US Daily: A Primer on the Impact of AI on the GDP Statistics (Peng/Briggs/Dong)

- Revenue at US companies providing AI infrastructure has risen by $400bn since 2022, which at first glance seems to suggest that AI has been a meaningful driver of economic growth recently. We review how AI spending is—and is not—recorded in the US GDP statistics and estimate both its true and measured contributions to GDP growth.
- AI-related spending affects US GDP through four channels: investment in equipment (e.g., semiconductors and information processing equipment), structures (e.g., data centers or power production), intellectual property (e.g., R&D and software), and net exports of AI-related goods and services. While information processing equipment investment rose at an outsized 39% annualized rate in 2025H1, this exaggerates the impact of AI, both because most of these investment goods were imported and therefore not a net addition to GDP, and because the especially rapid growth earlier this year probably reflected frontloading of imports ahead of tariff hikes.
- To estimate the *true* impact of AI on US real GDP, we start with revenues received by US companies providing AI infrastructure and then net out their foreign sales that are likely produced abroad, price inflation, and imports of inputs to estimate real domestic output. This strategy implies a boost to *true* US GDP from AI of around $160bn (0.7%) since 2022, or 0.3pp at an annualized rate.
- The *measured* impact of AI on GDP is likely much smaller because the BEA's methodology for estimating GDP treats semiconductors as intermediate inputs, which are only counted towards final demand when the products (e.g., consumer laptops) that they enable are sold. But the high-performance semiconductors developed in recent years are used for training and supporting AI models (i.e. building an intangible asset of which the ultimate output value has not been fully capitalized or measured in GDP). This means that the increase in AI-related semiconductor purchases has not been captured as a GDP addition via investment despite being captured as a subtraction via imports. Similarly, cloud service spending on the development of AI models is also unmeasured. As a result, we estimate that AI has only boosted *measured* real GDP by $45bn (0.2%) since 2022, or around 0.1pp at an annualized rate.

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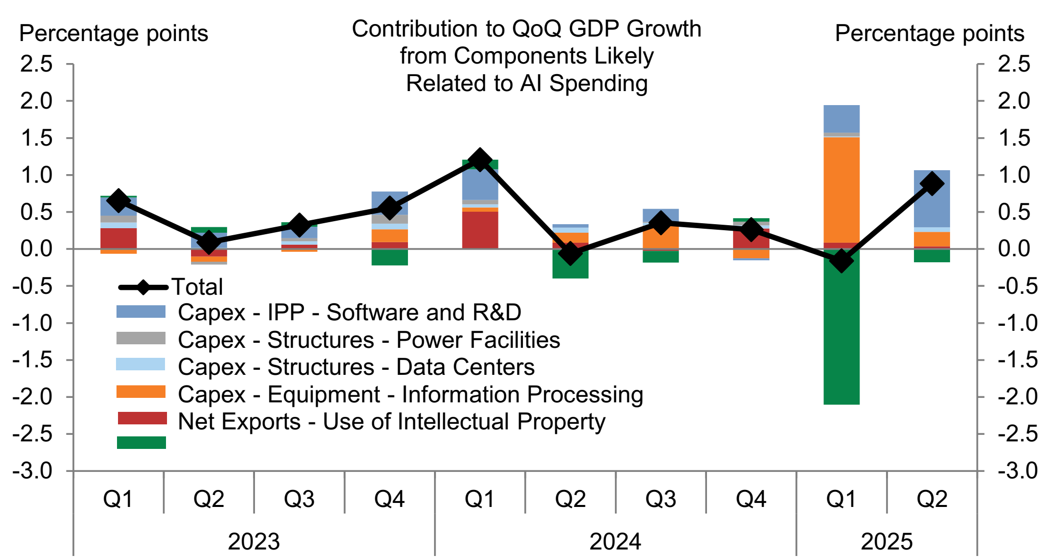
A Primer on the Impact of AI on the GDP Statistics

Revenue at US companies providing AI infrastructure has risen by $400bn since 2022, which at first glance seems to suggest that AI has been a meaningful driver of economic growth recently. We review how AI spending is—and is not—recorded in the US GDP statistics and estimate both its true and measured contributions to GDP growth.

At the current stage, we expect AI-related spending to largely concentrate on building out infrastructure to run AI applications and affect US GDP mainly through four channels: investment in equipment (e.g., semiconductors and information processing equipment), structures (e.g., data centers or power production), intellectual property (e.g., spending on model R&D and software), and net exports of AI-related goods and services (Exhibit 1).

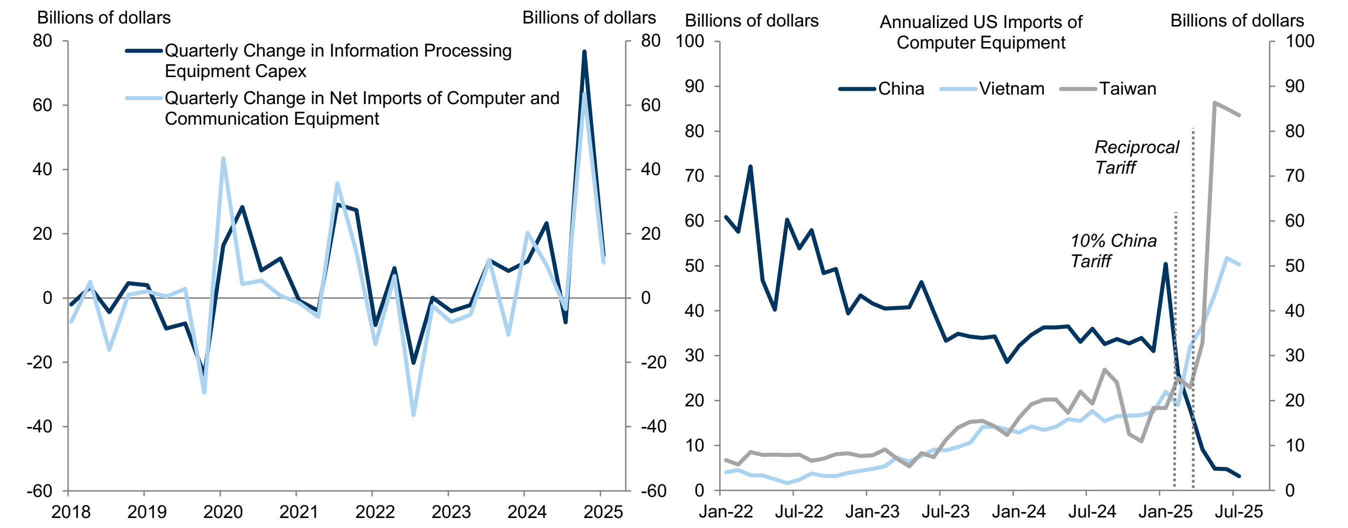
Exhibit 1: AI-Related Spending Affects GDP Through Investment in Intellectual Property, Investment in Construction of Data Centers and Power Facilities, Investment in Information Processing Equipment, and Net Exports of AI-Related Goods and Services



Source: Department of Commerce, Goldman Sachs Global Investment Research

While the orange bars in Exhibit 1 show that information processing equipment investment rose at a 39% annualized rate in 2025H1, driven mostly by purchases of computer servers, this increase overstates the importance of AI to GDP growth for two reasons. First, most investment goods in this category were imported (Exhibit 2, left), and imports are an offsetting subtraction from GDP, implying no net effect. Second, the import surge in the first half of this year probably reflects one-time frontloading ahead of tariffs and thus exaggerates normal AI investment demand (Exhibit 2, right).

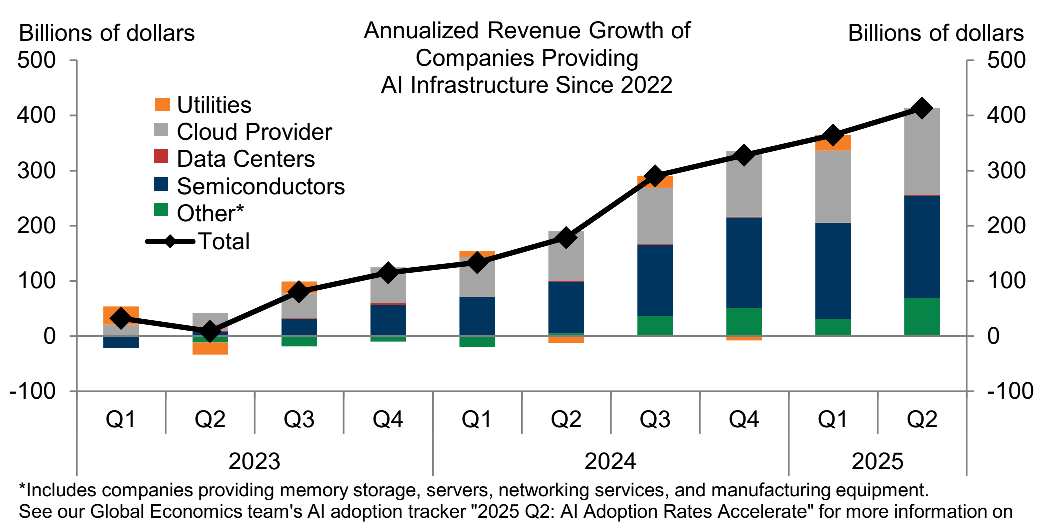
Exhibit 2: The 2025H1 Spike in Technology Equipment Investment Reflects Frontloading of Technology Capital Goods Imports Ahead of Tariffs, Not a Surge in Trend AI Investment That Boosts GDP



Source: Department of Commerce, Goldman Sachs Global Investment Research

To estimate the *true* impact of AI on real US economic activity properly, we follow an estimation strategy developed by our Global Economics team. We start by examining the increase in revenue at US public companies exposed to the buildout of AI infrastructure. Exhibit 3 shows that total nominal spending on AI has risen by $400bn since 2022. As a cross-check, we note that this increase is broadly in line with 2025 projections for hyperscaler capex ($368bn).

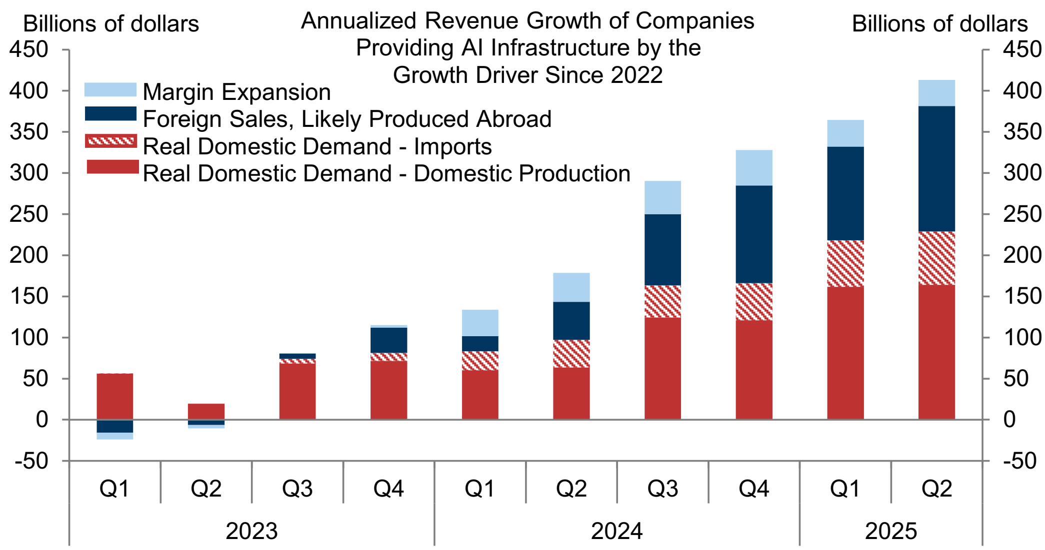
Exhibit 3: Revenue of Public US Companies Providing Key AI Infrastructure Has Surged by $400bn Since the Launch of ChatGPT in 2022



Source: FactSet, Goldman Sachs Global Investment Research

Next, we use information from these companies' balance sheets to estimate the share of the increase that represents an increase in real US domestic demand. We find that around half of the $400bn increase was driven by either margin expansion, much of which likely reflected an increase in price rather than quantity, or by growth in US companies' foreign sales of equipment, much of which was likely produced outside the US (Exhibit 4). This suggests that only the remaining $220bn likely reflects a rise in real US domestic demand for AI. Of this, around $60bn of semiconductor products and computer equipment were manufactured abroad and imported into the US. Therefore, on net, we estimate that the boost from AI to *true* US real GDP is likely around $160bn (or 0.7%) since 2022.

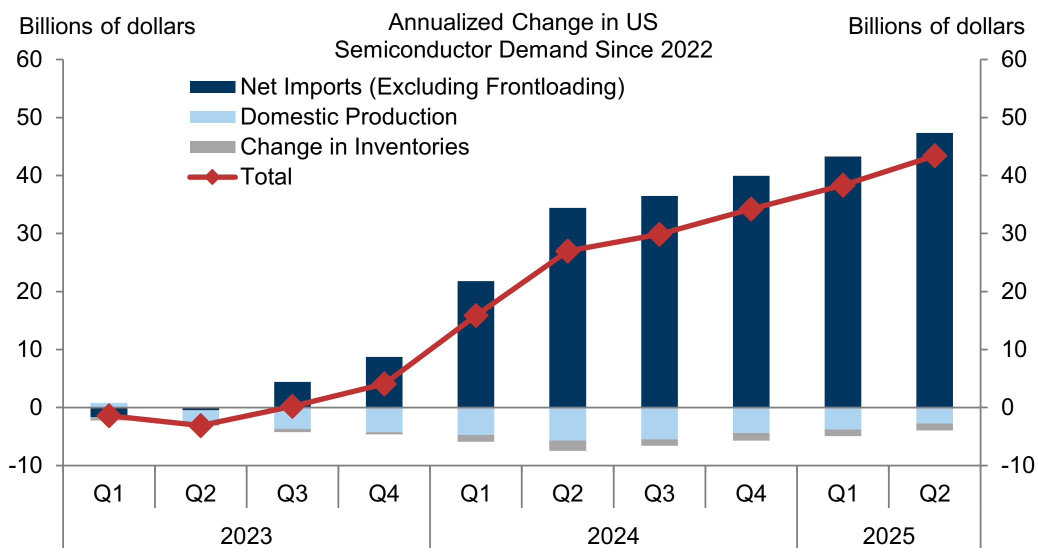
Exhibit 4: But Almost Half of the Increase in AI Spending Is Driven by Margin Expansion and Growth in Foreign Sales of Equipment Produced Largely Outside the US, Most of Which Should Not Be Counted in US GDP



Source: FactSet, Goldman Sachs Global Investment Research

However, the impact on *measured* GDP is likely much smaller. One key reason is that the BEA's current methodology for estimating GDP treats semiconductors as intermediate inputs, which are only counted towards final demand when the products (e.g., consumer laptops) that they enable are sold. But most high-performance semiconductors developed in recent years are used for training and supporting in-house AI models (i.e. building an intangible asset of which the ultimate output value has not been fully capitalized or measured in GDP). We estimate that US domestic demand for semiconductors has grown by $42bn since 2022, and this increase has been satisfied entirely by rising imports (Exhibit 5). Our estimate of the AI impact on *true* GDP has incorporated the $42bn AI-related demand for semiconductors as an addition in the investment statistics that is offset by an increase in imports. But under the current BEA's methodology, the increase in semiconductor imports is subtracted from GDP but the boost to investment is not added, so the impact on *measured* GDP is actually negative.

Exhibit 5: US Demand for Semiconductors Has Grown by $42bn Since 2022 but Has Been Satisfied Entirely by Rising Imports and Has Been Mostly Missed as an Addition to Investment Because the National Accounts Treat Semiconductors as Intermediate Inputs, Implying a Negative Net Effect on Measured GDP

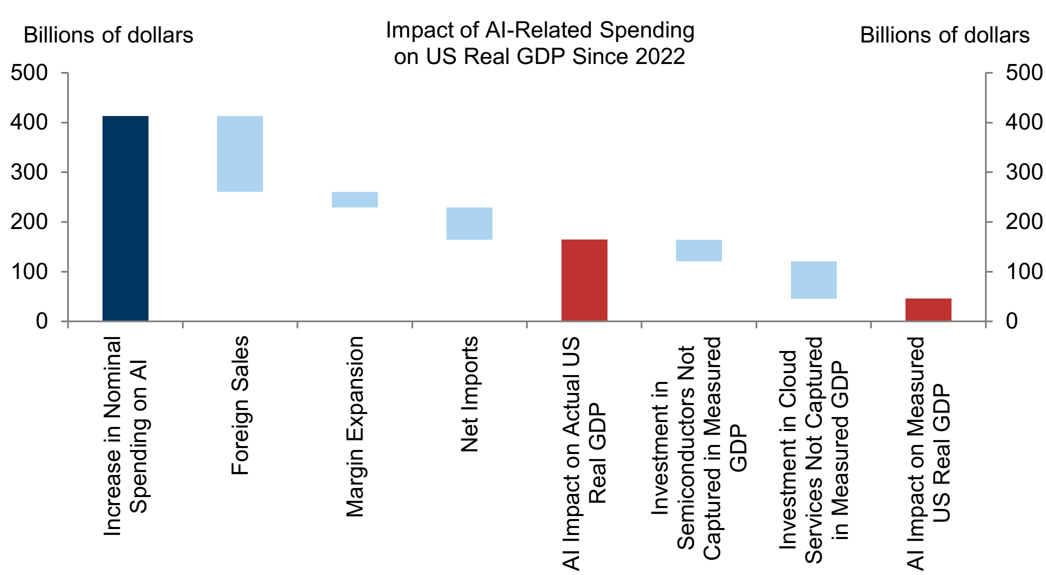


Source: Department of Commerce, Goldman Sachs Global Investment Research

Similarly, we find that around $75bn of cloud service spending on development of AI models and enterprise solutions has gone unmeasured in the investment statistics.

After accounting for these details, we estimate that AI has boosted *true* real GDP by $160bn (0.7%) since 2022, but the official GDP statistics have only captured about $45bn (0.2%) of the impact (Exhibit 6).

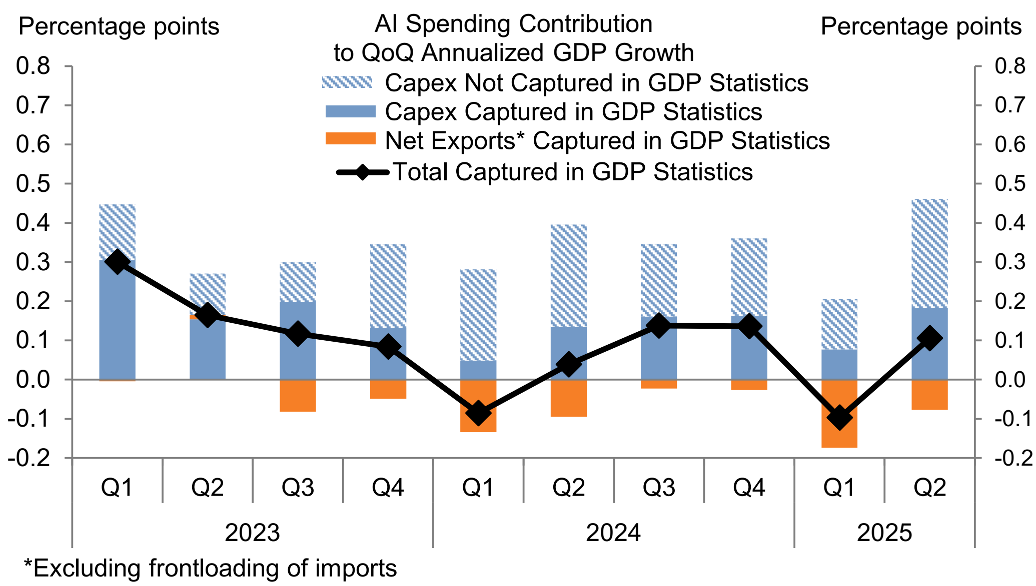
Exhibit 6: We Estimate That AI-Related Spending Has Boosted True Real GDP by $160bn Since 2022, but the Official GDP Statistics Have Only Captured About $45bn of the Impact



Source: Goldman Sachs Global Investment Research

In particular, we find that AI-related spending boosted *measured* GDP growth by 0.2pp in 2023, but the effect was negligible in recent years as the AI boost captured in the business investment component was entirely offset by increased spending on imports of these technology goods (Exhibit 7). This implies that the larger contribution to measured GDP growth from the broader capex and net export categories shown in Exhibit 1 overstates the impact of AI alone over this period, likely because it picks up some growth in non-AI hardware and software investment.

Exhibit 7: We Estimate That AI-Related Spending Boosted Measured GDP Growth by 0.2pp in 2023 but the Impact Was Modest in Recent Years, with the Capex Boost Roughly Offset by a Net Exports Drag



Source: Goldman Sachs Global Investment Research

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Disclosure Appendix

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We, Jan Hatzius, Alec Phillips, David Mericle, Ronnie Walker, Manuel Abecasis, Elsie Peng, Pierfrancesco Mei, Jessica Rindels, Joseph Briggs and Sarah Dong, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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