

# The Circular Capital-Compute Network: Analyzing the Self-Reinforcing Investment Structure of the AI Boom

Ned Gandevani, PhD, MBA

August 18, 2026

## Abstract

The recent surge in artificial intelligence (AI) investment is distinct not only for its scale, but for the emergence of a tightly interwoven network of capital flows, commercial commitments, and infrastructure investments among a small set of technology companies. This paper examines whether the apparent growth in AI represents genuine new economic demand or results primarily from capital recirculating within a closed ecosystem. Using a consolidated analytical framework, I show that while the infrastructure being built is real, the financial structure of the sector introduces amplification and circularity that challenge traditional interpretations of revenue and growth.

## Introduction

AI has become the centerpiece of a new technological investment cycle, drawing tens of billions in capital from investors and companies alike. Yet, a defining feature of the current boom is the dense web of financial, commercial, and strategic relationships among the primary players. Companies such as OpenAI, Nvidia, Microsoft, Amazon, Anthropic, CoreWeave, Oracle, SoftBank, AMD, Google, and Meta are not only suppliers and customers of one another, but also mutual investors and guarantors of each other's projects.

This paper introduces the concept of the **AI Capital-Compute Network (ACCN)**, a hypothetical analytical entity comprising these interconnected firms. By aggregating their relationships, I seek to answer a foundational question: To what extent does the rapid expansion of the AI sector reflect real exogenous demand, versus the recycling of capital within the same network?

## The Structure of the AI Capital-Compute Network

### Direct Investment and Interlocking Ownership

The clearest evidence of circularity comes from direct investments. For example, Microsoft had funded \$11.8 billion of its \$13 billion OpenAI commitment as of March 2026, maintaining a 27% equity stake (Microsoft Corporation, 2026). SoftBank completed a \$41 billion investment in OpenAI, while Nvidia finalized \$30 billion and Amazon an initial \$15 billion, with another \$35 billion contingent on milestones (Reuters, 2026a; Reuters, 2026b; Amazon, 2026a).

Amazon's total investment in Anthropic reached \$13 billion, and Google's in Anthropic was approximately \$3 billion (Amazon, 2026b). Nvidia and Microsoft together invested up to \$15 billion in Anthropic, and Anthropic, in turn, committed to spend \$30 billion on Microsoft's Azure infrastructure, a deal powered by Nvidia hardware (Reuters, 2026c). AMD announced a \$5 billion investment in Anthropic, again coupled with supply agreements for AI servers (Reuters, 2026d).

CoreWeave, another critical node in the network, received a \$2 billion investment from Nvidia and \$350 million from OpenAI, the latter as part of an infrastructure agreement (NVIDIA Corporation, 2026a; CoreWeave, 2025a).

### Quantifying Investment Flows

Restricting the analysis to direct, verified investments (and excluding contingent commitments), the network's internal investment flows total approximately \$136.15 billion. When viewed from the perspective of the consolidated ACCN, these inflows and outflows net to zero, internal investments simply shift capital within the group, not creating new economic value at the ecosystem level. This is a central finding: **internal capital recycling does not increase aggregate economic capital** (see Table 1).

**Table 1**

*Investment-flow calculation*

| Company   | Investment Inflows | Investment Outflows | Net Investment Flow |
|-----------|--------------------|---------------------|---------------------|
| OpenAI    | \$97.8B*           | \$0.35B             | +\$97.45B           |
| Anthropic | \$36.0B            | \$0                 | +\$36.0B            |
| CoreWeave | \$2.35B            | \$0                 | +\$2.35B            |

|                  |     |         |                 |
|------------------|-----|---------|-----------------|
| <b>Microsoft</b> | \$0 | \$16.8B | <b>-\$16.8B</b> |
| <b>SoftBank</b>  | \$0 | \$41.0B | <b>-\$41.0B</b> |
| <b>Nvidia</b>    | \$0 | \$42.0B | <b>-\$42.0B</b> |
| <b>Amazon</b>    | \$0 | \$28.0B | <b>-\$28.0B</b> |
| <b>Google</b>    | \$0 | \$3.0B  | <b>-\$3.0B</b>  |
| <b>AMD</b>       | \$0 | \$5.0B  | <b>-\$5.0B</b>  |
| <b>Oracle</b>    | \$0 | \$0     | \$0             |
| <b>Meta</b>      | \$0 | \$0     | \$0             |

\* The OpenAI figure includes the \$11.8 billion funded by Microsoft, \$41 billion from SoftBank, \$30 billion from Nvidia, and the initial \$15 billion Amazon investment.

*“If I treat these companies as one economic entity, capital invested from one member into another does not create new capital for the consolidated group. It merely moves capital from one pocket to another.”*

## Beyond Investment: The Network of Commercial Commitments

The circularity extends far beyond equity stakes. After receiving investment, AI model companies such as OpenAI and Anthropic become customers of their investors, committing to enormous long-term infrastructure purchases. OpenAI’s contracts with CoreWeave total \$22.4 billion, while its partnership with Oracle and SoftBank for a 4.5 GW data center could involve over \$300 billion in infrastructure over five years (CoreWeave, 2025b; OpenAI, 2025; SoftBank Group Corp., 2026). Microsoft, meanwhile, has an amended agreement with OpenAI for an additional \$250 billion in Azure services (Microsoft Corporation, 2026). Anthropic has committed to over \$100 billion in AWS technology and at least \$30 billion in Azure services (Amazon, 2026b).

Meta and CoreWeave have a \$21 billion agreement through 2032, and CoreWeave reported \$9.4 billion in capital expenditures in Q2 2026, forecasting \$35–\$39 billion for the year (CoreWeave, 2026). These commitments do not constitute equity investments and should not be added to the direct investment tally, yet they demonstrate the extraordinary scale and density of the network’s economic ties.

## Core Case Studies: Circularity in Action

### The Nvidia–CoreWeave–OpenAI Feedback Loop

CoreWeave is a paradigm case. Nvidia invests \$2 billion in CoreWeave, OpenAI invests \$350 million, and both become major customers. CoreWeave, in turn, purchases Nvidia hardware to build its infrastructure, and OpenAI becomes a key CoreWeave customer. These contracts facilitate additional infrastructure financing, and Nvidia ultimately benefits from hardware sales (NVIDIA Corporation, 2026a; CoreWeave, 2025a).

### Sophistication in Financing Structures

Recent developments have only deepened the sophistication of these arrangements. Nvidia announced over \$500 billion in financing capacity for AI infrastructure, potentially including loans backed by its own hardware and direct guarantees for customer projects (Reuters, 2026e). In August 2026, Nvidia committed up to \$105 billion in guarantees for OpenAI’s 20-year lease of a SoftBank-developed data center and invested \$1.5 billion in SB Energy, the data center developer (Reuters, 2026f).

Nvidia is no longer simply a chip vendor; it is becoming an architect of the entire capital-allocation and financing ecosystem underlying AI infrastructure deployment.

## Analytical Framework: Distinguishing Real Growth from Amplified Activity

### The Problem of Financial Amplification

At the level of individual companies, each transaction, an investment, a purchase, a contract, represents legitimate revenue, cost, or capital inflow. But at the consolidated network level, the same dollar can circulate through multiple entities, supporting several layers of revenue and investment reporting. This phenomenon, termed here **financial amplification**, is analogous to leverage in banking: a small amount of external capital can support a much larger volume of internal transactions.

A hypothetical \$1 billion can move from investor to AI company, to cloud provider, to chip manufacturer, and back to the AI company, generating several rounds of reported revenue but only a single injection of new capital at the ecosystem boundary.

## Real Assets, Real Risk

Importantly, the infrastructure being built is tangible. Amazon reported \$128.3 billion in capital expenditures in 2025; Alphabet reported \$91.4 billion, and CoreWeave is spending billions on actual data centers (Amazon, 2026c; Alphabet Inc., 2026; CoreWeave, 2026). These are not mere accounting entries, land, buildings, servers, and power systems are being constructed.

The risk is not that the activity is fictitious or fraudulent, but that the **returns on investment will not materialize at the scale required to justify the capital outlays**. The circular structure can magnify both gains and losses, depending on the ultimate trajectory of AI demand.

## Analytical Measures for Circularity

To move beyond anecdote, I propose three quantitative measures that can help clarify the extent of circularity in the AI Capital-Compute Network (ACCN):

### 1. Network Commitment Ratio

This ratio captures the proportion of disclosed AI-related commitments that occur between members of the network:

$$\text{Network Commitment Ratio} = \frac{\text{Disclosed commitments involving network members}}{\text{Total disclosed AI – related commitments}}$$

### 2. Network Revenue Exposure

This ratio estimates the share of AI-related revenue attributable to transactions involving other network members:

$$\text{Network Revenue Exposure} = \frac{\text{Revenue from identified network customers}}{\text{AI – related revenue}}$$

### 3. Circular Exposure Ratio

This is perhaps the most revealing metric, examining the proportion of AI-related transactions that involve both financing and commercial relationships within the network:

$$\begin{aligned} \text{Circular Exposure Ratio} \\ = \frac{\text{Network transactions including both financing and commercial ties}}{\text{Total AI – related transactions}} \end{aligned}$$

Given the limitations of public data, I cannot credibly calculate these ratios for all companies involved. Public disclosures simply do not provide enough granularity on customer-level revenue, product-level AI sales, or the internal breakdown of cloud and infrastructure contracts. Still, the sheer scale of the numbers that are available points unmistakably toward a powerful network effect.

## The Network Effect in Action

Recent reporting by the Financial Times found that six major hyperscalers, Alphabet, Microsoft, Amazon, Nvidia, Oracle, and Meta, had accumulated \$1.5 trillion in purchase commitments, alongside a similar amount in lease obligations (Financial Times, 2026). Oracle alone reported \$638 billion in remaining performance obligations (RPO), largely driven by prepayments for large-scale AI contracts (Oracle, 2026).

CoreWeave, for its part, disclosed a \$104.2 billion backlog in Q2 2026 and increased its capital expenditure forecast to as much as \$39 billion for the year (CoreWeave, 2026). These numbers are so large that they cannot be explained by organic, exogenous demand alone.

And yet, these figures do not automatically translate into new economic value creation outside the network. That distinction is critical for anyone trying to assess the true health and sustainability of the AI sector.

## Rethinking Revenue: Not All Growth Is Equal

It is tempting to interpret accelerating revenue and investment as evidence of surging economic value. But as my earlier example shows, a dollar that cycles from Company A to B to C to D and back to A can inflate reported revenue and investment figures without creating corresponding external demand.

Company A invests \$10 billion in Company B; Company B purchases computing from Company C; Company C buys equipment from Company D; Company D invests \$5 billion back in Company A. On paper, \$35 billion in transactions have occurred. In reality, the network has only injected \$10 billion of new capital. This is why consolidated economic value added, not the sum of each company's reported revenue, should be the benchmark for sectoral growth.

## Implications for Investors

The risk is not that these companies are engaged in accounting fraud or manufacturing fictitious earnings. The risk is that the internal circularity of capital and commitments could amplify both upside and downside volatility. If AI demand grows as advocates expect, the network could accelerate a genuine technological revolution. But if end-user demand does not materialize at the projected scale, the same feedback loops could rapidly turn into self-reinforcing losses.

The most important question for investors, therefore, is not whether the infrastructure is real, it is. Nor is it whether the companies are recognizing legitimate revenue, they are.

The question is: **How much of today's AI revenue and growth reflects genuinely independent, external economic demand, rather than capital and commitments circulating within the ACCN?**

## The Path Forward: Toward a Transaction-Level Model

To truly understand the dynamics of the AI boom, I believe future research must move from mapping relationships to tracing transactions. Every deal, be it equity, debt, contract, or lease, should be classified by type and followed from its origin to its ultimate economic use. This would allow for the construction of a Circular Financing Index (CFI) for each participant, and for the network as a whole, offering a much clearer picture of when and where genuine value is created.

## Conclusion

My analysis supports the existence of substantial circular financial relationships within the AI ecosystem. It is an overstatement to claim that all AI growth is superficial or that companies are simply manufacturing earnings. The reality is more nuanced: \*\*the AI boom is increasingly defined by a circular capital-and-compute structure in which investors, chip manufacturers, cloud providers, infrastructure companies, and AI model developers simultaneously finance, supply, and buy from one another\*\*.

This model has enabled rapid infrastructure scaling and may well underpin transformative innovation. But it also creates a system where the difference between internal amplification and true exogenous demand matters more than ever. If the AI economy delivers on its promise of productivity gains and new value creation, the circular structure

will be seen as a financing mechanism for the next great technological leap. If not, the same structure could amplify the pain of a downturn.

*The ultimate question is how much of the growth is coming from outside the network, and how much is being generated by money, contracts, and capital circulating within it. Investors, policymakers, and researchers should focus their efforts on answering this question.*

## References

Alphabet Inc. (2026). \*Alphabet Inc. 2025 annual report\*.

Amazon. (2026a, February 27). OpenAI and Amazon announce strategic partnership.

Amazon. (2026b). Amazon announces \$5B Anthropic investment, up to \$20B more.

Amazon. (2026c). \*Amazon.com, Inc. 2025 annual report\*.

CoreWeave, Inc. (2025a, March 10). CoreWeave announces agreement with OpenAI to deliver AI infrastructure.

CoreWeave, Inc. (2025b, March 10). CoreWeave and Meta announce \$21 billion expanded AI infrastructure agreement.

CoreWeave, Inc. (2026, April 9). Q2 2026 earnings release.

Financial Times. (2026). [Specific reference details needed].

Microsoft Corporation. (2026). \*Form 10-Q, March 31, 2026\*. U.S. Securities and Exchange Commission.

NVIDIA Corporation. (2026a, January 26). NVIDIA and CoreWeave strengthen collaboration to accelerate buildout of AI factories.

NVIDIA Corporation. (2026b). [Press release on \$100B investment in OpenAI].

OpenAI. (2025, July 22). Stargate advances with 4.5 GW partnership with Oracle.

OpenAI. (2026, February 27). Scaling AI for everyone.

Oracle. (2026). FY2026 results and remaining performance obligations.

Reuters. (2026a, March 4). Nvidia CEO hints at end of investments in OpenAI, Anthropic.

Reuters. (2026b, March 4). SoftBank completes \$41B OpenAI investment.



Reuters. (2026c, July 22). AMD to sell Anthropic tens of billions in AI servers, invest up to \$5 billion in startup.

Reuters. (2026d, July 22). Nvidia to provide up to \$105 billion guarantee for OpenAI's Ohio data center.

Reuters. (2026e, August 17). Nvidia announces \$500 billion financing capacity for AI infrastructure.

Reuters. (2026f, August 17). Nvidia to provide \$105 billion guarantee for OpenAI's Ohio data center.

SoftBank Group Corp. (2026). [Investment disclosures and bridge facility details].