



# AI Is Now A Debt Bubble Too, Quietly Surpassing All Banks To Become The Largest Sector In The Market

## 人工智能现在也成了一个债务泡沫，悄然超越所有银行，成为市场上最大的板块



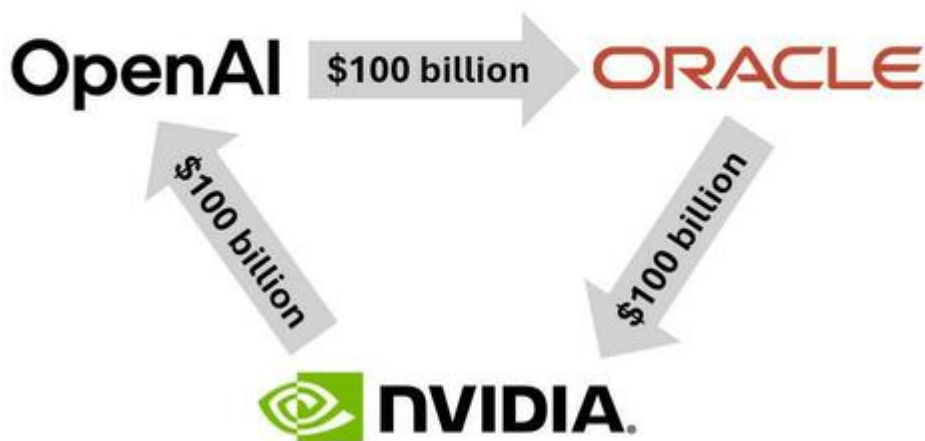
BY TYLER DURDEN

THURSDAY, OCT 09, 2025 - 10:44 AM

Last week we published a [lengthy article](#) discussing in detail the current generation's (because **every** generation has one, just ask [Global Crossing](#)) "infinite money" ~~circle-jerk~~ **circular deals** which have become the *de jour* staple of the AI bubble and which, simplified, look something like this...

上周我们发表了一篇[长篇文章](#)，详细讨论了当代（因为**每一**代人都有这么一个时期，问问[环球电讯](#)就知道了）的“无限资金”**循环交易**，这类交易已成为当下人工智能泡沫的主要特征，简单来说，其模式大致如下.....

### THE INFINITE MONEY GLITCH

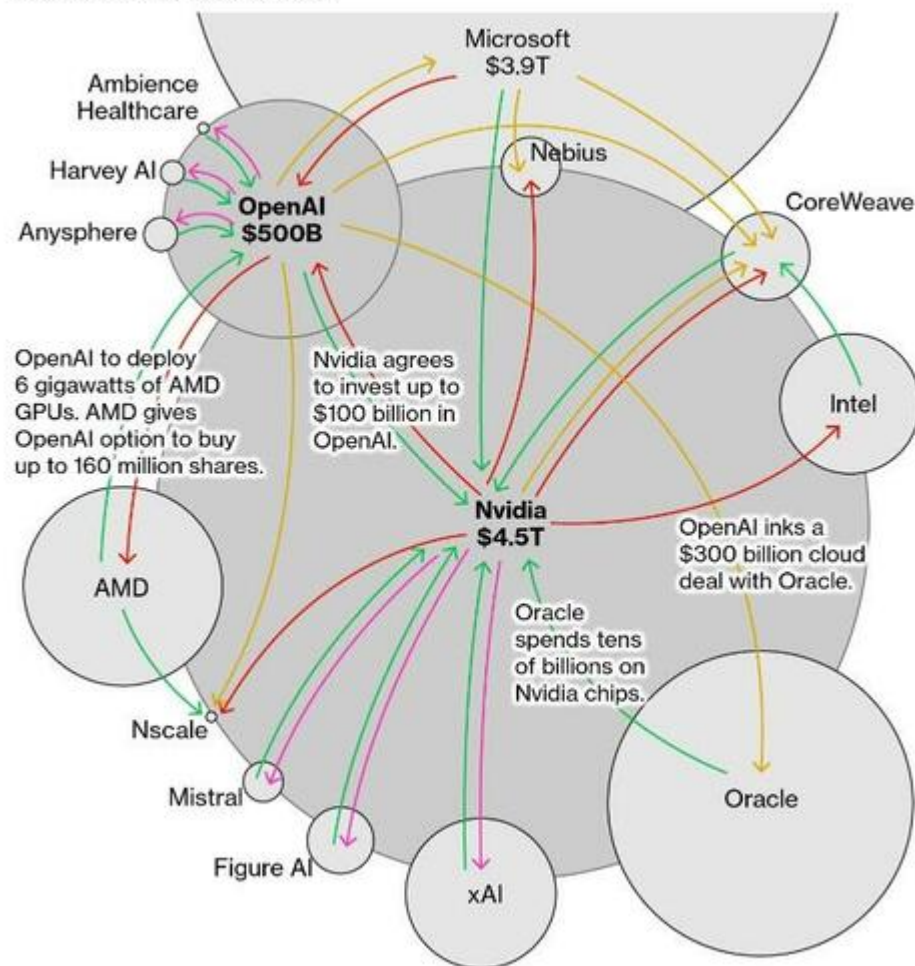


... or, using a [slightly more sophisticated variation from Bloomberg](#), like this...

.....或者，用彭博社的一个稍复杂些的变体，是这样的.....

## How Nvidia and OpenAI Fuel the AI Money Machine

Hardware or Software / Investment / Services / Venture Capital  
Circles sized by market value



Source: Bloomberg News reporting

Bloomberg

... which JPM's Michael Cembalest [described](#) laconically as follows...

.....摩根大通的迈克尔·森巴莱斯特对此简短地描述如下.....

Oracle's stock jumped by 25% after being promised \$60 billion a year from OpenAI, **an amount of money OpenAI doesn't earn yet, to provide cloud computing facilities that Oracle hasn't built yet, and which will require 4.5 GW of power (the equivalent of 2.25 Hoover Dams or four nuclear plants)**, as well as increased borrowing by Oracle whose debt to equity ratio is already 500% compared to 50% for Amazon, 30% for Microsoft and even less at Meta and Google.

在获得OpenAI承诺的每年600亿美元后，甲骨文的股价飙升了25%。而这笔钱OpenAI目前尚未赚到，甲骨文也尚未建成相关的云计算设施，且这需要4.5吉瓦的电力（相当于2.25座胡佛水坝或4座核电站），此外，甲骨文还需增加借款，其资产负债率已达500%，相比之下，亚马逊为50%，微软为30%，Meta和谷歌则更低。

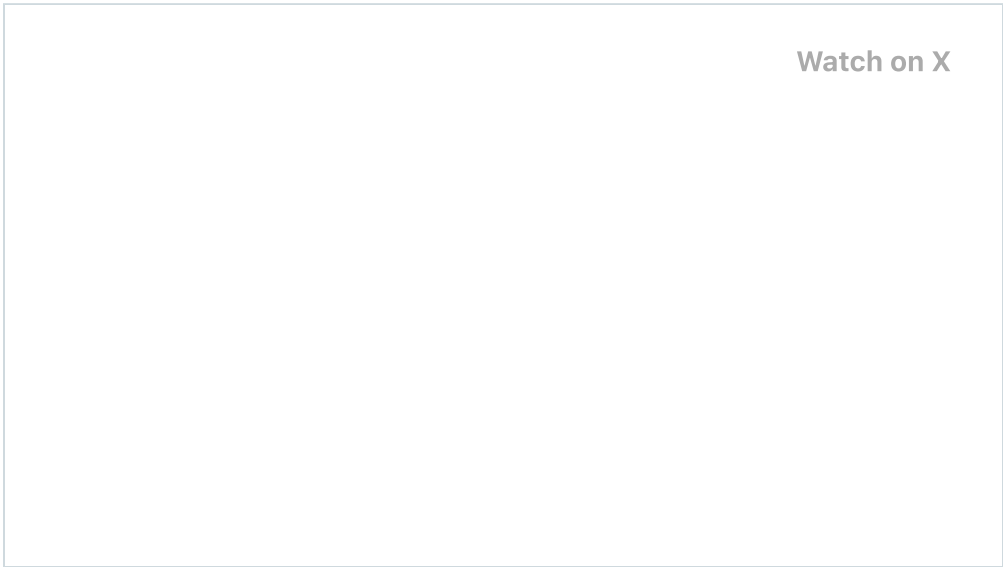
**There is no way for Oracle to pay for this with cash flow.** They must raise equity or debt to fund their ambitions. Until now, the AI infrastructure boom has been almost entirely self-funded by the cash flows of a select few hyperscalers. Oracle has broken the pattern. It is willing to leverage up to hundreds of billions to seize a share. The stable oligopoly is cracking...The implications are profound. Amazon, Microsoft and Google can no longer treat AI infrastructure as a discretionary investment. They must defend their turf. What had been a disciplined, cash-flow-funded race may now turn into a debt-fueled arms race.

甲骨文公司无法用现金流来支付这笔费用。他们必须通过增发股票或举债来为自己的雄心壮志提供资金。到目前为止，人工智能基础设施的繁荣几乎完全是由少数几家超大规模科技公司的现金

流自筹资金推动的。甲骨文打破了这一模式。它愿意举债数千亿美元来抢占一席之地。稳定的寡头垄断格局正在瓦解.....其影响是深远的。亚马逊、微软和谷歌不能再将人工智能基础设施视为可自由支配的投资了。它们必须捍卫自己的地盘。这场原本由现金流支撑、井然有序的竞争，如今可能会演变成一场由债务驱动的军备竞赛。

... and which has conjured out of thin air massive amounts of investment capital which as Jensen Huang was kind enough to admit to CNBC earlier today, **actually does not even exist...**

.....并且凭空变出了巨额的投资资金，正如黄仁勋今天早些时候在接受CNBC采访时坦言的那样，**这些资金实际上根本不存在.....**



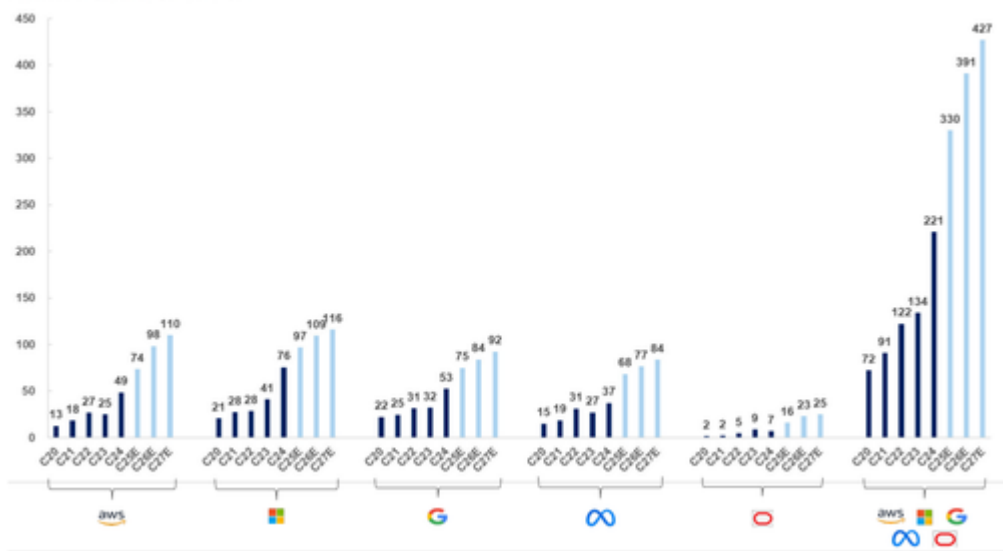
... but will at some point in the **future**, either in the form of **future** cash from operations, equity raises (don't tell current investors) or debt. Well, really just debt.

.....但在未来的某个时刻，无论是以未来的经营现金流、股权融资（别告诉现有投资者）还是债务的形式。嗯，实际上只有债务。

Lots and lots of debt, because with negligible enterprise penetration and the biggest use case so far being a \$19.99 monthly subscription for lazy college students who are outsourcing their essay writing to some chatbot, someone has to pay for the **\$500 billion in annual capex.**

债务堆积如山，因为企业渗透率微乎其微，而迄今为止最大的应用场景不过是每月19.99美元的订阅服务，供那些懒得自己写论文、把写作任务外包给某个聊天机器人的大学生使用，可总得有人为每年5000亿美元的资本支出买单。

Exhibit 1: US hyperscalers have spent a collective ~\$477bn in capex in CY2022-2024, which we expect to grow to ~\$1.15trn in CY2025-2027E  
Hyperscaler Capex by Company (\$bn)



That someone, we discussed in detail, will be a new generation of creditors. Some will be *private creditors* as we explained back in July in "[The Shocking Math: Paying For AI Capex Will Require Over \\$1 Trillion In New Debt By 2028](#)," in which we quoted some stunning numbers from Morgan Stanley:

我们详细讨论过，这个人将是新一代的债权人。正如我们在7月的《惊人数据：到2028年，支付人工智能资本支出将需要超过1万亿美元的新债务》中所解释的那样，其中一些将是私人债权人，在那篇文章中，我们引用了摩根士丹利的一些惊人数据：

We forecast roughly **\$2.9 trillion of global data center spend through 2028**, comprising \$1.6 trillion on hardware (chips/servers) and \$1.3 trillion on building data center infrastructure, including real estate, build costs, and maintenance.

我们预测到2028年，全球数据中心支出约为2.9万亿美元，其中包括1.6万亿美元的硬件（芯片/服务器）支出，以及1.3万亿美元的 data center 基础设施建设支出，涵盖房地产、建设成本和维护费用。

**This translates into investment needs of over \$900 billion in 2028. For context, the total capex spending by all companies in the S&P 500 index combined was about \$950 billion in 2024.**

这意味着2028年的投资需求将超过9000亿美元。作为参考，2024年标普500指数所有成分公司的资本支出总额约为9500亿美元。

Such large potential spending has significant macro consequences as well. Our economists expect that investment spending related to data center construction and power generation will add up to 40bp to US real GDP growth between 2025-26.

如此庞大的潜在支出也会产生重大的宏观影响。我们的经济学家预计，2025至2026年间，与数据中心建设和发电相关的投资支出将为美国实际GDP增长贡献40个基点。

That's the good news... which many will say is already largely priced in. The bad news, again, is who pays for all of this. And Morgan Stanley admitted as much:

这是个好消息.....许多人会说，这在很大程度上已经体现在价格中了。而坏消息，同样的，是谁来为这一切买单。摩根士丹利也承认了这一点：

By any measure, **the capital requirements to support this level of investment are staggering**, and mobilizing efficient and scalable capital becomes increasingly critical. We did a deep dive into this topic, exploring alternative avenues of capital to finance this expenditure, in a collaborative report published a few days ago. The key takeaway from the report is that credit markets – secured, unsecured, and securitized in both public and private markets – will play a growing role in financing data centers.

无论从哪个角度衡量，**支撑这种投资规模所需的资本量都大得惊人**，因此，调动高效且可扩展的资本变得愈发关键。几天前，我们在一份合作发布的报告中深入探讨了这一话题，研究了为这类支出融资的其他资本渠道。该报告的核心结论是，信贷市场——包括公共和私人市场中的有担保、无担保及证券化信贷——将在数据中心融资中发挥越来越重要的作用。

To be clear, capex related to AI and data centers has been in motion for the last few years. **Spending from the hyperscalers alone has gone from ~\$125 billion two years ago to ~\$200 billion in 2024 and the consensus expectation is that it exceeds \$300 billion in 2025.**

需要明确的是，过去几年与人工智能和数据中心相关的资本支出一直在进行。仅超大规模企业的支出就从两年前的约1250亿美元增长到2024年的约2000亿美元，市场普遍预期2025年这一数字将超过3000亿美元。

Internal operating cash flows from the hyperscalers have been the source of this spending. However, **our equity analysts expect the investment needs for data centers to rise sharply over the next few years.** While cash flows from hyperscalers will remain a key source of

capital to finance data center-related spending, these alone will no longer be adequate, after accounting for cash build and shareholder capital returns. Leveraging our equity analysts' projections, **we estimate that \$1.4 trillion of hyperscaler capex may be self-funded with cash flows, leaving a sizable \$1.5 trillion financing gap.**

超大规模企业的内部运营现金流一直是此类支出的资金来源。然而，**我们的股票分析师预计，未来几年数据中心的投资需求将大幅上升。**尽管超大规模企业的现金流仍将是为中心相关支出提供资金的关键来源，但在考虑到现金积累和股东资本回报后，仅靠这些现金流将不再足够。根据我们股票分析师的预测，**我们估计超大规模企业1.4万亿美元的资本支出可能由现金流自筹，这将留下1.5万亿美元的巨大融资缺口。**

We think that credit markets, broadly defined to encompass both public and private markets of different flavors, will gain traction as more efficient providers of capital to bridge this gap. There is a favorable alignment of significant and growing dry powder across credit markets with attractive real yields on offer with appeal to a sticky end-investor base (e.g., insurance, sovereign wealth funds, pension funds, endowments and high net worth retail) looking for scalable, high-quality asset exposures that can provide diversification benefits. We think that this alignment of needs of capital and investment will pave the way for bridging the \$1.5 trillion financing gap.

我们认为，广义上涵盖各类公开和私人市场的信贷市场，将作为更高效的资本提供者获得发展动力，以填补这一缺口。信贷市场中大量且不断增长的闲置资金，与具有吸引力的实际收益率形成了有利的契合点，这对那些寻求可扩展、高质量资产敞口（以获得分散化收益）的稳定终端投资者群体（如保险公司、主权财富基金、养老基金、捐赠基金和高净值散户）具有吸引力。我们认为，这种资本需求与投资需求的契合，将为填补1.5万亿美元的融资缺口铺平道路。

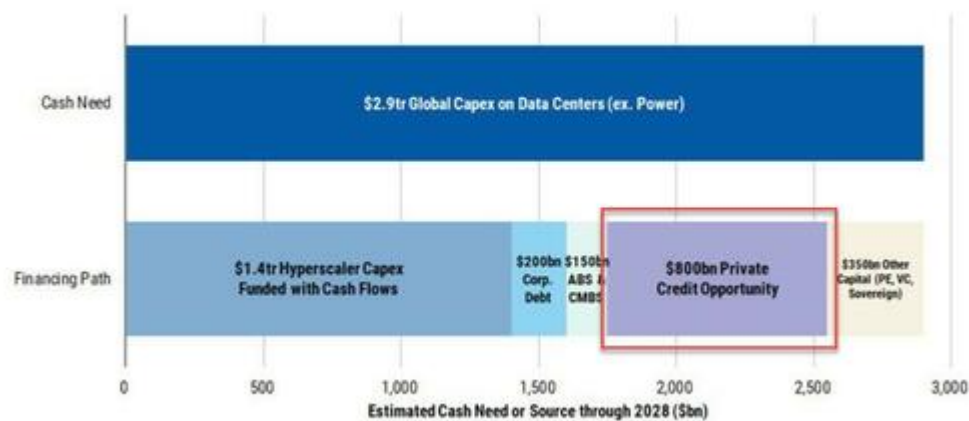
**We size the different financing channels as follows: unsecured corporate debt issuance from issuers in the technology sector (~\$200 billion); securitized markets in the form of data center ABS and CMBS (~\$150 billion), private credit markets in the form of asset-based financing (~\$800 billion), and other capital sources across sovereign, private equity, venture capital, and bank lending (~\$350 billion).** Of these, we think that **private capital – in particular credit – will play a key role in meeting a majority of the remaining financing gap** as it sits optimally at the intersection of significant expansion in AUM in a higher rate environment and the complex, global, and customized financing needs that are associated with AI build-out.

我们对不同融资渠道的规模估算如下：科技行业发行方的无担保公司债发行（约2000亿美元）；数据中心资产支持证券（ABS）和商业抵押贷款支持证券（CMBS）形式的证券化市场（约1500亿美元）；基于资产的融资形式的私人信贷市场（约8000亿美元）；以及来自主权基金、私募股权、风险投资和银行贷款等的其他资本来源（约3500亿美元）。在这些渠道中，我们认为私人资本——特别是信贷——将在填补大部分剩余融资缺口方面发挥关键作用，因为在利率较高的环境下，其资产管理规模（AUM）显著扩张，且恰好能满足人工智能建设相关的复杂、全球性和定制化的融资需求。

As MS concludes, "the point we want to drive home is that credit markets will play a major role in enabling AI-driven technology diffusion" and of all the available sources of credit, the chart below shows just how big the debt hole is that ***private credit will have to plug.***

正如摩根士丹利所总结的那样：“我们想要强调的一点是，信贷市场将在推动人工智能驱动的技术普及方面发挥重要作用”，而在所有可用的信贷来源中，下图展示了**私人信贷将要填补的债务缺口有多大。**

**Exhibit 1:** Estimated financing breakdown for total capex, 2025-28



Source: Morgan Stanley Research estimates

Two months later, [a study by Bain](#) came to virtually the same conclusion:

两个月后，贝恩公司的一项研究得出了几乎相同的结论：

Bain's research suggests that building the data centers with the computing power needed to meet that anticipated demand **would require about \$500 billion of capital investment each year, a staggering sum that far exceeds any anticipated or imagined government subsidies**. This suggests that the private sector would need to generate enough new revenue to fund the power upgrade. How much is that? Bain's analysis of sustainable ratios of capex to revenue for cloud service providers suggests **that \$500 billion of annual capex corresponds to \$2 trillion in annual revenue**.

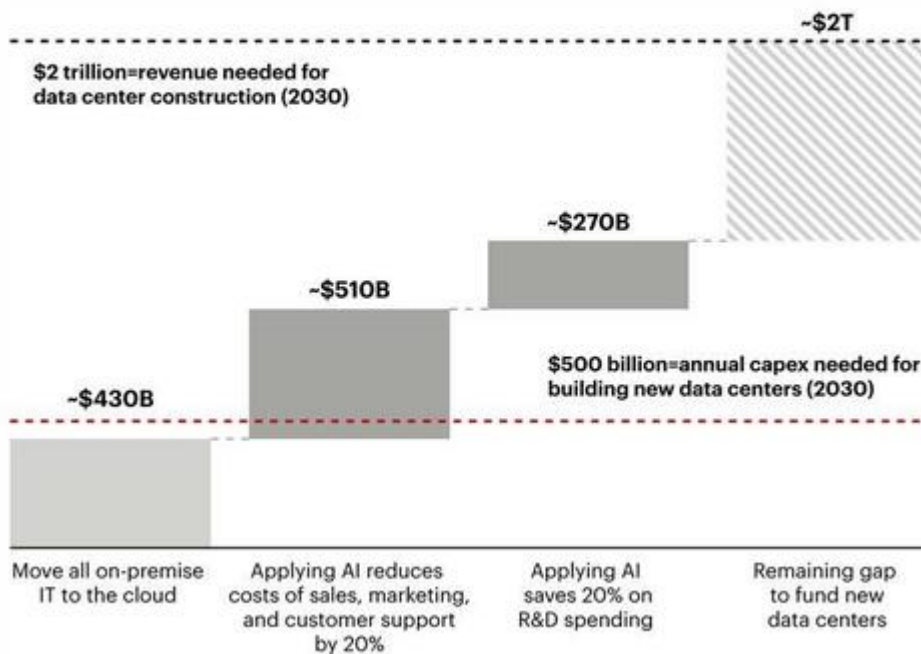
贝恩公司的研究表明，建设具备满足预期需求所需计算能力的数据中心，**每年需要约5000亿美元的资本投资，这一惊人数字远超任何预期或设想的政府补贴**。这意味着私营部门需要创造足够的新收入来为电力升级提供资金。这需要多少呢？贝恩公司对云服务提供商资本支出与收入的可持续比率分析显示，**每年5000亿美元的资本支出对应的是每年2万亿美元的收入**。

What could fund this \$2 trillion every year? If companies shifted all of their on-premise IT budgets to cloud and also reinvested the savings anticipated from applying AI in sales, marketing, customer support, and R&D (estimated at about 20% of those budgets) into capital spending on new data centers, **the amount would still fall \$800 billion short of the revenue needed to fund the full investment**.

每年2万亿美元的资金从何而来？如果企业将所有本地IT预算转移到云端，并将在销售、营销、客户支持和研发领域应用人工智能所预期节省的资金（估计约为这些预算的20%）重新投资于新数据中心的资本支出，**这笔资金仍会比资助全部投资所需的收入少8000亿美元**。

And visually: 从视觉上看：

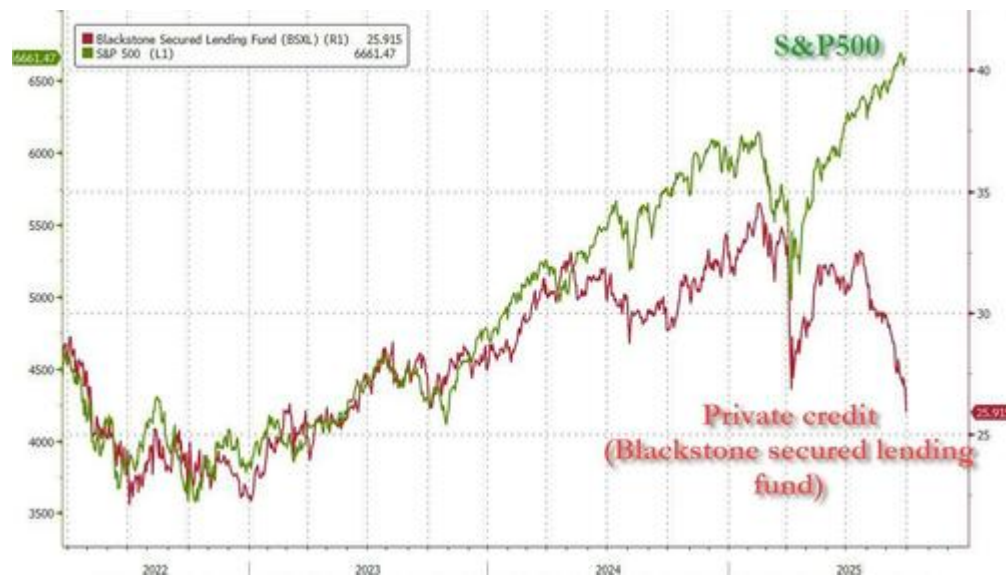
Even with AI-related savings, **\$800 billion** in additional revenue would need to be generated to fund the necessary data centers



Sources: OECD; S&P Global; Bain Cloud CIO Survey; IDC; Fortune; Gartner

The problem, as we [detailed last week](#), is that the private credit sector is starting to crack under the massive weight of its exposure to US consumers (where such notable implosions as the Tricolor and First Brands bankruptcies are just the beginning).

正如我们上周详细阐述的那样，问题在于私人信贷行业正因其对美国消费者的巨大敞口而开始崩溃（像 Tricolor和First Brands的破产等引人注目的崩溃事件仅仅是个开始）。

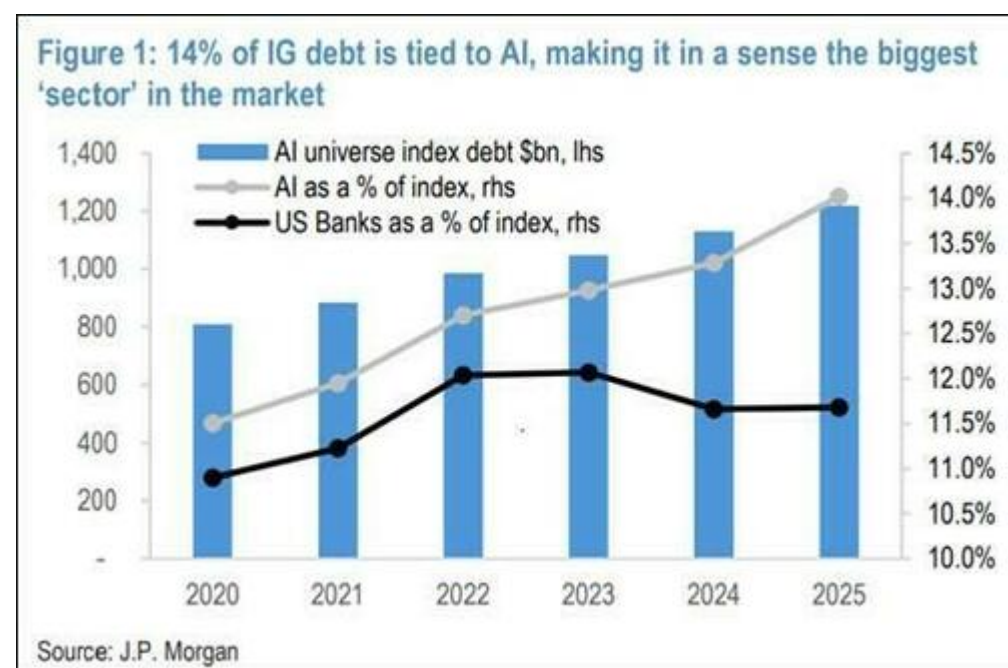


Luckily, there is also the public credit sector, and here we have a full-blown debt bubble brewing as well. And yes, it's all tech related too.

幸运的是，还有公共信贷领域，而这里也正在酝酿一场全面的债务泡沫。没错，这也都与科技相关。

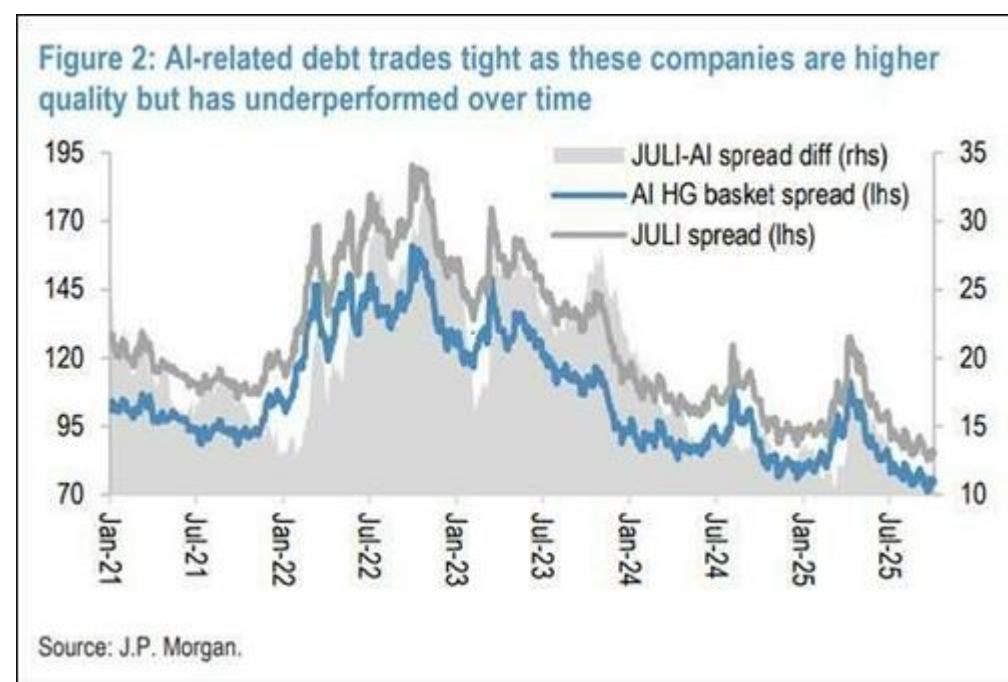
According to JPMorgan's Eric Beinstein and Nate Rosenbaum ([full note available here](#)), **AI-related companies now make up 14% of the Investment Grade Index with \$1.2T in debt**. Shockingly, **this is now the largest sector within the IG index, exceeding Banks**.

据摩根大通的埃里克·贝恩斯坦和内特·罗森鲍姆（完整报告见此处</b0）称，与人工智能相关的公司目前占投资级指数的14%，债务达1.2万亿美元。令人震惊的是，这现已成为投资级指数中最大的板块，超过了银行业。



Further, the sector trades ~74bps which is 10bps tighter than the broader JULI index (these companies can be tracked on BBG via JPM's Delta-One basket JPAMAIDE).

此外，该板块的交易利差约为74个基点，比更广泛的JULI指数低10个基点（这些公司可通过彭博社上摩根大通的Delta-One篮子JPAMAIDE进行追踪）。



This is how Beinstein summarized the problem:

这是爱因斯坦对该问题的总结：

The torrid ascent of AI stocks has **caused some angst for credit investors worried that any potential downside there could have credit implications.** We think that from a fundamental perspective, these fears are not justified as these companies are either cash rich/not highly levered (Tech and Cap Goods) or highly regulated (Utilities). That said, an equity selloff in AI-related names would likely impact credit too, and, given these companies trade tight to the rest of the market, a short basket of single name CDS may be an effective tail-hedge for cross-asset

investors.

人工智能类股票的火爆上涨让信贷投资者有些焦虑，他们担心股市任何潜在的下跌都可能对信贷产生影响。我们认为，从基本面来看，这些担忧并无道理，因为这些公司要么现金充裕、杠杆率不高（科技和资本货物类公司），要么受到高度监管（公用事业类公司）。话虽如此，人工智能相关股票的抛售也可能会影响信贷，而且鉴于这些公司的交易与市场其他部分关联紧密，单一名称信用违约互换的空头篮子或许是跨资产投资者有效的尾部对冲工具。

In conjunction with JPM HG Credit Tech, Utilities and Cap Goods analysts, we have identified what we believe to be the current cohort of IG companies most closely tied to the AI revolution. **The amount of debt tied to these companies has grown rapidly to \$1.2tr currently.** As such, AI companies as we define them now make up 14.0% of the IG index, which if thought of as a 'sector' is now larger than the largest HG sector (US Banks).

我们与摩根大通高评级信贷团队的科技、公用事业及资本货物分析师合作，确定了我们认为当前与人工智能革命联系最为紧密的投资级公司群体。**与这些公司相关的债务已迅速增长至目前的1.2万亿美元。**因此，我们所定义的人工智能公司目前占投资级指数的14.0%，若将其视为一个“行业”，其规模已超过最大的高评级行业（美国银行业）。

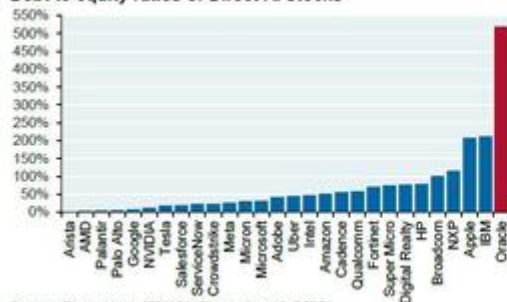
JPMorgan's conclusion: *"The market cap of the JPAMAIDE equity basket has grown to 39% of the market cap of the S&P500 so **a repricing could be significant for broader markets**"*

摩根大通的结论：*"JPAMAIDE股票篮子的市值已增长至标普500指数市值的39%，因此重新定价可能对更广泛的市场产生重大影响"*

At the single security level, AAPL, DUK, and ORCL are the largest bond issuers but are cash rich/net debt low types of companies. Of these, the last one is the most concerning because as JPM's Cembalest wrote in ["The Data Center Blob"](#), **Oracle has a debt to equity ratio of 500% compared to 50% for Amazon, 30% for Microsoft and even less at Meta and Google.** In other words, once the AI credit bubble bursts, Oracle will be the first to go.

在单一证券层面，苹果（AAPL）、杜克能源（DUK）和甲骨文（ORCL）是最大的债券发行方，但它们都属于现金充裕、净债务较低的公司类型。其中，最后一家公司最令人担忧，因为正如摩根大通的钱伯斯在《数据中心巨头》中所写的那样，甲骨文的资产负债率为500%，而亚马逊为50%，微软为30%，Meta和谷歌则更低。换句话说，一旦人工智能信贷泡沫破裂，甲骨文将首当其冲。

Debt to equity ratios of Direct AI stocks



Source: Bloomberg, JPMAM, September 16, 2025

#### On OpenAI/Oracle and the capital cycle:

"There is no way for Oracle to pay for this with cash flow. They must raise equity or debt to fund their ambitions. Until now, the AI infrastructure boom has been almost entirely self-funded by the cash flows of a select few hyperscalers. Oracle has broken the pattern. It is willing to leverage up to hundreds of billions to seize a share. The stable oligopoly is cracking...The implications are profound. Amazon, Microsoft and Google can no longer treat AI infrastructure as a discretionary investment. They must defend their turf. What had been a disciplined, cash-flow-funded race may now turn into a debt-fueled arms race". Doug O'Laughlin, *Fabricated Knowledge*, Sept 2025

There is a bigger problem: if and when the AI paradigm shifts, whether due to the market suddenly demanding tangible returns on AI investment and not just *circle jerk funny money*, or because China comes up with a 1000x cheaper AI chip than Nvidia, or reverse engineers a better LLM than anything the Sam Altman "non-profit" can push out, equity investors in the AI sector will suffer massive losses, but at least these will be large contained to the stock market. However, it is the AI credit, which is being used to pay for that \$500 billion in annual capex and serves as the scaffolding of the broader economy, and which is "guaranteed" with future cash flows that will never come, that will be the true time bomb that wrecks the economy once the AI bubble bursts.

还有一个更大的问题：如果人工智能范式发生转变（无论是因为市场突然要求人工智能投资带来切实回报，而不只是圈内的虚假资金，还是因为中国推出了比英伟达便宜1000倍的人工智能芯片，或是逆向工程出了比

山姆·奥特曼的“非营利组织”能推出的任何大语言模型都更好的产品)，人工智能领域的股权投资将遭受巨大损失，但至少这些损失主要局限于股市。然而，真正的定时炸弹是人工智能信贷——它正被用于支付每年5000亿美元的资本支出，是更广泛经济的支柱，且以永远不会到来的未来现金流作为“担保”——一旦人工智能泡沫破裂，它将摧毁整个经济。

Or maybe not. 也可能并非如此。

In its gloomy report (mentioned above), which calculated the massive funding shortfall facing the AI bubble and which virtually assures it will burst over time, the [consultancy laid out a case](#) in which the economics of AI might actually work:

在其那份悲观的报告（上文已提及）中，该咨询公司既算出了人工智能泡沫所面临的巨额资金缺口，也几乎断言这一泡沫迟早会破裂。同时，报告中还阐述了一种情况——在这种情况下，人工智能的经济账或许真的能算得过来。

**Technological breakthroughs change the landscape.** History is replete with unexpected leaps of progress in computational power. Sixty years of Moore's law progress in semiconductors has given us handheld devices that far outperform the most powerful computers of the 1970s. Many speculate that quantum computing, for example, could displace the favored semiconductors trajectory of today, reducing the compute and power demands of tomorrow's systems. Bain's research suggests **we are at least 10 to 15 years away from quantum computers** stable enough to replace generative AI training and inference workloads. **Other technological breakthroughs** could include specially designed training and inference application-specific integrated circuits (ASICs), which could be more efficient than general purpose graphics processing units (GPUs), or new forms of memory or advanced packaging to improve power efficiency.

**技术突破改变格局。**历史上，计算能力的进步中不乏出人意料的飞跃。半导体领域遵循摩尔定律发展的六十年间，我们手中的便携设备性能已远超20世纪70年代最强大的计算机。例如，许多人推测量子计算可能会取代如今主流的半导体发展轨迹，降低未来系统对计算能力和能耗的需求。贝恩咨询的研究表明，**我们至少还需要10到15年的时间，才能让量子计算机稳定到足以替代生成式人工智能的训练和推理工作负载。**其他技术突破可能包括专门设计的训练和推理专用集成电路（ASIC）——其效率可能高于通用图形处理器（GPU），或者是能提高能效的新型存储器或先进封装技术。

In other words, there is hope the AI bubble won't burst and drag global markets and the economy with it, and that the AI sector will one day become self-sustaining. **All we need, [is a miracle](#).**

换句话说，人们希望人工智能泡沫不会破裂，也不会拖累全球市场和经济，并且希望人工智能领域终有一天能实现自我维持。**我们所需要的，[只是一个奇迹](#)。**

More in the full JPMorgan notes [here](#) and [here](#), available to [pro subscribers](#).

更多内容详见摩根大通的完整报告（[此处](#)和[此处](#)），仅供[专业订阅用户](#)查看。

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