
	11/14/23	"quality assets are never inexpensive ... **leverage right now is 2.1x net. In the past, I would have talked about it 4x net, and at 4x net, we probably have over $2b of dry powder. The reality is, I think 3x is the new 4x right now** ... look at our recent acquisition strategy ... nice string of pearls ... string of pearls with the cash generation that we have is something that we're imminently capable of continuing over a multi-year period"
	11/28/23	"**we've always said that the urology call point is a good one for us. Interventional is a significant call point for us. The ICU, a significant call point for us, emergency medicine**. All of those areas are areas we would look to do M&A are in an aligned space to any of those areas. Tuck-ins and surgical and OEM, nothing has changed in our perspective on that. But **there's been no or very little innovation in the area of kidney stones ... in the area of erectile dysfunction in the last 20 years. So these are segments within urology that come to mind that are ripe for disruption**" "looking for assets that are accretive to our top line, accretive to GMs right out of the gate, a little bit of dilution in the shorter term. But we're also looking at assets that will be accretive"
ZBH	8/1/23	"**M&A standpoint, our first priority is that revenue growth and that diversification of the company into faster-growth markets**. That may come with some near-term dilution, but we're also going to be very conscious about driving P&L discipline and looking for accretion in a reasonable amount of time, let's say within the first two years"
	9/6/23	"**up to a $2b deal, willing to take dilution up to 24 months. We may or may not make an exception based on how compelling specific asset is**, but that's kind of like the North Star ... **we like certain spaces within orthopedics**. ... There's a lot of spaces within orthopedics that are very attractive, high growth, great margins. We got a great presence will be a seamless integration. So that will be leg, number one. **Number two is set. Higher growth segments in sports medicine, in upper extremity shoulder in our CMFT, cranial maxillofacial thoracic business**. ... **number three is site of care. We have a great presence in ASC large amount of cases are moving to the ASC ... want to leverage that call point and think about other adjacencies in that call point**" "from the capital allocation standpoint, it's really centered on three principles. The first is to ensure and protect the liquidity of the company. Two is to maintain strategic optionality and flexibility. The third underpinning all that is to maintain investment grade. ... third priority then is that flexibility to do M&A to accelerate our growth rate above that MSD profile"
	11/7/23	"[M&A] remains the Number 1 recipient of capital allocation. ... **SET is one category that is very attractive" "not ranked in order, three key areas, segments within recon that are growing faster than our WAMGR** ... and there's a lot in there. You got navigation, you got data, technology, elements of recon that are really attractive ... **[SET] buying things in sports med, buying things in CMFT and then looking at other categories, I don't want to get into for a competitive dynamics ... And then, ASC is also one attractive area** ... In terms of financials, we're not changing the story. We like to do things **up to $2b in acquisition price ... want these deals to be EPS-neutral within two years. And we spoke about high-single-digit ROIC within five years" "we would still look at debt financing over equity financing all day long**, even though it's 2x of where it was a year ago, it's still, you know, versus historical rates, still a pretty attractive source of capital. It has become marginally more difficult to make the deal economics work at these interest rates. So it just means that we've got to be that much more disciplined on our valuation and our purchase price"
	11/30/23	**"I love the word aggressive** ... do have the list of targets. Some of these targets are down 40%, 50%, 60%, but they don't act like [it]" "three categories, not necessarily in order ... high-growth categories within recon ... data, technology, robotics, next-generation robotics. Certain implants ... Second bucket, again not in order, is S.E.T ... These markets are growing USDs. CMFT ... Sports is growing up. There's a lot of opportunity in that area. Then the third area would be within the ASC" "we're not dependent on M&A. If we are to do M&A, do we need to do S.E.T, again not necessarily ... F&A. It's a great opportunity as well" "balance sheet is in a very strong position. We are in the low 2s on a net-debt-to-EBITDA basis ... **took that low 2s and you took it up by a turn, maybe up to two turns on an adjusted EBITDA basis of $2.5b plus you start to get in that ZIP code**. That does not include, by the way the EBITDA of the target that you would bring over, right? So it **could even be bigger ... whatever we do, we're going to do on the backdrop of maintaining investment grade ... preference is in the tuck-in to midsized deals. On the midsize, on the outside, I'd characterize that as probably about $2b plus or minus as our outside limit. Then, of course inside of that, you could get a lot of opportunity on the tuck-in side** ... near term, we had to take on some dilution for up to 24 months, we'd be willing to do that, but we're going to look for breakeven inside of the two years. In ROIC, that's at the HSDs to LDDs by year five. ... Cost of capital has increased our expectation and our bar" "[M&A environment] is not great. It's getting better. I think as these valuations continue to season, and Board's, management teams start to looking at a rearview mirror and that 52-week high gets further and further away I think we're going to start to see things improve"

Source: Company filings, BofA Global Research. *Note: M&A = mergers and acquisitions.

BofA GLOBAL RESEARCH

M&A activity picked up in Nov and Dec 2023

Exhibit 44: Medtech M&A deal tracker

These 101 deal announcements since 1/1/2020 were acquired at 7x EV/Sales, on average. The 9 deals announced since 11/1/23 were at 3x EV/Sales, on average*. *Note: Average is based on available EV/Sales data points.

Date Announced	Target	Acquirer	EV of Target Entity ($m)	EV /Sales	Sales ($m)	EV/EBITDA TTM	Seller
12/18/2023	ZimVie spine business	H.I.G. Capital	$375.0	0.9x	$400.0	na	ZimVie
12/18/2023	SERF SAS	Stryker	na	na	na	na	Menix

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These 101 deal announcements since 1/1/2020 were acquired at 7x EV/Sales, on average. The 9 deals announced since 11/1/23 were at 3x EV/Sales, on average*. *Note: Average is based on available EV/Sales data points.

Date Announced	Target	Acquirer	EV of Target Entity ($m)	EV /Sales	Sales ($m)	EV/EBITDA TTM	Seller
12/13/2023	Acclarent	Integra LifeSciences	$275.0	2.4x	$115.5	na	Johnson & Johnson
11/30/2023	Vyrsa Technologies	Nevro	$40.0	3.0x	$13.5	na	Vyrsa Technologies
11/30/2023	Laminar	Johnson & Johnson	$400.0	na	na	na	Laminar
11/27/2023	Penditure LAA Exclusion System	Medtronic Inc	na	na	na	na	Syntheon LLC
11/22/2023	CartiHeal	Smith & Nephew	$180.0	na	na	na	CartiHeal
11/1/2023	Cook Medical womens health surgical products	Cooper Companies	$300.0	5.1x	$59.0	na	Cook Medical
11/1/2023	LimFlow	Inari Medical	$250.0	na	na	na	LimFlow
10/26/2023	Certain assets of InNeuroCo	Integer Holdings	$42.0	na	na	na	InNeuroCo
9/25/2023	LimaCorporate	Enovis	€ 800.0	2.7x	€ 295.0	11.0x	LimaCorporate
9/19/2023	Relievant Medsystems	Boston Scientific Corp	$850.0	8.1x	$105.0	na	Relievant Medsystems
9/6/2023	Urotronic	Laborie Medical	$255.0	na	na	na	Urotronic
9/5/2023	Bigfoot Biomedical	Abbott	na	na	na	na	Bigfoot Biomedical
7/26/2023	Palette Life Sciences AB	Teleflex Inc	$600.0	10.7x	$56.0	na	Palette Life Sciences AB
7/6/2023	Blink Eye Drops	Bausch + Lomb	$106.5	na	na	na	Johnson & Johnson
6/30/2023	XIIDRA	Bausch + Lomb	$1,750.0	3.6x	$487.0	na	Novartis
6/20/2023	Surgical Instrumentation	Steris PLC	$540.0	3.2x	$170.0	12.0x	Becton Dickinson
6/9/2023	BioSentry® Biopsy Tract Sealant System	Merit Medical	$100.0	3.0x	$33.0	na	AngioDynamics
5/2/2023	Cerus Endovascular	Stryker Corp	na	na	na	na	Cerus Endovascular
5/1/2023	OSSIS	Zimmer Biomet	na	na	na	na	OSSIS
4/24/2023	Lead placement solutions of Radian, LLC	Axonics	na	na	na	na	Intermed Labs
2/13/2023	Assets related to pump-based AID technologies	Insulet	$25.0	na	na	na	Bigfoot Biomedical
2/9/2023	Caption Health	GE HealthCare	$127.0	na	na	na	Caption Health
2/9/2023	NuVasive	Globus Medical	$2,905.3	2.4x	$1,218.9	11.0x	NuVasive
2/8/2023	Cardiovascular Systems	Abbott Laboratories	$768.2	2.8x	$271.0	na	Cardiovascular Systems
1/17/2023	AcuFocus	Bausch + Lomb	na	na	na	na	AcuFocus
1/17/2023	Neovasc Inc	Shockwave	$100.0	10.5x	$9.5	na	Neovasc Inc
1/9/2023	IMACTIS	GE HealthCare	na	na	na	na	IMACTIS
1/5/2023	Embody	Zimmer Biomet	$155.0	na	na	na	Embody
1/3/2023	SynergEyes	Cooper Companies	na	na	na	na	SynergEyes
12/13/2022	AMF Medical	Tandem	$66.6	na	na	na	AMF Medical
12/11/2022	Acotec	Boston Scientific Corp	$523.0	9.9x	$53.0	na	Acotec
12/1/2022	Surgical Innovation Associates	Integra LifeSciences	$50.0	10.0x	$5.0	na	Surgical Innovation Associates
11/29/2022	Apollo Endosurgery	Boston Scientific Corp	$615.0	8.1x	$76.0	na	Apollo Endosurgery
11/1/2022	Abiomed	Johnson & Johnson	$16,600.0	14.4x	$1,151.4	56.2x	Abiomed
8/23/2022	Aerie Pharmaceuticals	Alcon	$770.0	5.7x	$135.0	na	Aerie Pharmaceuticals
8/22/2022	Standard Bariatrics	Teleflex Inc	$170.0	11.3x	$15.0	na	Standard Bariatrics
8/15/2022	Obsidio	Boston Scientific Corp	na	na	na	na	Obsidio
8/1/2022	Biorez	CONMED Corp	$85.0	17.0x	$5.0	na	Biorez
7/28/2022	MedKeeper	Becton Dickinson and Co	na	na	na	na	MedKeeper
7/21/2022	Capillary Biomedical	Tandem	na	na	na	na	Capillary Biomedical
6/15/2022	M.I.Tech	Boston Scientific Corp	$230.0	5.5x	$42.0	na	Synergy Innovation
6/14/2022	Medifox Dan	ResMed	$1,000.0	12.0x	$83.0	28.6x	Medifox Dan
6/6/2022	Parata	Becton Dickinson and Co	$1,525.0	6.9x	$220.0	na	Frazier Healthcare Partners
5/4/2022	In2Bones	CONMED Corp	$145.0	3.9x	$36.8	na	In2Bones
4/27/2022	Acutus (Left-heart access portfolio)	Medtronic Inc	na	na	na	na	Acutus (Left-heart acces portfolio)
3/21/2022	CUPTIMIZE	Johnson & Johnson	na	na	na	na	CUPTIMIZE
2/10/2022	Cross Roads Extremity Systems	Johnson & Johnson	na	na	na	na	Cross Roads Extremity Systems
2/1/2022	Cytognos	Becton Dickinson and Co	na	na	na	na	Cytognos
1/27/2022	Thermedx	Stryker Corp	na	na	na	na	Thermedx
1/10/2022	Affera	Medtronic Inc	$925.0	na	na	na	Affera
1/6/2022	Vocera Communications	Stryker Corp	$3,090.0	13.5x	$229.5	na	Vocera Communications
12/21/2021	Scanwell	Becton Dickinson and Co	na	na	na	na	Scanwell
12/9/2021	Tissuemed	Becton Dickinson and Co	na	na	na	na	Tissuemed
12/2/2021	Venclose	Becton Dickinson and Co	na	na	na	na	Venclose
10/6/2021	Baylis Medical	Boston Scientific Corp	$1,750.0	8.8x	$200.0	na	Baylis Medical
9/17/2021	Devoro Medical	Boston Scientific Corp	$400.0	na	na	na	Devoro Medical
9/7/2021	Gauss Surgical	Stryker Corp	na	na	na	na	Gauss Surgical

Exhibit 44: Medtech M&A deal tracker

These 101 deal announcements since 1/1/2020 were acquired at 7x EV/Sales, on average. The 9 deals announced since 11/1/23 were at 3x EV/Sales, on average*. *Note: Average is based on available EV/Sales data points.

Date Announced	Target	Acquirer	EV of Target Entity ($m)	EV /Sales	Sales ($m)	EV/EBITDA TTM	Seller
9/2/2021	Hill-Rom	Baxter International Inc	$11,716.0	3.9x	$3,018.0	17.8x	Hillrom
9/2/2021	Walk Vascular	Abbott Laboratories	na	na	$4.0	na	Walk Vascular
8/6/2021	Intersect ENT	Medtronic Inc	$1,100.0	7.6x	$143.8	NA	XENT US
8/5/2021	Zebrasci	Becton Dickinson and Co	na	na	na	na	Zebrasci
7/29/2021	PerClot	Baxter International Inc	$60.8	na	na	na	PerClot
7/27/2021	Tepha	Becton Dickinson and Co	na	na	na	na	Tepha
7/20/2021	Velano Vascular	Becton Dickinson and Co	na	na	na	na	Velano Vascular
6/24/2021	Farapulse	Boston Scientific Corp	$575.0	na	na	na	Farapulse
4/28/2021	Novartis / Simbrinza	Alcon	$355.0	7.0x	$51.0	na	Novartis
4/27/2021	TMJ Concepts	Stryker Corp	na	na	na	na	TMJ Concepts
3/22/2021	Peripheral Support Catheters	Cardiovascular Systems Inc	na	na	na	na	Wavepoint Medical
3/4/2021	GSL Solutions	Becton Dickinson and Co	na	na	na	na	GSL Solutions
3/3/2021	Lumenis LTD - Surgical Business	Boston Scientific Corp	$1,070.0	6.7x	$160.0	na	Lumenis
2/25/2021	Contura Ltd.	Axonics	$235.0	15.7x	$15.0	na	Contura
2/24/2021	Simplify Medical	NuVasive Inc	$150.0	na	na	na	Simplify Medical
2/1/2021	EarlySense	Hill-Rom Holdings Inc	$30.0	na	na	na	EarlySense
1/21/2021	Preventice Solutions	Boston Scientific Corp	$1,225.0	6.2x	$197.5	na	Preventice
1/20/2021	Cardiva Medical	Haemonetics Corp	$510.0	7.3x	$70.0	na	Cardiva
1/19/2021	Bardy Diagnostics, Inc.	Hill-Rom Holdings Inc	$375.0	12.5x	$30.0	na	BardyDx
1/12/2021	Cantel Medical	Steris	$4,600.0	4.4x	$1,055.8	14.7x	CMD US
1/5/2021	Orthosensor	Stryker Corp	na	na	na	na	Orthosensor
12/18/2020	BioTelemetry	Phillips	$2,800.0	6.3x	$445.8	23.7x	BioTelemetry
12/16/2020	Acell, Inc.	Integra LifeSciences	$400.0	4.0x	$100.8	na	Acell, Inc.
12/1/2020	BTG Spec Pharma (BSX)	SERB / Charterhouse Capital Partners	$800.0	3.8x	$210.0	na	BSX US
12/1/2020	AE Medical	Zimmer Biomet	$250.0	na	na	na	Vance Street Capital
11/12/2020	Medical Business Assets of CUBEX	Becton Dickinson and Co	na	na	na	na	CUBEX
11/6/2020	Incisive	Zimmer Biomet	na	na	na	na	Incisive
11/6/2020	Relign	Zimmer Biomet	na	na	na	na	Relign
10/29/2020	Ai Biomed	Medtronic Inc	na	na	na	na	Ai Biomed
10/28/2020	Z-Medica	Teleflex Inc	$525.0	8.1x	$65.0	na	Linden Capital
9/30/2020	Avenu Medical	Medtronic Inc	na	na	na	na	Avenu Medical
9/29/2020	Integra LifeSciences - Extremity Ortho Business	Smith & Nephew PLC	$240.0	2.7x	$90.0	na	IART US
9/15/2020	Fiagon AG	Intersect ENT	$71.0	na	na	na	Fiagon
8/19/2020	Momenta Pharmaceuticals	Johnson & Johnson	$6,500.0	na	$27.4	na	Momenta
8/11/2020	Companion Medical	Medtronic Inc	na	na	$17.5	na	Companion Medical
8/2/2020	Varian Medical Systems	Siemens Healthineers	$16,400.0	4.6x	$3585.0	27.5x	Varian
8/1/2020	RIST Neurovascular	Medtronic Inc	na	na	na	na	RIST
7/15/2020	Medicrea	Medtronic Inc	$230.0	na	na	na	Medicrea
6/24/2020	Sugarmate	Tandem	na	na	na	na	Sugarmate
4/30/2020	toSense	Baxter International Inc	na	na	na	na	toSense
2/13/2020	Digital Surgery	Medtronic Inc	na	na	na	na	Digital Surgery
2/10/2020	Orpheus Medical	Intuitive Surgical Inc	na	na	na	na	Orpheus Medical

Source: Company filings, BofA Global Research *Note: Average is based on available EV/Sales data points. EV = enterprise value, TTM = trailing twelve months.

BofA GLOBAL RESEARCH

Large cap medtech has ~$170bn of M&A capacity, up Vs ~$129bn exiting 2019

Exhibit 45: Large cap medtech change in balance sheets ($m) and M&A firepower ($m) Vs 2019

JNJ, ABT, MDT and ISRG had the most M&A firepower exiting the qtr. Large cap medtech has ~$170bn of M&A capacity ($13bn per company, on average), as compared to ~$129bn of M&A capacity ($11bn per company, on average) exiting fiscal 2019*.

	2019* ($m)					Q3'23* ($m)						
Ticker	Cash	Debt	EBITDA	Net Leverage	M&A Firepower	Cash	Debt	TTM EBITDA	Net Leverage	M&A Firepower	Change in Net Leverage	Change in Firepower
ABT	4,140	18,139	8,188	1.7x	**10,565**	7,047	15,528	9,887	0.9x	**21,180**	-0.9x	10,615
BAX**	3,335	5,350	2,726	0.7x	**6,163**	5,788	16,493	2,773	3.9x	**0**	3.1x	(6,163)

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	2019* ($m)					Q3'23* ($m)						
Ticker	Cash	Debt	EBITDA	Net Leverage	M&A Firepower	Cash	Debt	TTM EBITDA	Net Leverage	M&A Firepower	Change in Net Leverage	Change in Firepower
BDX	566	19,390	5,242	3.6x	**0**	4,266	16,782	5,363	2.3x	**3,572**	-1.3x	3,572
BSX	217	10,008	3,112	3.1x	**0**	952	8,899	4,505	1.8x	**5,568**	-1.4x	5,568
COO	89	1,826	867	2.0x	**863**	117	2,594	991	2.5x	**495**	0.5x	(368)
EW	1,517	594	1,401	-0.7x	**5,126**	1,864	597	1,891	-0.7x	**6,941**	0.0x	1,816
GEHC	-	-	-	-	**-**	2,418	10,260	3,477	-	**2,589**	-	-
ISRG	3,222	0	1,945	-1.7x	**9,056**	6,476	0	2,677	-2.4x	**14,506**	-0.8x	5,450
JNJ	19,381	27,696	28,255	0.3x	**76,450**	23,511	29,921	32,386	0.2x	**90,747**	-0.1x	14,297
MDT	9,848	25,324	9,767	1.6x	**13,825**	7,734	25,080	11,130	1.6x	**16,044**	0.0x	2,219
TFX	301	1,909	734	2.2x	**594**	881	2,038	868	1.3x	**1,447**	-0.9x	853
SYK**	4,425	11,090	4,222	1.6x	**6,000**	1,860	12,690	5,144	2.1x	**4,602**	0.5x	(1,398)
ZBH**	618	8,221	2,610	2.9x	**227**	292	5,482	2,406	2.2x	**2,029**	-0.8x	1,801
Average				**1.5x**	**10,739**				**1.3x**	**13,055**	**-0.2x**	**3,189**

Source: Company filings, BofA Global Research. *Note: Cash and debt values are on-balance-sheet cash and debt as of the most recent fiscal quarter close. For BDX, COO, and MDT, fiscal year does not equal calendar year. Firepower = 3x EBITDA – Debt + Cash. Equity could increase this amount. Calculation does not assume any ability to lever up the acquired entity. **BAX had $1.1bn debt due 12/1/23. BAX paid down ~$1.5bn of debt in Oct '23. BAX has said that it will use BPS divestiture proceeds to pay down another ~$1.3bn of debt due in 2024. **SYK had $580m debt due 11/30/23 and $600m debt due 12/1/23. SYK issued ~$1250m of debt in Dec'23. **ZBH issued $500m of debt on 12/1/23.

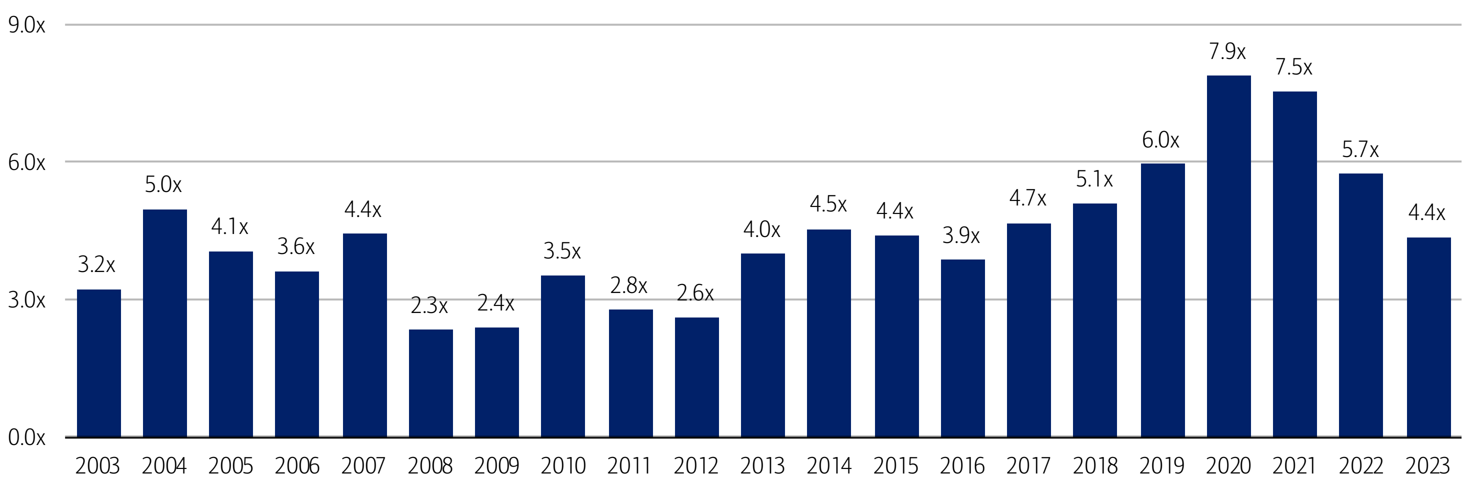
BofA GLOBAL RESEARCH

SMID cap EV/NTM sales valuations are in-line with 2003-2019 historicals

Below we look at avg SMID cap medtech EV/NTM Sales multiples at the end of each calendar year. For example, 2022 shows multiples on 2023 sales as of 12/31/22. 2023 valuations (4.4x) are below 2020 – 2022 avg valuations (6.9x) but roughly in-line with 2003 – 2019 avg valuations (3.9x). This suggests that SMID cap valuations are in-line with historicals. 2023 valuations are at 4.4x vs the US 10-Year 2023 average is 4.0%. In 2003 – 2008, average valuations were 3.8x vs the US 10-Year annual average was 4.3%.

Exhibit 46: SMID cap medtech EV/NTM Sales

The below shows average EV/NTM Sales multiples at the end of each calendar year for SMID cap medtech*. For example, 2022 shows multiples on 2023 sales as of 12/31/22. 2023 valuations (4.4x) are below 2020 – 2022 average valuations (6.9x) but in-line with 2003 – 2019 average valuations (3.9x).



Source: Bloomberg, BofA Global Research. *Note: SMID cap medtech includes companies with a market cap of $500m to $10bn as of the end of each calendar year.

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Recession … how Medtech fares

The below was previously published. See the full note: Medtech during recession.

The ultimate impact a recession on medtech depends significantly on the severity and duration of the recession. In this note, we try and highlight what we saw in the last recession keeping in mind it was the worst recession since the depression and came at a time when many medtech markets were in the process of maturing. The recession of 2008/2009 was the first that had a noticeable impact on medtech. And even in the 2008/2009 recession, growth stayed positive in the most elective procedure areas like hip and knee procedures. There was a slowdown in hips and knees in 2008/2009, but growth never went negative. The market was also starting to mature during those years, which makes the analysis on the impact of recessions challenging.

The area within medtech that slowed materially during the 2008/2009 recession was capital equipment sales. But, in most recessions, the impact on medtech procedures has been minor. It is difficult to quantify specifically as so many other factors were impacting medtech growth rates at those times. Overall, though, medtech revenue growth and EPS growth stayed positive during the last recession.

Recession impact to medtech revenue and EPS

We went back and looked at what happened to medtech companies in the 2008/2009 recession. As noted above, while medtech is typically a durable sector, the industry was negatively impacted in the last recession primarily due to the decrease in capex spending and loss of insurance coverage. However, medtech was still able to achieve positive revenue growth and EPS growth despite a challenging macro-environment.

In 2009, medtech revenue grew roughly 3.8% on average. SYK & ZBH were roughly flat in 2009 despite being exposed to elective surgeries (Hips and Knees). Furthermore, while absorbing some lingering pressures from the recession medtech revenue still grew by 7.3% in 2010 on average.

Medtech was still able to grow revenue amid one of the worst recessions

Exhibit 47: Medtech revenue

Medtech growth slowed in 2009, but most companies still had positive rev growth

	2006	2007	2008	2009	2010
Abbott Laboratories	22,476	25,914	29,528	30,764	35,167
y/y growth		*15.3%*	*13.9%*	*4.2%*	*14.3%*
Baxter	10,378	11,263	12,348	12,562	12,843
y/y growth		*8.5%*	*9.6%*	*1.7%*	*2.2%*
Becton Dickinson	5,738	6,360	7,156	6,987	7,124
y/y growth		*10.8%*	*12.5%*	*-2.4%*	*2.0%*
Boston Scientific	7,822	8,357	8,050*	8,188	7,806**
y/y growth		*6.8%*	*-3.7%*	*1.7%*	*-4.7%*
Edwards Lifesciences	1,037	1,091	1,238	1,321	1,447
y/y growth		*5.2%*	*13.4%*	*6.8%*	*9.5%*
Intuitive Surgical	373	601	875	1,052	1,413
y/y growth		*61.2%*	*45.6%*	*20.3%*	*34.3%*
Medtronic	11,301	12,299	13,519	14,599	15,819
y/y growth		*8.8%*	*9.9%*	*8.0%*	*8.4%*
Stryker	4,636	5,163	6,718	6,723	7,320
y/y growth		*11.4%*	*30.1%*	*0.1%*	*8.9%*
Zimmer Biomet	3,495	3,897	4,121	4,095	4,220
y/y growth		*11.5%*	*5.8%*	*-0.6%*	*3.0%*
C.R. Bard	1,985	2,202	2,452	2,535	2,720
y/y growth		*10.9%*	*11.4%*	*3.4%*	*7.3%*
Covidien	9,647	8,895	9,853	9,909	10,429
y/y growth		*-7.8%*	*10.8%*	*0.6%*	*5.2%*
CareFusion	3,052	3,478	3,663	3,595	3,377***
y/y growth		*14.0%*	*5.3%*	*-1.9%*	*-6.1%*
St Jude Medical	3,302	3,779	4,364	4,681	5,165
y/y growth		*14.4%*	*15.5%*	*7.3%*	*10.3%*
Average Growth	**-**	**13.2%**	**13.9%**	**3.8%**	**7.3%**

Source: Bloomberg, BofA Global Research

Exhibit 47: Medtech revenue

Medtech growth slowed in 2009, but most companies still had positive rev growth

2006	2007	2008	2009	2010

Note: all companies are on a fiscal basis; *In 2008, BSX declined due to the impact of divested businesses. Excluding the impact, the company had 2% y/y rev growth; **In 2010, BSX declined due to defib ship hold and product removal actions. Excluding the impact, the company declined 2% y/y growth; ***In 2010, CFN declined due to several non-recurring items

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With respect to EPS, in 2009 medtech was also able to achieve bottom line growth of 8.0% on average, despite lower sales growth and other macro pressures.

Medtech also demonstrated solid EPS growth in 2008/2009/2010

Exhibit 48: Medtech EPS

Medtech grew EPS 8.0% on average in 2009 and 12.1% in 2010

	2006	2007	2008	2009	2010
Abbott Laboratories	$2.53	$2.84	$3.32	$3.73	$4.18
y/y growth		*12.5%*	*17.0%*	*12.3%*	*12.0%*
Boston Scientific	$1.13	$0.77*	$0.81	$0.78	$0.69**
y/y growth		*-32.1%*	*6.2%*	*-4.2%*	*-11.5%*
Baxter	$2.23	$2.78	$3.39	$3.80	$3.62
y/y growth		*25.1%*	*21.1%*	*12.3%*	*-4.5%*
Becton Dickenson	$3.34	$3.84	$4.46	$4.76	$4.94
y/y growth		*15.0%*	*16.1%*	*6.7%*	*3.8%*
Edwards Lifesciences	$1.13	$1.06	$1.24	$1.52	$1.84
y/y growth		*-6.3%*	*16.2%*	*23.4%*	*20.4%*
Intuitive Surgical	$1.89	$3.70	$5.11	$5.93	$9.47
y/y growth		*95.9%*	*38.1%*	*16.0%*	*59.7%*
Medtronic	$2.21	$2.47	$2.61	$2.92	$3.22
y/y growth		*11.7%*	*5.8%*	*11.9%*	*10.4%*
Stryker	$2.32	$2.40	$2.83	$2.95	$3.33
y/y growth		*3.3%*	*18.0%*	*4.4%*	*12.9%*
Zimmer Biomet	$3.43	$4.05	$3.92	$3.94	$4.33
y/y growth		*18.1%*	*-3.3%*	*0.5%*	*10.0%*
C.R. Bard	$3.29	$3.82	$4.44	$5.09	$5.60
y/y growth		*16.0%*	*16.4%*	*14.6%*	*10.0%*
Covidien	-	$1.85	$2.64	$2.78	$3.38
y/y growth			*42.8%*	*5.4%*	*21.7%*
CareFusion	-	$1.17	$1.62	$1.54***	$1.36***
y/y growth		*-*	*38.8%*	*-5.0%*	*-11.6%*
St. Jude	$1.53	$1.85	$2.31	$2.44	$3.01
y/y growth		*20.6%*	*25.0%*	*5.4%*	*23.6%*
Average Growth		**16.3%**	**19.8%**	**8.0%**	**12.1%**

Source: Bloomberg, BofA Global Research

Note: all companies are on a fiscal basis; *In 2007, BSX declined partially due to the dilution from divested businesses; **In 2010, BSX declined partially due to the dilution from divested businesses and lower revenue; ***In 2009 and 2010, CFN spun off from Cardinal and had a shipment hold on Alaris

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Companies are more mature = better balance sheets/FCF/dividends

Exhibit 49: Medtech balance sheets

Almost all medtech companies also have better balance sheets and much stronger FCF

		ABT	BAX	BDX	BSX	EW	MDT	ISRG	SYK	ZBH
2008	Cash	5,080	2,131	831	1,641	227	1,613	451	2,196	215
	Debt	10,404	3,368	935	6,743	176	6,956	-	-	460
	Net Debt	5,325	1,237	105	5,102	(51)	5,343	(451)	(2,196)	245
	FCF	5,457	1,509	1,085	856	103	2,976	216	1,029	788
2021	Cash	10,249	2,951	2,295	1,925	1,467	10,817	4,204	3,019	479
	Debt	18,050	17,450	17,610	9,065	596	26,389	-	12,479	7,069
	Net Debt	7,801	14,499	15,315	7,140	(871)	15,572	(8,620)	9,460	6,590
	FCF	8,648	1,479	3,416	1,330	1,406	4,885	1,737	2,738	1,025
Δ 2021A vs 2008A	Cash	5,169	820	1,465	284	1,240	9,204	3,753	823	263
	Debt	7,646	14,082	16,675	2,322	420	19,433	-	12,479	6,609
	Net Debt	2,476	13,262	15,210	2,038	(820)	10,229	(8,168)	11,656	6,346
	FCF	3,191	(30)	2,331	474	1,304	1,909	1,521	1,709	237

Exhibit 49: Medtech balance sheets

Almost all medtech companies also have better balance sheets and much stronger FCF

	ABT	BAX	BDX	BSX	EW	MDT	ISRG	SYK	ZBH

Source: Company filings. Note: all companies are on a fiscal basis.

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Recession impact on capex and implications for medtech

Below we take a closer look at the capital equipment environment today and the impact on capex during the last recession.

Today SYK & ISRG have the largest exposure to capex

Exhibit 50: Capex and recurring revenue by company

GEHC, ISRG, and SYK have the greatest capex exposure as a % of revenue

	ABT	BAX	BDX	BSX	EW	GEHC	ISRG	MDT	SYK	TFX	ZBH
Capital Equipment	8%	10-15%	15%	<5%	<5%	~50%	25%	5%	25%	<5%	5%
Recurring Revenue	92%	90%	85%	~95%	95%	~50%	75%	95%	75%	>90%	~95%

Source: Company filings, BofA Global Research

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In 2009, ISRG revenue grew by just 20% driven by a decline in system revenue

Exhibit 51: ISRG total revenue growth trends

While procedures grew 51% in 2009, Da Vinci system sales growth slowed to 8% from 40% in 2008

Y/Y Growth	2007	2008	2009	2010
Rev Growth	61%	46%	20%	34%
Procedure Growth		60%	51%	35%

Source: Company filings, BofA Global Research

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And ISRG system placements only grew by 1% in 2009 but quickly rebounded to 31% growth in 2010

Exhibit 52: ISRG system placements

ISRG only grew placements 1% y/y in 2009

	2006	2007	2008	2009	2010
WW Systems Sold	170	241	335	338	441
y/y growth		*41.8%*	*39.0%*	*0.9%*	*30.5%*
WW Systems Revenue	$206	$324	$455	$490	$660
y/y growth		*57.6%*	*40.3%*	*7.7%*	*34.6%*

Source: Company filings

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However, ISRG now has 75% of recurring revenue vs 48% during the recession

Exhibit 53: ISRG reoccurring revenue trends

ISRG now has 20%+ more in reoccurring revenue

% ISRG Sales	2007	2008	2009	2010	2021
Recurring Revenue % Sales	46%	48%	53%	53%	75%

Source: Company filings, BofA Global Research

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SYK Medsurg sales declined 4% but quickly rebounded to 15% growth in 2010

Exhibit 54: Stryker's capital equipment sales during the last recession

Within Medsurg, approximately 60% of sales came from capital equipment during the recession

Y/Y Growth	2008	2009	2010
MedSurg	**13%**	**-4%**	**15%**
Surgical Equipment and Navigation	15%	2%	8%
Endoscopic and communication systems	8%	-1%	6%
Patient handling and emergency medical equipment	17%	-20%	18%

Source: Company filings, BofA Global Research

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The US Acute Care Bed/Stretcher Market grew 9% in 2008 but then declined 17% in 2009 and then grew 1% in 2010

Exhibit 55: US Acute Care Bed/Stretcher Market Model
The US beds and stretcher market declined 17% in 2009

	2005	2006	2007	Q108	Q208	Q308	Q408	2008	Q109	Q209	Q309	Q409	2009	2010	2011
US Sales															
HRC	NA	875	890	231	220	273	204	927	189	189	210	198	786	802	817
SYK	334	397	465	134	138	135	133	540	104	100	97	122	423	433	445
KCI	180	186	200	59	53	55	54	222	49	46	47	55	196	185	172
US Market Size	**NA**	**1,457**	**1,554**	**424**	**411**	**463**	**391**	**1,688**	**342**	**335**	**354**	**375**	**1,406**	**1,420**	**1,434**
Y/Y Growth															
HRC	NA	NA	NA	5%	6%	9%	-4%	4%	-18%	-14%	-23%	-3%	-15%	2%	2%
SYK	31%	19%	18%	21%	13%	21%	-2%	13%	-27%	-30%	-23%	-11%	-23%	2%	3%
KCI	-80%	3%	8%	5%	-5%	-3%	-9%	-4%	-14%	-12%	-15%	0%	-10%	-6%	-7%
US Market Growth	**NA**	**NA**	**NA**	**11%**	**10%**	**15%**	**-1%**	**9%**	**-19%**	**-19%**	**-24%**	**-4%**	**-17%**	**1%**	**1%**
Market Share															
HRC			57%	54%	54%	59%	52%	55%	55%	56%	59%	53%	56%	57%	57%
SYK			30%	32%	33%	29%	34%	32%	30%	30%	27%	33%	30%	31%	31%
KCI			13%	14%	13%	12%	14%	13%	14%	14%	13%	15%	14%	13%	12%
Total			**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Company filings, BofA Global Research

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Infusion pump market grew 8% in both 2007 and 2008, but declined 4% 2009

Exhibit 56: Infusion pump market model
The infusion pump market declined 9% in 2009

Infusion Market Model ($ in MM)	**2006**	**2007**	**2008**	**2009**
BAXTER				
Infusion Sales ($ in mm)	**817**	**861**	**906**	**858**
Reported Growth	-4%	5%	6%	-5%
BAX CC Growth		**5%**	**4%**	**-2%**
HOSPIRA				
Infusion Sales ($ in mm)	**535**	**584**	**655**	**659**
Reported Growth		9%	12%	1%
HSP CC Growth		**9%**	**11%**	**3%**
CAREFUSION				
Infusion Sales ($ in mm)[1]	**810**	**900**	**1,003**	**860**
Reported Growth		11%	12%	-14%
Adjustment for Alaris deferrals		11%	10%	10
Sales adjusted for Alaris deferrals		NA	NA	**870**
Reported Growth		NA	NA	-13%
Est'd CFN CC Growth adj'd for Alaris deferrals[2]		**11%**	**10%**	**-9%**
Total Infusion Market (adj'd for Alaris deferrals)	**2,162**	**2,345**	**2,564**	**2,387**
Market Growth (reported)		8%	9%	-7%
CC Market Growth (adj'd for Alaris deferrals)		**8%**	**8%**	**-4%**
Market Share (adjusted for Alaris deferrals)				
BAX share		37%	35%	36%
HSP share		25%	26%	28%
CFN share		38%	39%	36%

Source: Company filings, BofA Global Research
Note: 1) CFN Infusion sales are estimated as the company does not break them out; 2) CC growth for CFN is also estimated based on the average f/x impact seen by BAX and HSP

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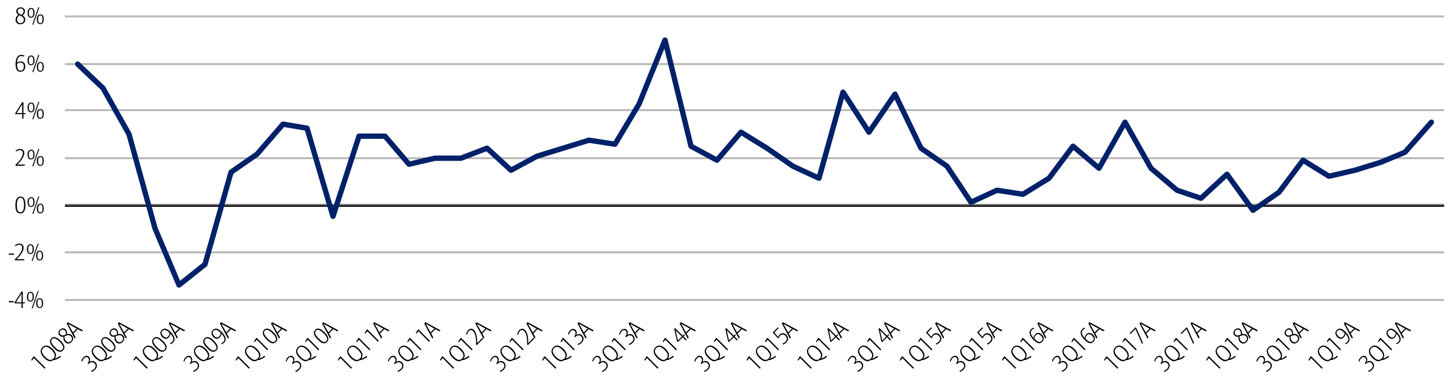
Recession impact on elective procedures

We also take a closer look at how the recession impacted elective procedures as well as more elective names and end markets within medtech.

ZBH growth turned negative for 3 qtrs during the recession but rebounded

Exhibit 57: ZBH's constant currency revenue growth

ZBH is the most exposed medtech stock to elective procedures, but growth quickly bounced back after the recession



Source: Company filings

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ABT Nutrition sales were resilient in '09 driven by both the US and OUS

Exhibit 58: ABT sales breakdown

Pharmaceuticals growth was weak in 2009 due the expected loss of nearly a $1bn in sales of Depakote to generic competition

	2006	2007	2008	2009	2010
Pharmaceutical	**12,395**	**14,632**	**16,708**	**16,486**	**19,894**
y/y growth		*18.0%*	*14.2%*	*-1.3%*	*20.7%*
Nutrition	**4,313**	**4,388**	**4,924**	**5,284**	**5,532**
y/y growth		*1.7%*	*12.2%*	*7.3%*	*4.7%*
Diagnostics	**3,979**	**3,158**	**3,575**	**3,578**	**3,794**
y/y growth		*-20.6%*	*13.2%*	*0.1%*	*6.0%*
Vascular	**1,082**	**1,663**	**2,241**	**2,692**	**3,194**
y/y growth		*53.7%*	*34.8%*	*20.1%*	*18.6%*
Other	**NA**	**2,073**	**2,080**	**2,725**	**2,753**
y/y growth		-	*0.3%*	*31.0%*	*1.0%*
Total Sales	**22,476**	**25,914**	**29,528**	**30,765**	**35,167**
y/y growth		*15.3%*	*13.9%*	*4.2%*	*14.3%*

Source: Company filings

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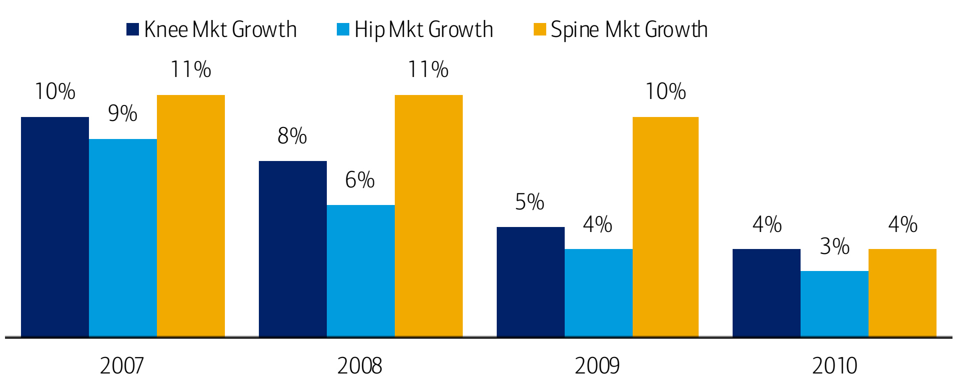
While Knees, Hips and Spine are some of the more elective categories within medtech, growth never fell below 3%

Exhibit 59: Knee, Hip and Spine market growth

Knee, Hip and Spine growth slowed but did not fall below 3% during the great recession



Source: Company filings, BofA Global Research

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The US knee market grew 4% in 2008 and 8% in 2009, compared to OUS growth of 16% in 2008 and flat in 2009

Exhibit 60: WW knee market

The US knee market grew 4% y/y in 2010, while OUS grew 5%

WW Knee Market ($ mill)	2005A	2006A	2007A	2008A	2009A	2010A
US Sales						
ZMH	881	942	1,032	1,090	1,114	1,110
SYK	567	644	725	666	808	851
BMET	326	362	399	461	505	546
SNN	270	297	322	358	377	408
JNJ	674	717	780	807	852	883
Total US Sales	**2,719**	**2,963**	**3,259**	**3,383**	**3,655**	**3,798**
Y/Y Growth	**15%**	**9%**	**10%**	**4%**	**8%**	**4%**
OUS Sales						
ZMH	487	519	606	673	646	681
SYK	306	335	408	391	463	455
BMET	151	170	228	283	274	295
SNN	177	201	235	400	384	410
JNJ	372	383	433	470	447	476
Total OUS Sales	**1,492**	**1,608**	**1,910**	**2,217**	**2,214**	**2,317**
Y/Y Growth	**15%**	**8%**	**19%**	**16%**	**0%**	**5%**
WW Sales						
ZMH	1,368	1,461	1,638	1,763	1,760	1,791
SYK	873	980	1,133	1,058	1,271	1,306
BMET	477	532	627	744	779	841
SNN	447	498	558	758	761	818
JNJ	1,046	1,100	1,213	1,277	1,298	1,359
Total WW Sales	**4,211**	**4,571**	**5,170**	**5,600**	**5,869**	**6,115**
Y/Y Growth	**15%**	**9%**	**13%**	**8%**	**5%**	**4%**

Source: Company filings, BofA Global Research

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The US hip market grew 3% in 2008 and rebounded to 6% in 2009, compared to OUS growth of 19% in 2008 and -2% in 2009

Exhibit 61: WW hip market

The US hip market grew 2% y/y in 2010, while OUS increased 6% y/y

WW Hip Market ($ mil)	2005A	2006A	2007A	2008A	2009A	2010A
US Sales						
ZMH	539	579	630	576	578	589
SYK	595	615	652	660	691	726
BMET	254	275	291	314	343	356
SNN	185	199	259	278	286	290
JNJ	535	569	648	727	800	799
Total US Sales	**2,107**	**2,236**	**2,480**	**2,555**	**2,698**	**2,760**
Y/Y Growth	**8%**	**6%**	**11%**	**3%**	**6%**	**2%**
OUS Sales						
ZMH	602	610	669	702	662	673
SYK	321	320	359	388	406	428
BMET	143	161	198	245	241	261
SNN	152	171	190	410	395	407
JNJ	470	505	550	596	585	652
Total OUS Sales	**1,688**	**1,767**	**1,966**	**2,341**	**2,289**	**2,421**
Y/Y Growth	**8%**	**5%**	**11%**	**19%**	**-2%**	**6%**
WW Sales						
ZMH	1,140	1,189	1,299	1,279	1,228	1,262
SYK	915	934	1,011	1,047	1,097	1,154

Exhibit 61: WW hip market
The US hip market grew 2% y/y in 2010, while OUS increased 6% y/y

WW Hip Market						
BMET	397	436	489	559	584	617
SNN	337	370	449	688	681	697
JNJ	1,005	1,074	1,198	1,323	1,385	1,452
Total WW Sales	**3,795**	**4,003**	**4,447**	**4,896**	**4,975**	**5,181**
Y/Y Growth	**8%**	**5%**	**11%**	**10%**	**2%**	**4%**

Source: Company filings, BofA Global Research

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WW spine market grew 10% in 2009 but slowed to just 4% growth in 2010

Exhibit 62: WW spine market
WW spine market grew above 4% throughout the recession

WW Spine Sales																				
Sales ($ in MMs)	**1Q06A**	**2Q06A**	**3Q06A**	**4Q06A**	**1Q07A**	**2Q07A**	**3Q07A**	**4Q07A**	**1Q08A**	**2Q08A**	**3Q08A**	**4Q08A**	**1Q09A**	**2Q09A**	**3Q09A**	**4Q09A**	**1Q10A**	**2Q10A**	**3Q10A**	**4Q10A**
MDT (ex InFuse and Kyphon)	$419	$412	$421	$426	$452	$454	$462	$455	$498	$477	$485	$479	$512	$533	$509	$504	$526	$492	$504	$494
MDT (incl InFuse)	582	575	599	598	643	644	660	661	719	698	683	684	727	752	729	716	742	699	720	729
JNJ	204	200	192	201	212	210	207	235	222	218	226	246	242	234	248	268	254	234	245	259
SYST	160	164	164	167	178	182	180	182	197	199	198	213	211	217	216	243	232	226	213	244
SYK	79	80	84	100	96	100	104	127	117	121	126	146	126	132	143	160	139	132	144	168
																				$0
NUVA	$20	$23	$25	$30	$33	$36	$39	$47	51	57	67	75	80	88	95	107	109	120	120	129
ZMH (includes ABT on a pro forma basis)	71	74	68	74	74	76	73	83	82	84	80	72	65	64	62	63	60	58	56	60
BMET	54	58	52	51	51	52	54	50	50	53	51	55	54	62	59	59	56	62	58	56
Orthofix	18	22	22	28	26	30	30	31	29	27	26	28	29	31	29	33	30	34	34	36
Alphatec	18	19	19	20	20	19	20	21	23	24	26	28	31	32	33	37	38	45	45	36
Other					62	71	76	82	88	92	90	98	106	110	108	118	127	120	117	135
Total Ex InFuse	**$1,043**	**$1,051**	**$1,047**	**$1,097**	**$1,204**	**$1,230**	**$1,244**	**$1,312**	**$1,358**	**$1,354**	**$1,374**	**$1,442**	**$1,455**	**$1,504**	**$1,501**	**$1,591**	**$1,571**	**$1,523**	**$1,537**	**$1,617**
Total Incl InFuse	**$1,206**	**$1,214**	**$1,225**	**$1,269**	**$1,395**	**$1,420**	**$1,442**	**$1,518**	**$1,579**	**$1,575**	**$1,572**	**$1,647**	**$1,670**	**$1,723**	**$1,721**	**$1,803**	**$1,787**	**$1,730**	**$1,753**	**$1,852**
CC Growth Rates	**1Q06A**	**2Q06A**	**3Q06A**	**4Q06A**	**1Q07A**	**2Q07A**	**3Q07A**	**4Q07A**	**1Q08A**	**2Q08A**	**3Q08A**	**4Q08A**	**1Q09A**	**2Q09A**	**3Q09A**	**4Q09A**	**1Q10A**	**2Q10A**	**3Q10A**	**4Q10A**
MDT (ex InFuse) WW					**10%**	**10%**	**8%**	**4%**	**7%**	**2%**	**4%**	**0%**	**0%**	**0%***	**0%**	**2%**	**1%**	**0%**	**1%**	**2%**
MDT (ex InFuse) US					8%	8%	6%	2%	4%	3%	2%	3%	2%	2%*	1%	-1%	-1%	-3%	-1%	-1%
JNJ WW					**4%**	**5%**	**8%**	**12%**	**0%**	**4%**	**7%**	**8%**	**13%**	**11%**	**11%**	**7%**	**3%**	**0%**	**0%**	**-3%**
US					-4%	-3%	-1%	3%	-2%	0%	5%	6%	11%	11%	9%	7%	0%	-4%	-3%	-8%
OUS					31%	32%	34%	NA	6%	14%	12%	13%	17%	11%	15%	8%	11%	7%	7%	4%
SYST WW					**NA**	**NA**	**NA**	**9%**	**13%**	**13%**	**19%**	**21%**	**13%**	**16%**	**12%**	**5%**	**2%**	**-1%**	**-1%**	**1%**
US					NA	NA	NA	9%	13%	13%	19%	21%	12%	14%	11%	5%	1%	-2%	0%	-4%
OUS					NA	NA	NA	NA	NA	NA	NA	NA	16%	19%	14%	5%	3%	0%	-2%	5%
SYK WW					**21%**	**24%**	**22%**	**24%**	**18%**	**17%**	**19%**	**17%**	**11%**	**13%**	**14%**	**6%**	**8%**	**0%**	**1%**	**-3%**
US					22%	30%	31%	32%	25%	22%	21%	20%	13%	14%	13%	4%	5%	-3%	0%	-4%
NUVA					**69%**	**57%**	**53%**	**54%**	**54%**	**61%**	**74%**	**59%**	**56%**	**54%**	**42%**	**43%**	**36%**	**35%**	**27%**	**19%**
ZMH ex ABT					**7%**	**6%**	**7%**	**18%**	**14%**	**9%**	**8%**	**-5%**	**-13%**	**-14%**	**-16%**	**-15%**	**-9%**	**-9%**	**-7%**	**-4%**
BMET WW***					**NA**	**NA**	**3%**	**3%**	**-2%**	**3%**	**-6%**	**9%**	**9%**	**18%**	**17%**	**12%**	**4%**	**2%**	**2%**	**-5%**
US***					NA	NA	-2%	8%	1%	9%	2%	10%	15%	22%	15%	13%	3%	1%	1%	-2%
Orthofix					**47%**	**37%**	**35%**	**7%**	**10%**	**-9%**	**-13%**	**-7%**	**0%**	**12%**	**10%**	**14%**	**9%**	**16%**	**20%**	**11%**
Alphatec					**8%**	**-3%**	**5%**	**7%**	**19%**	**27%**	**27%**	**33%**	**32%**	**35%**	**27%**	**29%**	**26%**	**13%**	**2%**	**0%**
Other					**20%**	**24%**	**27%**	**30%**	**42%**	**30%**	**18%**	**20%**	**20%**	**20%**	**20%**	**20%**	**20%**	**15%**	**15%**	**15%**
Total Ex InFuse					**11%**	**11%**	**11%**	**12%**	**12%**	**10%**	**12%**	**11%**	**10%**	**12%**	**10%**	**8-9%**	**7%**	**4%**	**4%**	**3%**
Total Ex InFuse - US					8%	9%	9%	11%	11%	11%	12%	12%	11%	12%	9%	7-8%	5%	2%	3%	0%

Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

WW pacemaker market grew 4% in 2009, but declined 2% in 2010

Exhibit 63: WW pacemaker market
WW pacemaker market had several consecutive qtrs of negative growth

WW Pacemaker Market															
$ in MMs	**1Q08A**	**2Q08A**	**3Q08A**	**4Q08A**	**2008A**	**1Q09A**	**2Q09A**	**3Q09A**	**4Q09A**	**2009A**	**1Q10A**	**2Q10A**	**3Q10A**	**4Q10A**	**2010A**
WW Sales															
MDT	540	526	506	457	2,029	494	536	498	459	1,987	494	473	472	450	1,889
BSX	154	158	149	144	605	145	155	163	158	621	148	148	144	141	581

Exhibit 63: WW pacemaker market

WW pacemaker market had several consecutive qtrs of negative growth

WW Pacemaker Market															
STJ	271	306	297	293	1,167	282	304	301	303	1,190	300	317	299	304	1,220
SORIN	53	54	54	56	216	57	58	57	60	231	59	61	59	61	239
Biotronik	134	138	138	145	554	145	152	145	152	593	151	159	146	152	608
Other	187	192	191	200	769	202	210	202	212	824	210	220	205	213	847
Total WW Market	**1,151**	**1,182**	**1,143**	**1,094**	**4,570**	**1,123**	**1,205**	**1,164**	**1,132**	**4,622**	**1,152**	**1,158**	**1,120**	**1,108**	**4,537**
Y/Y Growth						-2.5%	1.9%	1.8%	3.4%	1.1%	2.6%	-3.9%	-3.8%	-2.1%	-1.8%
C/C Growth						5.4%	9.2%	4.7%	-4.0%	4.0%	-3.2%	-4.0%	-1.8%	-0.5%	-2.4%
WW Market Share															
MDT	46.9%	44.5%	44.3%	41.8%	44.4%	44.0%	44.5%	42.8%	40.6%	43.0%	42.9%	40.8%	42.2%	40.6%	41.6%
BSX	13.3%	13.4%	13.1%	13.2%	13.2%	12.9%	12.9%	14.0%	14.0%	13.4%	12.8%	12.8%	12.9%	12.7%	12.8%
STJ	23.5%	25.9%	26.0%	26.8%	25.5%	25.1%	25.2%	25.9%	26.8%	25.7%	26.0%	27.4%	26.7%	27.4%	26.9%
Sorin	4.6%	4.5%	4.7%	5.1%	4.7%	5.1%	4.8%	4.9%	5.3%	5.0%	5.1%	5.3%	5.3%	5.5%	5.3%
Biotronik	11.6%	11.7%	12.0%	13.2%	12.1%	12.9%	12.6%	12.5%	13.4%	12.8%	13.1%	13.7%	13.0%	13.7%	13.4%
Other	16.2%	16.2%	16.7%	18.3%	16.8%	18.0%	17.4%	17.3%	18.7%	17.8%	18.2%	19.0%	18.3%	19.2%	18.7%

Source: Company filings

BofA GLOBAL RESEARCH

WW ICD market grew 6% in 2009 and 2% in 2010

Exhibit 64: WW ICD market

WW ICD market growth never turned negative

WW ICD Market **$ in MMs**	**2006A**	**1Q07A**	**2Q07A**	**3Q07A**	**4Q07A**	**2007A**	**1Q08A**	**2Q08A**	**3Q08A**	**4Q08A**	**2008A**	**1Q09A**	**2Q09A**	**3Q09A**	**4Q09A**	**2009A**	**1Q10A**	**2Q10A**	**3Q10A**	**4Q10A**	**2010A**
WW Sales																					
MDT	2,916	770	726	639	726	2,861	806	764	724	694	2,988	780	736	754	756	3,026	881	722	745	735	3,083
BSX	1,473	398	377	372	396	1,543	411	420	423	427	1,681	444	454	445	449	1,792	390	379	406	423	1,598
STJ	1,100	302	327	318	358	1,305	361	406	381	387	1,535	394	400	389	395	1,578	452	471	439	458	1,820
SORIN	74	19	23	20	24	86	22	28	23	25	98	23	27	26	36	113	34	37	37	36	145
Biotronik	195	52	55	54	60	221	67	67	65	69	267	67	69	67	71	274	68	70	68	72	278
Other	301	79	85	84	94	342	89	95	88	94	365	90	96	93	107	387	102	107	105	108	422
Total WW Market	**5,758**	**1,541**	**1,508**	**1,403**	**1,564**	**6,016**	**1,667**	**1,685**	**1,616**	**1,602**	**6,569**	**1,708**	**1,687**	**1,681**	**1,707**	**6,783**	**1,825**	**1,679**	**1,695**	**1,724**	**6,923**
Y/Y Growth	0%	2%	8%	-1%	9%	4%	8%	12%	15%	2%	9%	2%	0%	4%	7%	3%	7%	0%	1%	1%	2%
C/C Growth	0%	0%	6%	-3%	6%	2%	3%	7%	12%	6%	7%	7%	5%	6%	5%	6%	4%	0%	2%	2%	2%
WW Market Share																					
MDT	50.6%	50.0%	48.2%	45.5%	46.4%	47.6%	48.4%	45.3%	44.8%	43.3%	45.5%	45.7%	43.7%	44.9%	44.3%	44.6%	48.3%	43.0%	44.0%	42.6%	44.5%
BSX	25.6%	25.8%	25.0%	26.5%	25.3%	25.6%	24.7%	24.9%	26.2%	26.7%	25.6%	26.0%	26.9%	26.5%	26.3%	26.4%	21.4%	22.6%	24.0%	24.5%	23.1%
STJ	19.1%	19.6%	21.7%	22.7%	22.9%	21.7%	21.7%	24.1%	23.6%	24.2%	23.4%	23.1%	23.7%	23.1%	23.1%	23.3%	24.8%	28.0%	25.9%	26.6%	26.3%
Sorin	1.3%	1.3%	1.5%	1.4%	1.5%	1.4%	1.3%	1.7%	1.4%	1.6%	1.5%	1.4%	1.6%	1.5%	2.1%	1.7%	1.9%	2.2%	2.2%	2.1%	2.1%
Biotronik	3.4%	3.3%	3.6%	3.8%	3.8%	3.7%	4.0%	4.0%	4.0%	4.3%	4.1%	3.9%	4.1%	4.0%	4.2%	4.0%	3.7%	4.2%	4.0%	4.2%	4.0%
Other	5.2%	5.1%	5.6%	6.0%	6.0%	5.7%	5.3%	5.6%	5.4%	5.8%	5.6%	5.3%	5.7%	5.5%	6.3%	5.7%	5.6%	6.4%	6.2%	6.3%	6.1%

Source: Company filings

BofA GLOBAL RESEARCH

WW DES market grew 3% in 2009, but declined 4% in 2010

Exhibit 65: WW DES market

DES market growth was negative in 2010 and 2011

WW DES Market **($ in MM)**	**2006A**	**2007A**	**2008A**	**2009A**	**2010A**	**2011A**
WW Sales						
BSX Sales	2,358	1,788	1,643	1,693	1,538	1,518
Taxus	2,358	1,740	1,317	1,012	501	247
Taxus Element	0	0	0	0	0	169
Promus	0	48	326	671	810	666
Promus Element	0	0	0	10	227	436
ABT Sales	20	203	654	995	1,270	1,538
Xience						
ABSORB						
JNJ Sales	**2,619**	**1,772**	**1,354**	**919**	**630**	**215**
Cypher	2,619	1,718	1,354	919	630	215
CoStar	NA	10	0	0	0	0
Nevo	NA	NA	NA	NA	0	0
MDT Sales	276	329	630	637	649	770

Exhibit 65: WW DES market

DES market growth was negative in 2010 and 2011

WW DES Market						
Other Sales*	63	7	66	102	128	141
WW DES Market	**5,336**	**4,099**	**4,281**	**4,346**	**4,215**	**4,182**
Y/Y Growth	**2%**	**-23%**	**4%**	**2%**	**-3%**	**-1%**
CC Growth	**NA**	**NA**	**0%**	**3%**	**-4%**	**-3%**
WW Share						
BSX share	44%	44%	38%	39%	36%	36%
ABT share	0%	5%	15%	23%	30%	37%
JNJ share	49%	43%	32%	21%	15%	5%
MDT share	5%	8%	15%	15%	15%	18%
Other share	1%	0%	2%	2%	3%	3%

Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Company commentary on the great recession

We pulled out key quotes from management on the great recession, below.

- **ABT:** "First of all, I think any concern of economic slowdown is a little more U.S.-focused as I follow the various economists and the like. International growth in these markets has continued to be very, very strong. And that one product you mentioned is a very, very minor product for us in the international markets anyway. Really, what's driving that is the base products, the pediatric nutritionals, the adult nutritionals that people really see as more core to their essentials, as opposed to discretionary type items. So I think in that business as well, and as we've forecasted '09 as we go through our reviews here, we continue to feel very good about the ability of these markets to grow and our products to continue to gain share and the fact these products are pretty resilient." (10/15/2008)

  STJ (acquired by ABT): "I mean in tough economic conditions and in tough budget austerity conditions, inevitably, these market share --our markets are generally are in the same way we said a year ago about recession, I think our markets are austerity-resistant but clearly not austerity proof. We don't expect our markets to strengthen, we don't expect the Neuromodulation market to accelerate when there is as much budget and economic concern as there is." (4/20/2011)

- **BAX:** "We are seeing selective softening in hospital activity, not only in the US, but around the world. It's not dramatic. It's reflected in key indicators such as patient admissions, surgical procedures and so on. Now, specifically what are those admissions and surgical procedures, and how do they translate into the utilization of Baxter's products, IV solutions and so on, is a little bit more difficult to assess, which is why, again, we would say on that front really not – really not a material impact." (4/16/2009)

  "Our diversified model, our global reach, the medically necessary nature of our products puts us in a very good position to deal with a changing macro-environment, whether it be the economic changing conditions we see or the changing conditions we're probably going to experience as we continue to look at healthcare reform in the United States." (4/11/2009)

- **BDX:** "You asked about price as well so let me comment on that both U.S. and internationally. I don't want to underestimate the impact that the economic crisis is going to have on any industry, on any geography. But in relative terms, the impact in the areas that we do business, in our view, is going to be less because you can regard what we do essentially is being staples of healthcare. And even in circumstances where there maybe some reduction in elective healthcare procedures which could have impact on any supplier of medical technology, our devices and our systems are so fundamental to healthcare delivery that we believe we will be less impacted as a result. But what less means is subject to anybody's definition at this point." (11/12/2008)

"In past recessions, it has bounced back. The decrease in physician's office visits has been more severe in this downturn than before. Unemployment is higher, and there are higher co-pays out there, so I think insurance pricing is going to have an impact on this. I think that the underlying healthcare needs are there, number one. Number two, as healthcare reform kicks in, I don't think that's been factored into people's thinking, and you're going to see coverage for preventive care. So I think as employment improves-so this is personal opinion – as employment improves and healthcare reform starts to take hold, think you're going see volumes – business come back." (7/29/2010)

BCR (acquired by BDX): "In the face of a once in a 100-year global economic crisis, we could be seeing a couple of percent reduction in demand for our products." (4/22/2009)

CFN (acquired by BDX): "Capital, we are not seeing any real significant variations one way or the other from what it has been for pretty much the last year. I think that kind of stability is good news for us. On the disposable side, where in certain cases we do have some sensitivity to utilization and admissions, there is really only one area that I would consider to be a barometer. And that is in infusion disposables, where just about every one you see in a hospital is receiving some type of an IV that uses an infusion disposable. And so if there are fewer people in the hospital, you're going to use fewer disposables." (9/14/2009)

CFN (acquired by BDX): "I think the good news in all of this is that, even though hospital CapEx budgets are not what they used to be, of the top 10 items that they indicate that they will be purchasing, ventilation equipment and infusion devices are in those top 10. And so, I think we'll probably fair better than most, as we're going through some ongoing difficult times that hospitals are facing." (6/16/2010)

- **BSX:** "I think one of the speculations we have that we're taking a look at is there seems to be a correlation between the timing of – if you go back to the early stages when unemployment and the early stages of the recession, if you will, there seems to be some sort of correlation between the timing of the unemployment and therefore, the point at which COBRA would run out for many people, and I don't know whether that's real or not. We're looking into that, but there may be a pattern here where, yes, we understand people are sick and would go if necessary, but if they absolutely have lost coverage and have not regained employment, it becomes a very difficult situation. Whether that's real and it's a market-moving factor, you know, I don't think we know at this point, but I think it has some possibilities correlation-wise." (10/20/2009)
- "Our Neuromodulation business was disappointing and essentially flat over year. Procedure volumes continue to run softer than expected, a trend that we reflect some ongoing loss of benefits and lack of available copay funds through increased unemployment and a soft economy. With respect to elective procedures. We've noted with interest some of the ongoing weakness in the elective procedure portion of the U.S. spine business and feel that there may be some parallels here." (7/21/2010)
- **MDT:** "We are well insulated from macroeconomic recession and pressures. However, as I'll talk about some of the businesses, there are a few that are a little bit more elective in nature, and so there is some impact on our business overall as we deal with these macroeconomic times." (3/17/2009)

"Our hospital customers have been impacted as access to capital has been tough, and in some cases hospitals who are dependent on endowment income, which has been reduced, restricts their abilities to invest in large capital equipment. More people are now are without insurance and unemployment – as unemployment has risen. Some people are delaying visits to doctors and putting off elective procedures." (6/2/2009)

"Over the past several years we have seen some of the markets mature and others which are not immune to macroeconomic downturns, really have resulted in a little bit slightly slower growth in those markets. But we still expect our markets to see approximately six to 7% constant currency growth over the foreseeable future." (6/2/2009)

COV (acquired by MDT): "We've seen some softness in capital equipment. But again, as it's not a big part of our sales, it's less than 5% of our revenue. And for the most part, capital equipment, our capital equipment, is not as expensive as some of the other capital equipment that's out there. So we have seen some softness on that. And we expect that to continue." (11/11/2009)

- **ISRG:** "We continue to feel the impact of curtailed hospital spending for capital equipment in the ongoing economic recession." (4/16/2009)

  "While strong procedure growth continues to drive high demand for system sales, the general slowdown in hospital capital spending makes it difficult for us to accurately forecast how many systems we will be selling in the near term. Therefore, we also will not be reinstating guidance on system revenues at this time." (7/22/2009)

- **SYK:** "However, the significant economic slowdown, particularly its impact on our MedSurg franchise, was greater than expected in Q1, prompting us to take a more conservative stance as it relates to the remainder of '09. As we finalized our budgets in late Q4, the markets were in considerably greater flux and our insights into our hospital customer spending plans were more limited. Four months later there are still uncertainties, particularly as it relates to both elective procedures and the markets outside the U.S., with the latter having remained fairly insulated from the economic slowdown." (4/20/2009)

  "Within MedSurg, approximately 60% of sales come from capital equipment" (4/20/2009)

  "Medical products, which generate approximately 90% of sales from capital equipment." (4/20/2009)

  "However, it's worth noting that although hospital capital budgets remain under pressure, we have started to see some encouraging signs of customers looking to resume capital purchases. Much of this is still anecdotal and we would remain appropriately cautious regarding the near-term outlook for the roughly 25% of our revenue base that's tied to capital purchases, but it does suggest the cycle may be bottoming." (4/20/2009)

  "If you look back to '09, I think a lot of the concern heading into the year was that the economic meltdown was going to result in a big drop-off in elective procedures. But if you look at what actually took place over the course of '09, the market slowed, but really marginally. So at the same token, if you look to 2010, we're not anticipating some big rebound, which is why we've talked about that kind of mid single-digit recon growth, recognizing it's not going to be linear and it may bounce around a point or two in either direction in any given quarter." (4/20/2010)

"Everybody is aware of the global economic slowdown and the impact on that for Stryker, which I don't think many people would have anticipated, was two-fold: number one, a slowdown in capital spending by hospitals. Hospitals by and large keep their capital dollars either through philanthropic foundations or municipal bond market. As the economy contracted both of those sources of funds slowed up. Additionally, on the other side of our business, the orthopedic implant side, hips and knees, what we found is that as unemployment rose, hip and knee procedures which we largely did not view as elective, started to decline. Turns out people can live with a sore knee a little bit longer than we anticipated. Hips, it's a little bit harder, because you lose mobility with a hip issue, but we felt that, the industry felt that as we entered 2008, 2009 and really through majority of 2010." (7/15/2011)

- **ZBH:** "With respect to market growth rates, we continue to expect demand for procedures to slow this year by about 2 percentage points worldwide due to the general economic downturn. We also believe, however, that the market's deceleration in product, procedure demand is likely to be temporary as the benefits of Knee and Hip procedures are indisputable for prospective patients who are suffering the debilitating effects of osteoarthritis." (4/23/2009)

  "About 40% of our revenues, in the U.S. at least, are tied to patients that are under the age of 65 and are covered by private insurance, as opposed to being covered by Medicare. The other 60% of our revenue is tied to patients that are over the age of 65 and covered, in the U.S. at least, by Medicare." (12/1/2009)

  "Volumes throughout our Europe, Middle East, and Africa region continue to be suppressed but appear stable, as contemplated in our guidance. In The Americas and Asia Pacific regions, demand appears to be returning to pre-recession levels." (4/22/2010)

  "Global economic conditions continue to impact procedural volumes. Recent economic data, including lower consumer confidence and continued high unemployment rates, are reflected in sustained rates of procedure deferrals above what would be considered normal. The patient pool with access to joint replacement procedures remains artificially reduced as a result of the economic recession, particularly in the United States, where unemployment levels are linked to lower enrollment in private health insurance plans. As global governments work their way back to sustained economic growth, we would anticipate a recovery in procedure volumes toward more normal levels." (7/27/2011)

- **Hospira:** "The placement of new infusion devices generally requires a capital outlay. We anticipate that capital constrains could make purchasing decisions more difficult for some hospitals. And to help address this challenge, we are working proactively with several leading banks to provide flexible financing options for these customers." (11/5/2008)

Pillar Two tax more likely in 2025 than 2024 but medtech calling out 100-200bps higher tax rates in 2024

Pillar Two seems manageable, more likely 2025 not 2024

In November 2023 we spoke with a tax expert after a few medtech companies highlighted tax rates moving up next year due to Pillar Two (the 15% global minimum tax). This is not specific to medtech but the impact of Pillar Two on medtech seems like a manageable headwind from the few companies that have called it out so far (tax rates moving up 100-200bps). Also, our expert thinks this headwind could materialize more in

2025 than 2024 with implementation delays. Below we go through all the key takeaways from our tax expert call for those that want to get more in the weeds on Pillar Two.

Medtech so far seeing 100-200bps of higher tax rates

ZBH called out 150bps of higher tax from Pillar Two based on what has passed so far and what it expects to pass next year (ZBH has offsets elsewhere on the PnL). Alcon said Pillar Two has 200bps impact on its tax rate. JNJ called out 100bps of higher tax in 2024 from Pillar Two. COO doesn't see an impact as its already a full tax payer. Most medtech companies already have double digit tax rates today (see Exhibit 66 below) and every 100bps increase in tax rate is about 1-1.5% of EPS before any offsets (see Exhibit 67 below). Exhibit 68 below has our tracker for what each company has said on Pillar Two.

Exhibit 66: Large cap medtech tax rates and what the Street models for 2024/2025 (green is consensus)

The Street is modeling higher tax rates for BAX, BDX, BSX, EW, MDT, SYK, TFX, and ZBH in 2024 and 2025.

Company	2018	2019	2020	2021	2022	2023	2024	2025
ABT	14.1%	14.0%	15.0%	15.5%	15.7%	13.7%	14.3%	14.3%
BAX	17.7%	16.7%	16.7%	16.8%	19.9%	20.8%	20.9%	20.9%
BDX	16.7%	14.4%	14.5%	11.4%	13.3%	12.9%	14.1%	14.4%
BSX	6.8%	7.3%	5.3%	7.6%	12.7%	12.2%	12.8%	12.9%
COO	7.7%	6.6%	10.7%	11.2%	12.9%	13.4%	14.8%	15.0%
EW	13.4%	11.5%	12.5%	12.6%	14.6%	14.6%	15.3%	15.5%
GEHC		17.1%	22.8%	23.6%	22.5%	28.5%	24.1%	23.9%
ISRG	19.6%	19.5%	22.5%	22.2%	21.8%	22.7%	22.8%	22.5%
MDT	14.7%	13.6%	14.3%	11.8%	12.7%	13.7%	15.9%	16.1%
SYK	16.7%	15.8%	12.6%	14.9%	14.0%	14.0%	14.7%	14.8%
TFX	11.9%	11.2%	11.1%	13.3%	11.9%	10.2%	11.7%	12.0%
ZBH	18.0%	16.8%	16.0%	15.7%	16.5%	16.4%	17.8%	17.6%

Source: Bloomberg. Note: MDT, BDX and COO EPS are fiscal years

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Exhibit 67: Potential EPS impact of 1% higher tax rate in 2024 and 2025

This table shows the potential EPS impact for large cap medtech companies if their respective tax rates were to increase by 100bps in 2024 and/or 2025.

	EPS		Tax Rate Change		EPS $ Impact		EPS % Impact	
Company	2024E	2025E	2024E	2025E	2024E	2025E	2024E	2025E
ABT	$ 4.62	$ 5.13	1.0%	1.0%	$ (0.05)	$ (0.06)	(1.2%)	(1.2%)
BAX	$ 2.99	$ 3.39	1.0%	1.0%	$ (0.04)	$ (0.04)	(1.3%)	(1.3%)
BDX	$ 12.83	$ 14.32	1.0%	1.0%	$ (0.15)	$ (0.17)	(1.2%)	(1.2%)
BSX	$ 2.24	$ 2.52	1.0%	1.0%	$ (0.03)	$ (0.03)	(1.1%)	(1.1%)
COO	$ 13.90	$ 15.62	1.0%	1.0%	$ (0.16)	$ (0.18)	(1.2%)	(1.2%)
EW	$ 2.77	$ 3.10	1.0%	1.0%	$ (0.03)	$ (0.04)	(1.2%)	(1.2%)
GEHC	$ 4.24	$ 4.79	1.0%	1.0%	$ (0.06)	$ (0.06)	(1.3%)	(1.4%)
ISRG	$ 6.28	$ 7.24	1.0%	1.0%	$ (0.08)	$ (0.09)	(1.3%)	(1.3%)
MDT	$ 5.16	$ 5.44	1.0%	1.0%	$ (0.06)	$ (0.07)	(1.2%)	(1.2%)
SYK	$ 11.55	$ 12.85	1.0%	1.0%	$ (0.14)	$ (0.15)	(1.2%)	(1.2%)
TFX	$ 13.90	$ 15.74	1.0%	1.0%	$ (0.16)	$ (0.18)	(1.1%)	(1.1%)
ZBH	$ 7.93	$ 8.51	1.0%	1.0%	$ (0.10)	$ (0.10)	(1.2%)	(1.2%)

Source: Company filings, Bloomberg, BofA Global Research. Note: MDT, BDX and COO EPS are fiscal years

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Exhibit 68: Large cap comments on 2024 tax rates and Pillar Two

The commentary from large cap companies on the Pillar Two is mixed. Some expect it to create a headwind, although several companies think they can offset the headwind at least in 2024. Others have said that it's too early to tell what the impact will be.

Company	2024 tax rate comments	Comments on Pillar Two Impact
ABT	n/a	No comments on Pillar Two
ALC	200bps higher than fiscal 2023	"I would just keep Pillar Two in mind. So assuming Pillar Two is implemented in 2024, that has about 2 points of impact to our effective tax rate. So that's how I think about next year." *- ALC FQ3 2024 call (11/15)*
BAX	n/a	No comments on Pillar Two
BDX	n/a	"First of all, BD, we start our fiscal year before everyone else, so Pillar Two is not contemplated nor applicable to us in fiscal year 2024. We continue to assess those dynamics. We expect a lot more information as this year progresses. We'll share more on that at a future date. Obviously our tax rate, we are

Exhibit 68: Large cap comments on 2024 tax rates and Pillar Two

The commentary from large cap companies on the Pillar Two is mixed. Some expect it to create a headwind, although several companies think they can offset the headwind at least in 2024. Others have said that it's too early to tell what the impact will be.

		planning for a step-up in tax that we've absorbed in our guidance, but I think more to come on Pillar Two and we'll see how this plays out for us. So, we have time on that one." *- BDX FQ4 2023 call (11/9)*
BSX	inline with 2023 (14% oper. and 13% adj.)	To be clear on EU pillar II, any countries/jurisdictions that have implemented pillar II in to law today would be considered in the assumptions we shared at Investor Day. However, there continues to be uncertainty around any additional countries that will implement pillar II – any potential implementation has not been included in our assumptions. In 2026, we do expect 200-300bps of upward pressure to the rate based on TCJA provisions that are set to expire in 2026 (this is written in current legislation) *- BSX (11/11)* "we would expect our 2024 and 2025 tax rate to be in line with our original 2023 expectations of 14% operational and 13% adjusted" *- BSX Q3 call (10/26)*
COO	15% in fiscal 2024 (no impact from Pillar Two)	"Our expectations are incorporated in guidance, and I'll just restate, we expect our ETR to be around 15% [pre-discretes]." - COO (12/07) "We don't think pillar 2 will have an impact on us as we are already a full tax payor. Our organic tax rate is 15.5% and we continue to expect our tax rate to be around 15-16% going forward subject to discretes." *- COO (11/16)*
EW	n/a	No comments on Pillar Two
GEHC	n/a	"we are evaluating the potential impact of Pillar 2 on our tax burden" *- GEHC (11/15)*
ISRG	n/a	"we are aware of pillar II activities and potential changes in a number of countries, but it is too early for us to comment on whether there is a specific impact to Intuitive" *- ISRG (11/15)*
JNJ	up to 1% higher from Pillar Two	"With respect to tax, as you may be aware, the European Union member states are in the process of enacting the EU's Pillar 2 directive which generally pro vides for a 15% minimum tax rate as established by the OECD Pillar 2 framework. The first EU effective date for certain aspects of the law is January 1, 2024. As a result, we currently estimated up to 1% tax rate increase in 2024. In addition, the US Treasury's current perspective on Pillar 2 will be harmful as it relates to the treatment of US incenti ves for innovation and will result in US based multinational companies paying more tax revenue to foreign governments." *- JNJ Q3 call (10/17)*
MDT	n/a	"Global tax reform will likely be a headwind but as always, we're focused on driving offsets everywhere that we can. *- MDT FQ2 call (11/21)*
SYK	Wont be materially higher than 2023 (14%) (no expected impact from Pillar Two)	"Pillar 2 tax so what we've said on the earnings call is we believe we're going to be okay for 2024. We are aware that doesn't impact, but we have tax planning strategies that can get us through 2024. Not sure yet on 2025 and beyond... ...We'll provide guidance in January, but we're not – I know other companies have kind of flagged 2024 being a challenge. I think you could expect a more normal year in 2024. So this year we're guiding to 14%. That's a little bit low because we had some discrete items, but it won't be materially higher than that next year. We're still working on plans for 2025 and beyond. So there could be an impact and potentially in 2025." *- SYK Analyst Day (11/10)* "Just to finish on tax, as it relates to PILLAR II, at this point we're not projecting really anything negative next year if you think about our overall tax position, but of course we'll include that in our guidance early next year." *- SYK Q3 call (11/2)*
TFX	overall tax rate modestly higher than 2023 (11%) (includes any Pillar Two impact)	"Tom's comment about an increase in the tax rate for 2024 did include assumptions for Pillar 2. We have not finished up our annual plan for 2024, so not in a position to provide guidance at this time. For context, recall that the assumption in the LRP was for a 12% tax rate, so that should help provide some sense of direction." *- TFX (11/15)* "So we're not in a position to provide specific guidance for 2024 at this point. I would say that the expectation would be that the tax rate would be modest ly higher than where we are in 2023." *- TFX Q3 call (11/2)*
ZBH	+150bps over 2023 (includes any Pillar Two impact)	"Our updated tax expectations due to Pillar II are based on what has passed and what we expect to occur next year. We saw the headwind and didn't want to surprise the Street with a sizeable tax step up so we wanted to call it out as early as possible. With that said, we believe we'll offset much of that headwind and continue to grow EPS faster than revenue. We'll certainly update the street should there be a material change in our expected 2024 tax rate as we go forward." *- ZBH (11/22)* "...we do see a higher tax rate for next year because of the OECD's Pillar Two...On the tax rate, right now our best estimate is that it'll be about a 150 basis point increase off of our full year 2023 tax rate." *- ZBH Q3 call (11/7)*

Source: Company filings, BofA Global Research

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Our expert so far seeing 100-200bps of higher tax rates

Pillar Two was supposed to go live in 2024 but our expert thinks this likely gets pushed to 2025. However, some countries passed legislation already with effective dates for

2024 given that was the expected timeline. See Exhibit 69 below for the status by country. Our tax expert believes these countries with 2024 implementation dates could also delay to 2025 to line up with other countries. However, until they do so, some companies likely presume it's the law and make tax calculations and tax forecasts consistent with the law as it is today. However, companies with significant top up taxes may have to disclose more soon about potential liabilities as enough is known at this point about the rules to start estimating potential impacts.

Exhibit 69: Status of countries planning to implement Pillar Two

Only 4 countries have adopted final legislation implementing one of the Pillar Two rules; however 25 countries have draft legislation for Pillar Two

Final Legislation		Draft Legislation		Intend to Implement
Jurisdiction	**Pillar Two Rules**	**Jurisdiction**	**Pillar Two Rules**	**Jurisdiction**
European Union	QDMTT, IIR, UTPR	Austria	QDMTT, IIR, UTPR	Australia
Japan	QDMTT, IIR, UTPR	Bulgaria	QDMTT, IIR, UTPR	Bahamas
Mauritius	QDMTT	Canada	QDMTT, IIR	Belgium
South Korea	IIR, UTPR	Cyprus	QDMTT, IIR, UTPR	Gibraltar
United Kingdom	QDMTT, IIR	Czech Republic	QDMTT, IIR, UTPR	Guernsey
		Denmark	QDMTT, IIR, UTPR	Hong Kong
		Finland	QDMTT, IIR, UTPR	Indonesia
		France	QDMTT, IIR, UTPR	Isle of Man
		Germany	QDMTT, IIR, UTPR	Jersey
		Hungary	QDMTT, IIR, UTPR	Malaysia
		Ireland	QDMTT, IIR, UTPR	Malta
		Italy	QDMTT, IIR, UTPR	Qatar
		Liechtenstein	QDMTT, IIR, UTPR	Singapore
		Lithuania	Filing obligations	South Africa
		Luxembourg	QDMTT, IIR, UTPR	Spain
		Netherlands	QDMTT, IIR, UTPR	Taiwan
		New Zealand	IIR, UTPR	Thailand
		Norway	QDMTT, IIR	United Arab Emirates
		Romania	QDMTT, IIR, UTPR	
		Slovakia	QDMTT	
		Slovenia	QDMTT, IIR, UTPR	
		Sweden	QDMTT, IIR, UTPR	
		Switzerland	QDMTT, IIR, UTPR	
		United Kingdom	UTPR	
		Vietnam	QDMTT, IIR	

Source: Ernst & Young, BofA Global Research

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Things to consider...

Parent domiciled in low tax country

Our tax expert said just generally speaking companies domiciled in a low tax country could see a higher impact given the potential for more top-up tax as most of income is typically taxed at the parent level. For example, Ireland has a 12.5% tax rate and has already announced plans to take the rate up to 15% for Pillar Two companies.

Big benefits from R&D tax credits

Companies in the US that benefit from tax credits such as the R&D tax credit could also see an outsized impact depending on how much of a benefit they get. If the tax credit reduces overall US tax rate below 15% then Pillar Two rules could effectively reverse the benefit of these tax credits. Companies disclose in filings benefits from R&D tax credits but it's difficult to make a call on this given these are reported (not adjusted tax rates) and its not clear if the R&D credits would be big enough to bring down overall US tax rates below 15% or not.

Deep dive on Pillar Two – many nuances with US and various forms of tax collections

Pillar Two takeaways from our Tax Expert call

We conducted a call with a tax expert to discuss the details behind Pillar Two and the potential impact on the tax rates. See below for all our learnings but these were a few key things that stood out:

- The intention of the Pillar Two rules is to create a global minimum corporate tax rate of 15%.
- The OECD provided rules for the countries to follow but each country has to pass its own tax legislation.
- Pillar Two likely will not go into effect until 2025 and any countries that intended to implement new tax legislation for Pillar Two in 2024 will likely defer until 2025. But countries that have already passed legislation still have their laws saying 2024 and have not updated for 2025 yet.
- We are unlikely to see any companies with corporate tax rates well below 15% post Pillar Two. Some could be above 15% though.
- US is not compliant with Pillar Two and it is not expected to be but that doesn't mean there won't be an impact. There are various forms of collecting tax as we explain below. Worst case some US companies may have to pay the tax to other countries (pending how things work out) especially if they benefit from tax credits like the R&D tax credit that pushes their US tax rate below 15%.
- Companies parented in low tax jurisdictions more likely to pay top up tax.
- All countries in the OECD appear onboard with the Pillar Two rules today but there is likely to be more negotiations and discussions as implementation gets closer.

Pillar Two thoughts from our tax expert

Global minimum tax regardless of tax structure of incentives

Countries have been dealing with international tax arbitrage for decades and as systems continue to get more complicated this arbitrage is getting more difficult. The OECD took it upon itself to create a global minimum tax regime to create a floor regardless of what local tax rules are and all the different eccentricities each country has in their tax system. If you are operating in a country the idea is that you need to be paying a certain amount of tax regardless of incentives negotiated. That is the principle behind the system.

At its basic concept you compare the tax paid compared to pre-tax income and if its 15% or higher then it meets the standards. This is done on a country-by-country basis. If its below 15% in a particular country it requires a company to pay that tax to the other countries (called a top up tax) to make up for the tax not paid in the lower tax country.

This has created a situation for lower tax countries. If other countries are going to collect the top up tax from income earned in your lower tax country then the lower tax country would rather collect that tax. Therefore QDMTT (Qualified Domestic Minimum Top-up Tax) that is a rule OECD has developed as part of the system and that rule is basically a local country can just put in a minimum tax locally that requires them to pay 15% locally regardless of what all other rules say. Then the lower tax country can collect the top up tax rather than other countries collecting it. There are a lot of countries that are already planning to implement the QDMTT not surprisingly as they would rather get the tax if it has to be paid either way.

OECD provides language for countries to implement into law

Anything going on in any country also needs to go through whatever the local laws are to enact these changes. OECD is not a governmental entity. OECD is basically providing all the countries that will be participating with statutory language. They frame it as articles that looks like statutory language. Some countries have specific concepts where they must adapt what the OECD has to their specific code of laws. Every country in theory will implement these rules by enacting new legislation, except the US for now.

US having a hard time agreeing – OECD developing specific US rules

The US Congress is having a hard time agreeing and there also does not seem to be much appetite to implement. It seems unlikely the US will implement any statutory changes anytime soon. The OECD has tried to come up with special rules to deal with the US since the US is such a big piece of the global economy. They are developing rules to deal with the fact that the US rules are not strictly compliant with the OECD rules.

The collection mechanism in the US would be UTPR rule (undertaxed profits rule) in local countries (we explain more at end of this note). Even if the US doesn't change anything, if all the other countries implement the UTPR rule, those countries will collect that tax even though the US hasn't changed its rules. The system has been developed even though the US hasn't adopted it. The way the system will work is that as long as other countries go along with it, a company will end up having to pay this tax even if your local country doesn't go along with it. That is likely by design to convince every country to adopt. This is why countries are basically doing QDMTT now because if the tax is going to be collected, they might as be the ones to collect it.

Low tax jurisdictions unlikely to give other offsets – tax not lower elsewhere

Some companies have very low effective tax rates today as they tend to operate in a couple of low tax jurisdictions – Switzerland and Singapore, to a lesser extent Ireland – where they have worked out or negotiated very good tax incentives and have very low or zero tax rates in those countries. There is a question if these countries will provide other non-tax incentives to try to offset the cost of the extra tax if they adopt a QDMTT. However, there doesn't seem to be a huge appetite to provide other offsets given the companies are already located in these countries and can't move and get a lower tax rate because other places are subject to the same rules as well.

2024 is first live year officially but likely getting pushed more to 2025

Some countries – Korea and a couple of other countries – have already implemented QDMTTs that would take effect in 2024 as this was going to be the first live year for Pillar 2. But our expert sees this being pushed to 2025 now. However, some countries that were early adopters and put legislation in place were putting 2024 effective dates in the legislation. Our expert believes these countries likely amend and change their legislation to 2025 as well. However, until they do so, companies likely have to presume it's the law and have to make their tax calculations and tax forecasts consistent with the law as it is today.

Deferred taxes an example of why this still gets delayed to 2025

By and large, every country has at least said that they are supportive. As its coming toward the actual date of implementation the negotiations are becoming more down to the wire. For example, the treatment of deferred taxes is a really big issue for the whole system to set up and run correctly. There are countries that are starting to signal that they are not really happy with what's been done with deferred taxes. The UK came out with proposed legislation where they diverted from the OECD current rules about how deferred taxes would work. Other counties may now need to think about deferred taxes more deeply. It's possible that there are going to be more tweaks and changes but more guidance is coming out next month; however some of these bigger issues will not be in this guidance. Our expert says it will be interesting to see how long any of these big issues stay uncertain during 2024. At some point, there must be clarity because the laws need to get through the legislative functions in local countries.

Companies parented in low tax jurisdictions are more likely to pay top up tax

Generally, the parent jurisdiction is where you have the potential most concern for top-up tax just because in most systems most of the income is getting taxed at the parent level. For example, for an Irish-parented entity. Ireland currently has a 12.5% rate which is below the 15% rate. Ireland has already announced plans to increase that 12.5% rate up to 15% for companies that are subject to Pillar 2. Our expert thinks it is much more likely that companies that are parented in low tax jurisdictions such are Ireland or other places are going to be more likely to pay top up tax.

Could be above/below 15% but not drastically below 15%

There are potential scenarios where you could be a little bit below 15%. But our expert does not anticipate seeing companies dramatically below 15%. There are some aspects of the way things work today that might create a situation where planning opportunities may allow you sidestep Pillar 2 rules. But people are identifying relatively quickly and the OECD is becoming aware of them and they are implementing additional rules to shut them down.

Companies may need to make disclosure in Q4 of this year

Some companies may need to start making some disclosures in Q4 of this year given there is enough certainty in these rules that companies know what's coming. Even though it's not law yet companies that have a significant top up tax may feel the need to make some disclosures about that in Q4. There is not a lot of specificity on what disclosures need to be made though.

Enforcement is every country's existing tax enforcement rules

The enforcement mechanism is that every country will have to implement these rules in their local tax system. It will rely on preexisting tax enforcement rules in each country to enforce the changes that Pillar 2 is making. OECD is trying to graft this on to the existing global system in a way that allows it to be consistent. Negotiated amongst all the countries first. It will rely on existing enforcement mechanism.

One concern is maintaining consensus long-term

This system is designed to put in place on Jan 1 2025, everybody has the same rules but what happens after that. There is real concern from OECD and it has been a struggle to bring everyone to the table and get a consensus for this moment in time. How are you going to maintain consensus going forward a year from now or 5 years from now. What happens when a local country has a local program it needs to fund and increases the 15% to 17.5% to make more money. There is a real question about how this system will hold together as we move forward longer term.

Pillar Two top up tax mechanics – an example of no outs…

Pillar 2 has a couple of different mechanisms to claim the top up tax. The top up tax is the extra tax that the system says needs to be paid. There are a couple of different ways that the system will impose that tax as we show in the example below.

Take for example a US company that owns an Irish entity and is not paying 15%. There is a top up tax owed with respect to the Irish operations. Does Ireland have a QDMTT? If Ireland has a QDMTT, then they are going to pay the extra tax to Ireland. Ireland will be at 15%. Then nobody else needs to collect any tax because the extra tax has been collected in Ireland through the QDMTT.

If Ireland doesn't implement a QDMTT, then the next defense is the Income Inclusion Rule (IIR). That is a term for a concept like the US. US has concept called Subpart F that if a foreign subsidiary earns a certain type of income, then that income even before its distributed is taxed in the US, so its taxed immediately. The premise being usually this is mobile types of income (i.e., IRS saying you should have earned that income in the US). In this example the income would be included in a US tax return. However, the OECD requires the IIR to operate a very specific way and the US rules do not operate in the way OECD has laid out. The US income inclusion rules are not compliant with the OECD.

However, if the US did have a compliant IIR, then the US would effectively collect the extra tax in the US. The additional 2.5% from Ireland's 12.5% and the 15% minimum would be collected through the IIR in the US.

The third backstop is the UTPR – Under Tax Payments Rule. UTPR says if you are in Ireland, you are US parented, in Ireland you're not paying enough tax, the US did not collect the tax because they didn't change the rules. So the system will say that every other country you operate in – so say in addition to Ireland you are in the UK and Singapore. UK and Singapore you get to collect the tax that they didn't pay in Ireland. There is a calculation that you do based on how big your presence is in each country where they split the top up tax liability in each of those countries. You pay the top up tax partially in Singapore and partially in the UK instead. You can have countries collecting taxes for other countries under this system. Most countries will end up with the QDMTT but in theory these are the three mechanisms of ways you can collect tax.

R&D tax credit could make US more of a burden

Our expert said the US could end up being the biggest problem for a lot of companies that benefit from tax credits. Tax credits function to reduce tax liability, but problem is absence a specific rule, if you get tax credits that bring your tax rate below 15% then pillar 2 rules would come along and effectively reverse the benefit of those tax credits.

The R&D credit is still a so-called bad credit, meaning that you don't get to count it in your tax rate. There is a concept of a refundable credit or a good credit meaning even if you use the credit to reduce your liability you get to ignore that reduction when testing effective tax rate. The R&D credit in US is not a good credit. It is a bad credit meaning that you don't get to make that adjustment. If a company theoretically wiped out all of their tax liability with an R&D credit under pillar 2 rules the US would look like a zero rate jurisdiction and the rules say that you need to be paying 15%.

Then in the US, you have to go through the series of 3 payment options. The first one is QDMTT. US has not implemented the QDMTT. The corporate minimum tax that was implemented last year does not qualify as a QDMTT. It does not qualify as a pillar 2 compliant minimum tax. That basically preserves the benefit of R&D credit and GBC. Even with the corporate minimum tax still paying very little tax in the US. IIR rule is not an option because no one above the US to pick up the tax. The last option is the UTPR. You could end up paying the extra tax to all of the countries you operate in that you arguably should have paid in the US.

Pillar Two background – what is it in our own words

Pillar Two is a set of rules designed to require multinational companies to pay the global minimum tax of 15% on profits in each country in which it operates. Pillar Two is a part of an international tax framework, designed by the Organisation for Economic Co-operation and Development (OECD) and G20 countries to address global tax avoidance and improve international tax coherence and transparency. Specifically, the OECD is attempting to stop the "race-to-the-bottom" competition where countries try to entice multinational companies with more favorable tax rates. Any multinational companies with more than 750 million Euro in revenue are subject to Pillar Two.

Pillar Two rules suggest a "top-up" tax on profits in any jurisdiction where the effective tax rate falls below the 15% global minimum tax. For example, Ireland had a 12.5% tax on corporate profits. Under Pillar Two, companies would need to pay an extra 2.5% of tax on profits made in Ireland. There are three principal tax calculation methods that a jurisdiction can use to be in compliance – the Qualified Domestic Minimum Top-Up Taxes (QDMTT), Income Inclusion Rule (IIR) and the Undertaxed Payments Rule (UTPR). Most jurisdictions are likely to implement QDMTT which requires any jurisdiction under the minimum global tax to raise its tax rate to the global minimum or add an incremental tax on top of its current tax. The IIR allows a multinational's home country to tax the company's foreign profits. The UTPR is a backstop that allows each country where a multinational has operations to collect a portion of the company's top up tax if the home country has not implemented a QDMTT or IIR rule.

Pillar Two represents OECD's recommended template for each individual country or jurisdiction to use to enact new local tax legislation. The majority of the 135+ countries represented by the OECD/G20 are in the process of adopting new legislation or have stated that they intend to do so. According to our tax expert, only four countries (and the European Union) have finalized new tax legislation. Pillar Two was supposed to go into effect at the start of 2024 but the tax expert we spoke to expects the implementation to get pushed to 2025.

GLP-1 trials tracker

Exhibit 70: Overview of Eli Lilly and Novo Nordisk outcome studies for tirzepatide and semaglutide, respectively
GLP-1 trials address many comorbidities that may be improved with weight management

Company	Drug	Trial Name	Indication	Phase	Study Size (pts)	Primary Outcome	Timing
Lilly	tirzepatide	SURMOUNT-3	Obesity	3	806	Percent Change from Randomization in Body Weight	mid-2023
Lilly	tirzepatide	SURMOUNT-4	Obesity	3	783	Percent Change from Randomization (Week 36) in Body Weight	Oct'23
Lilly	tirzepatide	SURMOUNT-5	Obesity	3	700	Percent Change from Baseline in Body Weight	2025
Lilly	tirzepatide	SURMMOUNT-MMO	Obesity	3	15,000	Time to First Occurrence of Any Component Event of Composite (All-Cause Death, Nonfatal Myocardial Infarction, Nonfatal Stroke, Coronary Revascularization, or Heart Failure Events)	2027
Lilly	tirzepatide	SURPASS-CVOT	T2D	3	13,299	Time to First Occurrence of Death from Cardiovascular Causes, Myocardial Infarction or Stroke (MACE-3)	2024
Lilly	tirzepatide	SYNERGY-NASH	NASH	2	196	Percentage of Participants with Absence of NASH with no Worsening of Fibrosis on Liver Histology	Q1'24
Lilly	tirzepatide	SURPASS-6	Inadequately controled basal insulin	3	1,428	Change from Baseline in Hemoglobin A1c	Oct-23
Lilly	tirzepatide	SURPASS-PEDS	T2D	3	90	Change From Baseline in Hemoglobin A1c (HbA1c) in children or teenagers with type 2 diabetes taking metformin, or basal insulin, or both.	Oct-24
Lilly	tirzepatide	SURMOUNT-OSA	Sleep Apnea	3	469	Percentage Change from Baseline in Apnea-Hypopnea Index	2024
Lilly	tirzepatide	SUMMIT	HFpEF	3	700	A Hierarchical Compositive of All-Cause Mortality, Heaty Failure Events, 6-minute Walk Test Distance and Kansas City Cardiomyopathy Questionnaire Clinical Summary Score Category	Jun-24
Lilly	tirzepatide	TREASURE-CKD	CKD	2	140	Change from Baseline in Kidney Oxygenation in Participants With or Without T2D	Jan-26
Lilly	retatrutide	TRIUMPH-4	Knee osteoarthritis	3	405	Change from Baseline in the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) Pain Subscale Score	2026
Novo	semaglutide	SELECT	Obesity	3	17,500	Cardiovascular risk reduction with respect to reducing the incidence of MACE (a composite primary endpoint consists of: cardiovascular death, non-fatal myocardial infarction, or non-fatal stroke)	mid-2023
Novo	semaglutide	STEP-HFpEF	HFpEF / Obesity	3	516	Change in Kansas City Cardiomyopathy Questionnaire score and percentage change body weight	mid-2023
Novo	semaglutide	STEP HFpEF DM	HFpEF/ Obesity / T2D	3	610	Change in Kansas City Cardiomyopathy Questionnaire score and percentage change body weight	2H'23
Novo	semaglutide	STEP-10	Obesity / Prediabetes	3	201	Change in body weight and change to normoglycemia	mid-2023
Novo	semaglutide	SMART	Obesity / CKD	3	98	Change from baseline to week 24 in urinary albumin:creatinine ratio in individuals at high risk of CKD progression	2024?
Novo	semaglutide	REMODEL	CKD / T2D	3	105	Change from Baseline in Kidney Oxygenation in Participants With T2D	2024/2025
Novo	semaglutide	FLOW	CKD / T2D	3	3,508	Time to first occurrence of a composite primary outcome event defined as persistent eGFR decline of greater than or equal to 50 percentage from trial start, reaching ESRD, death from kidney disease or death from cardiovascular disease in Participants With T2D and CKD	1H24
Novo	semaglutide	ESSENCE	NASH	3	1200	Count of Participants with resolution of steatohepatitis with no Worsening of Liver Fibrosis	End 2024/2025
Novo	semaglutide	STRIDE	PAD / T2D	3	800	Change in maximum walking distance on a constant load treadmill test in Participants With T2D and PAD	1H24
Novo	semaglutide	FOCUS	T2D / Eye disease	3	1500	Presence of at least 3 steps Early Treatment Diabetic Retinopathy Study subject level progression	2H24

Exhibit 70: Overview of Eli Lilly and Novo Nordisk outcome studies for tirzepatide and semaglutide, respectively
GLP-1 trials address many comorbidities that may be improved with weight management

Company	Drug	Trial Name	Indication	Phase	Study Size (pts)	Primary Outcome	Timing
Novo	oral semaglutide	SOUL	T2D / Heart disease	3	9,642	Time to first occurrence of a major adverse cardiovascular event (MACE), a composite endpoint consisting of: cardiovascular death/non-fatal myocardial infarction/non-fatal stroke	2024
Novo	oral semaglutide	EVOKE Plus	Early Alzheimer's	3	1840	Change in the Clinical Dementia Rating - Sum of Boxes (CDR-SB) score	2025
Novo	oral semaglutide	OASIS 1	Obesity (oral tablet)	3	660	Relative change in body weight and achievement of body weight reduction greater than or equal to 5%	mid-2023
Novo	semaglutide	Effect of Subcutaneous Semaglutide 2.4 mg Once-weekly Compared to Placebo in Subjects With Obesity and Knee Osteoarthritis	Knee osteoarthritis	3	407	Change in WOMAC pain score [Time Frame: From baseline (week 0) to end of treatment (week 68)] Score points	Q4'23

Source: clinicaltrials.gov

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Medtech catalysts to watch in 2024

Medtech stocks tend to trade ahead of key catalysts and ahead of potential revenue acceleration which is why understanding the catalyst pathway for each name is important. Inside we have our catalysts tables for our entire coverage (excel version available). Below we identify the most needle moving in large cap. BSX, ISRG, and SYK stand out as potentially having announcements in 2024 that can drive revenue growth acceleration in 2025. Stocks with potential growth acceleration in 2025 likely work the best in 2024 and likely attract more fund flows when medtech becomes more in favor.

Exhibit 71: Large cap catalyst table
Among large caps, we view the biggest catalysts in 2024 as ABT TriClip; BAX Novum IQ US potential approval and KidneyCo spin in July; key product launches for BSX including Farapulse US approval/launch, Acurate TAVR valve US approval and launch, and Agent DCB US approval/launch; EW asymptomatic TAVR data and Evoque tricuspid US approval; ISRG smoke evacuation partnership with Novanta; MDT's US approval/launch of PulseSelect and Sphere-9, Symplicity Spyral, FDA submission of 780G+Simplera in the US, and commercialization of Syplicity Spyral; SYK's super cycle of product launches and the Mako shoulder and spine app.

Company	Device/ Catalyst	Timing	End Market
ABT			
ABT	Pump integration	Approval in Q1'23; integration with TNDM in US before 2023 year end and broad availabiltiy in early 2024, TNDM OUS integration and PODD US/OUS likely in 2024	Diabetes
ABT	Libre 2	Streaming capability US launch in 2024	Diabetes
ABT	Glucose/ketone sensor	Trial to start in Q4'23 as of July '23. 2025+ US approval	Diabetes
ABT	Basal reimbursement	CMS coverage of basal as of mid-April '23. CMS coverage of Libre 3 in August 2023 post reader approval. France coverage for basal patients for Libre in June 2023.	Diabetes
ABT	Lingo	UK controlled launch began in July 2023 for glucose, full launch in UK in 2024; Intend to file with US by 2023 year end. Potential US launch in 2024	Consumer biowearables
ABT	Libre 15-day	Rollout in 2H'23 in US	Diabetes
ABT	Aveir DR Leadless Pacemaker (Dual Chamber)	FDA approval in July 2023. CE Mark 2H24E	Cardiology
ABT	TactiFlex Ablation Catheter	FDA approval in May 2023	Cardiology
ABT	Assert-IQ ICM	FDA approval in May 2023	Cardiology
ABT	Navitor (next-gen TAVR system)	FDA approval in Jan 2023. Label expansion for low/intermediate risk a few years out	Structural Heart
ABT	CardioMems	CMS NCD 2H'24	Structural Heart
ABT	MitraClip Moderate Risk DMR	REPAIR MR trial estimated completion in 2026	Structural Heart
ABT	TriClip	Filed with the FDA in January 2023, CMS reviewing simultaneously. FDA panel likely in January 2024. US approval in 1H'24	Structural Heart
ABT	Tendyne	US approval 2025+	Structural Heart
ABT	Amulet	CATALYST Trial est completion in Dec 2024. Label expansion in 2025+	LAAC
ABT	ESPRIT BTK resorbable stent	US approval 2H24E	Peripheral Interventions
ABT	DCB Peripheral - Surmodics Partnership	US launch 1H'24	Peripheral Interventions
ABT	Eterna (rechargeable SCS)	Approved in Dec'22 for chronic pain and in May 2023 for non-surgical back pain	Neuromodulation
ABT	Painful Diabetic Peripheral Neuropathy (DPN)	Proclaim XR spinal cord stimulation approved for DPN in May 2023	Neuromodulation
ABT	Volt	As of May 2023 planned to start first in human trial in 2023. CE Mark / US approval 2025+	Electrophysiology

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Company	Device/ Catalyst	Timing	End Market
ABT	Laboratory traumatic brain injury blood test	Whole blood label expansion CE Mark / US Approval 2H24	Diagnostics
ABT	Test menu expansions - sexual health	CE Mark / US approval 2025+	Diagnostics
BAX			
BAX	Novum IQ	Resubmitted 510(k) to FDA April '23. Plan to submit 2 fixes identified in Canada to FDA by end of 2023. Expected launch timing not provided but we estimate sometime in 2024.	Infusion Pump
BAX	BPS Divestiture	Sep '23, divestiture completed	BPS
BAX	KidneyCo Spin	Spin expected to occur July 2024, contingent on stress-testing market conditions	Renal
BDX			
BDX	Alaris	FDA approval in July '23 - expects to begin shipping devices and recognizing revenue in FY24	Infusion Pump
BSX			
BSX	Watchman FLX Trial Data	OPTION trial data in early 2025; CHAMPION-AF data in 1H 2026	LAAC
BSX	Watchman TruSteer Access System	2024E	LAAC
BSX	Watchman FLX Pro	Approved in Sept 2023. Full launch early in 2024	LAAC
BSX	Acurate (all risk indications and sizes) TAVR valve	US approval in Q4'24E. EU full access & expansion in 1H'25. Japan approval in 2025	Structural Heart
BSX	Farapulse (Pulsed Field Ablation)	As of Oct 26, Farapulse filed with FDA. US approval expected in Q1 of 2024	Electrophysiology
BSX	FARAWAVE Nav & FARAVIEW	US 2024E year end	Electrophysiology
BSX	Farapoint	Part of second phase of ADVANTAGE trial, expect to complete enrollment in Q1'24. US 2025E	Electrophysiology
BSX	AVANT GUARD trial (Persistent AF, front line therapy)	Starting trial in 1H'24	Electrophysiology
BSX	POLARx (Cryo Single Shot)	FDA approval in August 2023	Electrophysiology
BSX	Wolf Thrombectomy	Completing early access as of Sept 2023 for DVT. May choose to release products in 2024. TBD on PE.	Vascular Thrombectomy
BSX	Agent DCB	2H24E US expected launch. 2025E expected launch in China	Cardiology
BSX	Next gen LUX Dx	Approved in 2023	Cardiology
BSX	BodyGuardian UL	2024E expected approval	Cardiology
BSX	Leadless Pacer Empower / Modular CRM	MODULAR ATP trial results in 2024. US launch 2025E	Cardiology
BSX	LUX HF	2024+	Cardiology
BSX	Next Gen CRM Platform	Submit the first family of these devices from the platform to regulators in 2025	Cardiology
BSX	Embold	Launched in early 2023. Line extensions to launch in 2024 globally	Peripheral Interventions
BSX	Obsidio	US launch in 2023. Global launch expected in 2024+	Peripheral Interventions
EW			
EW	Sapien X4	ALLIANCE enrollment restart in Q3'23. Continuing enrollment in 2024. Likely launch in 2025+	Structural Heart
EW	Sapien 3 Ultra Resilia	Japan launch in Q2'23. CE Mark expected in early 2024.	Structural Heart
EW	Asymptomatic TAVR	EARLY TAVR trial data expected to be presented at TCT in 2024	Structural Heart
EW	Moderate AS	PROGRESS trial data expected to complete enrollment early 2024. 2yr follow up, data in 2026 (our estimate)	Structural Heart
EW	US Pascal Precision Degenerative MR	Full CLASP IID Cohort Data at TCT in October 2023	Structural Heart
EW	US Pascal Precision Functional MR	Enrolling CLASP IIF pivotal trial through 2023	Structural Heart
EW	Sapien M3	ENCIRLE trial enrollment completed in Oct '23. CE Mark expected by end of 2025. US approval to follow	Structural Heart
EW	Evoque Eos	Completed enrollment in MISCEND early feasibility study in early 2023	Structural Heart
EW	Pascal Precision for tricuspid	CLASP II TR 2024 year-end expected completion	Structural Heart
EW	Evoque Tricuspid	TRISCEND II interim analysis at TCT of a randomized cohort; CE Mark in October. Expect US approval late 2024	Structural Heart
EW	MITRIS RESILIA valve.	Global commercialization in 2024	Structural Heart
EW	Critical care spin-off	Intends to complete tax-free spin-off at end of 2024. Mid-2024 SEC Form 10 submission	Critical Care
ISRG			
ISRG	SP Expanded Indications	Completed IDE in US for thoracic and colorectal, as of Sept'23 not yet submitted in US.	General Surgery (Robotics)
ISRG	SP Expanded geographies	SP submitted in Europe. Japan clearance in 2023.	General Surgery (Robotics)
ISRG	Da Vinci expanded indications	FDA approval for appendectomy in May 2023	General Surgery (Robotics)

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Among large caps, we view the biggest catalysts in 2024 as ABT TriClip; BAX Novum IQ US potential approval and KidneyCo spin in July; key product launches for BSX including Farapulse US approval/launch, Acurate TAVR valve US approval and launch, and Agent DCB US approval/launch; EW asymptomatic TAVR data and Evoque tricuspid US approval; ISRG smoke evacuation partnership with Novanta; MDT's US approval/launch of PulseSelect and Sphere-9, Symplicity Spyral, FDA submission of 780G+Simplera in the US, and commercialization of Syplicity Spyral; SYK's super cycle of product launches and the Mako shoulder and spine app.

Company	Device/ Catalyst	Timing	End Market
ISRG	Ion	First ion installs in UK and first cases in Q2'23	General Surgery (Robotics)
ISRG	New system	Late 2024?	General Surgery (Robotics)
ISRG	Novanta smoke evacuation	Novanta second-generation smoke evacuation platform launch in 2H24. Novanta quote on Q323 EPS call: "We continue to see active engagement and urgency with our customers to ensure their new product launches are a success. As a result, we're seeing a broad new product super-cycle entering late in 2024 and in 2025 and beyond, with key drivers including smoke evacuation insufflation, robotic surgery..."	General Surgery (Robotics)
JNJ			
JNJ	Ottava	Submit for approval for US IDE in 2H'24, trial start in 2025	General Surgery (Robotics)
JNJ	MONARCH	Potential other applications in the GI tract, timing TBD	General Surgery (Robotics)
JNJ	VARIPULSE Catheter	admIRE US clinical study to be completed early in Q4'23. FDA submission to follow. Varipulse submitted for CE Mark (2024 approval our estimate)	Electrophysiology
JNJ	Thermocool SmartTouch SF	As of Aug 2023 completed enrollment of SmartFIRE trial and patients in 12 month follow up. US SmartfiRE enrollment initiation in 2H'23	Electrophysiology
JNJ	Laminar	FDA approval for US pivotal study which will begin in 2024	LAAC
JNJ	Impella	Completed enrollment in Abiomed Impella ECP clinical study for high-risk PCI procedures in Q3'23.	Cardiology
MDT			
MDT	PulseSelect	CE Mark in Nov 2023 and will be commercially available early in 2024. US approval Dec 2023. Commercialization early 2024	Electrophysiology
MDT	Sphere-9 Mapping and Ablation Catheter (Pulse Field Ablation)	CE Mark in March 2023 and in LMR. US pivotal trial 12-mo follow up to be completed end of '23 and FDA submission will follow. Potential US approval in 2024.	Electrophysiology
MDT	Evolut FX	CE Mark in Nov 2023	Structural Heart
MDT	Aurora EV-ICD	CE Mark in Feb 2023. FDA approval in October 2023 followed by limited launch. Full launch in 2024E	Cardiology
MDT	Micra AV2 and VR2	FDA approval in May 2023	Cardiology
MDT	Micra AR (sinus node disfunction)	FY2024+	Cardiology
MDT	Symplicity Spyral Renal Denervation	FDA approval and immediate commercialization in Nov'23	Cardiology
MDT	Percept PC & RC with adaptive therapy (closed loop)	FY24+ Launch	Neuroscience
MDT	Inceptiv ECAPS	CE Mark approval in FQ1'24 (Aug 2023), with availability in the following months. Submitted for FDA approval	Neuroscience
MDT	SCS Expanded Indication	Upper limb and neck CY2024?	Neuroscience
MDT	Hugo	Activated new sites for Expand URO U.S. pivotal trial, progressing to plan as of Sept 2023. In FQ2 received FDA approval to move forward with an IDE for Hernia indication	General Surgery (Robotics)
MDT	780G	US approval in April 2023, started shipping in June 2023	Diabetes
MDT	Simplera (standalone)	CE Mark approval, first commercial patients started in October with expanded rollout in FY2H'24	Diabetes
MDT	780G + Simplera	Filed for CE Mark; Fully enrolled U.S. pivotal (ages 7-80) with final study completion expected in FY24Q4; followed by 780G+Simplera FDA submission expected in H1 CY24	Diabetes
MDT	InPen + Simplera	As of June 2023 under FDA/CE Mark review	Diabetes
MDT	8-Series Pump ACHL + Next Gen CGM	In development as of June 2023	Diabetes
MDT	Patch Pump + Next Gen CGM	FY2024+	Diabetes
MDT	Extended infusion set	Global rollout of 7-day wear continues as of Sept 2023	Diabetes
MDT	PM/RI Separation	1H FY25	Corporate
SYK			
SYK	Q Guidance system	Feb '23, FDA approved Cranial app; 2Q23, launched Cranial app	Ortho & Spine
SYK	1788 camera	Apr '23, FDA approved; Late 2Q23, limited launch; 3Q23, full launch	Endoscopy
SYK	System 9 power tools	Late '22, launched in US	Instruments
SYK	Mako Knee 2.0 software	Aug '22, began limited US release; 3Q23, expect full launch	Other Ortho
SYK	Citrefix suture anchor system	2023, expand Citrelock / Citrefix portfolio	Trauma & Extremities
SYK	Prophecy Footprint	2023, full launch at AOFAS (2022, limited US release)	Trauma & Extremities
SYK	Pangea Systems	Sep '23, FDA clearance. 2Q24, expect full launch	Trauma & Extremities
SYK	Next-gen LIFEPAK defibrillator	Early '24, expect to launch in US	Medical
SYK	Mako Spine app	3Q24, expect initial launch	Other Ortho
SYK	Mako Shoulder app	End of '24, expect initial launch	Other Ortho

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Company	Device/ Catalyst	Timing	End Market
ZBH			
ZBH	Persona IQ Smart Implant	Full Launch by YE23 or early 2024	Orthopedics
ZBH	Persona OsseoTi Keel Tibia	1Q23, limited launched; 2024 US full launch	Orthopedics
ZBH	Rosa shoulder	First company to launch shoulder robotic platform, sooner rather than later (as of Nov 2023)	Orthopedics
ZBH	Rosa expanded indication	Launching sometime in 2024 the posterior application for hip	Orthopedics
ZBH	Next-gen Rosa for knees	2024E (our estimate)	Orthopedics
ZBH	Hip Hammer	Expect to launch in 3Q23	Orthopedics

Source: Company filings, BofA Global Research

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Exhibit 72: SMID cap catalyst table

Among SMIDs, we view the biggest catalysts in 2024 as DXCM's non-insulin not at risk for severe hypoglycemia sensor in the US next summer; PODD's Omnipod 5 OUS expansion with a goal to have OP5 in a majority of European markets; and TNDM's rollout of mobi.

Company	Device/ Catalyst	Timing	End Market
AXNX			
AXNX	F15 Non-rechargeable	Commercial launch in Australia and Europe in 2024	Stimulation
AXNX	Radian technology	Expect commercial availability in mid-2024	Stimulation
AXNX	Indication expansion	Expect a study in 2024 for chronic constipation	Stimulation
AXNX	External trialing system	On market by end of 2024	Stimulation
AXNX	Implantable Tibial reimbursement (competitor)	July '23, tibial gained HOPD coverage = SNM	Stimulation
AXNX	MDT ITNS development (competitor)	Oct '23, TITAN 2 (tibial pivotal trial) completed primary (6mos) endpoint. MDT has submitted a couple of modules so far, but the final submission is likely a calendar 2024 event.	Stimulation
AXNX	Neuspera SNM development (competitor)	Apr '24, expect study completion per ct.gov	Stimulation
AXNX	BlueWind (competitor)	FDA approval in Aug 2023 for urge urginary incontinence. US launch 2024E	Stimulation
AXNX	Valencia (competitor)	FDA approval in Mar 2022 for urge urginary incontinence. US launch 2024E	Stimulation
BLCO			
BLCO	SiHy daily disposable toric contact lens	2024	Ophthalmology
BLCO	enVista Envy (trifocal IOL)	US, EU, Canada launch in 2024 (submissions in process)	Ophthalmology
BLCO	enVista Aspire (extended range monofocal IOL)	US launch in process; Canada launch 4Q23 (submitted 1Q23); EU launch in 2024 (submitted 2Q23)	Ophthalmology
BLCO	enVista Beyond (extended depth of focus IOL)	Expect 2025/2026 launch	Ophthalmology
DXCM			
DXCM	G7 OUS	Expand European geographies in 2023. APAC in 2024.	Diabetes
DXCM	Pump integration	Integration with TNDM's tslim X2: US commercial launch in Dec 2023, OUS launches expected in early 2024. Integration with PODD's Omnipod 5: LMR in early 2024	Diabetes
DXCM	Basal reimbursement	US: CMS covering basal patients as of mid-April. OUS: Approval for everyone in Japan. France likely to approve for everyone in 2024. Other countries likely to follow including Germany, Nordics, and UK.	Diabetes
DXCM	DexcomOne	Rollout on G7 in Q1'24	Diabetes
DXCM	Non-insulin, not at risk for severe hypoglycemia sensor	Oct 2023 finished the clinical trial required for submission before the end of the year. US launch summer of 2024. Reimbursement likely a 2-3 yr journey.	Diabetes
DXCM	15-day Sensor	Summer 2024 for for non-insulin, not at risk for severe hypoglycemia population; G7 and other products to 15 day to follow	Diabetes
DXCM	Malaysia facility	Online in June 2023	Diabetes
DXCM	Direct to Apple Watch	By end of 2023	Diabetes
DXCM	Next-gen extended wear	2025+	Diabetes
DXCM	$10 sensor standard cost	2025	Diabetes
DXCM	Roche CGM (competitor)	Roche tech day talking about CGM on May 22, 2024	Diabetes
GMED			

Exhibit 72: SMID cap catalyst table

Among SMIDs, we view the biggest catalysts in 2024 as DXCM's non-insulin not at risk for severe hypoglycemia sensor in the US next summer; PODD's Omnipod 5 OUS expansion with a goal to have OP5 in a majority of European markets; and TNDM's rollout of mobi.

Company	Device/ Catalyst	Timing	End Market
GMED	E-hub navigation system	Late 2023 / early 2024	Spine
GMED	Augmented reality headset	Mid-year 2024, possibly 3Q24	Spine
GMED	Knee robot	1H24	Orthopedics
GMED	Cementless knee	2024	Orthopedics
IART			
IART	Boston facility distribution restart	mid to late 2Q24	Wound Reconstruction
IART	Cerelink on market in all OUS countries	all by end of 2023	Wound Reconstruction
IART	Cerelink relaunch in US (needs 510k approval)	1Q24 (submitted 510k at end of 3Q23)	Neurosurgery
IART	DuraSorb for breast reconstruction	Expected 2025/2026	Wound Reconstruction
IART	Surgimend for breast reconstruction	1H25 - FDA inspection of Boston facility in 4Q24 / 1Q25	Wound Reconstruction
INSP			
INSP	Inspire V (fifth gen device)	Will send response to FDA questions in early 2024. Expect Q3'2024 approval and will do limited launch, 2025 full commercial launch	Stimulation
INSP	Remote patient programming	2024 (our estimate)	Stimulation
INSP	Inspire VI & VII	2025+	Stimulation
INSP	Initial commercial units replacements	2025+	Stimulation
NARI			
NARI	Artix System	Re-enter LMR in 2024	Vascular Thrombectomy
NARI	PEERLESS trial	Data readout in 2024	Vascular Thrombectomy
NARI	PEERLESS II trial	First patient enrolled in Nov 2023. Primary completion estimated in 2026	Vascular Thrombectomy
NARI	New products	RevCore, InThrill, ProTrieve, T16 Curve, CT XL, next gen CT Bold in full market release in 2H'23. In 2024 to a large extent, new products will be within or under the umbrella of the existing toolkits alongside refinements to the existing toolkit as opposed to new additions.	Vascular Thrombectomy
NARI	Geographic expansion	Anticipate beginning to treat patients in China and Japan in 2024	Vascular Thrombectomy
NARI	LimFlow acquisition and milestone payments	Close expected in Q4'23. ~$250M cash outlay upon deal close. Q1 2025: NARI agreed to pay 1.5x 2024 revenue which is expected to be modest given it is just now launching. Q2 2025: NARI agreed to pay two reimbursement milestones totaling $25m max ($12.5m for NTAP; $12.5m for new tech APC). With the OPPS 2024 final rule LimFlow was reassigned to a new tech APC which is expected to pay $27.5k, a ~$10k increase. Q1 2026: The 2025 revenue milestone is expected to pay out at 0.85x 2025 revenue. This milestone is likely self-funded given LimFlow's gross margin. Q1 2027: The 2026 revenue milestone is expected to at 0.5x 2026 revenue. This milestone is likely self-funded given LimFlow's current gross margin.	Chronic limb-threatening ischemia
NARI	Profitability	Anticipate initial operating support for LimFlow's commercial launch of approximately $2 million to $3 million per month. As LimFlow's revenue begins to ramp throughout 2024 and into 2025, NARI believes it will increasingly cover its expenses, reducing the impact on NARI operating income. Now expects to reach sustained operating profitability in the second half of 2025.	Financial performance
NVRO			
NVRO	New iQ platform launch	Limited launch in US underway (since Oct); iQ approval in Europe expected but timing uncertain	Stimulation
NVRO	Nyrsa Tech Deal	Deal closed Nov 30th 2023; likely adds incremental growth to NVRO over time	Pain / SI Joint
PODD			
PODD	Omnipod 5	Continued US rollout of OP5 in 2023. OP5 UK launch in June 2023 and Germany launch in August 2023. By end of 2024 goal to have OP5 in majority of European markets	Diabetes
PODD	iOS	Approval in October 2023, will launch with G6. LMR for G7 in early 2024	Diabetes
PODD	Pump integration with Dexcom	Integration with G7 LMR in early 2024	Diabetes
PODD	RADIANT study (Libre 2 integration)	Began enrollment in Sept 2023	Diabetes
PODD	EVOLUTION study (next-gen AID algo)	Recruitment began in July 2023 in New Zealand	Diabetes
PODD	SECURE study (T2 pivotal)	Reached enrollment goal of 400 participants in early Nov 2023. 13 week study	Diabetes
PODD	Omnipod GO	Launched US commercial pilot program in 2023. Commercialization in 2024	Diabetes
PODD	EOFlow injunction	Court granted request for a preliminary injunction against EOFlow in Oct 2023	Diabetes

Exhibit 72: SMID cap catalyst table

Among SMIDs, we view the biggest catalysts in 2024 as DXCM's non-insulin not at risk for severe hypoglycemia sensor in the US next summer; PODD's Omnipod 5 OUS expansion with a goal to have OP5 in a majority of European markets; and TNDM's rollout of mobi.

Company	Device/ Catalyst	Timing	End Market
PODD	Malaysia facility	Operational by mid-2024	Diabetes
PRCT			
PRCT	Aquablation for prostate cancer trial	Data readout in 1H 2024	Urology
PRCT	Aquablation Japan clinical trial	Complete enrollment in 4Q23	Urology
PRCT	Aquablation Japan launch	early 2024 with revenue contribution in 3Q24	Urology
RXST			
RXST	Full launch of reconfigured LDD	Started in Sept 23, full launch in 4Q23	Ophthalmology
RXST	LAL+ launch	1H24	Ophthalmology
SIBN			
SIBN	Granite line extension targeting short construct deformity	2024	Spine
SILK			
SILK	Tapered ENROUTE stent	1H24, expect to launch	TCAR
SILK	NPS Plus protection system	2H23, expect limited market release	TCAR
SILK	Japan/China expansion	2024+ (Early '23, received CHN NPS approval)	TCAR
SILK	ROADSTER 3	2024+	TCAR
SILK	Stroke treatment	2024+	TCAR
SILK	NSPR C-Guard (InspireMD)	Nov '23, positive 30-day CT results at VIVA. 1H24, expect to initiate TCAR study. 1H25, expect US C-Guard approval	TCAR
SILK	Contego stent trial completion	New stent with embolic protection. Enrollment completed as of Nov 2023 - will support PMA application.	TCAR
SWAV			
SWAV	C2+	C2+ (next gen coronary IVL) US launch in 2H23	Coronary
SWAV	Germany	German reimbursement improvement went live Jan 2023	Coronary
SWAV	E8 (BTK)	US market entry in 2024E	Peripheral
SWAV	Javelin Peripheral IVL Catheter (BTK)	US market 2025E	Peripheral
SWAV	C2 Aero (coronary)	US market 2025E	Coronary
SWAV	Javelin Coronary IVL Catheter	US market 2026E	Coronary
SWAV	Reducer	US Approval 2027E	Reducer
SWAV	RX System - Carotid IVL	US market 2027E	Carotid
SWAV	Crescendo (Aortic Stenosis)	US market 2028E	TAVR
SWAV	Mitral VTL System (Mitral)	US market entry 2029E	Mitral
TNDM			
TNDM	Mobi (formerly t:sport)	FDA approval in Q2'23. Scaled launch will kick off with LMR in early Q4 and broad availability in 2024	Diabetes
TNDM	CGM integration	Libre: US launch with L2 initiating later in Q4 2023 with broad availability early in 2024. L3 will follow. OUS launch with L3 will follow; Dexcom G7: US commercial launch in Dec 2023 with t:slim X2, OUS launches expected in early 2024	Diabetes
TNDM	t:slim x3	2025+	Diabetes
TNDM	Mobi tubeless	2025+	Diabetes
TNDM	Sigi patch pump	2025+	Diabetes

Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Ratings and views

ABT: We maintain our Buy rating as estimates for 2024 seem de-risked and ABT's gross margin expansion gives room for upside along with its balance sheet.

AXNX: We maintain our Buy rating as AXNX's valuation does not reflect solid double digit profitable revenue growth and we see room for both estimates to move higher and the multiple to expand.

BAX: We maintain our Neutral rating given we see multiple expansion being difficult pre renal spin.

BDX: We maintain our Buy rating as BDX's multi-year margin targets/EPS growth look on target despite a misstep along the way.

BSX: We maintain our Buy rating as it has one of the best pipelines in medtech and can drive strong double digit plus EPS growth for several years.

CNMD: We maintain our Neutral rating as we wait to see the sustainably of CNMD's double-digit revenue growth.

DXCM: We maintain our Buy rating as we see multi-year, increasingly profitable, revenue growth coming from basal with some potential new insights into TAM expansion over the next 1-2 year with the non-insulin product coming to market.

EMBC: We maintain our Underperform rating as EMBC's cash flow value looks reflected in valuation when considering the structural growth rates for this business longer term.

EW: We maintain our Neutral rating as we continue to see risk to EW's 2025 revenue growth acceleration at a time when competition is increasing.

INSP: We maintain our Buy rating as nothing we've learned changes our view on INSP's large growth opportunity, and there are reasons to believe that INSP can eventually achieve profitability.

ISRG: We maintain our Buy rating as we see more pipeline visibility coming which could expand the multiple especially if it expands the TAM.

MDT: We maintain our Buy rating as MDT likely continues to execute consistently which should drive the earnings multiple higher.

NARI: We maintain our Buy rating as NARI continues to beat and raise and at this stage looks like it has upside risk to 2024 estimates.

NVRO: We maintain our Underperform rating as we think the SCS market will remain pressured and while the company is trying to diversify, we think 2024 focus will remain on the core business.

OM: We maintain our Underperform rating as profitability remains multiple years away and execution has been inconsistent.

PODD: We maintain our Buy rating as PODD is the clear market leader in the fastest-growing segment of the pump market with a wide moat.

SILK: We maintain our Underperform rating as we think it will be hard for the stock to work given how far away profitability is today at a time when the growth outlook is clouded by better coverage of stenting and increasing TCAR competition.

SWAV: We maintain our Buy rating as SWAV remains at an attractive valuation for its earnings growth.

SYK: We maintain our Buy rating as we see both revenue and margin upside as new products come to the market and SYK sprints back to 2019 margins.

TNDM: We maintain our Underperform rating as we continue to see some risk to out-year estimates and TNDM is still years away from being able to participate in the growth segment of the pump market (patch pumps) in our view.

ZBH: We maintain our Neutral rating as it will take time for ZBH to prove out a higher WAMGR.

Acronym glossary

Afib = atrial fibrillation
ASC = Ambulatory Surgical Center
ASP = average selling price
CABG = coronary artery bypass graft
CAGR = compound annual growth rate
Capex = capital expenditure
EV = enterprise value
GI = gastroenterology
GLP-1 = Glucagon-like peptide-1
GM = gross margin
LAAC = Left Atrial Appendage Closure
LRP = long-range plan
M&A = merger and acquisition
NTM = next twelve months
OM = operating margin
OUS = outside the US
PO = price objective
ROIC = return on invested capital
SMID = small and mid
TAM = total addressable market
TSA = transition services agreement
GLP-1 = Glucagon-like peptide-1
reimb = reimbursement
RDN = renal denervation

Investment Rationale

Axonics

We see AXNX valuation relative to the group expanding as investors get more evidence of SNM market acceleration once COVID headwinds become more manageable and AXNX turns up the throttle on DTC advertising. 2022's primary cell launch is a major catalyst and Bulkamid is bringing in both competitive reps and surgeons.

Baxter International Inc

We see BAX revenues growing below the medtech average particularly with hospitals potentially pulling back on replacement capital spending. We do not see any major upside revenue growth catalysts for BAX.

Becton Dickinson

BDX is back to executing and delivering a consistent message. BDX also has some of the best pricing power in medtech on a relative basis. In addition, we have more confidence in BDX delivering on its core targets with many higher growth/higher margin acquisitions over the last 2 years that move BDX. BDX also has a path for multi-year double digit EPS growth.

Conmed

We believe CNMD's mix and scale can drive 50-100bps of margin expansion per year, creating value for shareholders over time. We are bullish on the smoke evacuation market (Buffalo Filter) long-term but see risk in the near-term given tough COVID-related comps and increased competition from Stryker. 2023 guidance seems appropriate and the stock seems fairly valued in our view.

Embecta

EMBC is the market leader in insulin pen needles, syringes, and injection safety products but these markets are mature and until EMBC diversifies into new product areas it will be challenging for EMBC to see much growth. EMBC has high margins and generates good cash flow which could allow it to invest in new areas but with a balance sheet 3x levered and a market where innovation takes time we see no near term growth drivers. We think the market is already pricing in EMBC cash flows.

Inari Medical
NARI sells an elegant, easy to use venous clot removal technology that can remove large blood clots from the pulmonary veins and ilio-femoral veins of the leg. Blood clots are a significant problem globally, with 10 million cases per year, 1 million+ of which are in the United States alone. We are positive on NARI's high growth potential in a large, underpenetrated market.

Inspire Medical
Inspire provides an effective treatment for moderate to severe obstructive sleep apnea patients when CPAP therapy fails. INSP has been hitting on all cylinders with DTC advertising and having a best-in-class product portfolio. INSP's pipeline could keep this market expanding as they continue to address many of the things doctors have mentioned as potential roadblocks and make the procedure more economical for doctors to perform.

Intuitive Surgical
We expect ISRG to deliver robust procedure growth in the US and internationally as the company drives deeper penetration across a broader range of surgical procedures. ISRG has a near monopoly globally on soft tissue surgical robotics today and we feel confident that the company has adapted its business model and increased other competitive barriers to sustain robust growth even as new competitors potentially enter the market.

Medtronic
MDT's mid single digit rev growth profile with exposure to several growth markets suggests MDT low valuation multiple could quickly expand if MDT can begin to execute and if MDT can begin to show sustainable EPS growth. FY24 sets up as a low bar given easy comps and risk reward remains favorable at this valuation. MDTs pipeline suggests upside as well.

Nevro
We do not see material upside to estimates and prefer to own higher growth names in medtech in markets that are either less competitive or appear more resilient. We anticipate more difficult share gains for the company moving forward, and believe the PDN opportunity will be slow to develop and ultimately be shared by at least 3 other competitors.

Outset Medical
Outset has had multiple execution missteps now and companies without profitability have even less margin of error given there is no real profitability valuation floor.

Shockwave Medical
SWAV launched coronary in the US in Feb 2021 and coronary sales were already annualizing over $240m as of the Q421. The US market is around a $1.5b opportunity (OUS market is $3b+) and we see continued coronary driven beats coming from SWAV. Others may eventually come to market with IVL but SWAV also has a large opportunity outside the US (China, Japan, and Germany are notable opportunities).

Silk Road Medical
We see TCAR still taking share from CEA but with NCD increasing coverage for CAS investors will see some risk to out-year estimates and without profits SILK will struggle to re-rate.

Stryker

SYK's message on margin upside has turned more bullish but the stock has yet to work given the negative sentiment on medtech which we see as an opportunity now ahead of the 2024 upside. SYK's new product super-cycle could add to revenue growth, capital is unlikely to slow anytime soon, ortho is likely higher for longer (multi-year backlog and better pricing), and upside to operating margins alone could drive upside to EPS.

Zimmer Biomet
Backlog is starting to come through with better staffing and ZBH likely to let this upside flow through to EPS. Valuation is at a premium but EPS upside could partly offset multiple.

Price objective basis & risk

Abbott Laboratories (ABT)
Our $115 PO is based on 25x our 2024E EPS. This multiple is a premium for a high single digit organic grower but ABT's forward multiple has averaged 27x over the last three years. ABT likely deserves a premium for its balance sheet, above average durability in recession, and upside optionality with COVID testing.

Downside risks to our PO are: 1) durability of COVID testing revenue, 2) product or pipeline setbacks, 3) lower-than-expected growth in emerging markets, 4) unfavorable FX moves.

Axonics (AXNX)
Our $75 PO is based on 8x EV/2024E sales. This multiple is relatively in line with other high growth medtech peers which is justified, in our view, given we expect roughly 30% /20% growth for AXNX in 2023 /2024 with an in-line margin profile relative to the group (mid-70s).

Downside risks to our PO are: SNM market slowing if potential patients are unwilling to undergo surgery, increased competitive pressure, or AXNX hitting an unforeseen roadblock with payers. COVID related headwinds also pose a risk as SNM has proven to be elective.

Baxter International Inc (BAX)
Our price objective of $40 is based on an earnings multiple of approximately 14x our 2024E EPS estimate. This multiple represents a several turn discount to the large cap medtech comp group as we see BAX revenues growing below the medtech average particularly with hospitals likely to pull back on replacement capital spending. We do not see any major upside revenue growth catalysts for BAX.

Upside/Downside risks to our PO are: 1) whether BAX can create value with its portfolio repositioning (business exits/spins) and 2) deflation/inflation given BAX has outsized exposure to inflationary pressures.

Becton Dickinson (BDX)
Our price objective of $305 is based on 22x our CY24E EPS. We believe this multiple is warranted for a mid-single digit grower with the ability to raise prices in an uncertain microenvironment.

Risks to our PO are: 1) COVID testing could decline quicker than expected, 2) potential delays in Alaris approval, 3) inflation and cost pressures, and 4) slower growth in emerging markets.

Boston Scientific (BSX)
Our PO of $60 is derived from 28x our 2024E EPS estimate, which is a premium to the large cap medtech comp group. We believe this multiple is justified given our view of BSX's accelerating earnings growth outlook based on opportunities to drive above

average top line growth.

Downside risks to our PO are: 1) Watchman slowdown if ABT becomes more competitive than expected, 2) supply chain/inflationary pressures impact margins more than expected, 3) BSX sees a major setback in a clinical trial or product pipeline failure, 4) unexpected COVID related headwinds.

Conmed (CNMD)
Our $125 PO is based on 3.5x EV/Sales multiple on our 2024 sales estimate. This is relatively in line with the SMID-cap comp group average for CNMD which we view as appropriate given CNMD's overall expected revenue growth is similar to the group average in the HSD.

Risks to our PO are: surprises either positive or negative in the growth of CNMD's smoke evacuation business, meaningful progress or lack of progress in margin expansion, larger companies having an ability to contract with hospitals making it harder for CNMD to take share in its base business, and continued COVID or inflation related headwinds.

Dexcom (DXCM)
Our $170 PO is based on 45x our 2025 EBITDA, a premium given DXCM can grow EBITDA faster than mature large caps. High quality large cap names (BSX/SYK) trade at 19x EBITDA. We maintain our Buy rating as we see multi-year, increasingly profitable revenue growth coming from basal with some potential new insights into TAM expansion over the next 1-2 years with the non-insulin product coming to market.

Upside risks are strategic activity, less of an impact than expected from competition, and faster approvals for DXCM's pipeline products. Downside risks are introduction of a pharmaceutical that better treats diabetes, increased competition in glucose sensing, inability to move into new market opportunities or geographies (i.e. setbacks with expected TAM expansion due to regulatory/reimbursement coverage delays), or pricing pressure.

Edwards Lifesciences (EW)
Our PO of $76 is based on a 25x PE multiple on our 2025E EPS. We assume with high single digit revenue growth, good margins/cash flow/balance sheet and some upside TAM potential, EW deserves a 25x forward EPS (two turn premium to SYK).

Risks to our PO are: 1) the TAVR market slows if the TAM is not as big as we expect or new populations do not benefit from TAVR, 2) the mitral/tricuspid market does not materialize, 3) EW faces setbacks with its clinical trials or pipeline, 4) the TAVR market becomes more competitive.

Embecta (EMBC)
Our price objective of $17 is based on 8x CY2025 EPS a discount to large cap value medtech that trades at 10-13x EPS given EMBC's structural declining market.

Upside risks to our PO are: 1) Multiple Daily Injection (MDI) patients decline slower than expected, 2) faster growth in emerging markets, 3) pipeline comes to market quicker than expected, and 4) larger opportunity in Type 2 patient population. Downside risks are: a negative material change in EMBC's cash flow driven by a need to invest more or a slowdown in its markets or further pricing pressure

Inari Medical (NARI)
Our $68 PO (derived using 5x EV/2025E sales) is based on NARI's high growth potential in a large, underpenetrated market where NARI offers among the safest and most effective alternatives for acute pulmonary embolisms and deep vein thrombosis. The EV/sales multiple we apply is in line with NARI's peers. We believe NARI should trade in

line with high growth peers as its market opportunity, growth outlook and margin outlook are similar to those companies'.

Upside risks are if NARI can generate meaningful international sales, significantly beat Street expectations and become consistently profitable quicker than expected. Downside risks to our PO are a failure to meaningfully convert pulmonologists and develop the market, increased competition from new and existing players, and covid.

Inspire Medical (INSP)
Our $230 PO is based on 7x our 2025 rev. With INSP executing and revenue growth remaining strong there are reasons to believe that INSP can eventually achieve profitability. This allows us to assign INSP an EV/Sales at the high end of the medtech SMID group which trades in the 1-7x sales range.

Risks are 1) future competitors could pose a risk, 2) procedure interruptions due to COVID-19, 3) lack of ability to train doctors and have doctors want to do the procedure, and 4) heavier weighted OUS exposure to Germany.

Insulet (PODD)
Our $255 PO is based on 45x our 2025 EBITDA. We use the same multiple we use for DXCM, given PODD is growing EBITDA faster than mature large caps so deserves a premium for its faster profit growth. We maintain our Buy rating as PODD is the clear market leader in the fastest-growing segment of the pump market with a wide moat.

Upside risks are a faster penetration in Type 2 or a greater than expected share gain with Omnipod 5, pharmacy channel, and pay-as-you-go. Downside risks are slowdown in the overall pump market or patients converting from multiple daily injections, pricing pressure, new competitors with patch pumps, or additional competition particularly from AID systems in OUS markets.

Intuitive Surgical (ISRG)
Our $400 PO is based on roughly 53x our 2025E EPS. We think the premium multiple relative to average large cap peers is justified given ISRG's expected mid-teens top-line growth over the next several years, nearly 3x that of the medtech market, and ISRG is well ahead vs competition in one of the most significant growth markets in medtech (soft tissue robotics). ISRG pipeline also justifies our multiple as ISRG is spending over $500m a year in R&D and it's a matter of time before the fruits of these investments show up in estimates.

Downside risks are 1) lower surgical volumes due to covid, 2) slowdown in hospital capital spending, 3) other competitive entrants and 4) supply chain headwinds.

Medtronic (MDT)
Our $100 price objective for MDT is based on 18.5x our calendar 2024E EPS. This multiple is in line with the average medtech multiple 2023 EPS and is warranted for a company with a mid single digit (MSD) growth profile that competes in MDT's markets.

Downside risks to our price objective are 1) RDN data disappoints, 2) slower-than-expected revenue growth from new products, 3) other pipeline setbacks, 4) increased competition or share losses, and 5) China VBP.

Nevro (NVRO)
Our PO of $17 is based on a 1.0x 2025 EV/Sales multiple, which represents the low end of the historical 1-5x EV/Sales range smid cap medtech has historically traded at since sustainable profitability seems far out and there's uncertainty with underlying market growth/share. Upside risks are a material acceleration in the SCS market, a setback at a competitor that helps NVRO, strategic activity, or a material inflection in PDN. Downside

risks are a slowdown in the core SCS business or SCS market, a failure to expand the market for PDN, or new competitive entrants that take market share.

Outset Medical (OM)
Our $3 PO is based on 1x EV / 2024E sales. This multiple is at the low end of smidcap medtech valuations given execution missteps creates risk around revenue estimates and OM is not generating profits.

Upside risks are more rapid expansion in the acute care market and faster uptake than expected in the home care market while reaching expanded gross margins and reaching profitability quicker than expected. Downside risks are if OM is unable to continue expanding its gross margin profile, increased competition from new entrants in both the home or acute dialysis setting, or an inability to grow the home hemodialysis market as previous attempts by competitors have not been overly successful.

Shockwave Medical (SWAV)
Our $250 PO is derived using a 30x EV/2025E EBITDA multiple. This represents a premium given SWAV can grow EBITDA faster than mature large caps. High quality large cap names (BSX/SYK) trade at 20x EBITDA and large cap growth (ISRG) trades at 30x EBITDA.

Downside risks: SWAV's success has gotten the attention of competitors, and while it's not clear how successful a competitive technology would be, it seems quite likely that SWAV will eventually face competition. Other downside risks are any major changes in reimbursement and an inability to expand in new geographies. COVID and staffing challenges are a risk as well.

Silk Road Medical (SILK)
Our PO is $8, which is derived from an 1x EV/2025E Sales estimate assuming a year of cash burn. We use a 1x EV/Sales multiple, the low end of the 1-5x EV/Sales range smid cap medtech has historically traded at, given profitability is far out and there's increased uncertainty given carotid NCD and the recent guide reset. Upside risks are better uptake in TCAR if doctors sense more competition from CAS or the overall market expanding with more awareness. Downside risk are CAS increasing and taking share from TCAR or an impact to TCAR pricing.

Stryker (SYK)
Our $315 PO is based on 27x our 2024 EPS which is a premium to medtech but in line with where higher-quality, higher-growth names trade today on 2024 EPS.

Downside risks to our PO are a slowdown in hospital capital spending, supply chain disruption, or more inflation pressure on costs and materials. Upside risks to our PO are new product launches and continued share gains driving upside to revenue growth. Moderating inflation/improving supply chains could also drive upside.

Tandem Diabetes Care (TNDM)
Our $18 PO is based on a 1x EV/2025E Sales multiple. We use 1x sales, the low end of the 1-5x EV/Sales range smid cap medtech has historically traded at given sustainable profitability is far out along with more competitive pressure.

Upside risks to our PO are driven by increased market share gains, an acceleration in the overall pump market, or less competitive pressure than expected. Downside risks to our PO are increased competition in the pump market, Type 1 pump penetration peaking earlier than expected, the Type 2 opportunity not opening for TNDM, and potential pipeline delays.

Zimmer Biomet (ZBH)

Our $130 PO is based on 16x our 2024E EPS. This multiple is in line with large cap medtech peers. We think in line is appropriate given ZBH is growing revenue and eps in line with average large cap medtech peers.

Upside risks to our PO are 1) orthopedic backlog caused by covid comes through faster than expected, 2) pipeline product adoptions happens quicker than we had modeled and 3) an acquisition that accelerates top-line growth.

Downside risks are 1) a slowdown in the hip/knee market, 2) pressure on margins from supply chain/inflation/ increased pricing pressure in hips/knees and 3) slower than expected benefit from robotic utilization and new product mix and 4) strategic activity that is not well received.

Analyst Certification

I, Travis Steed, 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.

Special Disclosures

BofA Securities is currently acting as financial advisor to Inari Medical Inc in connection with its proposed acquisition of LimFlow SA, which was announced on Nov 1, 2023.

US - Medical Technology & Devices Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Abbott Laboratories	ABT	ABT US	Travis Steed
	Axonics	AXNX	AXNX US	Travis Steed
	Bausch & Lomb	BLCO	BLCO US	Craig Bijou
	Becton Dickinson	BDX	BDX US	Travis Steed
	Boston Scientific	BSX	BSX US	Travis Steed
	Dexcom	DXCM	DXCM US	Travis Steed
	Inari Medical	NARI	NARI US	Travis Steed
	Inspire Medical	INSP	INSP US	Travis Steed
	Insulet	PODD	PODD US	Travis Steed
	Intuitive Surgical	ISRG	ISRG US	Travis Steed
	Medtronic	MDT	MDT US	Travis Steed
	Paragon 28	FNA	FNA US	Craig Bijou
	Procept BioRobotics Corporation	PRCT	PRCT US	Craig Bijou
	RxSight	RXST	RXST US	Craig Bijou
	Shockwave Medical	SWAV	SWAV US	Travis Steed
	Si-Bone	SIBN	SIBN US	Craig Bijou
	Stryker	SYK	SYK US	Travis Steed
	The Cooper Companies	COO	COO US	Craig Bijou
NEUTRAL				
	Baxter International Inc	BAX	BAX US	Travis Steed
	Conmed	CNMD	CNMD US	Travis Steed
	Edwards Lifesciences	EW	EW US	Travis Steed
	GE HealthCare	GEHC	GEHC US	Craig Bijou
	Integer Holdings Corporation	ITGR	ITGR US	Craig Bijou
	Teleflex Incorporated	TFX	TFX US	Craig Bijou
	Zimmer Biomet	ZBH	ZBH US	Travis Steed
UNDERPERFORM				
	Embecta	EMBC	EMBC US	Travis Steed
	Globus Medical	GMED	GMED US	Craig Bijou
	Integra Lifesciences	IART	IART US	Craig Bijou
	Nevro	NVRO	NVRO US	Travis Steed
	Outset Medical	OM	OM US	Travis Steed
	Silk Road Medical	SILK	SILK US	Travis Steed
	Tandem Diabetes Care	TNDM	TNDM US	Travis Steed

Disclosures

Important Disclosures

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

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	234	60.94%	Buy	115	49.15%
Hold	80	20.83%	Hold	36	45.00%
Sell	70	18.23%	Sell	29	41.43%

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.

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

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