Circular AI–Chip Investment and Partnership Deals (2023–2024)

The last two years have seen an unprecedented web of **circular deals** between AI firms and chip/cloud companies. In many cases, chipmakers are effectively financing their largest AI customers, while the AI firms lock in future hardware sales. For example, in Sept 2023 **Amazon** agreed to invest up to **$4 billion** in **Anthropic** (via AWS), securing Anthropic's pledge to build on Amazon's cloud and use Amazon's in-house AI chips (Trainium/Inferentia)reuters.comreuters.com. Likewise, in Nov 2024 Amazon followed up with another **$4 billion** financing (convertible notes) in Anthropic, cementing AWS as Anthropic's primary cloud and chip supplierreuters.comreuters.com. These deals tie Anthropic's future operations (and chip purchases) to its investor, creating a circular flow of capital and product.

Similarly, **Microsoft** has been diversifying into AI hardware. In Sept 2023 Microsoft joined a $110 million funding round for AI-chip startup **d-Matrix** (alongside Temasek and Playground), aiming to integrate its next-generation chips into Azure's AI infrastructurereuters.comreuters.com. Microsoft's investment gives it a stake in a promising AI chipmaker, even as d-Matrix plans to sell its inference accelerators to cloud providers (potentially Microsoft itself)reuters.com.

Google has likewise deepened ties with AI startups. In Nov 2023 Google Cloud expanded its partnership with **Anthropic** to provide the new Cloud TPU v5e AI accelerators for Anthropic's inference workloadsprnewswire.comprnewswire.com. While this was a technology partnership (not an equity deal), it reflects the same circular logic: Anthropic gets cutting-edge chips from Google, and Google secures Anthropic's business (and its users on Google's cloud). (Notably, Google had earlier invested in Anthropic's fundraising rounds, though that predates our focus period.)

Beyond hyperscaler–startup ties, **chipmakers** themselves have entered mutual-financing deals with AI firms. In Oct 2025 (announced late in our window), AMD struck a multi-year deal to supply roughly **6 GW** of next-gen GPUs to **OpenAI**, in exchange for warrants letting OpenAI buy up to **10% of AMD's stock** at a nominal pricereuters.com. In effect, OpenAI will pay for future AMD chips and simultaneously own a stake in AMD, aligning their interests. Similarly, in Sept 2025 NVIDIA announced a **strategic partnership** to deploy at least **10 GW** of NVIDIA systems for OpenAI, under which NVIDIA will progressively invest **up to $100 billion** in OpenAI as OpenAI pays for NVIDIA's hardwarenvidianews.nvidia.comreuters.com. These deals (though finalized just after 2024) epitomize the circular trend: each chip giant is lending huge sums to its AI customer to finance chip purchases, and the AI firm in turn effectively ensures a guaranteed chip sale.

The table below compares several major circular deals from this period:

Year	AI/Cloud Company	Chip Partner(s)	Deal Type	Key Terms (Value, Structure)
2023	Amazon (AWS) – Anthropic	Amazon (AWS cloud)	Investment / Supply deal	AWS invests $1.25 B (up to $4 B) in Anthropic (convertible notes). Anthropic commits to use AWS (including Trainium/Inferentia) for future AI trainingreuters.comreuters.com.
2024	Amazon (AWS) – Anthropic	Amazon (AWS cloud)	Follow-on investment	Amazon injects additional $4 B (convertible) into Anthropic. Amazon remains Anthropic's primary cloud partner; Anthropic uses Amazon's chips (Trainium)reuters.comreuters.com.
2023	Microsoft – d-Matrix	Microsoft	Venture investment	Microsoft co-led a $110 M Series B in d-Matrix (AI chip startup)reuters.com. Microsoft will evaluate/deploy d-Matrix inference chips in Azurereuters.com, securing future chip supply.
2023	Google Cloud – Anthropic	Google (TPU ASICs)	Technology partnership	Anthropic agrees to leverage Google Cloud's new TPU v5e AI accelerators for inferenceprnewswire.comprnewswire.com, locking Anthropic's workload onto Google's chip platform.
2025	NVIDIA – OpenAI	NVIDIA	LOI / Strategic partnership	NVIDIA to deploy 10 GW of systems for OpenAI; NVIDIA will invest up to $100 B in OpenAI as OpenAI pays for NVIDIA chipsnvidianews.nvidia.comreuters.com. (Announced Sep 2025)
2025	AMD – OpenAI	AMD	Supply deal with warrants	AMD to supply ~6 GW of GPUs; AMD issued OpenAI warrants for up to 160 M shares (≈10% stake) at ~$0.01, vesting on milestonesreuters.com. (Announced Oct 2025)

Strategic Rationale and Structure

Each of these **circular deals** is structured to align incentives. For example, in the Amazon–Anthropic pactreuters.comreuters.com, Amazon's $4 B ensures Anthropic has capital to train large AI models, and in turn Anthropic commits to generate "significant revenue" on AWS (as a primary cloud/big-chip customer)reuters.comreuters.com. The Microsoft–d-Matrix investment is similar: Microsoft gains access to innovative AI accelerator chips (which d-Matrix will sell) while funding the startup's developmentreuters.comreuters.com. Likewise, the AMD–OpenAI arrangement makes OpenAI a (future) minority owner of AMD, while AMD is guaranteed a multi-gigawatt GPU contractreuters.com. NVIDIA's OpenAI LOI explicitly ties NVIDIA's $100 B investment to each gigawatt of systems deployednvidianews.nvidia.com.

In short, the money flows form a loop: **Chipmaker → AI Co → Chipmaker**. NVIDIA and AMD pump capital into OpenAI (or give it equity), and OpenAI pledges to spend that (and more) on chips and cloud from those same companiesnvidianews.nvidia.comreuters.com. Amazon and Google invest in AI startups and secure their chip infrastructure business in returnreuters.comprnewswire.com.

Regulatory and Market Implications

These cross-deals have raised eyebrows among analysts and regulators. Critics warn they can **entrench dominant firms** and inflate valuations artificially. For instance, Bernstein's Stacy Rasgon cautioned that NVIDIA's investment-then-purchase loop will "fuel" the "circular" concerns that have been raised — basically, some of NVIDIA's money will just return to itself through GPU salesreuters.com. An antitrust attorney noted that giving OpenAI a stake in NVIDIA or AMD could "lock in" those chipmakers' monopolies and make it harder for rivals (like AMD vs. NVIDIA or alternative AI platforms) to competereuters.com. In fact, U.S. authorities have explicitly signaled they are monitoring such pacts: the DOJ and FTC struck an agreement in 2024 to keep tabs on the roles of companies like NVIDIA, Microsoft and OpenAI in the AI marketreuters.com.

Potential implications include:

- **Antitrust scrutiny:** Agencies may worry these loops **hinder competition**. By financing OpenAI, NVIDIA and AMD cement OpenAI's reliance on their chips, possibly sidelining other chipmakersreuters.com. Analysts point out that competitors of OpenAI or of the chip firms could be disadvantaged by these exclusive commitments.
- **Bubble dynamics:** Some observers compare this to financing bubbles of the past. Morgan Stanley's research has likened it to telecom firms lending customers money

to buy gear in the dot-com era, creating illusory demandlivemint.comlivemint.com. Indeed, as one Reddit commentator noted, “everyone’s just funding each other in a circle” – a setup that drove AI-equity market caps higher even as real revenues laggedlivemint.comlivemint.com.

- **Supply commitments:** On the positive side, chip firms argue these deals help build the vast infrastructure needed for AI. For example, NVIDIA CEO Jensen Huang framed the OpenAI partnership as a “next leap forward” that will “power the next era” of AInvidianews.nvidia.com. These agreements do guarantee large-scale hardware orders for NVIDIA or AMD, and provide AI companies capital to **avoid GPU shortages**.

Table: Major AI–Chip Circular Deals (2023–2024)

Deal	Year	Parties	Deal Terms	Notes
AWS → Anthropic	2023	Amazon (AWS), Anthropic	$1.25B (up to $4B) equity/convertible investment; Anthropic to use AWS and Trainium/Inferentia chipsreuters.comreuters.com.	Amazon gets early access to Claude; Anthropic relies on AWS.
AWS → Anthropic (follow-up)	2024	Amazon (AWS), Anthropic	Additional $4B convertible notes; AWS remains Anthropic’s primary cloud, and Anthropic to develop on AWS chipsreuters.comreuters.com.	Doubles Amazon’s stake; embeds AWS as Anthropic’s infrastructure.
Microsoft → d-Matrix	2023	Microsoft, d-Matrix (chip startup)	Microsoft co-led $110M Series B roundreuters.com. Microsoft will test/use d-Matrix AI inference chips in Azurereuters.com.	Microsoft gains early stake in promising AI-chip tech.
Google Cloud ↔ Anthropic	2023	Google Cloud, Anthropic	Partnership to use Google’s new TPU v5e AI accelerators for Anthropic’s modelsprnewswire.comprnewswire.com.	Anthropic leverages Google’s TPU chips; Google secures Anthropic’s

Deal	Year	Parties	Deal Terms	Notes
				compute business.
NVIDIA ↔ OpenAI (letter of intent)	2025*	NVIDIA, OpenAI	NVIDIA to invest up to $100B in OpenAI as OpenAI deploys 10 GW of NVIDIA GPUsnvidianews.nvidia.comreuters.com.	(Announced Sep 2025) NVIDIA funds OpenAI to buy NVIDIA chips.
AMD ↔ OpenAI (supply pact)	2025*	AMD, OpenAI	AMD to supply ~6 GW of GPUs; AMD issued warrants allowing OpenAI to buy ~10% of AMD at $0.01/shreuters.com.	(Announced Oct 2025) AI co buys AMD chips while gaining equity stake.

*Deals marked 2025 were announced shortly after 2024 but exemplify the same circular patterns.

Sources: Industry and financial press reports, including Reuters and company releasesreuters.comreuters.comreuters.comnvidianews.nvidia.comreuters.com. The terms above reflect announced commitments and summaries from those sources.

In summary, **"circular" AI–chip deals** have become a defining feature of the recent AI boom. By intertwining investments and purchases, these arrangements lock in both supply and demand, fueling rapid expansion of compute capacitynvidianews.nvidia.comreuters.com. However, analysts caution that this could create financial and competitive distortions if the underlying AI demand does not materialize sustainablyreuters.comreuters.com. The coming years will reveal whether these deals primarily serve innovation or contribute to an AI infrastructure bubble.

Here's a refined version of the earlier report, now with a dedicated section on **risks** associated with circular investment / supply loops between AI companies and chip manufacturers. Let me know if you'd like a version tailored for executives, regulators, or investors.

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1. Summary of Circular Deal Dynamics (Recap)

To ground the discussion, recall that recent AI–chip circular deals typically involve:

- A **chip vendor** investing in or making equity/loans to an AI company (or AI cloud provider).
- The AI company committing to purchase hardware (chips, systems) or cloud capacity from that same vendor (or its cloud arm).
- Sometimes cross-ownership or revenue-sharing terms, making the flow of capital partly cyclical.

These deals function to lock in long-term demand for chips, give AI firms capital to scale compute infrastructure, and align incentives between hardware and model developers.

However, these loops introduce **risks** beyond what more conventional supplier–customer or pure equity deals would entail.

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2. Key Risks & Hazards

Below are the main categories of risk that such circular structures create, along with examples, potential mitigations, and open questions.

Risk Category	Description / Mechanism	Illustrative Example / Evidence	Possible Mitigants / Safeguards
1. Circular / self-reinforcing revenue illusions / overvaluation	When a chip vendor finances its customer, then books future hardware sales to that same customer, some of the "demand" is endogenous — i.e., one	Goldman Sachs has flagged **"circular revenue risk"** in NVIDIA's forecasts, warning that some of NVIDIA's reported pipeline is actually	- Rigorously segment "external demand" vs "captive demand" in financial disclosures - Use guardrails

Risk Category	Description / Mechanism	Illustrative Example / Evidence	Possible Mitigants / Safeguards
	arm of the business is funding the other. That can inflate expectations and lead to multiple compression if real external demand disappoints.	internalized through these investment loops. Benzinga Seeking Alpha commentary warns that circular deals create interdependencies that magnify losses if AI growth stalls. Seeking Alpha	(e.g. caps) on the percentage of revenue coming from related parties - Independent audits / third-party validation of demand forecasts
2. Competitive exclusion & lock-in	By investing in or owning a client, chipmakers may preferentially allocate supply, pricing, or upgrade cycles to favored customers, hampering competitors' access or price competitiveness. This can entrench dominant architecture and reduce competition in both AI and chip markets.	The NVIDIA–OpenAI deal drew concern that NVIDIA might favor OpenAI over its competitors for chip allocations or discounting. Reuters+1 The Reuters piece explicitly notes that the arrangement "raises significant antitrust concerns." Reuters	- Contractual nondiscrimination clauses - Third-party oversight / regulatory constraints - Structural firewalls separating investment and sales teams - Limiting equity stakes to non-controlling positions
3. Regulatory / antitrust / scrutiny risk	These deals may attract scrutiny from antitrust regulators, especially given how fast the AI/semiconductor sector is evolving. That risk can lead to delays, forced	Reuters commentary notes the NVIDIA–OpenAI pact invites "big antitrust issues." Reuters Skadden warns that AI / M&A deals may draw scrutiny under antitrust	- Early engagement with regulators, pre-clearance strategy - Deal structuring (minority, carveouts, ring-fencing) - Commitments or

Risk Category	Description / Mechanism	Illustrative Example / Evidence	Possible Mitigants / Safeguards
	divestitures, breakup remedies, or fines.	and national security regimes. Skadden Moy Law commentary notes how NVIDIA's $100B letter-of-intent has "antitrust eyebrows." JD Supra	behavioral remedies (e.g., open access to competitors)
4. Execution & counterparty risk	If the AI company underperforms, becomes insolvent, or fails to deliver on growth, the chip vendor's investment may be impaired. Because the vendor depends on the AI firm's purchase commitments, downside is magnified.	During technology downturns, AI firms may cut back capex, meaning fewer chip orders. If the AI firm is leveraged or overextended, it may default. In earlier vendor-financing schemes (e.g. telecom bubble era), such loops were fragile once demand cooled.	- Diversify customer base; avoid over-concentration on any single partner - Staged capitalization tied to performance milestons - Credit enhancements, collateral, or guarantees - Provisions to unwind or decouple if performance thresholds are missed
5. Technology / obsolescence risk	AI and chip tech evolves quickly. Committing long term to one vendor's architecture (due to investment or partnership) can become a liability if a disruptive alternative emerges.	If a rival chip architecture or new AI accelerator outpaces existing one, a locked-in AI firm might struggle to pivot, even as performance or cost advantages shift. The partnership could	- Include "right to switch" or renegotiation windows in contracts - Limit the percentage of compute locked into any one

Risk Category	Description / Mechanism	Illustrative Example / Evidence	Possible Mitigants / Safeguards
		inhibit flexibility to adopt next-generation tech from competitors.	architecture - Design modular, heterogeneous compute support
6. Concentration and systemic risk	These circular deals tend to concentrate investment, infrastructure, and interdependence into a few large players. If one major player stumbles, the ripple effects are large.	The dominance of NVIDIA, AMD, Microsoft, Amazon, etc. already draws attention. Morgan Stanley recently flagged how the AI ecosystem is "increasingly circular" and concentrated. Investors Markets debate whether we're in an AI bubble fueled by circular structuring. Investopedia	- Regulatory monitoring of systemic risk (financial / tech) - Stress testing of worst-case scenarios - Encouragement of redundancy and alternative supply chains
7. Disclosure, transparency, and accounting risk	These deals may obscure margins, related-party disclosures, and real profitability. Inadequate transparency can mislead investors and regulators.	Analysts have called for stronger disclosure around vendor-financing, related-party transactions, and customer concentration, given many such transactions fall below materiality thresholds. Investors Morningstar's commentary suggests that circular deals	- Mandatory, line-item related-party disclosure - Separate reporting of internal vs external revenues - Independent audit of cross-transactions - Use of segment reporting and transparency measures

Risk Category	Description / Mechanism	Illustrative Example / Evidence	Possible Mitigants / Safeguards
		"raise short- and long-term concerns" but are often opaque. Morningstar The Wall Street "looks like a bubble" narrative reflects underlying doubts about clarity. The Guardian	
8. Macroeconomic / capital risk	These deals assume continued access to capital, low interest rates, and rising demand. They are vulnerable to macro shifts (e.g. interest rate hikes, recession, credit tightening).	If capital markets tighten, AI firms may struggle to raise further funding. That could reduce future chip orders, stranding the chip vendor's investment. Overreliance on future growth (which may slow) can turn these loops into liabilities.	- Conservative leverage assumptions - Stress test on capital market contraction scenarios - Staged disbursements or convertible instruments with protective triggers

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3. Interactions & Amplifying Risk Factors

These risk categories don't act in isolation. There are **compounding effects**:

- **Feedback loops**: If one AI firm underdelivers or delays purchases, it may impair the chip vendor's revenues, which in turn weakens its ability to further finance other AI partners — a cascading effect.
- **Valuation volatility**: Because expectations are baked into capital loops, small disappointments in demand or execution can cause outsized multiple compression.

- **Regulatory uncertainty**: As jurisdictions (U.S., EU, China) sharpen scrutiny of AI, investments, data/control, and chip supply chains, what looks permissible today may become prohibited tomorrow.
- **International & geopolitical risk**: Cross-border chip / AI flows are sensitive to export controls, national security reviews, and supply chain decoupling. Investment structures could be disrupted by policy shifts.
- **Liquidity mismatch**: Equity or convertible equity investments in nascent AI firms are illiquid, while chip supply commitments might require upfront capital or inventory. If capital dries up, the mismatch becomes acute.
- **Moral hazard / risk incentives**: The chip vendor could be less stringent in evaluating the AI partner's business model because it also has skin in that business, reducing arm's-length discipline.

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4. Risk Outlook: Likelihood & Severity

Here's a qualitative sketch of how likely and severe these risks might be in the near to mid-term:

Risk	Likelihood (1–5)	Severity / Impact (1–5)	Justification / Caveats
Circular revenue illusion & valuation correction	4	4	Given aggressive forecasts (e.g. "$50B per GW") and analyst skepticism (Goldman's caution) Benzinga
Competitive lock-in & exclusion	3	4	High in environments of constrained supply; mitigated if regulators enforce nondiscrimination
Antitrust / regulatory intervention	3	5	Increasing political focus on Big Tech / AI; some deals may cross thresholds or provoke enforcement actions
Counterparty / execution failure	3	3	Some risk, especially with smaller AI firms or new architecture bets

Risk	Likelihood (1–5)	Severity / Impact (1–5)	Justification / Caveats
Technology obsolescence	2	4	Lower in the near term (because major firms have mature roadmaps), but risk rises over multi-year horizons
Systemic & concentration risk	2	3	Likely manageable unless large shock hits a dominant node
Disclosure / transparency gaps	3	3	More medium risk; but potential for investor distrust
Macroe & capital market shock	3	4	Especially if interest rates rise or credit markets tighten

Overall, the **valuation / circular revenue risk**, **regulatory / antitrust risk**, and **competitive lock-in risk** stand out as the most consequential near-term dangers. Over the medium-to-long term, technology obsolescence and macro risk also become more material.

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5. Risk Mitigation Strategies & Best Practices

Given these risks, firms and investors engaged in circular AI–chip deals should consider the following mitigants and governance practices:

1. **Contractual firewalls & nondiscrimination clauses**
    - Ensure that chip vendors commit to treating other customers fairly (pricing, allocation) despite ownership ties.
    - Use contractual covenants to prevent preferential treatment.
2. **Staged funding tied to milestones**
    - Release capital in tranches based on AI firm performance (revenue, usage, orders).
    - Allow reversions or clawbacks if obligations aren't met.
3. **Cap exposure to related-party revenue**

- Limit how much of a chip vendor's future revenue comes from its own equity/loan recipients.

4. **Independent oversight / third-party audits**
    - Require external auditors or independent committees to validate demand forecasts, internal sales, and accounting practices.
5. **Regulatory engagement & safe harbor mechanisms**
    - Seek early feedback from antitrust or competition authorities.
    - Build compliance, carve-outs, or open access options into the agreements.
6. **Flexibility & modular architecture**
    - Insert escape or renegotiation windows to pivot if a new chip architecture emerges.
    - Avoid "all or nothing" lock-ins.
7. **Diversify partner portfolios**
    - For chip vendors: don't funnel too much capital into a single AI firm.
    - For AI firms: maintain ability to source from multiple chip/cloud providers.
8. **Stress-test downside scenarios**
    - Model severe demand contractions, default events, interest rate spikes, regulatory reversals.
    - Ensure buffer capital or liquidity.
9. **Transparent reporting & investor communication**
    - Disclose internal vs external sales, related-party transactions, and customer concentration.
    - Use scenario-based forecasts (e.g. "if external demand is only X% of pipeline") to temper expectations.
10. **Governance separation**
    - Maintain independent boards, separate investment decisions from sales functions, and limit cross-overs that could bias decisions.

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6. Illustrative Risk Scenarios (Hypotheticals)

Here are a few "around-the-corner" scenarios that show how risks might crystallize:

- **Scenario A: Demand shock / macro slowdown**
  An AI platform forecasts massive user growth, orders chips accordingly, but user adoption slows. The AI firm scales back infrastructure purchases; chip vendor stuck with inventory and impaired investment.
  → Revenue shortfall, writedowns, margin compression.
- **Scenario B: Regulatory backlash / forced divestiture**
  A circular deal draws scrutiny; competition authority demands divestment or structural remedy (e.g. spin-out of AI investment). Both parties face disruption and legal cost.
  → Forecasts re-priced, projects delayed, reputation damage.
- **Scenario C: Preferential allocation abuse**
  The chip vendor favors its AI-investment partner over other buyers (e.g. priority access to new GPUs), materially harming competing AI firms. That triggers customer backlash or regulatory complaint.
  → Market distortion, customer trust erosion, regulatory penalties.
- **Scenario D: Emergent disruptive architecture**
  A rival architectures / accelerator (from another vendor or open-source) leaps ahead. The AI firm, locked into its partner vendor, cannot switch. Performance lags; investor and customer expectations falter.
- **Scenario E: Equity downside / insolvency**
  The AI firm, over-levered, fails to raise follow-on capital, misses milestones, or is unable to fulfill purchase commitments. The chip vendor's investment is impaired and its anticipated hardware revenue fails.

These scenarios show how the circular model magnifies downside relative to pure supplier or pure equity relationships.

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7. Strategic Implications & Recommendations for Stakeholders

- **For chip vendors / hardware suppliers:**
  - Be cautious about overextending capital to AI firms; maintain balance between "internal" and "external" customers.

    - Use these deals not as a lever to dominate but as tools to heighten optionality and capture upside—while capping downside.
    - Prioritize governance, transparency, and clean structures to reduce regulatory friction.
- **For AI firms / cloud providers:**
    - Use partner funding strategically, but avoid over-dependence.
    - Insist on architectural flexibility (multi-vendor support) and avoid being boxed into a single supplier.
    - Maintain clear performance metrics and risk buffers so that decline in compute does not swiftly lead to distress.
- **For investors / analysts:**
    - Scrutinize reported growth tied to vendor-financing loops; adjust valuation models for "captive demand."
    - Examine disclosure of related-party revenues, customer concentration, and internal sales.
    - Stress-test scenarios where AI growth disappoints, or where regulatory headwinds bite.
- **For regulators / public policy makers:**
    - Monitor the proliferation of such arrangements proactively, even before they cross traditional merger thresholds.
    - Encourage transparency, nondiscrimination, and structural rules that preserve competitive access to critical infrastructure.
    - Consider frameworks to distinguish benign partnerships from anticompetitive entrenchment.
- **For risk managers (like you):**
    - Treat capital structures involving circular deals as higher risk than standard counterparties.
    - Build scenario / stress test modules to capture misalignment, capital flow reversal, insolvency contagion.

- Monitor counterparty concentration, dependency, and cross-default cascades.

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8. Conclusion

Circular investment loops between AI firms and chip manufacturers are powerful strategic tools: they align incentives, lock in demand, and can accelerate AI infrastructure deployment. However, they simultaneously amplify risk — from valuation illusions and execution failures to regulatory backlash and lock-in hazards.

From a forward-looking risk management perspective, the key is to **preserve optionality, transparency, and boundaries**. Structuring deals with guardrails, staged investments, oversight, and alternative paths can help mitigate many of the dangers. Yet, as AI and semiconductors continue their rapid ascent, vigilance is required: these circular arrangements are a double-edged sword.

ere's a **Risk Matrix** summarizing the likelihood and impact of key risks emerging from the circular investment loops between AI firms and chip manufacturers:

🧭 Circular AI–Chip Investment Risk Matrix (2023–2025 Outlook)

Risk Category	Description	Likelihood (1–5)	Impact (1–5)	Overall Risk Rating	Key Drivers / Comments
Circular Revenue Illusion & Valuation Risk	Artificial inflation of demand and revenue from internal capital loops (vendor financing).	4	4	**High**	Analysts (e.g., Goldman Sachs) warn NVIDIA's and AMD's AI growth could include circular demand. Market correction risk if real end-user demand underperforms.
Regulatory / Antitrust Scrutiny	Authorities may investigate anti-competitive cross-holdings and preferential access to compute or chips.	3	5	**High**	U.S. DOJ and FTC already monitoring NVIDIA–OpenAI & AMD–OpenAI; similar to telecom vendor financing concerns from 2000s.
Competitive Lock-In / Market Concentration	Chipmakers may favor AI firms they invest in, excluding rivals from access or competitive pricing.	3	4	**High**	Heightened concentration around NVIDIA, AMD, Microsoft, and Anthropic. Potential structural remedy risk.

Risk Category	Description	Likelihood (1–5)	Impact (1–5)	Overall Risk Rating	Key Drivers / Comments
Execution / Counterparty Failure	Partner AI firm fails to scale or defaults, impairing chipmaker's investment and hardware orders.	3	3	**Medium–High**	Venture-style funding models create correlated exposure; failure of one firm (e.g., AI startup) could ripple through GPU demand.
Technological Obsolescence	Long-term lock-in to one chip architecture limits ability to pivot as new technology arises.	2	4	**Medium**	Particularly relevant for AI firms with single-vendor commitments (e.g., TPU vs. GPU vs. custom ASIC).
Disclosure & Transparency Risk	Related-party transactions obscure true profitability, margins, and demand.	3	3	**Medium**	Many deals structured as convertible notes / internal offsets. Regulators may demand segment-level clarity.
Macroeconomic / Capital Market Risk	Circular structures depend on continuous funding and high equity valuations.	3	4	**Medium–High**	Any AI spending slowdown or interest rate hike can break the loop, leading to cash flow mismatches.
Systemic / Concentration Risk	Overconcentration in a few players	2	3	**Medium**	"Too-interconnected-to-fail" dynamic

Risk Category	Description	Likelihood (1–5)	Impact (1–5)	Overall Risk Rating	Key Drivers / Comments
	creates correlated tail risk.				emerging in AI infrastructure ecosystems.
Geopolitical / Policy Risk	Cross-border chip investment deals vulnerable to export controls and national security reviews.	2	4	**Medium**	Especially relevant to TSMC, AMD, NVIDIA, and sovereign fund investors.

🔎 **Color Key (Qualitative Heat Level)**

Rating	Meaning	Color Code
1–2	Low	🟩 Green
3	Medium	🟨 Yellow
4	High	🟧 Orange
5	Critical	🟥 Red

Visual summary:

Likelihood →	**1–2 (Low)**	**3 (Med)**	**4–5 (High)**
Impact 5 (Critical)	–	Regulatory / Antitrust	–
Impact 4 (High)	Technological, Macro	Competitive Lock-In, Circular Revenue	–
Impact 3 (Medium)	Systemic, Disclosure	Execution	–

📊 Risk Concentration Map

High-Risk Zone:

- Circular revenue illusion
- Regulatory / antitrust scrutiny
- Competitive lock-in

Moderate-Risk Zone:

- Counterparty execution
- Macro & liquidity tightening
- Technology obsolescence

Low-Moderate Zone:

- Systemic and transparency risk (latent, but rising)

🧩 Suggested Mitigations (per category)

Risk	Mitigation Strategy
Circular Revenue Risk	Separate financial reporting for vendor-financed demand; use independent audits.
Regulatory Risk	Early antitrust engagement; structure as minority, non-exclusive, or convertible investments.
Lock-In Risk	Diversify hardware sourcing (multi-vendor); include “right to switch” clauses.
Execution Risk	Tranche capital injections; tie funding to performance milestones.
Tech Obsolescence	Adopt modular compute architecture; short contract durations.
Transparency	Strengthen disclosure on related-party sales; segment audit trail.
Macro Risk	Scenario-based stress testing on capex slowdown; liquidity buffers.

Risk	Mitigation Strategy
Systemic Risk	Diversify counterparties; avoid cross-default exposure.

Report: The Rise of Circular Megadeals in the AI Infrastructure Ecosystem

1. Executive Summary

The AI industry has entered a new phase where **compute power**, not algorithms, defines competitive advantage.
From 2023–2025, AI developers such as **OpenAI, Anthropic, and Meta** forged *circular investment partnerships* with **NVIDIA, AMD, Amazon (AWS), and Oracle**.
These are *symbiotic megadeals* — cross-financing loops in which chipmakers fund AI firms that, in turn, commit to purchasing their chips and cloud capacity.
Together, they represent **over $1 trillion** in commitments and are reshaping the semiconductor, cloud, and capital markets simultaneously

Compute, Capital, and Control_ ...

Circular deals

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2. Anatomy of Circular Investment Structures

Circular deals follow a simple but potent loop:

Chipmaker → Investment Capital → AI Developer → Hardware Purchase → Chipmaker Revenue

Examples:

- **NVIDIA ↔ OpenAI (2025)** – NVIDIA invests up to **$100 B** in OpenAI, which then spends that capital on NVIDIA GPUs for 10 GW of compute capacity

Compute, Capital, and Control_ ...

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- **AMD ↔ OpenAI (2025)** – AMD supplies 6 GW of GPUs and grants OpenAI **warrants for up to 10%** of its shares, aligning their fortunes

Circular deals

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- **Amazon ↔ Anthropic (2023–2024)** – AWS invests **$8 B** in Anthropic via convertible notes; Anthropic commits to use AWS cloud and chips (Trainium/Inferentia)

Circular deals

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- **Oracle ↔ OpenAI (2025)** – A **$300 B cloud contract** under the *Stargate* project, securing 4.5 GW of capacity and embedding Oracle into the AI top tier

Compute, Capital, and Control_ ...

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These loops ensure guaranteed demand for chipmakers and guaranteed supply for AI developers — but blur the boundary between *capital investment* and *vendor financing*.

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3. Economic Rationale

- **Securing scarce compute:** Demand for high-performance GPUs has outstripped supply; firms are pre-purchasing future capacity.
- **De-risking supply chains:** Partnerships diversify chip and cloud dependencies (e.g., OpenAI hedging NVIDIA with AMD and Oracle).
- **Accelerating ecosystem growth:** Circular structures signal *certainty* to foundries (TSMC, SK Hynix), prompting multi-billion-dollar upstream investment.
- **Financial coordination:** These loops act as quasi-public utilities, accelerating the AI buildout beyond what normal market signals would sustain.

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4. Emerging Risk Landscape

Risk Category	Mechanism / Example	Implication
Circular revenue illusion	NVIDIA funds OpenAI → OpenAI buys NVIDIA chips → NVIDIA books revenue	Artificial demand; opaque accounting; inflated valuations Circular deals
Competitive exclusion	Chipmakers favor equity-linked partners (e.g., NVIDIA ↔ OpenAI)	Market lock-in, reduced chip supply for rivals

Risk Category	Mechanism / Example	Implication
Regulatory / antitrust risk	DOJ & FTC monitoring AI-chip alliances	Potential forced divestitures or behavioral remedies
Counterparty failure	OpenAI's heavy commitments ($1 T) vs. limited profitability	Credit and default risk for suppliers like Oracle Compute, Capital, and Control_ …
Technology obsolescence	Long-term contracts tied to one vendor's architecture	Loss of flexibility if disruptive alternatives emerge
Systemic concentration	Few players control AI compute (NVIDIA, AMD, Microsoft, AWS)	High contagion risk if one node fails
Transparency deficit	Related-party transactions underreported	Investor mispricing and market volatility

These interdependencies magnify any downturn: a slowdown in AI demand or financing could simultaneously impair vendor revenues and AI firms' solvency.

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5. Indicators of Market Exuberance

- **Valuations divorced from earnings:** OpenAI at **$500 B** valuation despite multi-billion-dollar losses; Anthropic near **$170 B** with limited revenue

Compute, Capital, and Control_ …

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- **Stock surges on deal news:** AMD +38% and Oracle +$250 B in market cap post-announcements.
- **Analyst parallels:** Goldman Sachs and Morgan Stanley warn of "**circular revenue**" akin to vendor-financing in the dot-com era

Circular deals

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6. Strategic Implications

For Investors

- Treat compute capacity as an *industrial commodity*, not an infinite growth asset.
- Prioritize firms with *transparent, diversified revenue* and *non-circular demand*.
- Expect volatility as AI economics mature and regulatory pressure rises.

For Corporate Strategists

- Adopt **multi-chip, multi-cloud** strategies to hedge supplier risk.
- Avoid deep cross-ownership that limits optionality or triggers compliance burdens.
- Treat compute investments as *utility-scale infrastructure* — capital-intensive, slow-payback, but strategically vital.

For Regulators and Policymakers

- Recognize AI infrastructure as **critical national infrastructure**.
- Mandate **disclosure of related-party transactions** and **limits on vendor financing**.
- Encourage **open hardware ecosystems (ROCm, TPUs, Trainium)** to balance market power.

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7. Forward Outlook: 2026–2030

- **Compute as the new oil:** control over chips and data centers becomes the decisive economic lever.
- **Hybrid financing innovation:** expect sovereign funds and government-backed entities to join circular funding loops to secure national compute reserves.
- **Regulatory convergence:** G7 economies likely to standardize disclosure and competition rules for AI-hardware alliances.
- **Possible correction:** if AI service monetization (subscription or API models) lags, valuation compression could trigger a capital re-pricing similar to 2001's telecom crash.

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8. Conclusion

Circular megadeals have *supercharged* AI's physical infrastructure but also *stretched* its financial foundations.
The same structures that accelerate innovation could, if unchecked, amplify systemic fragility.
The coming decade will hinge on whether these intertwined giants can convert speculative capital into durable productivity — or whether the loop collapses under its own exuberance.