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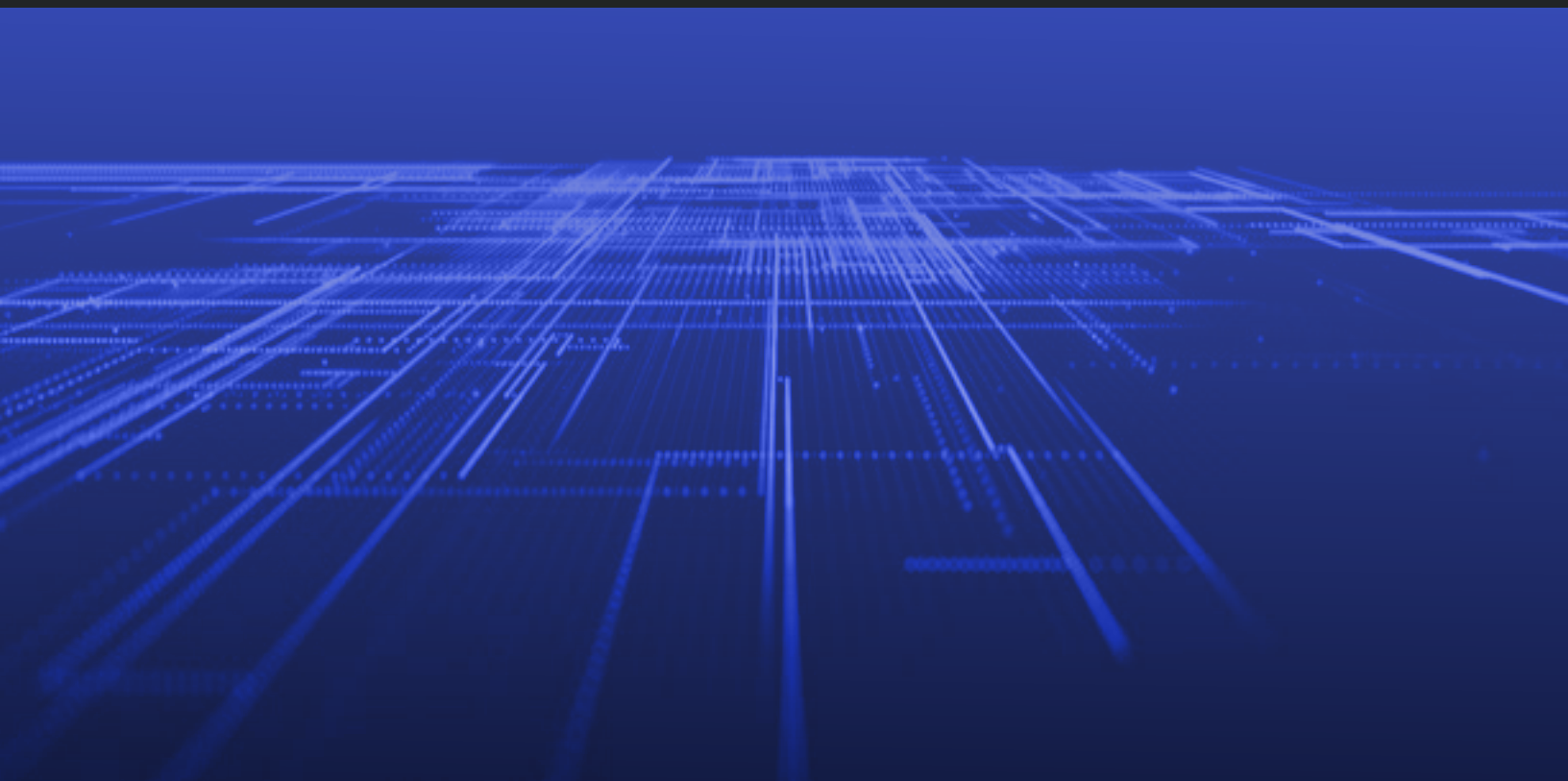
The AI Infrastructure Bottleneck

Data Center Growth Is Outpacing Supplier Capacity



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Executive Summary

AI investment is accelerating. Supplier readiness is not.

An analysis of 7,200+ public and private companies critical to data center deployment shows that under realistic growth conditions, a large portion of the supply base does not have the financial capacity to build AI capacity.

But what happens when trillions of dollars are deployed into infrastructure that depends on a supply base.

Key Findings

- Nearly 1 in 5 suppliers was already high risk before AI infrastructure scaling
- Under stress test scenarios, nearly 50% of all large private suppliers become high-risk or very high-risk of bankruptcy
- All nonresidential construction suppliers went from 60% low risk to 45% high-risk under growth scenarios, showing suppliers lack the physical capacity to build
- Among all critical subsectors, growth increases financial risk instead of strengthening capacity

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The State of Data Center Supply Chains in the AI Economy

Foreword

Artificial intelligence has become a primary engine of global economic growth. In the first half of 2025, an estimated 92% of GDP growth was tied to investment in AI technologies and the data centers that support them. Nearly every major company is participating in the race to build AI capacity.

But what happens when trillions of dollars are deployed into infrastructure that depends on a supply base already under strain?

This white paper examines the financial resilience of the suppliers responsible for building and scaling data centers. These companies are operating in an environment marked by tariff volatility, elevated costs of capital, persistent cost pressure on inputs, and limited access to skilled labor and materials. At the same time, they are being asked to meet unprecedented growth targets on squeezed timelines.

Here is the question we attempt to answer: does the supply chain have the financial capacity to support the scale of AI investment now underway?

RapidRatings is the leading provider of supply chain financial health analytics, with more than 500,000 ratings across 150 countries, sourced directly from private company financial statements. Using this proprietary data, we stress tested more than 7,200 critical suppliers to the data center ecosystem to assess their ability to scale in line with projected demand.

The results show a growing disconnect between infrastructure ambition and supplier financial readiness.

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The Stress Test

We modeled a 50% revenue growth scenario across 7,204 critical data center public and private suppliers.

Why these assumptions?

Supply chain professionals understand that a stress test is only as credible as its underlying assumptions. The 50% revenue growth figure reflects the consensus range of projected data center capacity expansion derived from publicly disclosed hyperscaler capital expenditure plans and third-party market forecasts through 2027. This is not a theoretical worst case, but a realistic scenario that procurement and operations teams should be planning against today.

Assumptions

Scope	with Full FY24, FY25, 26 results
Revenue Increase	50%
COGS Variable	110%
Inflation to Operating Expense	3%
Operating Expense Variable	110%
Increase Fixed Assets (only if Revenue increase) ~ Capex	30%
Interest on New Debt - add to interest exp	7%

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The 7-year amortization schedule reflects standard depreciation practice in construction and manufacturing, consistent with GAAP treatment of these asset classes. The 7% interest rate on new debt reflects current borrowing conditions for mid-market private companies, which is the segment bearing the greatest risk in this analysis. The COGS variable of 110% captures a well- documented supply chain reality: when suppliers scale rapidly, input costs rise faster than output prices. Labor tightens, raw material premiums emerge, and pricing power rarely materializes fast enough to compensate. Any supply chain professional who has managed a rapid ramp cycle recognizes this pattern. Together, these assumptions model what scaling actually costs; not what it costs under ideal conditions.

Demographics

We applied the stress test on both public and private suppliers divided by revenue buckets.

Demographics

By NAICS	Privates	Publics	Total
Architectural, Engineering, and Related Services	533	111	644
Building Equipment Contractors	418	35	453
Communications Equipment Manufacturing	54	242	296
Computer and Peripheral Equipment Manufacturing	40	176	216
Computer Systems Design and Related Services	648	484	1132
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	174	67	241
Electric Power Generation, Transmission and Distribution	115	328	443
Electrical Equipment Manufacturing	106	121	227
Facilities Support Services	18	7	25
Investigation and Security Services	86	29	115
Nonresidential Building Construction	394	151	545
Other Electrical Equipment and Component Manufacturing	174	239	413
Other General Purpose Machinery Manufacturing	199	146	345
Semiconductor and Other Electronic Component Manufacturing	282	770	1052
Software Publishers	88	199	287
Utility System Construction	342	75	417
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	89	85	174
Wired and Wireless Telecommunications (except Satellite)	73	106	179
Total	**3833**	**3371**	**7204**

We examined the following critical suppliers within data center builds across 18 NAICS subsectors, spanning architectural and engineering services, construction, semiconductor manufacturing, electrical equipment, software, and telecommunications; the full cross-section of the data center value chain.

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PRE-STRESS: Risk Was Already Elevated Before Growth

Before applying the growth scenario:

- Nearly 20% of all suppliers were already high risk or very high risk
- Smaller public companies showed the greatest vulnerability, with almost 40% in the highest risk categories
- Private companies, traditionally more strained, showed a more equal distribution among the risk classes, with higher revenue companies being more likely to have high risk

This means the AI build-out is not starting from a position of financial strength.

Pre-Stress

All Companies	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
<25 million	41.86%	18.47%	18.43%	18.22%	3.02%
25-100 million	35.10%	24.15%	21.70%	18.30%	0.75%
100-250 million	26.96%	28.77%	23.99%	19.53%	0.74%
250 mill-1 billion	20.26%	29.96%	29.61%	19.48%	0.69%
>1 billion	15.24%	33.64%	36.70%	14.08%	0.33%
Total	**30.58%**	**25.37%**	**24.69%**	**17.92%**	**1.43%**
Public Companies					
<25 million	9.88%	19.77%	30.52%	33.72%	6.10%
25-100 million	22.01%	27.04%	26.86%	23.22%	0.87%
100-250 million	19.57%	32.03%	28.65%	19.22%	0.53%
250 mill-1 billion	17.02%	32.26%	33.69%	16.55%	0.48%
>1 billion	13.45%	33.87%	39.03%	13.26%	0.38%
Total	**16.46%**	**30.55%**	**33.02%**	**18.87%**	**1.10%**
Private Companies					
<25 million	47.16%	18.26%	16.43%	15.66%	2.50%
25-100 million	43.56%	22.28%	18.37%	15.12%	0.67%
100-250 million	37.89%	23.95%	17.11%	20.00%	1.05%
250 mill-1 billion	28.62%	24.00%	19.08%	27.08%	1.23%
>1 billion	27.04%	32.08%	21.38%	19.50%	0.00%
Total	**43.00%**	**20.82%**	**17.38%**	**17.09%**	**1.72%**

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Understanding Why Private Suppliers Carry Greater Risk

The data consistently shows private suppliers as the more financially vulnerable segment. For procurement professionals, understanding the structural reasons behind this is as important as the numbers; because it directly shapes how risk should be managed at the contracting and sourcing level.

Private suppliers in construction, specialty manufacturing, and systems integration operate on thin margins with limited financial buffers. They cannot access equity capital markets to fund rapid growth. When a large contract arrives, their options are retained earnings; often insufficient at the required scale, or debt at significant cost.

Increasingly, that debt is sourced from private credit markets. While private credit has expanded access to capital for mid-market firms, it has also reduced transparency. Recent situations involving privately financed companies such as Market Financial Solutions and Tricolor demonstrate how leverage within private credit structures can become visible only once restructuring emerges. The practical consequence for procurement teams is reduced visibility into balance sheet strain; and in turn reduced warning time before a supplier situation becomes critical.

Working capital compounds the problem. Many of these firms are subcontractors where payment terms are dictated from above. When asked to ramp ahead of payment cycles, they are effectively self-financing the growth of the organizations above them. Under 50% growth scenarios with simultaneous cost inflation, this becomes financially untenable.

The risk here is structural, not operational. Many of these private suppliers are highly capable and strategically irreplaceable. That distinction matters for procurement teams: financial fragility in a critical supplier is a sourcing problem, not just a vendor management problem.

On average, private firms make up 75% of supply chains in several critical industries. This imbalance creates significant disruption risk.

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POST-STRESS: Growth Drives Risk Convergence

After applying the stress test:

- The share of private suppliers in high or very high risk rises from 19% to nearly 29%
- Among large private companies, nearly half move into high-risk and very high-risk territory
- Public companies largely resemble pre-stress scenarios, but do not offset the deterioration in the private supply base

The data center ecosystem relies heavily on private companies for construction, specialty manufacturing, engineering, and services. These are the firms experiencing the most severe financial strain under growth conditions. In other words, the very companies required to scale AI infrastructure are the least equipped to sustain that scale.

Post-Stress

All Companies	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
<25 million	47.23%	13.76%	21.28%	13.39%	4.34%
25-100 million	35.51%	19.52%	24.15%	18.84%	1.97%
100-250 million	28.45%	19.96%	27.18%	22.72%	1.70%
250 mill-1 billion	23.69%	23.52%	28.15%	23.26%	1.37%
>1 billion	23.20%	28.91%	23.45%	23.61%	0.83%
Total	**34.55%**	**19.86%**	**24.11%**	**19.03%**	**2.44%**
Public Companies					
<25 million	20.06%	19.77%	31.98%	20.35%	7.85%
25-100 million	31.20%	24.44%	21.84%	21.32%	1.21%
100-250 million	27.76%	24.56%	21.35%	25.44%	0.89%
250 mill-1 billion	25.36%	27.62%	22.02%	24.17%	0.83%
>1 billion	23.38%	31.11%	19.85%	25.00%	0.67%
Total	**25.60%**	**26.85%**	**22.22%**	**23.76%**	**1.57%**
Private Companies					
<25 million	51.73%	12.76%	12.24%	19.51%	3.76%
25-100 million	38.30%	16.35%	17.25%	25.64%	2.46%
100-250 million	29.47%	13.16%	18.68%	35.79%	2.89%
250 mill-1 billion	19.38%	12.92%	20.92%	44.00%	2.77%
>1 billion	22.01%	14.47%	14.47%	47.17%	1.89%
Total	**42.42%**	**13.72%**	**14.87%**	**25.78%**	**3.21%**

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PRE-STRESS: Subsector Risk

From copper wiring and ventilation systems to construction and computer equipment manufacturing, we examined the critical suppliers needed to build out data centers. Prior to stress testing, risk was largely spread across risk categories, with private companies showing the greatest instances of high risk among specific sectors.

All Companies Pre-Stress

All Companies - By NAICS	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
Architectural, Engineering, and Related Services	46.58%	25.16%	14.60%	12.42%	1.24%
Building Equipment Contractors	60.26%	21.41%	9.05%	7.95%	1.32%
Communications Equipment Manufacturing	21.96%	24.66%	28.04%	23.99%	1.35%
Computer and Peripheral Equipment Manufacturing	18.06%	29.63%	33.80%	18.06%	0.46%
Computer Systems Design and Related Services	33.04%	22.97%	25.88%	16.52%	1.59%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	20.33%	17.84%	30.71%	27.39%	3.73%
Electric Power Generation, Transmission and Distribution	13.54%	26.19%	43.57%	16.70%	0.00%
Electrical Equipment Manufacturing	27.31%	30.40%	24.23%	17.62%	0.44%
Facilities Support Services	32.00%	44.00%	16.00%	8.00%	0.00%
Investigation and Security Services	32.17%	35.65%	15.65%	15.65%	0.87%
Nonresidential Building Construction	44.22%	25.32%	17.80%	11.93%	0.73%
Other Electrical Equipment and Component Manufacturing	17.92%	26.63%	26.15%	26.88%	2.42%
Other General Purpose Machinery Manufacturing	31.88%	30.72%	19.71%	17.39%	0.29%
Semiconductor and Other Electronic Component Manufacturing	17.49%	28.99%	30.42%	21.77%	1.33%
Software Publishers	16.38%	20.91%	39.37%	21.25%	2.09%
Utility System Construction	42.45%	19.42%	15.83%	19.42%	2.88%
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	26.44%	27.01%	22.99%	21.84%	1.72%
Wired and Wireless Telecommunications (except Satellite)	31.84%	25.14%	21.79%	18.44%	2.79%
Total	**30.58%**	**25.37%**	**24.69%**	**17.92%**	**1.43%**

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Public Companies Pre-Stress

Public Companies - By NAICS	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
Architectural, Engineering, and Related Services	19.82%	33.33%	30.63%	15.32%	0.90%
Building Equipment Contractors	42.86%	40.00%	14.29%	2.86%	0.00%
Communications Equipment Manufacturing	19.01%	26.03%	28.93%	24.79%	1.24%
Computer and Peripheral Equipment Manufacturing	13.07%	34.09%	34.66%	17.61%	0.57%
Computer Systems Design and Related Services	26.24%	33.26%	29.96%	10.12%	0.41%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	11.94%	38.81%	26.87%	22.39%	0.00%
Electric Power Generation, Transmission and Distribution	4.88%	28.66%	51.52%	14.94%	0.00%
Electrical Equipment Manufacturing	19.83%	31.40%	28.10%	20.66%	0.00%
Facilities Support Services	0.00%	57.14%	42.86%	0.00%	0.00%
Investigation and Security Services	3.45%	65.52%	17.24%	13.79%	0.00%
Nonresidential Building Construction	9.93%	28.48%	30.46%	30.46%	0.66%
Other Electrical Equipment and Component Manufacturing	12.13%	24.27%	33.05%	27.20%	3.35%
Other General Purpose Machinery Manufacturing	29.45%	34.93%	22.60%	13.01%	0.00%
Semiconductor and Other Electronic Component Manufacturing	14.03%	29.22%	33.38%	21.95%	1.43%
Software Publishers	14.07%	27.64%	40.70%	16.08%	1.51%
Utility System Construction	10.67%	34.67%	30.67%	22.67%	1.33%
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	15.29%	28.24%	29.41%	24.71%	2.35%
Wired and Wireless Telecommunications (except Satellite)	27.36%	30.19%	23.58%	15.09%	3.77%
Total	**16.46%**	**30.55%**	**33.02%**	**18.87%**	**1.10%**

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Private Companies Pre-Stress

Private Companies - By NAICS	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
Architectural, Engineering, and Related Services	52.16%	23.45%	11.26%	11.82%	1.31%
Building Equipment Contractors	61.72%	19.86%	8.61%	8.37%	1.44%
Communications Equipment Manufacturing	35.19%	18.52%	24.07%	20.37%	1.85%
Computer and Peripheral Equipment Manufacturing	40.00%	10.00%	30.00%	20.00%	0.00%
Computer Systems Design and Related Services	38.12%	15.28%	22.84%	21.30%	2.47%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	23.56%	9.77%	32.18%	29.31%	5.17%
Electric Power Generation, Transmission and Distribution	38.26%	19.13%	20.87%	21.74%	0.00%
Electrical Equipment Manufacturing	35.85%	29.25%	19.81%	14.15%	0.94%
Facilities Support Services	44.44%	38.89%	5.56%	11.11%	0.00%
Investigation and Security Services	41.86%	25.58%	15.12%	16.28%	1.16%
Nonresidential Building Construction	57.36%	24.11%	12.94%	4.82%	0.76%
Other Electrical Equipment and Component Manufacturing	25.86%	29.89%	16.67%	26.44%	1.15%
Other General Purpose Machinery Manufacturing	33.67%	27.64%	17.59%	20.60%	0.50%
Semiconductor and Other Electronic Component Manufacturing	26.95%	28.37%	22.34%	21.28%	1.06%
Software Publishers	21.59%	5.68%	36.36%	32.95%	3.41%
Utility System Construction	49.42%	16.08%	12.57%	18.71%	3.22%
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	37.08%	25.84%	16.85%	19.10%	1.12%
Wired and Wireless Telecommunications (except Satellite)	38.36%	17.81%	19.18%	23.29%	1.37%
Total	**43.00%**	**20.82%**	**17.38%**	**17.09%**	**1.72%**

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POST-STRESS: Construction Is a Systemic Bottleneck - And the Most Operationally Consequential Finding in This Report

When applying stress test scenarios, risk multiplies across many subsectors. The most extreme risk shift occurs in Nonresidential Construction, where nearly half of all suppliers, public and private, move into high or very high risk of financial distress.

All Companies Post-Stress

All Companies - By NAICS	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
Architectural, Engineering, and Related Services	22.02%	13.76%	15.96%	45.50%	2.75%
Building Equipment Contractors	40.00%	4.00%	20.00%	36.00%	0.00%
Communications Equipment Manufacturing	17.43%	23.00%	22.52%	32.20%	4.84%
Computer and Peripheral Equipment Manufacturing	18.52%	25.93%	24.54%	30.09%	0.93%
Computer Systems Design and Related Services	26.14%	16.60%	22.41%	29.46%	5.39%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	18.06%	23.86%	27.47%	28.52%	2.09%
Electric Power Generation, Transmission and Distribution	29.05%	17.57%	24.32%	27.70%	1.35%
Electrical Equipment Manufacturing	41.74%	20.00%	11.30%	25.22%	1.74%
Facilities Support Services	27.31%	26.87%	19.38%	24.67%	1.76%
Investigation and Security Services	41.34%	17.67%	16.17%	22.53%	2.30%
Nonresidential Building Construction	31.03%	19.54%	22.41%	22.41%	4.60%
Other Electrical Equipment and Component Manufacturing	49.16%	14.87%	12.47%	20.14%	3.36%
Other General Purpose Machinery Manufacturing	36.81%	23.19%	17.68%	19.42%	2.90%
Semiconductor and Other Electronic Component Manufacturing	37.63%	21.60%	20.91%	18.12%	1.74%
Software Publishers	56.52%	12.58%	11.96%	17.24%	1.71%
Utility System Construction	50.84%	17.32%	11.17%	16.20%	4.47%

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All Companies Post-Stress cont.

Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	58.28%	13.47%	13.91%	12.58%	1.77%
Wired and Wireless Telecommunications (except Satellite)	26.41%	37.47%	23.93%	11.29%	0.90%
Total	**34.55%**	**19.86%**	**19.03%**	**24.11%**	**2.44%**

Public Companies Post-Stress

Public Companies - By NAICS	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
Architectural, Engineering, and Related Services	9.27%	17.22%	19.21%	52.98%	1.32%
Building Equipment Contractors	14.29%	14.29%	28.57%	42.86%	0.00%
Communications Equipment Manufacturing	16.00%	20.00%	26.67%	36.00%	1.33%
Computer and Peripheral Equipment Manufacturing	12.13%	25.10%	24.69%	33.47%	4.60%
Computer Systems Design and Related Services	15.91%	27.84%	25.57%	30.11%	0.57%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	15.06%	24.03%	30.00%	28.83%	2.08%
Electric Power Generation, Transmission and Distribution	26.45%	16.12%	27.69%	28.51%	1.24%
Electrical Equipment Manufacturing	17.36%	30.58%	23.97%	25.62%	2.48%
Facilities Support Services	30.63%	25.23%	19.82%	22.52%	1.80%
Investigation and Security Services	18.82%	27.06%	29.41%	21.18%	3.53%
Nonresidential Building Construction	40.00%	22.86%	20.00%	17.14%	0.00%
Other Electrical Equipment and Component Manufacturing	34.33%	32.84%	17.91%	14.93%	0.00%
Other General Purpose Machinery Manufacturing	35.62%	29.45%	21.23%	12.33%	1.37%
Semiconductor and Other Electronic Component Manufacturing	42.71%	29.15%	16.58%	10.05%	1.51%
Software Publishers	43.39%	27.27%	19.42%	9.71%	0.21%
Utility System Construction	58.49%	17.92%	10.38%	9.43%	3.77%
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	22.87%	44.51%	23.78%	8.54%	0.30%
Wired and Wireless Telecommunications (except Satellite)	24.14%	48.28%	20.69%	6.90%	0.00%
Total	**25.60%**	**26.85%**	**23.76%**	**22.22%**	**1.57%**

Private Companies Post-Stress

Private Companies - By NAICS	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
Architectural, Engineering, and Related Services	26.90%	12.44%	14.72%	42.64%	1.69%
Building Equipment Contractors	26.14%	4.55%	30.68%	36.36%	1.91%
Communications Equipment Manufacturing	22.99%	10.34%	24.14%	35.06%	1.85%
Computer and Peripheral Equipment Manufacturing	50.00%	0.00%	16.67%	33.33%	2.50%
Computer Systems Design and Related Services	39.81%	10.49%	13.73%	32.10%	3.86%
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	47.67%	10.47%	8.14%	31.40%	7.47%
Electric Power Generation, Transmission and Distribution	24.71%	20.11%	19.54%	30.46%	2.61%
Electrical Equipment Manufacturing	30.00%	17.50%	20.00%	30.00%	0.94%
Facilities Support Services	26.24%	23.40%	20.57%	27.66%	0.00%
Investigation and Security Services	39.73%	16.44%	12.33%	26.03%	2.33%
Nonresidential Building Construction	37.69%	18.59%	15.08%	24.62%	3.30%
Other Electrical Equipment and Component Manufacturing	40.74%	24.07%	9.26%	24.07%	5.17%
Other General Purpose Machinery Manufacturing	42.70%	12.36%	15.73%	23.60%	4.02%
Semiconductor and Other Electronic Component Manufacturing	38.68%	22.64%	14.15%	23.58%	2.13%
Software Publishers	36.52%	17.39%	24.35%	19.13%	2.27%
Utility System Construction	56.43%	13.74%	9.36%	16.67%	3.80%
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	61.91%	9.94%	10.32%	16.14%	5.62%
Wired and Wireless Telecommunications (except Satellite)	59.81%	12.68%	13.40%	12.20%	5.48%
Total	**42.42%**	**13.72%**	**14.87%**	**25.78%**	**3.21%**

For supply chain and operations professionals, this finding warrants more than a passing reference. Construction is the long pole in the tent for any data center build; every downstream element is sequenced behind it. Financial distress in a construction supplier doesn't stay contained; it cascades. A subcontractor under cash flow pressure stretches payments, slows deliveries, and reduces crews. A mid-project default triggers bonding claims, replacement sourcing, and schedule risk that moves upstream to the enterprise or hyperscaler funding the build in the form of delayed in-service dates and cost overruns.

The shift from roughly 60% low-risk pre-stress to nearly 45% high-risk post-stress is not a marginal change. It is a structural reversal in the risk profile of the most critical category in the build sequence.

Already, over the last year, numerous companies in the engineering, procurement & construction sectors have filed for bankruptcy. Procurement and project delivery teams should treat construction supplier financial health as a project execution risk; stress testing capacity before contract award and maintaining subcontractor financial visibility throughout the project lifecycle are now baseline requirements, not advanced practices.

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The Tariff Dimension: A Risk Factor That Amplifies These Findings

The foreword identifies tariff volatility as a pressure on data center suppliers, but it deserves more direct treatment. For supply chain professionals, tariff exposure is not background noise; it is an active risk that intersects directly with the financial stress findings here.

Electrical components, steel, copper, semiconductor inputs, and HVAC components are all subject to existing or threatened tariff regimes; and these categories map directly onto the subsectors showing the highest risk concentration in this analysis. For private suppliers operating on thin margins with limited pricing power, tariff-driven cost increases are difficult to pass through quickly. Fixed-price contracts and subcontractor market dynamics mean many suppliers absorb these costs rather than transfer them, further compressing the balance sheet metrics our model already flags as insufficient under growth scenarios.

Tariff impacts were not modeled as a discrete variable in this stress test; the 3% inflation assumptions capture part of the effect but not its full magnitude in the most exposed categories. Procurement teams should treat the risk findings in those sectors as conservative and layer independent tariff pass-through analysis onto any supplier financial assessment.

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The Bullwhip Effect: Simultaneous Demand Acceleration Creates Its Own Risk

There is a supply chain dynamic that significantly amplifies the risks identified here that supply chain professionals will recognize immediately: the bullwhip effect. When hyperscalers, enterprises, and co-location providers all accelerate build programs simultaneously, demand signals into the supply base become amplified and distorted. Suppliers respond by committing to capacity, materials, and labor to meet what appears to be durable demand. Each tier in the chain adds its own buffer, compounding the effect at every step.

For financially fragile suppliers, the private companies this report identifies as most at risk - this is dangerous in both directions. On the ramp up, they over-commit to signals that may not fully materialize. On any correction such as a project delay, a repricing event, or a design change, they are left holding inventory, labor, and fixed cost commitments their balance sheets cannot support. Construction is particularly exposed given the long lead times and limited reversibility of its supply chain commitments.

The bullwhip dynamic and the financial fragility findings in this report are not separate problems - they interact. A supplier at the edge of viability does not need a demand collapse to fail. That is the compounded risk the data center supply chain is currently carrying.

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Snapshot: Key Risk Dimensions

Public vs. Private

The stress test reveals a widening divide.

Public Companies:

Risk profile remains broadly similar to pre-stress levels. Greater access to capital markets provides breathing room.

Private Companies:

Significant migration into high-risk categories. Working capital and debt requirements become unsustainable at scale. Growth amplifies, rather than improves, financial risk.

On average, private firms make up 75% of supply chains in several critical industries. This imbalance creates significant disruption risk.

Capital Doesn't Always Equal Delivery

The AI investment assumes that infrastructure will scale in parallel with capital deployment. Our findings suggest otherwise.

Without financially resilient suppliers:

- Project timelines will extend
- Costs will rise
- Capacity build-out will become uneven
- Disruption risk will increase across dependent industries

The AI economy is exposed to a hidden concentration risk: overreliance on a financially stressed supplier base.

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Implications for Enterprises and Investors

Organizations funding or deploying AI infrastructure must move beyond traditional procurement and project planning. The findings in this report point to several specific actions that supply chain and procurement leaders should prioritize.

- **Monitor supplier financial health continuously, not just at contract award.** Risk profiles shift rapidly under growth conditions, particularly for private suppliers in construction, manufacturing, and systems integration.
- **Tier suppliers by financial risk and replaceability simultaneously.** A high-risk supplier that can be dual-sourced is a manageable problem. A high-risk single-source supplier for a specialized capability is a program risk. These require fundamentally different mitigation strategies.
- **Stress test supplier financial capacity before awarding large contracts.** Awarding a contract to a supplier who cannot execute it doesn't transfer the risk; it concentrates it. Financial capacity assessment should be a prerequisite for critical scope awards.
- **Engage proactively with at-risk but strategically critical vendors.** Supply chain finance programs, adjusted payment terms, and contract structures that reduce working capital burden can preserve supplier viability. The cost of proactive support is almost always lower than the cost of a mid-project default.

Growth alone does not strengthen suppliers. In many cases, it weakens them.

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Conclusion: AI Ambition Requires Financial Visibility

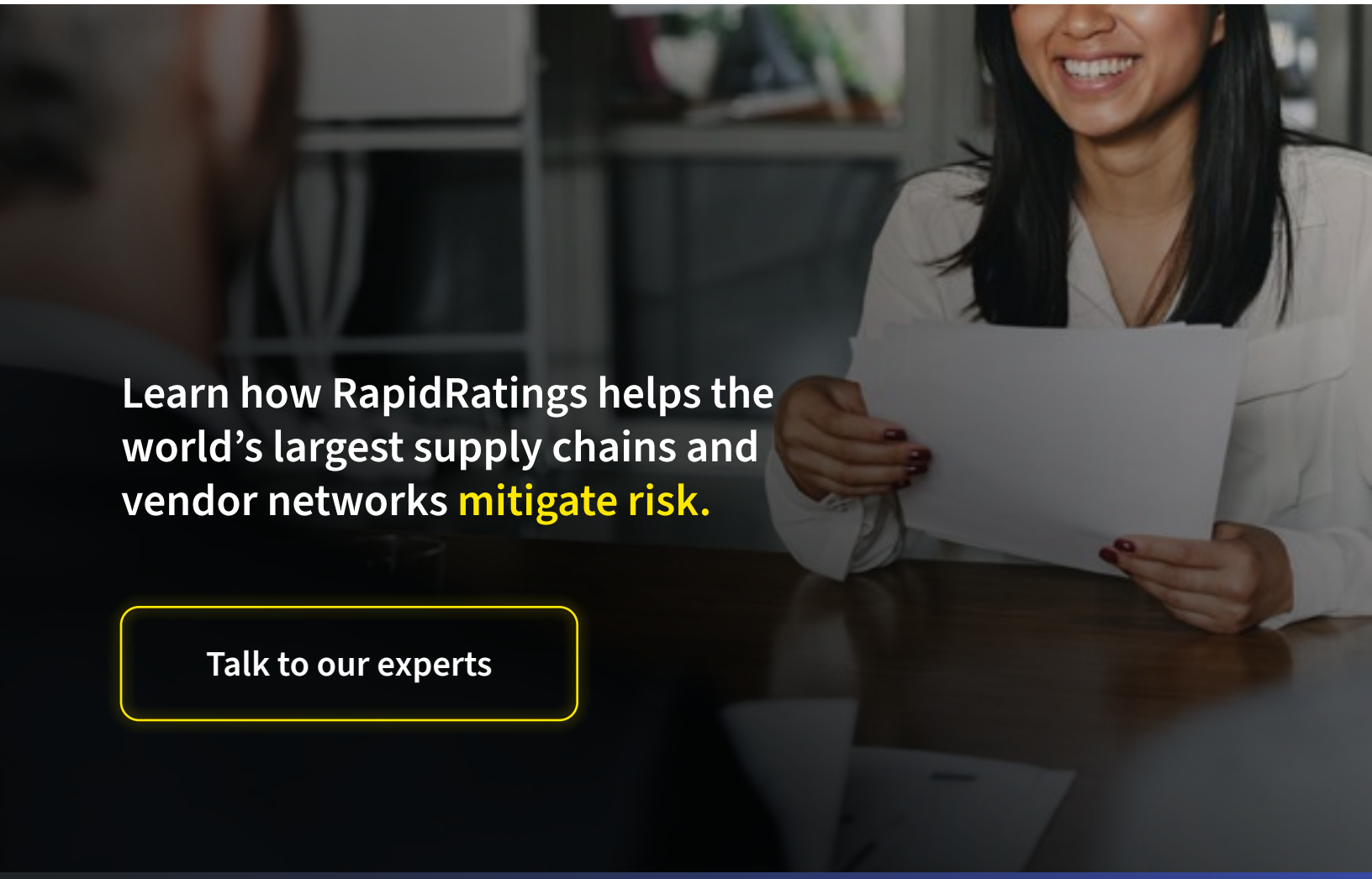
The global economy is betting on AI. But that bet is only as strong as the suppliers responsible for turning capital into physical and digital infrastructure.

Our analysis shows that under realistic growth conditions, financial risk increases across the data center value chain; particularly among private companies that perform essential roles in construction, manufacturing, and systems delivery. The most acute risk is in nonresidential construction, where supplier failure cascades across the entire build sequence. Compounding this are structural private supplier vulnerabilities, active tariff pressures on key input categories, and bullwhip dynamics from simultaneous demand acceleration; risks that interact and amplify one another.

This is not simply a balance sheet problem. It is a systemic supply chain risk problem - and it requires a supply chain response.

For enterprises investing in AI, financial transparency across the supply base is no longer optional. Stress testing capacity, tiering by risk and replaceability, monitoring continuously, and engaging proactively with critical vendors must be prerequisites for execution — not responses to failure.

Because without financially viable suppliers, even the largest AI investments will struggle to materialize.



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