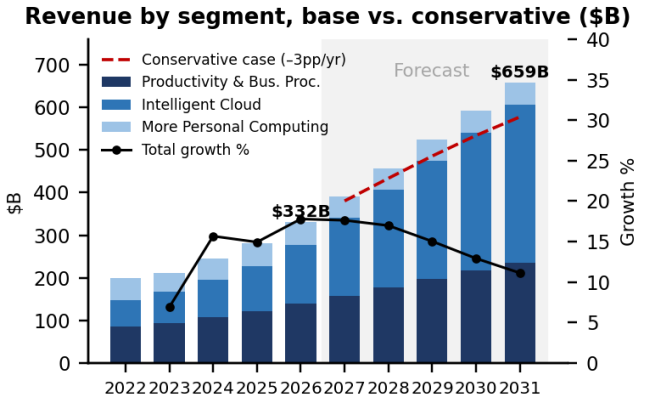
Microsoft (MSFT) – DCF Assumptions: Executive Summary

Joonha Kwon · Investment Banking · Prof. Kisgen · Assignment #1 · September 2026 · All years are fiscal (June year-end) · $ in billions unless noted

$342 / share	$499.70	–32%	9.5%	2.0%	85%	$35.4B
Implied value	Current price (9/8/26)	Implied downside	WACC	Terminal growth	PV of TV / EV	FY26 FCF

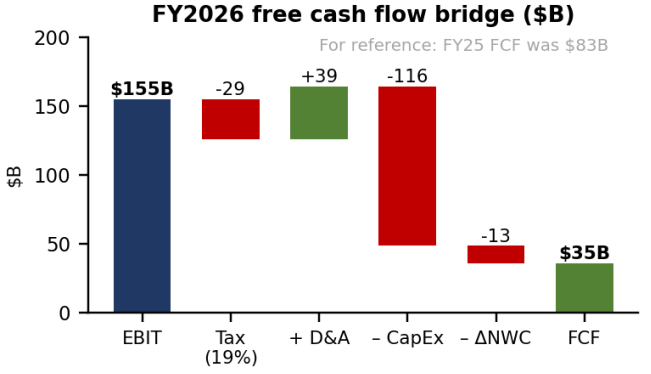
Bottom line: my base case values Microsoft at about $342 a share, roughly a third below the market. The gap is not about the business – it comes from a 9.5% WACC and $850B of CapEx over the next five years. The market is pricing something closer to a 7.5% WACC, or faster growth than I assume.

1. Revenue: cloud does the heavy lifting



- **FY2026 revenue $332B (+18%).** I forecast growth fading from 17.6% to 11.1%, reaching $659B in FY2031.
- **Intelligent Cloud** is the driver: 32% in FY27 (Q1 guidance 33–34%; Azure grew 43% in Q4 and demand still exceeds supply), fading to 14% as Azure passes $100B. **P&BP** 13% → 9% on Copilot seats (30M paid). **MPC** –7% then roughly flat (Windows OEM and Xbox down).
- **Conservative case:** every segment grows 3pp slower each year – about one standard deviation of MSFT's FY23–26 growth. Driver: slower AI monetization / capacity constraints. FY2031 revenue $578B, value $301/share.
- *Historical segments use the recast (FY2025+) structure so growth rates compare like-for-like.*

2. Margins & free cash flow



- **Gross margin is sliding:** 69.8% (FY24) → 68.8% → 67.9% (FY26); five-year average 68.8%. Data-center depreciation is the reason. I hold EBIT margin at FY26's 46.8%.
- **FY26 FCF is $35.4B, down from $83B.** Operating income grew 21%, but CapEx nearly doubled ($65B → $116B). Profit up, cash down – that is the whole story of this valuation.
- **SBC ($12.4B, 3.7% of revenue) is treated as a real cost.** It is already inside EBIT and I do not add it back; I also divide by diluted shares (7,451M). Adding SBC back instead would lift the value ~11% to $380.
- Working capital is negative (unearned revenue > receivables), so growth **adds** ~$5–6B of cash a year.

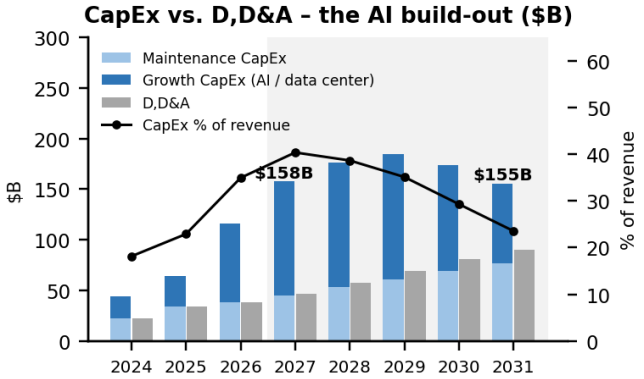
3. WACC: 9.5%

Risk-free rate	4.78%	US 10Y Treasury (FactSet)
Beta	1.08	FactSet 3-yr adjusted
Market risk premium	4.46%	Damodaran implied ERP
Cost of equity	9.60%	CAPM
Cost of debt (pre / after tax)	5.52% / 4.47%	Rf + 74bp MSFT 10-yr CDS
Weights E / D	98.9% / 1.1%	Market values
WACC	**9.54%**	

Why MSFT's own beta, not a comps un-lever / re-lever

- Microsoft's own regression beta is reliable: huge, liquid, decades of price history. The comps method exists for firms with a short history or a changing capital structure – neither applies here.
- Debt is 1% of capital. Re-levering a peer beta at D/E of 1.1% moves it by ~0.01 – pure noise.
- There is no clean peer set. Apple (hardware), Google/Meta (ads), Amazon (retail) would add other businesses' risk rather than remove estimation error.
- The adjusted beta already pulls toward 1.0 (⅔ raw + ⅓ × 1.0), which fits the "long-term rates" requirement.
- It is not the swing factor: beta 1.00–1.20 gives $316–$362.

4. CapEx & AI spending



- **FY27 CapEx $158B (+36%), FY28 $176B (+10%).** Management said FY27 CapEx grows year over year and Q1 alone is >$50B; Azure demand still exceeds supply.

How I split maintenance vs. growth CapEx

- Maintenance = D&A as a % of revenue (11.6% in FY26). The 10-K does not disclose the split, so I use depreciation as the spend needed just to stand still.
- Growth = total CapEx – maintenance. It was 50% of the total in FY24 and 67% in FY26. I forecast it with a growth path: +45% FY27, +10% FY28, flat FY29, then –15% / –25% as the build-out matures. About two-thirds of it is short-lived GPUs/CPUs.
- D&A rolls forward as 90% of last year's D&A + 10% of last year's CapEx, so heavy spending feeds back into depreciation.

- **On AI spending:** AI infrastructure is the single largest use of Microsoft's cash – 35% of revenue in FY26 and ~40% in FY27. Every $10B of FY27 CapEx is worth about $1.20 a share. Whether it earns its cost of capital is the question this valuation hinges on.
- *Cash CapEx (additions to PP&E) excludes finance leases; management's ~$175B calendar-2026 figure includes them.*

5. Terminal value & sensitivity

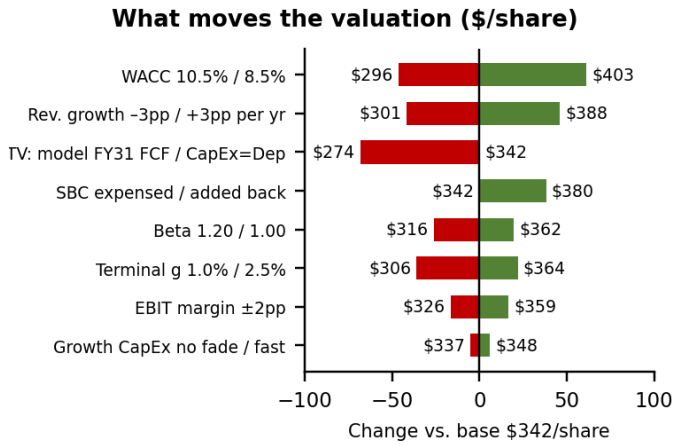
- FY2031 terminal FCF = $659B × 46.8% EBIT margin × (1 – 19%) = **$250B**, with CapEx = D&A and ΔNWC = 0 per the assignment. TV = $3.4T, which is **85% of enterprise value**.

WACC ↓ g →	1.0%	1.5%	2.0%	2.5%
8.54%	$354	$377	$403	$434
9.04%	$329	$348	$371	$396
9.54%	$306	$323	**$342**	$364
10.04%	$286	$301	$318	$336
10.54%	$268	$281	$296	$312

Implied share price; base case in bold. Current price $499.70 sits above every cell – with these cash flows it implies a WACC of about 7.4% at g = 2%.

- **Caveat:** my explicit FY2031 FCF is only $190B because CapEx is still 1.7× D&A. The CapEx = D&A rule adds $59B to terminal FCF, worth ~$68/share. Without it the value would be ~$274.

6. Top 3 assumptions that move the value



1. **WACC.** ±1pp moves value from $296 to $403. Nothing else comes close, and the market is clearly using a lower number than 9.5%.
2. **Revenue growth.** ±3pp a year gives $301–$388. It also feeds straight into the terminal FCF, so it counts twice.
3. **How terminal FCF is defined (CapEx = D&A) and SBC.** Together a $274–$380 range. These are modelling choices, not forecasts, yet they matter as much as growth.

Surprise: explicit-period CapEx barely moves the answer ($337–$348) because the terminal value assumes CapEx = D&A. That is a weakness of the model, not evidence that CapEx doesn't matter.

7. Surprises & risks

- **Profit vs. cash:** operating income +21%, free cash flow –57% in the same year.
- **85% of value is terminal.** The five-year forecast is almost decoration; g and WACC decide everything.
- **No credit for non-operating assets.** The OpenAI and Anthropic stakes are not in the EV → equity bridge, so the true gap to $500 is smaller than –32%.
- **Accounting tailwinds:** extending data-center lives (15 → 25 yrs) lowers depreciation and flatters margins. If GPUs need replacing every 5–6 years, "growth CapEx" may never fade.

8. AI tasks

(1) Where AI gave me a wrong number

When I asked AI to draft the SBC note, it wrote: "treating SBC as a cash cost would cut FY26 FCF from $35.4B to $23.0B (–35%)." I caught it because my FCF starts from EBIT, and SBC is already an expense inside EBIT – subtracting it again double counts. Correct answer: $35.4B is already net of SBC; the alternative is to add SBC back, which gives $47.8B and about +11% on the share price. I rewrote the note in the Excel.

(2) AI's strongest bear case vs. my base case

AI: *"Azure's 43% growth is supply-constrained demand. Once capacity catches up, price competition from AWS/Google and cheaper open models compress growth and margins. Two-thirds of CapEx is GPUs with 5–6 year lives, so growth CapEx never fades – it becomes replacement CapEx. The 25-year useful-life change is inflating reported margins. Your DCF already says –32%; the base case is still too kind."*

My response: Commercial RPO of $678B (+84%) is contracted demand, not a supply mirage, and it gives multi-year visibility. I hold margins flat at FY26 levels, so no expansion is assumed. I agree CapEx is the real risk, which is why the conservative case ($301) and the "no fade" scenario are in the model. But a AAA company earning $134B a year, trading at 28× earnings, is not being priced for this bear case. The disagreement is about WACC and terminal growth, not whether the business works.

9. If I had 4 more hours

- **Cross-check the terminal value with an exit multiple.** My perpetuity TV implies ~13.5× terminal FCF, or only ~8.5× FY2031 EBITDA – versus ~19× today. Applying a range of EV/EBITDA exit multiples from large-cap software / cloud comps would likely give a higher TV, which is exactly why it is worth testing: it tells me whether g = 2% is too conservative or the market multiple is too rich.
- **Run a comps beta.** Un-lever peer betas (Oracle, Google, Amazon, Salesforce, ServiceNow), re-lever at MSFT's ~1% debt, and compare with the 1.08 I used. I expect 1.0–1.2, but showing it beats asserting it. The stock implies a WACC around 7.5%, so this is where the value gap lives.
- **Fix the bridge:** add the OpenAI/Anthropic stakes and finance-lease debt to EV → equity.
- **Model CapEx bottom-up:** GPU replacement cycle vs. long-lived shells, so terminal CapEx/D&A is a forecast rather than a rule.
- **Mid-year discounting** and a stub period from the 9/8 valuation date.

10. So what: what would have to be true to justify $500

- **A much lower discount rate.** At g = 2%, today's price implies a WACC of about 7.4% – roughly 2pp below my CAPM number. Nothing else in the model closes the gap on its own.
- **Or several of my conservative choices relaxed at once.** WACC 8.0% and g 2.5% gets to $483; add the SBC add-back and it is $535. The market is effectively doing all three.
- **My read:** this model is closer to a floor than a fair value – it ignores non-operating assets, expenses SBC and uses g = 2% for a business still growing 18%. I would call Microsoft fully valued rather than 32% overvalued. The real bet you make at $500 is that ~$850B of AI CapEx earns its cost of capital.