

# CATMOCK DAILY CAPSULE

April 27 , 2026

## KAKURO

*Kakuro puzzles are similar with crosswords, but instead of letters board filled with digits (from 1 to 9).*

*The board's squares need to be filled in with these digits in order to sum up to the specified numbers.*

*You are not allowed to use the same digit more than once to obtain a given sum.*

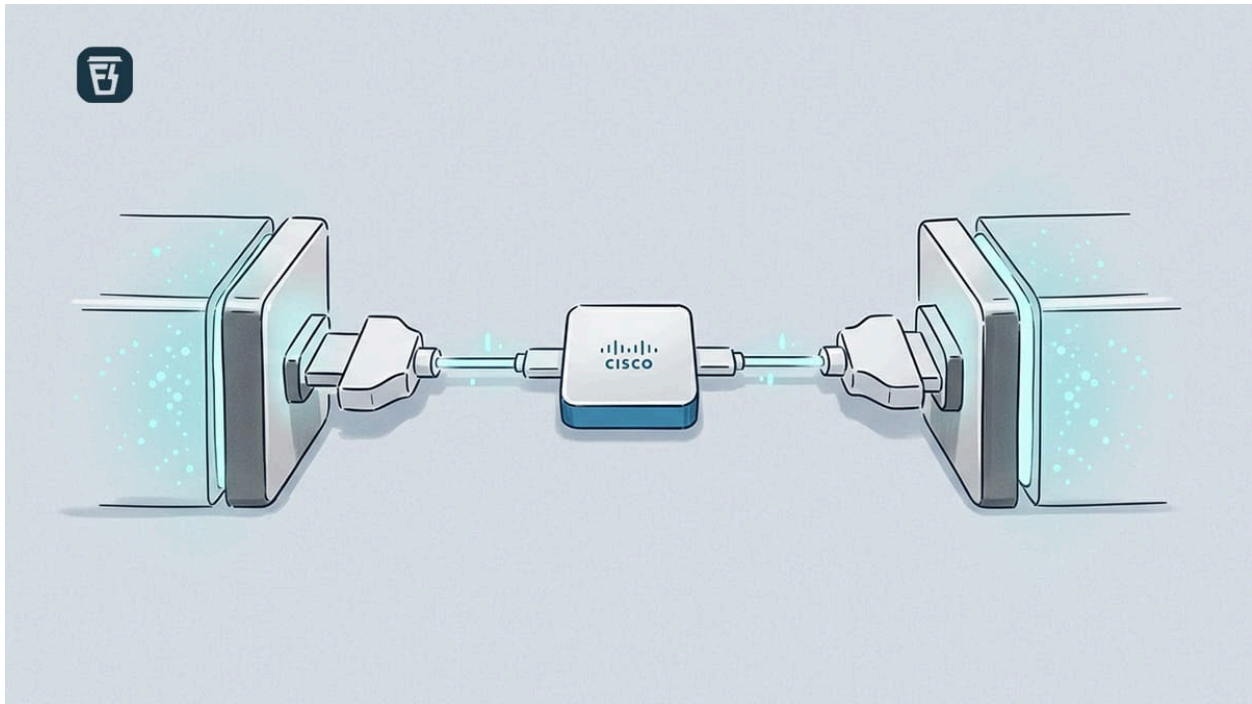
*Each Kakuro puzzle has a unique solution. Good luck!*

						29	16
			12	14		16	
	4	37	13			9	
37						7	
6			9	7			16
	10			5	11	15	
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## SUDOKU

*Every sudoku grid always contains some partially completed grids with digits. The objective of the game is to the fill the missing digits into the grid. With 4x4 grids you need to use and fill digits from 1 to 4; with 6x6 -grids digits 1 to 6 and 9x9-grids contain digits from 1 to 9 respectively. In each column, row and block you can use each digit only once.*

	9				7	8		
8		7	2	3	9		4	
1	4				5		7	3
	8	4	7	9	3			
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		5	3		8	1	2	9
7	1			4	2	5		6



For all the progress made in quantum computing, there's one problem that no one has solved yet: quantum computers still can't talk to each other.

And that might be about to change.

Last week, Cisco introduced something unusual and unheard of: a “universal quantum switch.”

Now, we've already covered what quantum computers are here, but the gist of it is simple. At a basic level, unlike regular computers that process information as simple zeros and ones, quantum computers work with probabilities, letting them explore many possibilities at once.

That's what gives them their edge.

But here's what matters: even today, most quantum machines work alone. They run experiments, solve problems, and stop there. There's no real way for them to share what they've learned or work together.

And that's the gap this quantum switch is trying to fill. So let's try to understand this better.

You see, connecting quantum systems isn't as simple as plugging in a cable. Quantum information behaves very differently from normal data. It's fragile and short-lived. Even tiny

disturbances can destroy it. And unlike regular data, you can't just copy it or resend it if something goes wrong.

Think of it like trying to send a soap bubble across a crowded room. It might reach the other side, but the slightest disturbance can pop it instantly.

That makes communication incredibly difficult.

Then there's another issue. Not all quantum computers are built the same way. Some use light, others use electrical circuits, and some rely on trapped atoms. Each system follows its own rules, which makes getting them to "talk" to each other even harder.

And even if you solve all of that, there's one more layer to deal with. These systems don't exist in isolation. Any quantum network has to work alongside today's internet, which is built for a completely different kind of data.

And that's exactly why this hasn't been the focus so far.

For years, companies like Google and IBM have been busy just trying to make a single quantum computer work reliably. Keeping quantum information stable for even a few seconds is hard enough.

But connecting them? That was always a step further down the road.

And that's the missing piece that Cisco is trying to solve.

Its "universal quantum switch" is designed to route quantum information between different systems—much like how a regular network switch directs data between computers today. But instead of handling normal bits, this switch works with quantum signals, which behave very differently.

So what exactly did Cisco build?

At its core, the Universal Quantum Switch does something quite simple: it acts as a translator.

This matters because quantum systems aren't built the same way. Many use light to carry information, but each encodes it differently, whether through the direction of light waves, timing, color, or even the path the light takes.

These approaches work on their own, but not with each other.

That's what Cisco's switch is trying to fix. It acts as the bridge between them.

At the heart of the switch is a conversion engine developed by Cisco. When quantum information arrives at the switch, it accepts the signal in whatever encoding the sender is using, translates it into a common format for routing, and delivers it in the format the receiving system needs — without losing the information in the process.

Think of it like a power adapter for international travel. The electricity is the same. The plug is different. The adapter lets you connect them without changing what's actually flowing through the wire.

But pulling that off with quantum information is genuinely hard. Normally, even measuring a quantum signal to figure out what it contains destroys it. So any system that tries to read, convert, and re-send quantum information risks wiping it clean before it ever arrives.

Cisco's tests showed that their switch avoids this. In proof-of-concept experiments, the switch preserved quantum information with an average degradation of 4% or less in fidelity. In simple words, it means that the information arriving at the other end was essentially the same as what went in. That's a big deal for such a fragile system.

Then there's the speed. The switch can reconfigure connections in as little as one nanosecond — that's one billionth of a second. That's essential too since quantum information doesn't sit around waiting and the network has to keep up with it.

But apart from these, two other things make this switch unusually practical.

First: it works at room temperature. Most quantum hardware is notoriously fragile. Quantum processors typically need to be cooled to temperatures colder than outer space. We're talking fractions of a degree above absolute zero. That requires expensive, bulky refrigeration systems. Cisco's switch operates at room temperature, removing the need for any of that specialized cooling infrastructure.

Second: it runs on the same fiber optic cables that already carry today's internet. It operates at standard telecom frequencies, meaning it requires no specialized equipment and no new infrastructure. The cables are already in the ground. The switch just has to plug into them.

Put those things together and you start to see why this is being called a milestone. It's not just that the switch works. It's that it can be deployed in the real world, without building everything from scratch.

If this works, quantum computers would no longer be limited by their own boundaries.

Instead of trying to build one perfect machine, smaller systems could work together — sharing information and splitting tasks in ways that weren't possible before. It shifts the focus from scale to coordination. In simple terms: connect a hundred thousand-qubit machines through a quantum network, and you effectively have a hundred-thousand-qubit system without having to build it.

That could unlock problems that are currently out of reach.

Take drug discovery or materials science. These fields require simulating how thousands of particles interact simultaneously. Even today's best quantum machines struggle with that alone. But a network of quantum systems could start to divide and conquer in a way no single machine can. The U.S. National Science Foundation is already funding research into distributed quantum systems, pointing to their potential in scaling applications like materials science and drug discovery.

Or consider astronomy. Researchers have explored linking distant telescopes using advanced networking techniques, building on ideas similar to Very Long Baseline Interferometry. Quantum networks could take this a step further by synchronising systems over long distances. And more recently, researchers at the University of Oxford demonstrated that quantum computations can be distributed between separate, interconnected modules. Small scale, yes. But tried and tested.

There's another effect that's easy to miss.

Once quantum systems can reliably exchange information, you open the door to a fundamentally different kind of communication. One where security isn't built on encryption keys or software, but on the laws of physics themselves. Any attempt to intercept the signal would disturb it, and that disturbance would be immediately visible. Banks and financial institutions, which move trillions of dollars in transactions every day secured by classical encryption, are already paying close attention to this.

For the first time, you could see a hybrid model take shape where classical systems handle the coordination, routing, and logistics, and quantum systems are brought in precisely where their strengths matter most.

But let's be clear about what this isn't.

Cisco's switch is still a research prototype. Quantum networks don't exist yet at any meaningful scale. The problems being described are still years, possibly decades away.

But what makes this moment interesting isn't the switch itself but the thinking behind it.

For years, the assumption was that quantum computing would be solved by building bigger and better machines. Cisco is betting on a different idea: that the answer isn't one perfect machine, but many imperfect ones that can finally talk to each other.

And come to think of it, it's the same idea that built the internet.

## **THE MARKET EVERYONE HAS GIVEN UP ON**

- Bloomberg

### **Silicon Rally**

Whatever your view on the likely outcome in Iran, or the polarization in the US that saw a gunman try to storm a glitzy dinner attended by President Donald Trump at a Washington hotel, the artificial intelligence boom can make your opinion irrelevant. The stock market is at all-time highs, powered by an extraordinary rally for semiconductor stocks.

The Philadelphia Stock Exchange Semiconductors index, universally known as the SOX, has gained 47% in the 18 trading days since the broader stock market perceived a thaw in the Iranian position. It has advanced in every one of those days, the longest string of wins in its history:

### **Knocking Their SOX Off**

The PSE Semiconductors index is up 47% in 18 trading days

SOX Index



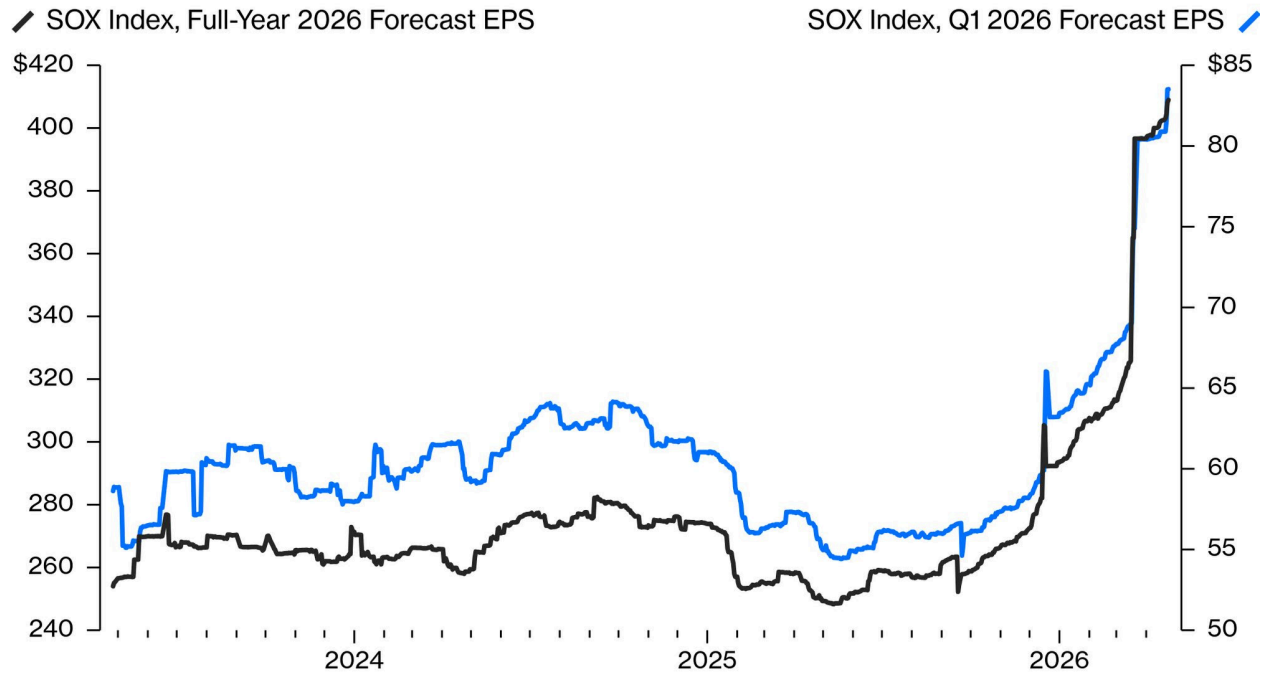
Source: Bloomberg

Bloomberg Opinion

That might seem crazy, but chipmakers are the prime and immediate beneficiaries of the AI boom as companies building data centers or large language models have to start by buying chips. Over the last month, expectations for the sector's earnings this year have rocketed:

## Hope Heads for the Moon

Semiconductors' earnings forecasts have gone ballistic in the last month



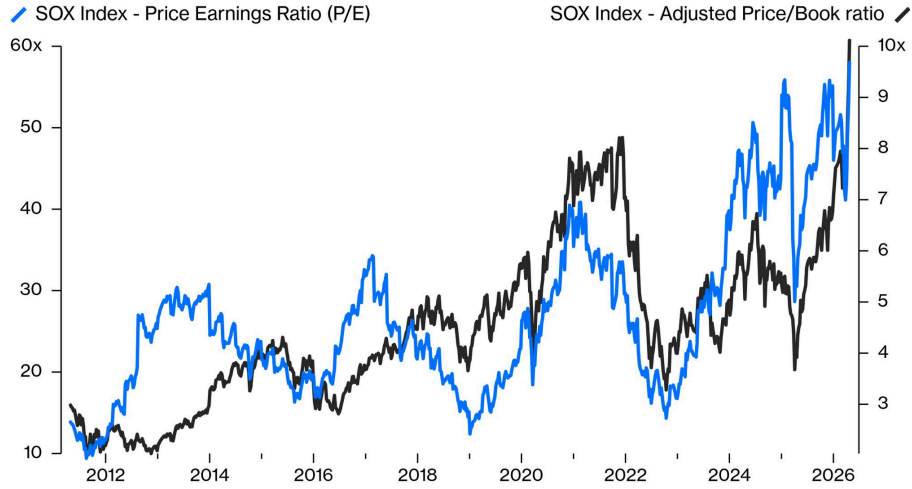
Source: Bloomberg Earnings Estimates Graphs

Bloomberg [Opinion](#)

It's just as well that there is so much optimism on earnings, because valuations have surged to new highs. The price/earnings ratio for the SOX, based on the last 12 months' earnings per share, is now at a nosebleed 60 times:

### Valuable SOX

Earnings and book value multiples have surged this month



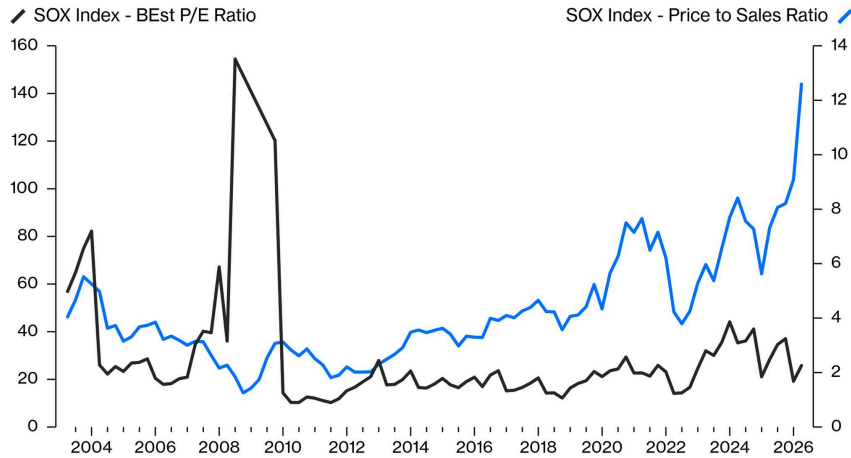
Source: Bloomberg

Bloomberg Opinion

If we use the forward-looking p/e, incorporating the latest more bullish forecasts, it doesn't look so extreme. But the multiple that investors are prepared to pay of sales makes clear that this is almost wholly dependent on massive margin expansion. The chip providers are expected to be able to ask whatever price they want from the hyperscaler companies racing to dominate AI, with all that increase feeding through to profit:

### SOX Puppets Rely on Margins

Multiples of expected earnings are unexceptional. Sales multiples, however...



Source: Bloomberg

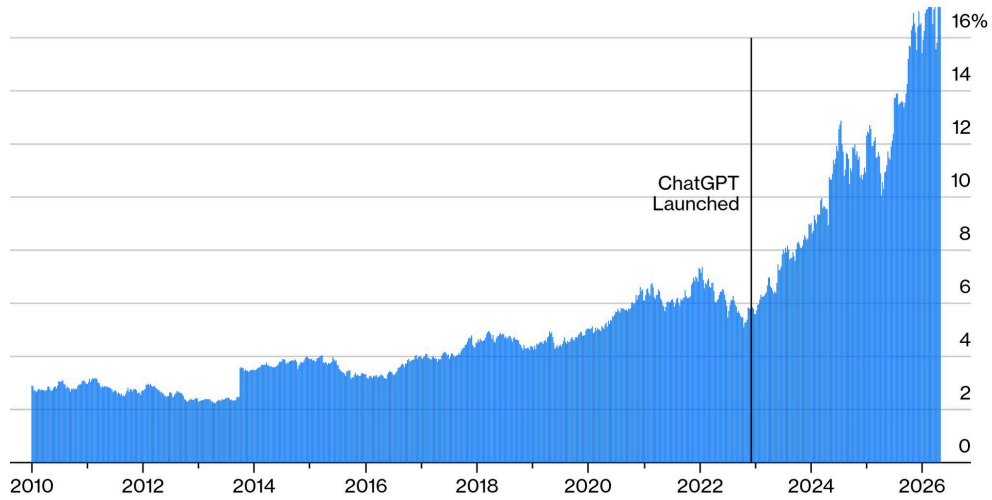
Bloomberg Opinion

This is a remarkably specific play to semiconductors. Since ChatGPT launched late in 2022, the SOX index has moved from 4% to 16% of the S&P 500's market cap:

### Pulling Their SOX Up

Semiconductors' share of the S&P has quadrupled since ChatGPT

■ SOX Market Cap Relative to S&P 500



Source: Bloomberg

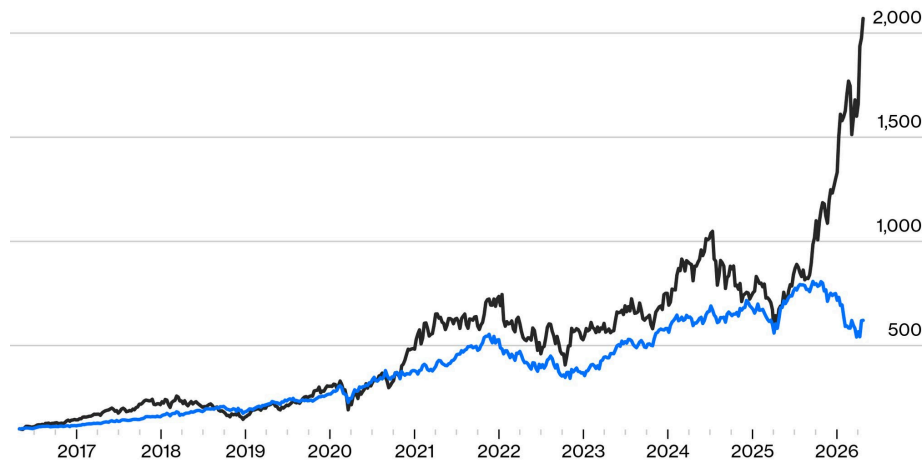
Bloomberg Opinion

Over the last year, this has come at the direct cost of displacing software groups. Investors now seem to assume that all those semiconductors can be put to work making software business models obsolete:

### The K-Shaped AI Boom

Chips' dominance of software is only a year-old phenomenon

■ S&P 1500 Software ■ S&P 1500 Semiconductors



Note: Data is normalized with factor 100 as of April 29, 2016.

Source: Bloomberg

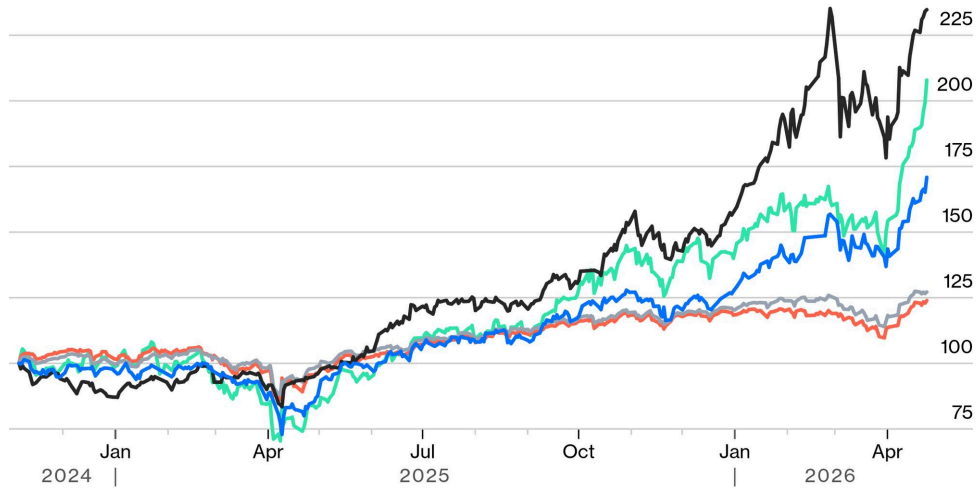
Bloomberg Opinion

Semiconductors also drive the global balance of power. Taiwanese and South Korean indexes, both heavily weighted toward chip makers, have far outperformed the US in the nearly 18 months since Trump's election. The US as a whole slightly lags the world:

## Silicon Rally

Semiconductor stocks have driven global winners and losers

■ Taiwan SE ■ KOSPI ■ MSCI All-World ■ S&P 500 ■ SOX Index



Note: Data is normalized with factor 100 as of November 5, 2024.

Source: Bloomberg

Bloomberg Opinion

The question is whether the chipmakers are really as free to set price as many assume. Most of what they sell will be bought by other quoted companies; the revenue of Nvidia Corp. and Intel Corp. will be the capital expenditure of someone else. All the biggest hyperscalers are due to report this week — Alphabet Inc., Amazon.com Inc., Meta Platforms Inc., and Microsoft Corp. on Wednesday, just after we'll have heard from the Federal Reserve, and Apple Inc. on Thursday. These stocks have fared better than most during the last month, despite the widespread belief that their expenses on chips are going to go up:

## To the Victors, the Spoils

Returns have been concentrated during the latest rally

■ BBG Mag 7/Other 493 ■ S&P 500/S&P 500 Equal-Weight



Note: Data is normalized with factor 100 as of November 5, 2024.

Source: Bloomberg

Bloomberg Opinion

If they choose to rein in their capex, as many think they should, that should be bad news for the chipmakers. If they keep spending money on chips, the market might not like it — and as the hyperscalers are still quite a lot bigger even than the massed chipmakers of the SOX, that might rein in a rally that is now historic but also close to unfathomable.

## **Fed Up**

Kevin Warsh will get his chance. The risk of a protracted vacancy in the Fed's chairmanship has suddenly disappeared, as the Justice Department announced Friday that it was abandoning its investigation of Jerome Powell, prompting Senator Thom Tillis to drop his refusal to let Warsh's name go to a vote.

Warsh is a well-qualified candidate with experience on both Wall Street and the Fed, and he's as friendly to the administration's ideas as any nominee who would command market support could possibly be. The next four years will tell whether he's any good at the job, but as of now, this is close to a perfect outcome for Trump 2.0.

It also suggests that guardrails work, and are even helpful. The one big unanswered question now is whether Powell will stand down as a governor when his term as chairman ends next month (his overall term has two more years to run). Without the legal shenanigans and abuse from the president, he would almost certainly leave — creating a vacancy that could be filled by a Trumpista. That's no longer so clear, and will probably be the greatest point of interest at Wednesday's meeting of the Federal Open Market Committee.

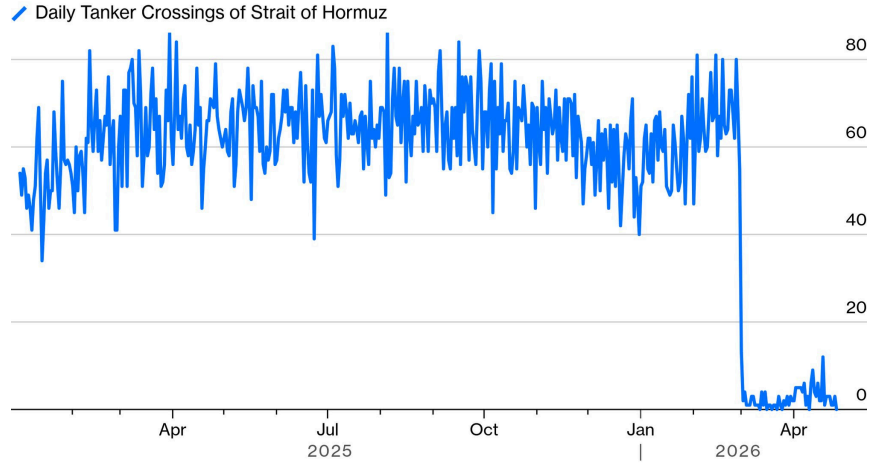
If he does stay, then Trump's bullying campaign of the last year will have been directly counterproductive. Doing things the way the constitution envisages, and thrashing out policy with the legislature without attempting to weaponize the justice system, really does have a lot to recommend it — a point the president might want to bear in mind for the remaining 33 months of this mandate.

## **No Thoroughfare**

The news flow from the Middle East hardly signals a lasting resolution to the Iran conflict. The Strait of Hormuz, blockaded by both the US and Iran, remains totally closed to tanker traffic:

### Even Direr Straits

The Iranian and US blockades of Hormuz appear to be very effective



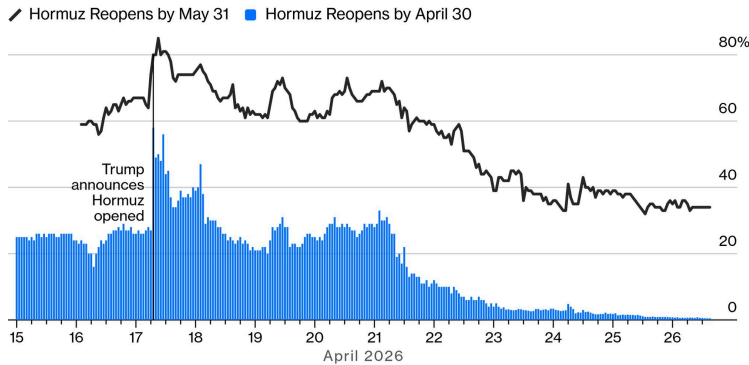
Source: Bloomberg

Bloomberg Opinion

The chances that the Strait is fully opened by the end of this month, Polymarket is surely correct to say, are now zero. Bettors also think that it's unlikely that it will be open for business by the end of May — which means that the artery for 20% of the world's oil would have been closed for three months:

### Hopes Dashed

Polymarket bettors see just a one-in-three chance the Strait opens in May



Source: Polymarket, Bloomberg

Bloomberg Opinion

At best, the indefinite ceasefire puts a floor under oil prices, keeping them still uncomfortably high. In a glass-half-full view, the fact that prices aren't surging is some relief. But the conflict's ripple effects are coming into focus, including aviation as the peak summer travel season approaches. Gasoline prices may have eased slightly, but they remain at levels consumers haven't seen since 2022:

### Gasoline Prices Decelerate Marginally

The pain at the pumps is slightly better but still unbearable

◆ Daily National Average Gasoline Prices (Unleaded)



Source: American Automobile Association

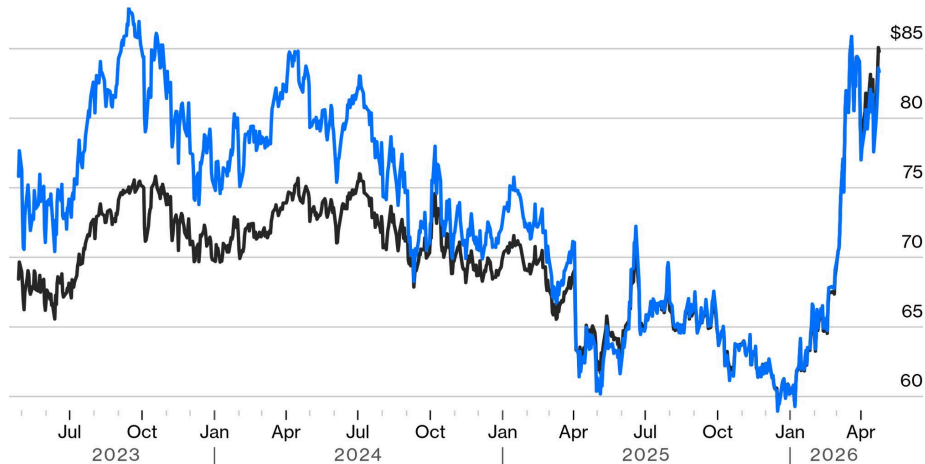
Bloomberg Opinion

One underappreciated impact of the impasse has been to push up crude oil futures for the end of this year. Declining risk of wholesale attacks on Gulf-area oil infrastructure has brought down spot prices, but the blockades have left December futures at or near their highs, at more than \$80. The market has dealt with expectations of oil as expensive as this as recently as 2023; but until the Iran war broke out, nobody expected oil to end 2026 at such a level:

### The Oil Spike Won't Be Over by Christmas

Futures still price Brent above \$80 per barrel in December

◆ Brent Crude, 8th Month    ◆ Brent Crude, Dec. 2026



Source: Bloomberg

Bloomberg Opinion

Consumers' pain threshold might face a sterner test as record-high jet fuel pushes airlines to raise ticket prices above their typical summer highs. Many may be forced to abandon their travel plans:

### No Thoroughfare

Costly jet fuel prompts airlines to increase airfares, cancel flights

Jet Fuel 54 Colonial Pasadena



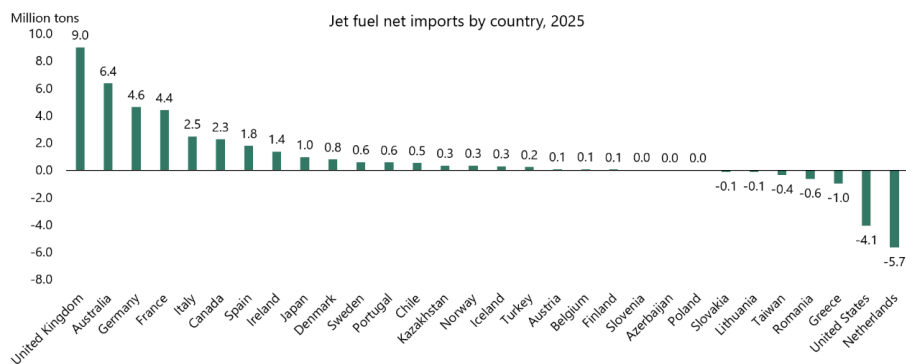
Source: Bloomberg

Bloomberg Opinion

Will airlines absorb some of the pain to avoid demand destruction? Earnings suggest a nuanced response. Delta Air Lines Inc.'s fuel prices have doubled in the past month alone, leaving the company on track to spend an extra \$2.5 billion this quarter. With margins already razor-thin, there's little room to shoulder this burden. Delta Chief Executive Ed Bastian notes that the company is looking for ways to pass those costs on to customers, and it's well-positioned as it expects a \$300 million boost from its Pennsylvania oil refinery this quarter.

Other airlines are being forced into more drastic action: reducing routes to save costs. This means flight cancellations. Lufthansa has slashed almost 20,000 flights over the next six months to conserve jet fuel. If fortunes don't improve, more airlines are likely to go that route as Europe faces the prospect of running dry. Apollo Global's Torsten Slok offers this chart showing dependence on jet fuel imports:

Jet fuel dependencies: Net importers and exporters, by country



Spiking airfares or route cancellations will grab the headlines, but the effects are much broader. Unlimited Funds' Bob Elliott notes that jet fuels are inputs into nearly all economic activity:

The result is that pretty much every business is either directly or indirectly feeling a '22 peak level squeeze from transportation costs. While the impact on other costs won't necessarily be as immediate as, say, airfares, it's not going to take long for the type of direct and indirect fuel surcharges we saw in '22 to come back quickly.

The impact will be unequal. Europe, with a far more sluggish economy than the US, is once again confronting rising price pressures. The latest purchasing managers' index for the region slipped into contraction territory, while delivery times and the rate of input price inflation rose at the fastest pace since 2022 — incontrovertible evidence of mounting stagflationary pressure.

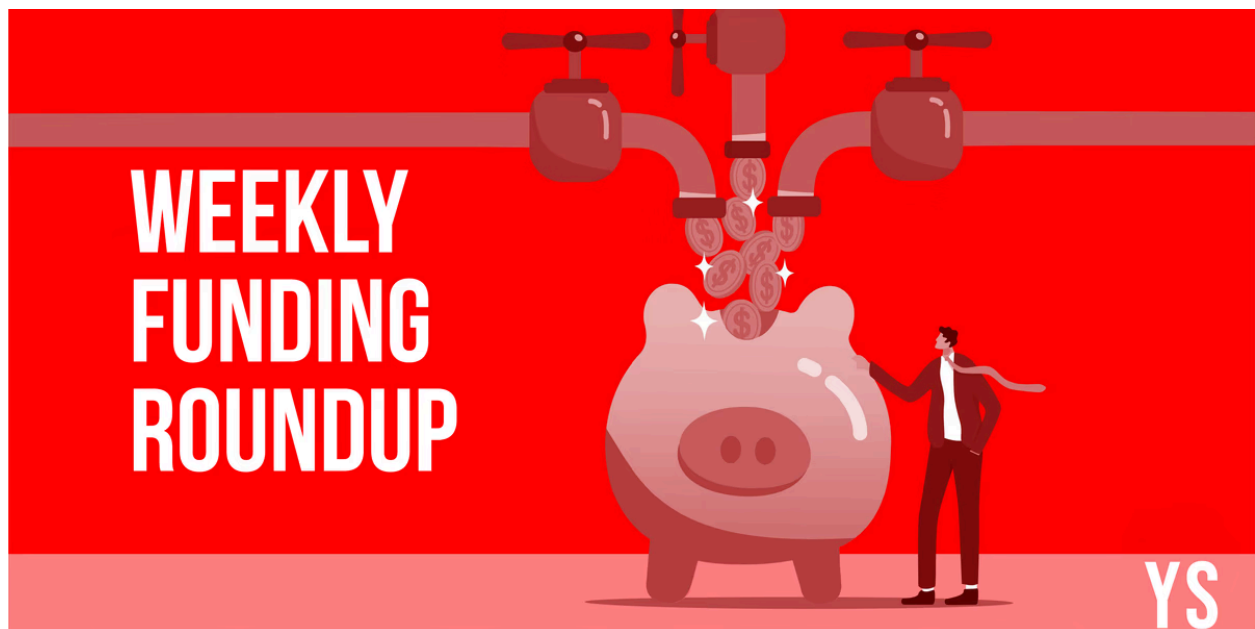
A swift resolution to the war would help, but that's not the base case. Surging stock markets appear to be working on the dictum of BCA Research's Marko Papic: "What happens in Donbas stays in Donbas" — or Gaza, or maybe now the Strait of Hormuz. The bet appears to be that what happens in the Strait will stay there and won't affect international markets.

That is about to be tested. For airlines, the existential question is whether consumers decide travel is a necessity or something they can do without.

—Richard Abbey

## **VC INFLOW CONTINUES TO DECLINE**

- Youth Story



Venture capital funding into Indian startups continues to remain below the \$100 million level and this is largely due to the absence of large value deals.

Venture capital inflow into the startup ecosystem continues to decline as the total this week was less than \$100 million for the second time this month. This was largely due to absence of large value deals.

The total funding for the fourth week of April came in at just \$81 million from 22 deals. This has not been any appreciable increase when compared to the previous week where the funding amount was \$70 million.

This is the fourth time in the year till now that weekly VC funding has been below the \$100 million level and this reveals the challenges the Indian startup ecosystem continues to face in raising capital.

### **April24-trends**

In the current week, only in the pre-Series A and Series A stages of funding saw any activity, which has been the trend for the last two years. These two stages have seen the most number of deals but the capital invested has remained low as they are early-stage.

This decline in the funding momentum has been largely due to two factors. Firstly, given the tough macro economic conditions which has been made worse due to the ongoing tension between US and Iran has stymied the fund inflow. Secondly, a large part of VC money has been flowing into artificial intelligence (AI) startups.

### **April24-stages**

In India, the number of AI startups continue to remain low in number though there has been some uptick in the recent past.

Given this scenario, the hope is that the second part of the year will see a revival in VC funding.

### **Key transactions**

Fintech startup Oolka has raised Rs 130-crore (\$13.7 million approx.) from Accel India, Lightspeed and Z47.

Dunzo co-founder Kabeer Biswas raised Rs 102 crore (\$11 million approx.) for his new venture, M, from Peak XV Partners, Blume Ventures, and CRED.

### **April24-top3**

LightFury Games, a game-tech studio, raised \$11 million from Blume, V3 Ventures, MIXI, Times Internet and several Indian cricket team members.

STCH, a textile tech startup raised \$5.5 million from Omnivore, Kae Capital and WVC.

AI startup NudgeBee raised \$3 million led by Kalaari Capital.

**SOLUTIONS:**

**KAKURO**

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			12	14	16	7	9	
	4	13	5	8	9	2	7	
37	3	8	7	6	4	9		
6	1	5	9	7	3	4	16	
	10	6	4	5	11	15	6	9
	24	2	5	3	6	1	7	
16	7	9	7	2	5			
9	2	7						

**SUDOKU**

3	9	6	4	1	7	8	5	2
8	5	7	2	3	9	6	4	1
1	4	2	6	8	5	9	7	3
6	8	4	7	9	3	2	1	5
9	7	1	5	2	4	3	6	8
5	2	3	8	6	1	4	9	7
2	3	9	1	5	6	7	8	4
4	6	5	3	7	8	1	2	9
7	1	8	9	4	2	5	3	6