

## Perpetual pandemic

Meticulous planning will allow us to live with Covid — MARTIN SANDBU, PAGE 23

## America's drugs war

Record overdoses lead to calls for peaceful approach — BIG READ, PAGE 21



## Inflation challenge

Fed's approach will be key theme of 2022 — MOHAMED EL-ERIAN, PAGE 14

## Holmes truths

### Theranos case raises red flags

Theranos founder Elizabeth Holmes, centre, leaves court in San Jose, California, on Monday after being found guilty of defrauding investors.

The 37-year-old faces decades behind bars following a criminal fraud trial that captivated Silicon Valley, where Holmes raised nearly \$1bn to fund her blood-testing company that ultimately failed. She had charmed investors as varied as Australian media mogul Rupert Murdoch and Mexican tycoon Carlos Slim.

The case has shone a spotlight on the nature of fraud in Silicon Valley, where start-up founders can push the boundaries to lure investors.

**Verdict opens rift in Valley** page 11

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Dai Sugano/MediaNews Group/The Mercury News via Getty Images

# Travel and leisure shares surge on belief Omicron turmoil is waning

◆ Record infections across west ◆ Investors focus on lower severity ◆ Tech stocks suffer

PHILIP GEORGIADIS AND JIM PICKARD — LONDON  
ERIC PLATT — NEW YORK

Travel stocks rose sharply yesterday as investors grew more confident that the economic threat of the Omicron variant was fading, despite record numbers of cases in the US, UK, France and Italy.

US cases in a single day were 1.08m, according to Johns Hopkins University, while the UK reported 218,000, France close to 300,000 and Italy 170,000.

But with the virus causing fewer hospital admissions than in other waves, investors bought into companies most at risk from lockdowns and travel restrictions. London-listed budget carrier Wizz Air gained 12 per cent, British Airways owner IAG rose 11 per cent and easyJet added 9 per cent. German tour

operator Tui rose 10 per cent, Ryanair climbed 8 per cent and other European airlines, including Lufthansa and Air France, added to Monday's gains.

"The global theme in markets is that we have reached 'peak Covid'," said Roger Lee, head of UK equity strategy at Investec.

Boris Johnson said there was a chance that the UK could "ride out this Omicron wave without shutting down our country". The prime minister added: "We can keep our schools and our businesses open, and we can find a way to live with this virus."

Traders have welcomed early data that Omicron may cause less severe illness than previous virus strains, while new findings boosted evidence that vaccines hold up against severe outcomes.

The UK's travel rules, which include expensive testing before and after flights, will be reviewed today.

Industry executives expect the government to abolish the requirement to take a pre-departure test before returning to the UK as part of the review.

One government official said the pre-departure tests were "likely" to be removed, given the rampant spread of the virus domestically.

Grant Shapps, the transport secretary, wants to abolish the testing rules to help the aviation sector recover, according to people familiar with the matter.

Shares in big US airlines followed Europe higher as investors shrugged off thousands of flight cancellations caused by Covid-related staff absences and severe weather.



Shares in US and European airlines rose as investors shrugged off flight cancellations caused by Covid-related staff absences

The technology-focused Nasdaq Composite fell 1.6 per cent, as shares in companies typically viewed as beneficiaries of Covid-related curbs declined. Peloton traded more than 6 per cent lower, while Zoom Video Communications dipped about 5 per cent.

The decline in tech stocks accompanied a second day of heavy selling in the \$22tn US Treasury market, pushing yields on 10 and 30-year government debt higher. Investors and strategists said the moves reflected confidence in the recovery.

*Additional reporting by Naomi Rovnick*

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### Briefing

► **Sunak warns energy price aid has limits**  
Allies of chancellor Rishi Sunak have warned there is "only so much the government can do" to offset rising prices, as business secretary Kwasi Kwarteng prepares to meet industry leaders today.— PAGE 3

► **TPG eyes \$9bn valuation in listing plan**  
The US buyout group founded by David Bonderman and Jim Coulter in 1992 has filed proposals for an offering that could raise \$877m, as it seeks to tap interest in private equity.— PAGE 9; LEX, PAGE 24

► **Starmer defends Blair in rightward shift**  
Labour leader Sir Keir Starmer has defended the award of a knighthood to Tony Blair, one of his predecessors, as he continues to shift his party to the centre ground.— PAGE 2; SEBASTIAN PAYNE, PAGE 22

► **Rokos racks up £900m pandemic profit**  
Hedge fund manager Chris Rokos and his partners made bumper profits during the first wave of the pandemic. The performance has since soured amid bond turbulence.— PAGE 12



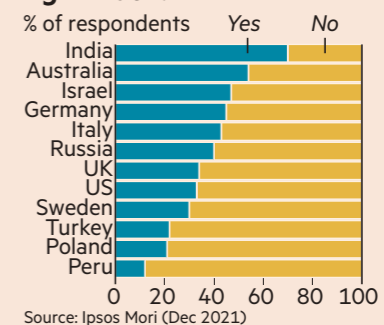
► **Chinese banks wary of slowing economy**  
Banks have sought to meet state-imposed lending targets by buying low-risk financial instruments rather than issuing loans, signalling their belief that the pool of qualified borrowers has shrunk.— PAGE 8

► **Date set for Italian presidential selection**  
Lawmakers and regional representatives have been summoned for the process on January 24. Premier Mario Draghi's willingness to be nominated risks triggering elections and threatening reform.— PAGE 6

► **Mercedes touts long-range Tesla buster**  
The German carmaker has unveiled a car that it claims can travel more than 1,000km per charge. It says the road-legal version will be able to cover nearly twice the distance of a Tesla Model S.— PAGE 9

### Datawatch

#### Is your country on the right track?



The world is slightly more pessimistic than this time last year. Across 28 nations, 65 per cent on average say their country is on the wrong track while 35 per cent take the opposite view. A year earlier, 62 per cent were positive

Source: Ipsos Mori (Dec 2021)



### Fight to stay warm in land Russia's gas grid forgot

Russia, the biggest gas exporter, flexes its muscles as an energy superpower but many Siberian cities, entire time zones and millions of its citizens are not connected to its domestic network. In Chita, four days from Moscow by train, coal-fired power plants heat the city centre. In the suburbs residents burn whatever they can to fend off freezing temperatures, including rubber and waste oil. The resultant air pollution is among the country's worst.

**Strategic games** ► PAGE 6

## EU demands seat at Ukraine talks as Moscow prepares to meet US and Nato

HENRY FOY — BRUSSELS

A divided EU has demanded a role in next week's negotiations with Russia over the Ukraine crisis and other issues of European defence, after Vladimir Putin succeeded in sidelining the bloc in favour of talks with the US and Nato.

EU officials speaking to the Financial Times expressed frustration at the way talks in Geneva and Brussels were arranged — with Russian officials set to discuss the security of Ukraine and the whole European continent with counterparts from both Washington and the US-led military alliance. While US officials have remained in close contact with those in Brussels and in individual EU states, Washington has not sought to alter Moscow's proposed negotiations.

Brussels "cannot be a neutral spectator in the negotiations" over Europe's

future security architecture, EU foreign policy chief Josep Borrell said yesterday as he started a three-day visit to Ukraine.

The sidelining underscored Brussels' lack of foreign policy clout amid divergent views on how to handle Russia and internal disagreements over the bloc's own security policy, the EU officials said, pointing to the inability of its 27 members to agree on a long-planned statement of co-operation with Nato.

"This is not a theoretical exercise right now, it is about real threats," a senior EU government minister said of the debate over co-operation with Nato. "In the current context, [the delay] exposes the divisions inside the union and makes us less able to respond to Russia as one."

Moscow, which has massed more than 100,000 troops close to the Ukrainian border, has issued a list of security

demands to the west and threatened military action if they are ignored. They include Nato and the US not offering membership to Ukraine, and restricting the transatlantic alliance's deployments in EU countries close to Russia.

While Brussels is overlooked, some EU states have sought bilateral contacts with Russia. Germany and France have stepped up diplomatic efforts, with their foreign policy advisers travelling this week to Moscow for talks with senior Russian officials. They will also meet Ukrainian officials for separate talks.

"The EU's limited role in the discussion with Moscow is a natural reflection of its own lack of unity," said Andrew Weiss, vice-president of the Russia and Eurasia programme at the Carnegie Endowment for International Peace. "Moscow has literally zero interest in engaging with the EU as such."

### World Markets

STOCK MARKETS				CURRENCIES				INTEREST RATES						
	Jan 4	prev	%chg	Jan 4	prev	Jan 4	prev	price	yield	chg				
S&P 500	4792.87	4796.56	-0.08	\$ per €	1.131	1.129	€ per \$	0.738	0.744		US Gov 10 yr	147.32	1.68	0.06
Nasdaq Composite	15575.48	15832.80	-1.63	\$ per £	1.355	1.345	£ per €	1.198	1.191		UK Gov 10 yr		1.01	0.11
Dow Jones Ind	36832.44	36585.06	0.68	€ per ¥	0.835	0.840	¥ per €	131.326	130.197		Ger Gov 10 yr		-0.12	0.00
FTSEurofirst 300	1916.30	1900.35	0.84	¥ per \$	116.120	115.300	£ index	82.369	82.467		Jpn Gov 10 yr	112.64	0.08	0.02
Euro Stoxx 50	4362.84	4331.82	0.72	¥ per £	157.378	155.050	Sfr per €	1.239	1.235		US Gov 30 yr	118.29	2.09	0.09
FTSE 100	7505.15	7384.54	1.63	Sfr per \$	1.034	1.037					Ger Gov 2 yr	104.49	-0.62	-0.01
FTSE All-Share	4276.18	4208.02	1.62	€ per \$	0.884	0.886								
CAC 40	7317.41	7217.22	1.39											
Xetra Dax	16152.61	16020.73	0.82											
Nikkei	29301.79	28791.71	1.77											
Hang Seng	23289.84	23274.75	0.06											
MSCI World \$	3241.43	3231.73	0.30											
MSCI EM \$	1233.50	1232.01	0.12											
MSCI ACWI \$	756.94	754.83	0.28											

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## NATIONAL

## Pandemic

## Johnson seeks to ride out Omicron

PM says there is no need for further restrictions and averts Tory rebellion

GEORGE PARKER, JASMINE CAMERON-CHILESHE AND OLIVER BARNES

Boris Johnson said yesterday he believed England could ride out the Omicron wave of coronavirus infections without the need “to shut down our country once again”, offering a new year boost for business.

The prime minister admitted that hospitals were on a “war footing” but said existing Covid-19 restrictions and the booster vaccine campaign would keep the economy open.

The prime minister’s bullish mood

has reassured Conservative MPs, scores of whom oppose any further restrictions to tackle the Omicron variant.

Johnson told a Downing Street press conference: “I would say we have a very good chance of getting through the Omicron wave without the need for further restrictions and without the need, certainly, for a lockdown.” But he said people would be “profoundly wrong” to think the fight with Covid was over, adding that some hospitals already felt “at least temporarily overwhelmed”.

He confirmed a record of almost 219,000 Covid-19 cases across the UK in the latest 24-hour period, although the figures partly reflected delays in collating data over the Christmas holiday.

Johnson also announced about 100,000 critical workers, including

those in food processing, transport and border control, would be given daily Covid tests to curb the spread of coronavirus to colleagues.

At least six NHS hospital trusts in England have declared a critical incident in recent days in response to strain from spiralling staff shortages and mounting Covid admissions.

Blackpool Teaching Hospitals NHS Foundation Trust, United Lincolnshire Hospitals Trust and Great Western Hospitals NHS Foundation Trust in Wiltshire are among those affected.

Johnson’s cabinet is expected to endorse his proposal that England should continue with its so-called plan B restrictions: work from home guidance, mask wearing in public places and Covid passes for mass events.

His stance will avoid the possibility of a cabinet mutiny – ministers, led by chancellor Rishi Sunak, oppose new restrictions unless compelling new data come to light – and the prospect of a big Tory rebellion in parliament. Almost 100 Tory MPs voted against Johnson’s limited Covid restrictions before Christmas, and some will return to Westminster today in a much better frame of mind.

Theresa Villiers, a former cabinet minister, messaged the Covid Recovery Group of lockdown sceptic Conservative MPs: “Not locking down seems to have coincided with an improvement in the polls. Who knew?”

Although Johnson’s decision not to go beyond plan B was driven partly by a fear of warfare with his own party, some

MPs were prepared to give him credit for keeping England largely open over Christmas. One former Conservative minister said: “I’m sure there are some – either within cabinet or on the backbenches – who will try to take some glory but he’s the prime minister, he ultimately made the decision and he gets the credit.”

Other Tory MPs claimed Johnson had reluctantly been forced to yield to pressure from his own side for no further restrictions, and that his leadership was still under pressure.

Even if Johnson navigates through the Omicron surge, he still has to deal with cost of living pressures and an inquiry into reports about parties in Downing Street amid Covid restrictions in 2020. *Additional reporting by Sebastian Payne*

## Covid-19

## New term brings fresh disruption for schools

BETHAN STATON AND JASMINE CAMERON CHILESHE

School leaders have warned of further disruption to teaching due to the latest wave of Covid-19 and said they are preparing “innovative” adaptations in the face of widespread staff absence.

After a Christmas holiday season overshadowed by the Omicron variant, children in England began to return for a new term yesterday. But as Covid-positive staff isolate and supply teachers run short, school leaders said lessons could be thinly resourced and plans for GCSE and A-level exams could be threatened.

Some reported teacher absences in double figures and said they were planning online lessons, while others warned of unfairness should GCSE and A-level exams go ahead.

“We are in a bit of a perfect storm about availability of supply staff – there’s been a big increase in demand and a significant reduction in supply,” said Mike Walters, who chairs the Kent Association of Head Teachers.

“It’s going to be questionable how good the quality of education is going to be,” he said. “I am really worried about the implications on exam groups.”

Many secondary school pupils will not begin lessons until the end of the week to allow them to be tested for Covid-19. They will wear masks in class to help control the spread of the virus.

While the extent of staff shortages is unclear, educators acknowledged that they might need to take unusual steps to ensure education goes ahead.

Nadhim Zahawi, education secretary, has said schools should prioritise face-to-face teaching but he encouraged a “flexible approach”, including combining classes or moving some online.

The Department for Education said it had put in a “range of measures to keep young people in the classroom”.

Ian Bauckham, chair of Ofqual, the exams regulator, said schools could suspend “specialist” classes, such as personal, social, health and economic education, to maximise resources.

Paul Whiteman, general secretary of the National Association of Head Teachers, said a “small increase” in staff absence would cause “real problems”, and the government should be “realistic” about expectations.

“If the priority is to keep children in school we will need innovative approaches to delivery when staffing is critically low,” he said.

Sir Dan Moynihan, chief executive of Harris, which runs 50 primary and secondary academies in London, said early indications were that large number of staff, including heads, would be absent in coming days. He was “anxious” about exams going ahead this summer.

“We have a terrible feeling that within two weeks we will see large numbers of absences,” he said. “If large numbers of kids are off for January and February it will make things very difficult.”

Tarun Kapur, chief of the Dean academy trust in Manchester, said up to 10 per cent of teaching and support staff were isolating. “There is still a concern surrounding absences,” he said.

David Weston, head of the Teacher Development Trust, said “day-to-day teaching and learning is going to be that much harder with this much absence . . . There will always be compromises made.”

## Coronavirus

## Signs of London variant slowdown raise hopes for NHS

OLIVER BARNES AND JOHN BURN-MURDOCH

Science advisers and health officials have welcomed tentative signs that the surge of the Omicron coronavirus variant in London has begun to abate, raising hopes that the NHS will weather the latest Covid wave.

By yesterday, the number of new coronavirus cases in the capital had fallen about a fifth from a daily peak of nearly 28,000 on December 22, helped by a marked reduction in social mixing over the festive period.

London was the first part of the UK hit by a wave of Omicron, since it was identified in South Africa in late November.

Neil Ferguson, professor of epidemiology at Imperial College London, said he was “cautiously optimistic” that infection rates among people aged between 18 and 50 in London had plateaued. But he said it was too early to say whether infections were falling in the capital.

Cases among people aged 20 to 34, which drove the initial spread in London, have fallen more than a third since peaking on December 20, according to official data.

“With an epidemic that has been spreading so quickly, reaching such high numbers, it can’t sustain those numbers forever so we would expect to see case numbers start to come down . . . they may be already coming down in London,” Ferguson told the BBC’s *Today* programme. He warned that Omicron “hasn’t had time . . . to really spread into the older age groups, which are at much greater risk of severe outcomes and hospitalisation”.

Rates among the over-80s have risen more than tenfold from a low base of just 11 daily cases per 100,000 in early December.

Tim Spector, professor of genetic epidemiology at King’s College London, said the fall in infections in London “made sense” given similar trends in South Africa. The “fear factor” over rising infections before Christmas had helped the turnaround because it led to more cautious behaviour, he added.

“The rapid fall in London is faster than anything we’ve seen with Delta,” said Spector. “I don’t see it bouncing right back if people remain cautious after the return to work and school.”

Hospital admission rates in the capi-



Cautious steps: pedestrians on the Millennium Bridge, London, on Monday

Neil Hall/EPA-EFE

tal over the past week reflect the easing of the surge.

Chris Hopson, chief executive of NHS Providers, which represents healthcare leaders across the country, said the daily growth rate of hospital admissions in

London had fallen to the low single digits in recent days. “There is a definite sense that were the rate of admissions to stay at that level that London would be able to cope,” he said.

In London, the number of admissions rose 18 per cent in the week to January 2, against an 85 per cent increase across the rest of England, with growth rates highest in the north-east.

“Hospitalisations are still generally going up across the country and we may see high levels for some weeks,” Ferguson said.

A senior Whitehall official told the *Financial Times* there was particular concern about the extent of translation of increased cases in over-60s into hospital admissions.

The weekly growth rate in the number of Covid patients in hospital in the capital peaked at 66 per cent on December 30 but slowed to 32 per cent by January 3. There are nearly 4,000 Covid patients in London hospitals.

“The rapid fall in London is faster than anything we’ve seen with Delta”

Tim Spector, King’s College London

In terms of virulence, there is mounting evidence from the capital that Omicron is milder than previous variants. A Covid patient typically develops severe disease within 15 days of infection. There are 245 patients with the virus on ventilators in London, which equates roughly to 1 per cent of the number of cases reported two weeks earlier.

At the same stage of last winter’s wave that figure was 814.

Figures published last week showed that 60 per cent of Covid patients in intensive care in England were unvaccinated.

However, Hopson warned that London was not yet “completely out of the woods”, adding: “There is still a risk that because of Christmas, New Year’s Eve and schools going back that we could see London facing a new surge of hospitalisations.”

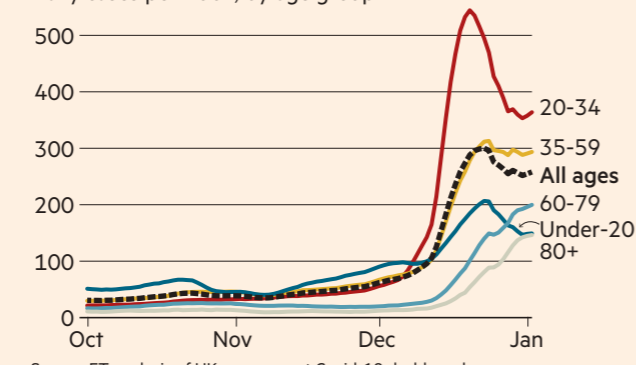
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### Cases among young adults in London have fallen since mid December, but rates have continued rising among older groups

Daily cases per 100k, by age group



Source: FT analysis of UK government Covid-19 dashboard

## New year speech

## Starmer backs Blair knighthood as he steers Labour to centre

JIM PICKARD CHIEF POLITICAL CORRESPONDENT

Sir Keir Starmer has defended the award of a knighthood to Tony Blair, one of his predecessors as Labour leader, as he continues to shift his party further to the right.

“I do not think the prime minister [Boris Johnson] has earned the right to have an honour. I do think Tony Blair has,” he said yesterday, despite a petition against the honour attracting half a million signatures.

Starmer has adopted the “Blair playbook” by moving the party to the centre in an attempt to replicate his predecessor’s success in winning three general elections a generation ago.

The approach has seen him jettison some of the economic radicalism of Jeremy Corbyn, veteran of the hard left and Starmer’s immediate predecessor, while emphasising his own patriotism.

In a new year speech in Birmingham, Starmer nodded to the achievements of three Labour leaders who won elections in the 20th century: Clement Attlee, Harold Wilson and Tony Blair. Asked why he did not refer to Corbyn, he

replied: “I have always cited Attlee, Wilson and Blair because they won.”

To the backdrop of a Union Jack, Starmer spoke of his “pride” in the Queen and described Britain as a “remarkable nation” in which to live.

The opposition leader promised a new “contract with the British people” to uphold trust in a future Labour government with three priorities: security, prosperity and respect.



Keir Starmer: promised a new ‘contract with the British people’

Labour has a sizeable lead over Johnson’s Conservatives in the opinion polls, reflecting public anger about revelations of parties in Downing Street that violated Covid rules during previous lockdowns. A poll by Focal data for the *Sunday Times* last week suggested that support for Labour was at 40 per cent, compared with 32 per cent for the Conservatives.

Starmer said the lockdown parties had shown defects in both Johnson’s leadership and “the flaws of a whole style of government” under the Tories, adding that the prime minister had lost “the moral right to set [Covid] rules”.

He accused Johnson of viewing politics as a “branch of the entertainment industry”, while he, in contrast, would focus on the serious business of getting things done. “Just when trust in government has become a matter of life and death, for the prime minister it has become a matter of what he can get away with.”

The Labour leader said he would use the next year to show people how his party could govern Britain and shrugged off accusations that he had offered little in the way of policies,

pointing to pledges in areas including employment rights, housing and green energy. “Trust has to be earned,” he said. “I am confident, but not complacent, about the task ahead.”

He also emphasised his adherence to preventing crime, pointing to his record as the former director of public prosecutions.

Starmer was a prominent Remainer during the EU referendum campaign and, as shadow Brexit secretary, played a key role in persuading Corbyn to back a second referendum on the issue at the last election.

Yesterday, however, he said he now wanted to “make Brexit work” rather than to try to turn back the clock.

He also warned that the government was presiding over a “cost of living crisis”, with energy bills set to leap in the spring.

Starmer said he would hold a series of events this year to persuade people to listen to Labour’s vision. He also acknowledged that opinion polls could change rapidly. “Just because the Tories lose the public’s trust it doesn’t mean Labour simply inherits it,” he said. “Trust has to be earned.”

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## NATIONAL

# Northern Ireland protocol to cast shadow over region's poll campaign

Post-Brexit trading arrangements will take centre stage as significant shift in politics looms

JUDE WEBBER — BELFAST

One year on, as far as Northern Ireland is concerned, Brexit is nowhere near done. With the nation entering an election year, polls suggest unionist parties are on course to lose their majority in the devolved government for the first time — a seismic political shift in a region created for them a century ago.

Brexit, about which most voters care little, will be among the most pivotal issues in the May 5 elections. Instead of health, inflation, housing or jobs, the campaign will be dominated by the trading arrangements for Northern Ireland since Britain left the EU.

"It will be a big feature of the elections," said Katy Hayward, professor of political sociology and Brexit expert at Queen's University Belfast.

London and Brussels are expected this month to resume deadlocked talks on how to make the special arrangements, known as the Northern Ireland protocol, workable.

The negotiations will be the green light for a politically volatile year as the Democratic Unionist party seeks to keep its voters onside, nationalist party Sinn Féin aims to seize the first minister's post and centrist parties hope to be kingmaker.

Brexit left Northern Ireland straddling two jurisdictions: as well as being in the UK market, it remained in the EU's single market for goods. The arrangement was designed to ensure there would be no return of a hard border on the island of Ireland that could take the region back to the dark days before the 1998 Good Friday Agreement ended three decades of conflict.

But the compromise put customs checks in the Irish Sea, which has caused problems for trade between mainland Britain and Northern Ireland, despite advocates arguing it offers the region a chance to benefit from access to both the EU and British markets.

Already, trade with the Republic of Ireland is booming. Northern Ireland's exports to its southern neighbour surged 63 per cent in the first 10 months of 2021, to €3.2bn, compared with the same period in 2020, according to Ireland's Central Statistics Office. Northern Ireland's imports from the Republic were also 46 per cent higher, at €922m.

Neil Collins, managing director of Wrightbus, a bus maker focused on hydrogen-fuelled vehicles, said the protocol had the potential to be a "very, very strong suit for Northern Ireland", but needed tweaks.

According to a recent survey by the Northern Ireland Chamber of Commerce and Industry, Brexit has meant supply chain problems for nine out of 10 Northern Irish companies.

Paul Jackson, commercial director at McBurney Transport, a haulage group, said his costs had risen about 27 per cent in 2021 and he expected another 10-12 per cent increase in 2022.

"We have seen big increases in terms of our costs and . . . if we're not careful, Northern Ireland could become a manufacturing backwater," said Geoff Potter, managing director at Gray &



Road sign: an anti-protocol poster greets freight drivers arriving in Larne, Northern Ireland, from Britain last month

Charles McCullin/Getty

Adams, a maker of refrigerated trucks.

The DUP, the biggest party supporting Northern Ireland's place within the UK, has repeatedly threatened to walk out of the region's power-sharing government unless the customs checks are scrapped. In a sign of how the protocol exacerbates cross-community party divisions, it is backed by Sinn Féin.

The EU has offered to slash red tape and customs checks to end the row over the protocol but London is pushing for further concessions. The UK government is also threatening to suspend parts of the deal by triggering the Article 16 safeguard clause, which could detonate a trade war with the EU.

But polls show many people in both unionist and republican communities in Northern Ireland accept, or are resigned to, the protocol.

Sir Jeffrey Donaldson, leader of the

DUP, has spent a great deal of political capital on the protocol in recent months, but even if he went through with his threat, it would have little practical impact so close to the election.

"Brexit has been bad for unionism . . . and really bad for the DUP," said Pete Shirlow, director of the Liverpool university's Institute of Irish Studies.

The issue is also important to the Ulster Unionist party, which is seeking to mobilise the moderate unionist vote. "At the moment, half of their supporters are opposed to the protocol, a quarter are in favour and a quarter don't know," said Hayward.

With public ambivalence about the protocol, and census results expected to show Catholics outnumbering Protestants in Northern Ireland for the first time this year, the election is "crunch time for unionism", she added.

'Brexit has been bad for unionism and really bad for the DUP'

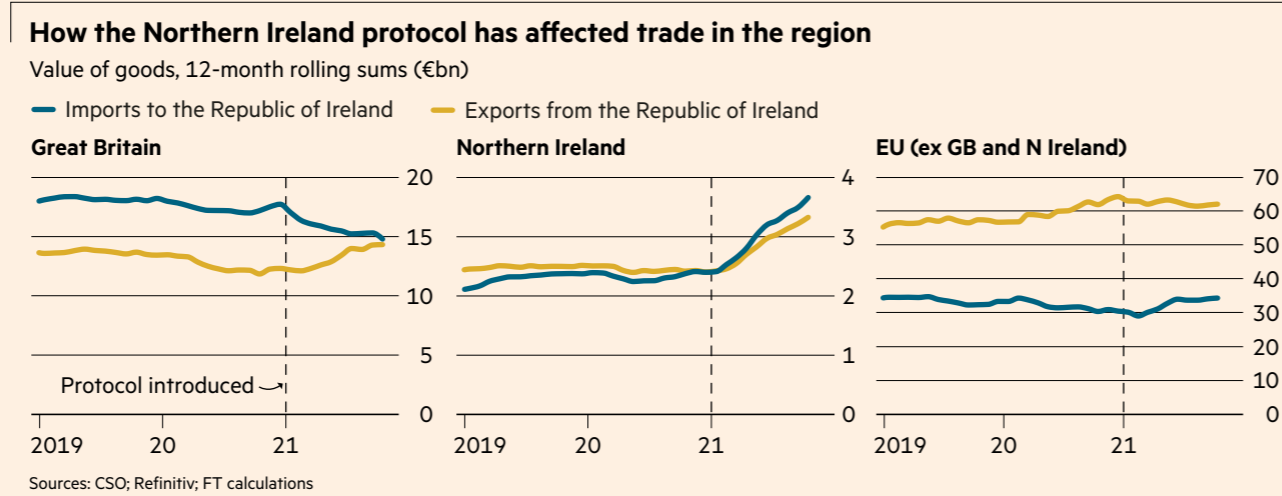
There is also uncertainty over whether unionists would yield to Sinn Féin if the nationalist party came out on top in so-called designations — the process by which Northern Ireland's elected representatives must designate themselves "unionist", "nationalist" or "other" to ensure cross-community consent for decision-making.

After an election, the largest party within the largest designation nominates who will be first minister and the largest party in the second-largest community nominates the deputy first minister, although both posts have equal status.

But the DUP has been unwilling to say whether it would serve alongside a Sinn Féin first minister. Support for the centrist Alliance party, which has been gaining ground since 2017 and designates itself as "other", could be key.

"We're going to get stuck in politics about who's first minister and more distraction from the question about how do we fix health, how do we fix housing, how do we use the subvention [the UK government's budget transfer to Northern Ireland] to build a new economy, how do we build a new society," Shirlow said.

Brexit threatens to amplify these political divisions. As Irish foreign minister Simon Coveney told the Financial Times last month: "As long as the protocol remains a topic of dispute between the EU and the UK, and between Britain and Ireland, politics in Northern Ireland can't settle in the way that it needs to, particularly in an election year."



## Transport. Customs parks

### Regional ports fear checks will aid Channel rivals

Funding for border facilities risks distorting market,

claims head of industry body

PETER FOSTER — PUBLIC POLICY EDITOR

Government plans to introduce post-Brexit customs checks later this year risk undermining the commercial "level playing field" for regional ports, the body representing some of the country's largest port operators has warned.

Charles Hammond, chair of UK Major Ports Group, which includes 40 large ports, said government funding for customs parks risked unfairly distorting the market in favour of English Channel ports that served the "short straits". The inland sites will be used to carry out physical inspections on imports from the EU, which are due to start in July.

Hammond's intervention came as the government promised to unveil charging structure in the new year for its inland border facilities, including a main site in Sevington, Kent, which will set the benchmark for charges levied by other UK ports.

The government has committed £470m to post-Brexit port infrastructure, of which £200m was shared among 41 UK ports through a port infra-

structure fund to build border inspection facilities needed for new customs controls.

However, the Port of Dover and the Channel Tunnel site at Folkestone were not required to build border infrastructure because they lacked the physical space at their sites.

Instead, trucks arriving at these "roll-on, roll-off" Channel ports will be sent inland for inspection at Sevington and other UK government-run sites, such as Dover White Cliffs. Hammond argued that this conferred a potentially unfair advantage over ports that had funded their own infrastructure.

"The government must come up with a pricing model that creates a level playing field because we know that we'll have to be recovering our operating costs," said Hammond, arguing that ministers should find a way of passing costs back to the Channel ports.

"To be fair, in the market place, the costs of these [ports] should be passed to the parties who are benefiting to decide whether they recover those costs from customers, freight forwarders or whoever it might be."

Tim Reardon, head of EU exit for the Port of Dover, rejected the idea Dover was a beneficiary of the government-built customs parks or that the authorities would pass charges back to port

operators. "How the government chooses to recover costs of the Sevington operation is its choice," he said. "User charges can be levied against importers whose goods are pulled into Sevington but I don't see them charging the ferry company or Port of Dover, because neither is in any sense a 'user' of the site."

The Major Ports Group argued that failure to price Sevington competitively would reduce the benefits of Brexit to

"The government must come up with a pricing model that creates a level playing field"

regional ports, which had expected to see an increase in traffic as EU exporters shipped more unaccompanied loads to the UK to avoid border bureaucracy.

"The Brexit transition means friction in trade and our members are completely committed to work with the government, but the trade-off is that we would expect trade to spread up the east and west coast [of Britain]," added Hammond.

New border facilities in existing ports were only two-thirds funded by the government's port infrastructure fund,

leaving operators to find a total of £100m to make up the shortfall, according to Major Ports Group estimates.

Richard Ballantyne, chief executive of the British Ports Association, a trade body, said many operators were worried the new charges would create a competitive advantage for some routes. "If you price things inappropriately then other routes could be disadvantaged," he said. "The main issue is that the government prices aren't published yet, and ports want to be talking to their customers about what this new regime will be."

People close to the matter said internal discussions over the pricing mechanism had been continuing in Whitehall, with the help of private consultants, for several months but no decisions had been made. However, senior UK officials told MPs last month that port operators could expect the government to set out its charging regime for inland sites "early in the new year".

Emma Churchill, head of the border and protocol delivery group in the Cabinet Office, said that while it was a "commercial decision" for port operators to set their own prices, she understood why they were waiting for the government to announce its fees.

"I recognise that they have been rather frustrated that we have not already set that out," she said.

## Cost of living

### Sunak warns of limits to help with high energy prices

JIM PICKARD, NATHALIE THOMAS AND GEORGE PARKER

Chancellor Rishi Sunak has warned there is a limit to how much help the government will give to offset soaring energy prices, and that support should be targeted on the households that need it most.

Business secretary Kwasi Kwarteng is meeting industry leaders today to discuss plans that could help households contending with a surge in energy prices and broader cost of living pressures.

Options being considered by the business department and the Treasury include cutting value added tax on energy bills, increasing the warm homes discount for vulnerable households and providing loans to energy companies so they can help consumers.

Sunak has not ruled out the temporary removal of the 5 per cent VAT rate on energy bills, a move for which the Labour party has called. But he has privately argued that it would cost £2bn a year and would be poorly targeted, since it would also benefit people who were relatively well off, according to the chancellor's allies.

"There's only so much the government can do," said one Sunak ally, noting that energy prices could remain high for a significant period.

Sunak, who is waiting for officials to draw up detailed proposals after representations by the energy industry, is wary of making an open-ended commitment when he is trying to rein in state borrowing.

Asked about rising energy bills, Boris Johnson said yesterday that Sunak was "mindful" of the problem. "We are going to do what we can to help," added the prime minister.

Johnson said in 2016 that one of the benefits of Brexit would be the freedom to cut VAT on energy bills. But yesterday he said: "The argument is that it is a bit of a blunt instrument and you end up cutting fuel bills for people who don't need the same help."

Energy suppliers sent submissions to the government late last year setting out ideas that could both reduce the rise in bills for households and prevent the collapse of more companies.

Executives admit there are drawbacks with all options but insist action is needed both to assist households and to prevent further collapses of energy suppliers. More than 20 companies have gone bust since the start of August because of the surge in wholesale gas and power prices.

The government is working against an effective deadline of February 7, when the regulator, Ofgem, will announce the new level of the energy price cap that will kick in from April.

Analysts have warned that annual energy bills for the 15m-plus households in Britain that are covered by the price cap could rise 56 per cent, or nearly £720 a year, from April.

Wholesale gas prices are trading at more than three and a half times the level they were at the start of 2021. They have, in turn, pushed up power prices, given Britain's significant dependence on gas-based electricity generation.

## Bank of England

### Consumer credit data point to economic uptick in November

VALENTINA ROMEO

Household borrowing in November rose for the first time since the start of the pandemic, official data show, pointing to a possible strengthening of the economy before the spread of the Omicron coronavirus variant.

Consumer credit data from the Bank of England showed a rise of £1.2bn in net borrowing in the penultimate month of 2021, pushing total credit up 0.4 per cent on the same month the previous year, marking the first increase in the annual rate since March 2020, when coronavirus hit the UK.

This was above the £800m in net borrowing forecast by economists polled by Reuters with credit card spending, which made up the bulk of figure, the strongest since July 2020.

The resumption in household borrowing signalled growing economic momentum in November after a lacklustre October. "The healthy rise in . . . November adds to evidence that economic activity strengthened in the middle of Q4," said Bethany Beckett, UK economist at Capital Economics.

The BoE data showed that household savings fell in November with £4.5bn deposited with banks and building soci-

eties, less than half the monthly average of £11.2bn in the 12 months to October 2021. It is also below pre-pandemic levels: in the 12 months to February 2020 the average savings level was £5.5bn.

But some economists cautioned that rising inflation was likely to be driving the rebound in consumer credit. In November, consumer prices rose to a decade high of 5.1 per cent.

Samuel Tombs, chief UK economist at Pantheon Macroeconomics, said: "This downshift [in savings] appears to reflect households' attempt to sustain real consumption while inflation is soaring, rather than a rapidly strengthening recovery."

Thomas Pugh, economist at RSM UK, said that combined with stronger retail sales figures for November, up 1.4 per cent, the data suggest consumer spending was "strong" in November. But inflationary pressures meant the rise in borrowing "may not translate as neatly into real GDP growth".

Beckett said she estimated that gross national product growth reached 0.5 per cent in November, up from October's 0.1 per cent rise, with her forecast for the final quarter an expansion of 0.6 per cent. This is well below the 1.1 per cent rise in GDP in the third quarter.

## INTERNATIONAL

## Variant's spread

## US hits record 1m daily virus infections

Deluge of cases disrupts travel and pushes back plans for return to office

MAMTA BADKAR — NEW YORK  
JOHN BURN-MURDOCH — LONDON

The US has registered more than 1m Covid cases in a single day as the highly transmissible Omicron variant spreads rapidly throughout the country, alarming officials and dashing hopes of a return to normality at the start of 2022.

The 1.08m cases recorded on Monday is the highest daily tally since the start of the pandemic, according to data from Johns Hopkins University, although that number is skewed by a testing backlog

from the new year holiday weekend.

Even with the backlog, the number of Covid-19 cases being reported in the US has been at record highs for several weeks, as Omicron has circulated throughout the population. On Monday, the seven-day rolling average of cases reached a record 469,919, according to the Financial Times data tracker, double the equivalent figure a week earlier.

The US experience has been echoed elsewhere with France recording a record of nearly 300,000 daily cases, according to health minister Olivier Véran, and UK cases passing 200,000 for the first time, at 218,724.

Omicron has sent daily case numbers to record highs in 20 countries across the globe, from Africa to the Americas.

US case rates have more than doubled in the past week in 27 states, rising fourfold in North Carolina and Louisiana. The seven-day rolling average of cases per 100,000 people in Washington stood at

US case rates have more than doubled in the past week in 27 states, rising fourfold in North Carolina

2,135, while in New Jersey and New York it was 1,929 and 1,820 respectively, according to the FT tracker.

The deluge of cases has resulted in huge disruption to travel, as staffing shortages force airlines to cancel thou-

sands of flights. It has also prompted some employers, including Wall Street's biggest banks, to backtrack on plans for a return to the office this month.

Hospital admissions and deaths have not yet matched the peaks seen earlier in the pandemic, although there is always a one- to two-week lag between infections and progression to severe disease and death.

The seven-day rolling average for Covid-related deaths in the US stood at 1,243 on Monday, according to the FT tracker, up 28 per cent over the past month but well below the peak of about 3,400 during last year's winter surge.

There are 112,495 people in hospital with Covid and 20,927 of those are in intensive care, say federal data, higher

than in recent months but below the peaks during the winter surge last year.

Federal, state and local officials in the US are still scrambling to adjust to the sharp rise in cases.

The Centers for Disease Control and Prevention last month cut the recommended isolation period for people who have Covid-19 to five days, from 10, as long as they were no longer symptomatic. However, the agency received pushback from health experts for failing to outline its recommendations on whether a person must test negative before ending isolation. Vivek Murthy, US surgeon-general, said yesterday that government health officials would clarify the shorter isolation time and testing requirements this week.

## Pandemic

## Harvard study finds existing jabs effective against severe Omicron

DONATO PAOLO MANCINI — LONDON

Cellular immunity elicited by the BioNTech/Pfizer and Johnson & Johnson Covid-19 vaccines is effective against the Omicron coronavirus variant, according to a study, suggesting vaccines will protect against severe disease even if the antibody responses against the strain are not as strong or durable.

The findings, contained in a new Harvard medical school study, add to evidence that the current vaccines hold up against severe Covid outcomes, and could help health authorities to decide whether to switch to Omicron-targeted jabs.

"These data suggest that current vaccines may provide considerable protection against severe disease with the Sars-Cov-2 Omicron variant despite the substantial reduction of neutralising antibody responses," the researchers wrote in the study made public on Monday. The paper has yet to be peer-reviewed.

Previous evidence suggests that the existing vaccines lose antibody power when pitted against Omicron, meaning individuals are likely to get infected and develop mild disease when they come into contact with the virus.

A third shot at least partially restores that antibody protection, and countries have been racing to scale up their booster programmes to avoid new restrictions. But vaccines are still expected to protect against severe disease, and health authorities have said they would closely examine evidence such as the one contained in the Harvard study to decide whether a switch to Omicron-targeted vaccines is necessary.

Cellular immunity is a different part of the immune response that tends to last longer than antibodies.

While manufacturing projections for 2022 indicate supply will keep up with demand in most scenarios if the world continues to use the shots available at present, switching to Omicron-targeted vaccines could see a global supply squeeze.

Healthcare analytics company Airfinity has estimated — in a best-case scenario — that if all drugmakers switched production and scaled up quickly, 6bn Omicron-targeted shots would be available by October 2022.

If drugmakers were to switch half of their production and continued to make both versions, that target would not be reached before January next year.

Health authorities sounded the alarm on the highly mutated Omicron variant late last year, saying it was able to pierce through immunity afforded by previous vaccines or infection, but scientists have been hopeful widely used shots could still protect from severe disease.

Early findings suggest Omicron appears to be milder than previous variants, but it is not clear yet if this is because of the variant itself, or because most of the world has either been infected or vaccinated, or a combination of the two factors.

However, scientists have said that its high transmissibility, coupled with uneven vaccine coverage, could still mean health systems worldwide come under pressure as many more people become infected. The World Health Organization has repeatedly called for more equitable distribution of vaccines.

## Global health. Disease

## Scientists battle to see off long Covid crisis

Millions suffer symptoms 12 weeks after diagnosis but few drugs exist to tackle condition

HANNAH KUCHLER — LONDON

Long Covid is another public health crisis hidden inside the pandemic, medical experts warn, with estimates of the patients suffering from the debilitating disease stretching to more than 100m worldwide.

Scientists are in the early stages of seeking treatments to ease symptoms, target the unclear causes and get people healthy enough to return to work.

A meta-analysis of studies by Penn State researchers found more than half of the 236m people who had Covid-19 when the paper was published — which has since risen to 275m — had symptoms lasting more than six months.

Amitava Banerjee, a professor of clinical data science at University College London, said even two years into the pandemic, we are "still caught in the headlights", focused on dashboards that track intensive care admissions and deaths but not the long Covid crisis.

## What is long Covid?

Long Covid is defined as suffering symptoms 12 weeks or more after diagnosis.

A recent UK study discovered one in three of those admitted to hospital were suffering from long Covid a year later. Rachael Evans, a clinical scientist at the UK's National Institute for Health Research, said the post-hospital admission Covid-19 (Phosp) study helped sort sufferers into subgroups and steered work to discover new drugs. "It really highlights the urgent need for treatments to be investigated and for health-care support to improve recovery. None of us think that long Covid has one mechanism and one treatment."

## What are the symptoms?

While patients suffer a range of symptoms, the most common are fatigue and breathing problems. Some also experience damage to their organs and in the Phosp study, one in 10 had clinically relevant cognitive impairment, often called "brain fog". Many symptoms resemble those in other post-viral diseases, including from coronaviruses.

Margaret O'Hara, a trustee at patient group Long Covid Support, fell sick with



**Cautious: visitors to the Kanda Myojin Shrine in Tokyo, Japan, yesterday wear masks as they pray on the first business day of the year**  
Toru Hanai/Bloomberg

Covid-19 in April 2020 after assisting on a critical care coronavirus ward. She experienced long Covid for a year — and then, after contracting the disease in October 2021, is suffering again. "Just fatigue doesn't really begin to describe the intensity," she said. "It's so bizarre. Sometimes I'll get up in the morning and within an hour it is like I've been anaesthetised. . . I have to lie down."

Women, people with obesity, and those who were on invasive mechanical ventilation are all more likely to develop long Covid. Self-reported data from the UK's Zoe symptom tracking app suggest vaccination halves the risk.

## What causes long Covid?

A great deal remains unknown. However, the Phosp study provided an important clue that lends weight to a hypothesis that long Covid is caused by a continued immune reaction. It found sufferers had increased inflammatory markers. Researchers discovered people with the most severe long Covid, and those experiencing brain fog, had the highest levels of inflammation.

Sir Stephen Holgate, co-founder of Synairgen, a company creating Covid-19 antiviral medication, said MRI scans had shown inflamed organs. "The body turns on itself as a result of all this inflammation during the Covid period and attacks its own tissue."

There may be a genetic predisposition that determines who is most likely to suffer this kind of immune response, so researchers are conducting large genome-wide association studies that try to locate genes that patients have in common. Another hypothesis is that the virus attacks the cells' energy reserves, mitochondria. Subgroups could be suffering for different reasons — or both hypotheses could be true at once.

## Can some drugs be repurposed?

Some physicians have been trying to use drugs with few side-effects that they believe could have an impact. These are as diverse as the symptoms, including antihistamines and cytokine blockers to address inflammation, antacids, beta blockers and anti-clotting agents. A small Cambridge study suggested

"The virus comes in and takes over the "battery" and damages it so the battery can no longer hold the charge properly"

taking a combination of "friendly bacteria" could help ease long Covid's gut symptoms and improve overall wellbeing.

## Which drugs are in development?

Bill Hinshaw, chief executive of Boston-based biotech Axcella Therapeutics, said there were few products in the pipeline for long Covid and even fewer targeting muscle fatigue and weakness. Axcella and Oxford university are developing a drug to reduce inflammation and restore mitochondrial function. They hope to have clinical trial data in the middle of this year.

"You have a certain amount of energy in the "battery," said Hinshaw. "The virus comes in and takes over the battery and . . . damages it so the battery can no longer hold the charge properly."

Others are focusing on a subset of patients. For example, digital therapeutics pioneer Akili Interactive is creating a game for people with from brain fog. PureTech Health is working on a drug for lung tissue damage. See FT View and Opinion

## Endangered wildlife

## Porous borders make Nigeria a hub for illicit pangolin trade

NEIL MUNSHI — EPE, NIGERIA

The butcher grabbed a sack from behind a table piled with bloodied carcasses — copper-coloured duiker, grey-black cane rats, a 5ft crocodile with bulging eyes — at the entrance to the biggest fish market in Lagos state and pulled out a brown ball the size of a grapefruit.

"Pangolin. . . they pay good money," he said of the Nigerian dealers and Asian buyers offering the equivalent of \$30 apiece — more than a third of the local monthly minimum wage — for an endangered animal whose scales are prized in some traditional medicines.

The butcher, who did not wish to be named, is a small player in a global trade in pangolins estimated to be worth hundreds of millions of dollars annually.

Experts warn that the illicit industry is increasingly centred on Nigeria, which in recent years has grown to become the most important wildlife smuggling hub in Africa.

"Because of the level of corruption, because our borders are so porous, because our law enforcement is not strong enough and because we're deep

in poverty and people want something that will put food on the table, Nigeria has become this transit hub," said Professor Olajumoke Morenikeji, head of the Pangolin Conservation Guild at the country's University of Ibadan.

High-profile seizures last year made clear Nigeria's key role in the trade. In July, authorities confiscated seven tonnes of pangolin scales as well as more than 46kg of elephant ivory worth \$54m from a house in Lagos. In September, authorities seized another tonne of scales in the city.

The Wildlife Justice Commission, whose intelligence work led to the raids, said the hauls were both connected to a global network active in Nigeria and central Africa that is responsible for more than half of all pangolin and ivory seizures worldwide.

The pangolin, a small gentle creature that resembles an armoured anteater, is estimated by anti-smuggling groups to be the most trafficked mammal in the world, above African rhinos and elephants, tigers and abalone.

Following crackdowns and increased enforcement in eastern and southern Africa over the past half decade or so,

the criminal syndicates that move huge quantities of pangolin scales to China have turned to Nigeria.

"There's no real investigative capacity that has been directed towards this," said Julian Rademeyer, of the Global Initiative Against Transnational Organised Crime.

While trade in pangolins is illegal under the Convention on International Trade in Endangered Species of Wild Fauna and Flora — signed by 183 countries, including Nigeria and China — the World Wildlife Fund estimates that almost 200,000 were poached in 2019



Highly prized: pangolins are said to be most trafficked mammal in world

alone. UK-based organisation Traffic, the wildlife trade monitoring network, calculates that about 20m tonnes of pangolins and their parts are trafficked each year.

The eight species of pangolin found in Africa and Asia are all protected, with two listed as critically endangered. The high prices they command make them an almost irresistible target for hunters in countries with few job opportunities.

Although some of the animals are caught in Nigeria, much of the trade originates with poachers in bordering Cameroon, the Democratic Republic of Congo and other countries.

The scales and ivory are packed in shipping containers that are usually marked as timber or another export and sent to Asian countries including Vietnam, where wholesalers sell them on to Chinese buyers. A Nigerian hunter might sell one pangolin to a butcher for 4,000 naira (\$10), while a kilo of scales goes for more than \$1,000 in China.

Rademeyer said recent seizures in Nigeria were encouraging. "But seizures need to be more than just an opportunity for customs authorities to hold a press conference."

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## INTERNATIONAL

# Russia plays strategic games with gas exports while regions suffer off-grid

Burning coal and waste pollutes cities not linked to the network as big pipelines take precedence

POLINA IVANOVA — CHITA, RUSSIA

Standing on a lookout point above the Siberian city of Chita, 46-year-old energy worker Vitaliy Gobrik surveys its fast-expanding suburbs, where the landscape bristles with thousands of low-rise chimneys. “Out of poverty, people burn coal, wood . . . but they also burn rubber, garbage, waste oil, wooden rail sleepers,” Gobrik said, smog sinking into the skyline below. “They put anything they can find in those stoves.”

Chita is one of many big cities in Siberia that have not been connected to Russia’s domestic gas network. Instead, coal-fired power stations heat the city centre, while residents of the suburbs fend off freezing temperatures by firing up furnaces, causing some of the worst air pollution in Russia.

Though Russia is the world’s biggest gas exporter, flexing its muscles globally as an energy superpower, back home it has struggled to connect its vast landmass to the domestic network. Whole time zones have been left behind.

Only 11 of Russia’s 83 administrative regions are fully connected to the gas pipeline network; about a third of settlements are not connected. In the vast Siberian federal district, with 17m residents, just 17 per cent of settlements have access to piped gas.

State-run gas giant Gazprom, responsible for expanding major domestic infrastructure since the 2000s, has said it plans to build all the local pipelines that are “technically feasible” by 2030.

Igor Yushkov, an analyst with the National Energy Security Fund think-tank, says it would be more apt to say “economically justified”. Many areas are too remote and sparsely populated for projects to make financial sense. “In most cases, Gazprom is justified when it makes this argument,” Yushkov said.

But many areas remain that should be connected, he adds. “Gas is not just a commodity, it’s an element of social justice,” Yushkov said. “We are the largest country in the world in terms of gas reserves . . . while many people are without gas even when living along major export pipelines. Frankly, people are annoyed.”

Chita, about 5,000km or more than four days by train away from Moscow, bordering China and Mongolia, does not feature in Gazprom’s near-term proposals, according to the company’s pipeline expansion plans to 2025.

Konstantin Ilkovsky, the region’s governor until 2016, realised gas was a priority when he first moved to Chita and wondered why his clothes would be a sooty grey colour by the end of a working day. “Everybody got gas, while we were left behind like some outcasts,” he said. “I felt personally resentful.”

Ilkovsky lobbied Moscow for a gas pipeline and worked on expanding storage facilities for liquefied natural gas that could be delivered by tankers.

“When there’s no wind and temperatures are below freezing — meaning the power plants are burning coal at full blast — the city is covered in coal dust,” he said. “And that is what people are



**Pollution: smoke rises from low-rise homes in Chita where locals burn furnaces to keep warm**  
Polina Ivanova

breathing.” But in meetings with Gazprom and other authorities, Ilkovsky was told his region’s population — at just over 1m — was too low to make building a pipeline financially viable.

Ilkovsky disagrees. “There is no alternative to gas. We are a gas superpower. It’s just funny to even be arguing about whether or not we need to connect these regions to the network,” the former governor said.

Chita lies in a basin, at the confluence of two rivers, and the surrounding hills lock in polluted air. During the summer, smoke from nearby forest fires is also trapped over the city, says Chita pensioner Elvira Cheremnykh.

Cheremnykh, 69, lives in a one-room wooden house she heats with logs when she can afford to. With coal, “you end up all black like the devil”, she says, standing in the snow outside her home on a particularly toxic day, the air’s smell and taste a mix of sulphur, petrol and soot.

Her neighbours, however, burn whatever they can find, she says, and their chimney comes up outside her window. “It’s impossible to breathe . . . it all ends up in here,” she said. “You need a gas mask, and even that won’t save you.”

In the 1990s, businesses affiliated with the Yukos oil company developed a plan to build a pipeline beside a stretch of the Trans-Siberian railway, bringing



**‘It’s impossible to breathe. You need a gas mask, and even that won’t save you’**

Elvira Cheremnykh

gas to the region’s cities, says Ravil Geniatulin, who was governor of Chita and the Zabaikalsky Krai region for 17 years.

“The project was genuinely about to get started,” Geniatulin recalls, from a room in the Chita city archives. “Maybe the documents still exist somewhere — maps, beautiful ones, where you can see the pipeline drawn on in blue.”

In the mid-2000s the plans fell apart, he says, with Yukos itself, which was seized by the government. Chief executive Mikhail Khodorkovsky was jailed.

The announcement of the building of Gazprom’s massive Power of Siberia pipeline, bringing gas for export to China from a field just 500km from Chita, raised hopes in the city once again. But a different route was chosen.

Plans are being made for a second Power of Siberia pipeline to China via Mongolia. “Skipping us, though, once again,” said Vladimir Kurbatov, a Chita security guard and Communist party member, who has picketed local government over gas supplies and pollution.

Kurbatov says many have given up on gas pipelines, himself included, but they are still desperate for cleaner air. He wants authorities to build the plants and storage infrastructure necessary for Chita to be powered on LNG, but is sceptical that a government-led clean air programme for the city will deliver.

“I’ve seen how people in western Russia live,” Kurbatov says. “It’s all clean there, all using gas . . . Whereas here we breathe the entire Mendelev [periodic] table of elements.”

**The gaps in Russian gas coverage**  
Russia’s expected gas pipeline network by 2025



## Covid vaccine

### Israel claims fourth dose boosts antibodies fivefold

NERI ZILBER — TEL AVIV  
DONATO PAOLO MANCINI — LONDON

A fourth dose of a Covid-19 vaccine increases antibodies in the blood fivefold after one week, according to Israel’s prime minister, citing a preliminary study a day after the country began rolling out the jabs.

Israel began offering a fourth dose of the BioNTech/Pfizer Covid-19 vaccine on Monday to Israelis over the age of 60 and medical workers amid soaring case numbers because of the Omicron coronavirus variant.

Prime Minister Naftali Bennett said the findings of the study, by Israeli researchers, were promising. “First of all, the fourth dose is safe. It’s a safety parameter similar to what we saw after the third dose — that’s good news,” Bennett said yesterday at Sheba Medical Center where the study was conducted.

“A week after taking the fourth dose we see a meaningful rise in the number of antibodies, a fivefold increase within one week. That’s an indicator of a very high likelihood that the fourth dose will protect . . . against infection to some degree and against severe symptoms.”

The study was carried out on 154 people who exhibited low antibodies and

who received the third “booster” jab of the Pfizer vaccine before August 20. Other preliminary studies from Israel suggested vaccine effectiveness waned after three to four months.

The European Medicines Agency signalled late last year it was reviewing whether fourth doses were needed for a subset of at-risk populations, such as those who were immunocompromised. Immunocompromised people in the UK can receive a fourth dose.

UK health officials have said they are reviewing the available evidence on whether this should be expanded to the general population.

Israel was the first country to introduce a third shot last July, a move that was credited with halting the previous Delta variant wave. The fourth jab is now being offered to those who both meet the criteria and received the third shot more than four months ago.

As of Monday, the first day the fourth jab was on offer, some 100,000 eligible Israelis either received the vaccine shot or had made appointments to do so.

More than 10,000 new Covid cases were reported in Israel for Monday, the highest daily figure since September.

Additional reporting by Oliver Barnes in London

## Investor jitters

### Presidential poll casts doubt over Italy’s ruling coalition

DAVIDE GHIGLIONE — ROME

Italy’s parliament will convene on January 24 to start voting for the country’s next president, in an election that could herald the end of the national unity government and unsettle investors betting on a continued economic recovery.

Roberto Fico, the Speaker of the lower house of parliament, summoned lawmakers from both chambers of parliament and representatives of Italy’s regions to take part in the voting process, which could last several days.

Mario Draghi, prime minister, unsettled lawmakers before Christmas when he signalled he was willing to be nominated as president. His potential resignation as premier could trigger elections, which would risk delaying structural reforms and investments linked to the EU’s pandemic recovery fund.

Many lawmakers and international investors would prefer the former European Central Bank president to remain as prime minister until elections due in 2023, to complete structural reforms and amid uncertainty over the Omicron coronavirus variant.

Many MPs will also lose their jobs in the next election, after a 2019 referen-

dum found in favour of cutting the number of parliamentary seats by more than a third.

Draghi is seen as a unifying figure for the unwieldy ruling coalition, which includes the centre-left Democratic party (PD), far-right League, populist Five Star and liberal Forza Italia, as well as small leftwing and centrist parties.

Enrico Letta, PD leader, warned that if the coalition could not agree on a cross-party presidential candidate, a crisis would follow.

The first choice of the centre-right coalition parties, as well as the opposition Brothers of Italy, is former prime minister Silvio Berlusconi, who is willing to take on the presidency. But he would not be expected to receive support from Five Star or the PD.

Five Star said it would consider a woman such as Maria Elisabetta Alberti Casellati, the Senate Speaker, or Marta Cartabia, justice minister. Giuliano Amato, former prime minister, has also been suggested as a candidate.

President Sergio Mattarella, 80, whose seven-year term ends next month, is not seeking re-election.

The president’s formal powers include appointing the prime minister and other members of the government.

## Economic activity

### France and Germany resilient despite virus and inflation

VALENTINA ROMEO

The EU’s two leading economies revealed robust economic health yesterday, with Germany reporting strong labour figures and French inflation slowing more than expected.

German unemployment fell by more than expected in December with the eurozone’s largest economy showing resilience despite the Omicron variant of coronavirus and surging inflation.

The German Labour Office reported that the number of people out of work fell by 23,000 to 2.4m in December, a larger decline than forecast by economists polled by Reuters. The figure pushed the unemployment rate to 5.2 per cent, the lowest since March 2020.

Detlef Scheele, chair of the Federal Employment Agency, said the labour market had “developed well towards the end of the year”, continuing the recovery of the past few months.

Compared with December 2020, joblessness was down by 400,000, while the unemployment rate was down from a peak of 6.4 per cent in June 2020.

“These are uplifting numbers,” said Claus Vistesen, chief eurozone economist at Pantheon Macroeconomics, “pointing to underlying resilience in

## Import data

### Baltic nations’ trade with Belarus at a high despite sanctions

RICHARD MILNE  
NORDIC AND BALTIC CORRESPONDENT

Belarus’s exports to Estonia, Latvia and Lithuania are at or close to record levels, cementing their trading relationships even as the three Baltic states take an aggressive stance against the regime of Alexander Lukashenko.

In the first 10 months of last year, Estonia’s imports from Belarus were more than double 2020’s total at €522m and more than a fifth higher than the previous peak in 2018. Lithuania’s imports have increased 50 per cent compared with 2020, hitting €1bn, a third higher than the previous 2015 high. Latvia’s are up two-thirds from 2020 to €407m, just 2 per cent below their 2011 peak.

The sharp increases lay bare the tensions the Baltic states face between economic opportunities and their geopolitical rhetoric, according to experts.

“The Baltic states are in the process of discovering that translating strong and principled foreign policy positions into an effective sanction regime is not such a simple matter, even in the most clear-cut cases,” said Tomas Jermalavicius, head of studies at Estonia’s International Centre for Defence and Security.

“There are domestic economic players — even state-owned corporate entities — that will use every possibility to find ways around them for as long as feasible.”

The Baltic states have become the loudest voices in Nato for an assertive policy against both Belarus and Russia, as Minsk has in recent months used illegal immigrants to put pressure on Latvia, Lithuania and Poland.

But economic considerations are causing domestic political tensions. Lithuania’s government almost collapsed last month after it emerged that it had continued to trade with Belarus in the face of US sanctions. Lithuania’s foreign and transport ministers submitted their resignations — they were rejected — after revelations that the country’s state-owned railway was still transporting Belarusian potash.

Jermalavicius said logistics and transport operators in all three Baltic countries would “always seize opportunities for extra earnings . . . if there is no pressure from the governments” as many had close relationships with Belarusian state-owned businesses.

But Vidmantas Janulevicius, president of the Lithuanian Confederation of Industrialists, said that although the Baltic countries needed to obey sanctions, it would be “stupid” to block all imports, especially as the region was connected to China and central Asia through Belarus.

Estonia’s foreign ministry said imports from Belarus were “goods in transit” and were carefully checked against sanctions lists. Lithuania’s foreign ministry noted that there was no legal basis in the EU to implement sanctions imposed by a third country. And Latvia’s foreign ministry said: “Any ongoing trade [with Belarus] is currently taking place in compliance with the sanction regimes imposed.”

“I’ve seen how people in western Russia live,” Kurbatov says. “It’s all clean there, all using gas . . . Whereas here we breathe the entire Mendelev [periodic] table of elements.”

labour demand, even in the face of soaring virus cases and the threat of restrictions in Q1.”

Vistesen said the data indicated companies were “looking through the latest surge in virus cases, probably expecting that any restrictions will be shortlived giving way to a solid rebound in activity towards the end of Q1 and into Q2.”

French inflation was slower than expected in December, suggesting price rises are close to their peak, which may help ease pressure on the European Central Bank to act on soaring prices.

France’s EU harmonised rate of consumer price inflation was 3.4 per cent in December, unchanged from November, the national statistical office said. That was the fastest pace in over a decade but slower than the 3.5 per cent forecast by economists polled by Reuters.

The figure from Insee suggests “we are close to the peak in the current inflation cycle”, said Angel Talavera, economist at Oxford Economics. Extreme volatility in energy prices will dominate price dynamics in the short term, he said, yet “we expect a marked slowdown in inflation in the second half of 2022.”

The annual rate was unchanged at 2.8 per cent, reflecting an acceleration in food prices.

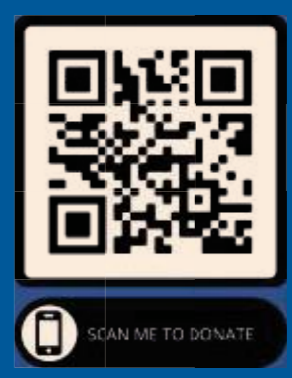


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Nine in ten (90%) say that they learned either not very much or nothing at all about managing money and personal finances when they were at school (8% say they learned either a great deal or fair amount). Source: FT-Ipsos Mori survey of 3,194 people polled across England.



## INTERNATIONAL

## Slowdown concerns

## Chinese banks reveal fears over economy

Executives rush for low-risk instruments to meet quotas rather than lend

SUN YU — BEIJING

Chinese banks rushed to meet their annual state-imposed lending quotas last month by buying up low-risk financial instruments rather than issue loans, in a surge that bankers and analysts said reflected financial institutions' wariness about the country's slowing economy.

The rise in demand for banker's acceptances, which are guaranteed by their issuers and technically classified as loans, reduced the interest they paid

to close to zero per cent in the second half of December. A record low of 0.007 per cent was reached on December 23.

That was far lower than Chinese banks' average 2.5 per cent cost of capital over the same period, implying they preferred to lose money on low-yielding banker's acceptances rather than risk greater losses by issuing their own loans at higher rates of interest.

President Xi Jinping's administration wants banks to lend more, especially to small and medium-sized enterprises in government-favoured sectors such as agriculture and new-energy vehicles. But banks are reluctant because they believe China's slowing economy has reduced the pool of qualified borrowers.

Loan officers said buying banker's acceptances to meet year-end lending quotas was the safest way to back the government's policy objectives.

"Supporting the broader economy is a political task we can't say no to," said an executive at Zhongyuan Bank in the central city of Zhengzhou, who asked not to be named. "Our losses from buying banker's assurances are smaller than lending to unqualified businesses."

Companies use banker's acceptances as a form of payment, which the holder can redeem with the issuing bank. They can also be bought and sold on open markets, such as the Shanghai Commercial Paper Exchange.

Loan officers said Xi's regulatory

crackdowns had hit many of their best borrowers in sectors such as real estate and private education, with no sign that conditions would improve soon.

"The authorities want us to support the real economy while keeping bad debts under control," said a loan officer at Zhesang Bank in Hangzhou, who asked not to be identified. "That is difficult to achieve."

Bo Zhuang, a Singapore-based analyst at Loomis Sayles, an asset manager, added: "This is a conundrum the current policy mix can't solve."

China's total social financing, the broadest measure of credit supply, reported three consecutive double-digit declines year on year from July to Sep-

tember, which reflected the government's efforts to deflate the housing bubble by tightening mortgage lending.

The credit crunch pushed China Evergrande Group and other overleveraged developers into default, stalling the completion of apartments funded by advance payments from homebuyers.

Government officials began to fret that protests by aggrieved homebuyers, retail investors and unpaid construction workers could threaten social stability. That led to a moderate shift in monetary policy as China's central bank last month unveiled measures to pump liquidity into the real economy.

Additional reporting by Tom Mitchell in Singapore

## Taiwan office

## Lithuania president shatters state unity over Beijing spat

RICHARD MILNE  
NORDIC AND BALTIC CORRESPONDENT

Lithuania's decision to allow Taiwan to open a de facto embassy in its own name was a mistake, the country's president said yesterday, as he rebuked the country's government for a move that sparked a diplomatic spat with China.

Gitanas Nausėda told Lithuanian radio the centre-right government had not consulted him last year before the island's representative office was opened in the name of Taipei — as in most European countries.

Beijing has accused Lithuania of breaking its One China policy, under which it does not allow other nations to treat Taiwan as an independent country. It has recalled its ambassador and downgraded Lithuania's diplomatic presence in Beijing.

"I think it was not the opening of the Taiwanese office that was the mistake, but the name, which was not co-ordinated with me . . . I believe the name was the spark, and now we have to deal with the consequences," Nausėda told Ziniu Radijas.

Since Taiwan and Lithuania agreed in August to open representative offices in each other's capitals, China has ratcheted up pressure on Vilnius. Beijing has not only banned imports from the Baltic country but has tried to stop manufacturers, including German blue-chip auto parts supplier Continental, from using components produced in Lithuania.

Lithuania evacuated its remaining diplomats from Beijing last month after China demanded they hand in their diplomatic IDs to have their status downgraded.

Both Nausėda and the Lithuanian government have insisted they respect China's policy on Taiwan, but that Vilnius has the right to establish economic and cultural relations with whomever it likes.

"We would like to also have relations with China based on the principle of mutual respect. Otherwise the dialogue turns into unilateral ultimatums, requirements which are not acceptable in international relations," Nausėda told the Financial Times in August.

Taipei has tried to soften the blow to Lithuania from China's economic retaliatory measures. On Monday, state-owned Taiwan Tobacco and Liquor Corporation snapped up a shipment of 24,000 bottles of Lithuanian rum that had been rejected by Chinese customs. Lithuanian beer brand Volfas Engelman's Taiwan sales soared 23-fold in 2021, boosted by goodwill towards the Baltic country.

Taiwan's new envoy has also said that Taipei will set up a task force seeking to help Lithuania train semiconductor engineers and attract semiconductor investment.

Nausėda's comments about Taiwan yesterday have shattered the fragile unity on foreign policy that had existed between the president, who takes the lead on such issues, and the government, headed by prime minister Ingrida Simonyte, whom Nausėda beat in 2019's presidential election.

Nausėda has clashed with Simonyte's government over its Covid-19 policies, which descended into open bickering between the pair in November after the president vetoed a bill to make unvaccinated workers pay for their own tests.

Additional reporting by Kathrin Hille in Taipei

## Clean energy. British Columbia

## Canada's ancient forests caught in climate fight

Conservationists and biomass groups are at odds over use of trees for 'carbon neutral' fuel

CAMILLA HODGSON — LONDON

Centuries-old forests dotting the landscape in British Columbia, Canada's westernmost province, have become a battleground for two schools of thought about curbing climate change: one that wants to use their biomass for green power, and another anxious to protect carbon-absorbing trees.

Scientists and campaigners are putting the provincial government under pressure to preserve older woodland, in particular, which is often rich in biodiversity and a significant store of carbon. But escalating climate concerns have also encouraged the growth of British Columbia's biomass industry, which produces wood pellets that are treated as a "carbon neutral" fuel.

Big producers include power company Drax, which has sought to reinvent itself as a generator of clean energy. The UK-listed company acquired Canadian wood pellet producer Pinnacle last year, and plans to double the production and sales of pellets by 2030.

Although biomass fuels have become a significant source of energy in the EU and Asia, some scientists are increasingly sceptical about the environmental credentials of burning wood for energy.

In British Columbia, some wood from old trees ends up in pellets. While this remains legal, campaigners fear the practice is not sustainable, and say that it undermines the argument of biomass advocates that pellets are a responsible alternative to fossil fuels.

Some producers fear the provincial government will introduce stricter harvesting quotas to reduce the amount of old woodland that can be logged.

British Columbia "should not be issuing permits to log [old] forests", said Michelle Connolly, director of advocacy group Conservation North. "They have the power and they should know better."

The scale of the harvesting of old trees was "insanity", said Rachel Holt, a member of the independent Old Growth Technical Advisory Panel convened by the provincial government last year. "These are incredibly rare, extremely high-value forests . . . You cannot log and harvest 2,000-year-old trees sustainably," she said.

According to official figures, about a quarter of all the forest that is harvested each year in British Columbia is classified as "old growth", which typically refers to trees that are more than 140 or 250 years old, depending on location.



Towering: 'The Grandfather Tree' in a forest on Vancouver Island where anti-loggers have been protesting, below — Cole Burston/ AFP/Getty

The province's pellet industry has grown rapidly since the early 2000s, while related activities such as paper production have shrunk. The market has attracted investment from companies looking to convert coal-fired plants into biomass plants. Pellet mills typically source wood from the areas surrounding them, largely the offcuts and residues from trees harvested for other purposes, producers said.

All seven of Pinnacle's British Columbia mills are surrounded by woodland that includes "primary" forest — native and often old trees that have not been disturbed by human activities — according to an analysis of government data by

Conservation North. A recent Drax-commissioned report found that supply to two Pinnacle mills might shrink as a result of the provincial government's efforts to protect old-growth forests.

Drax said its Canadian pellets were "made from waste fibre, which would have been burnt at the roadside, land-filled or left to rot. Eighty per cent of this waste fibre comes from sawmill residues and 20 per cent comes from harvesting residues".

Under pressure to rethink how old forests should be managed, the provincial government commissioned an independent review in 2019. The report, published in 2020, concluded that the economy was "heavily dependent on trees harvested from primary forests of old trees" and outlined recommendations, such as deferring development in sensitive areas.

Garry Merkel, a forester, member of the region's indigenous Tahltan nation and lead author of the report, said old forests were "critical" for the health of ecosystems and were "not renewable", adding: "We have to think of this more like mining."

British Columbia's forests ministry said it was "committed to improving the way we care for our forests" and would implement the report's recommendations.

The 2020 Drax-commissioned report

'These are incredibly rare, extremely high-value forests. You cannot log and harvest 2,000-year-old trees sustainably'

on supply to Pinnacle's mills said government measures to protect biodiversity and old growth had "resulted in partial withdrawals of land from timber harvest availability . . . in some areas harvesting is prohibited whereas in others it may proceed on a modified basis".

Further restrictions might be "in the offing", the report said.

Drax has converted four of the six units at its power station in Yorkshire, England from coal to woody biomass. However, it was dropped from the S&P Global Clean Energy Index in October as a result of a high "carbon intensity" score.

Meanwhile, a Citi analyst note from December said "we do not fundamentally see biomass as a sustainable source of energy", reflecting the concerns about treating wood pellets as environmentally friendly.

British Columbia's Council of Forest Industries said the province had "world-leading sustainable harvesting and active forest management practices". It said lumber companies minimised waste by selling offcuts — whether from old growth trees or younger woodland — to groups that included paper and pellet mills.

But Merkel, the forester, said even this approach depleted ecosystems, adding that "there is no such thing in nature as waste".



## Seven-decade conflict

## Seoul determined to declare Korean war over despite US and China doubts

CHRISTIAN DAVIES — SEOUL

South Korea president Moon Jae-in is pressing ahead with his quest to declare an end to the Korean war despite months of fruitless diplomacy that has exposed divisions between Seoul and Washington.

Moon told the UN General Assembly in September that a formal declaration to end the war, which was fought from 1950 until the signing of an armistice agreement in 1953, would "mark a pivotal point of departure in creating a new order of reconciliation and co-operation on the Korean peninsula".

But doubts in Washington, Pyongyang and Beijing have frustrated his hopes of securing a long-sought political legacy as a peacemaker, illustrating the complexity of reconciling the competing interests of the four parties to a 70-year-old conflict.

North Korea, China and the US-led UN command discussed signing a peace treaty within three months of the armistice but failed to do so. "All Koreans have long aspired for peace, prosperity and unification," said Moon, whose presidential term ends in May. "I will continue to make efforts to institutionalise sustainable peace, and I won't stop that until the end of my term."

Go Myong-hyun, a senior fellow at the Asan Institute of Policy Studies think-tank in Seoul, said: "For Moon, this is not just about diplomatic strategy. It is also a question of national identity. He wants to be able to say that the Korean nation is no longer at war, and that eventual unification is still on the horizon."

Moon's proposal is not for a legally binding peace treaty but a symbolic declaration that supporters said would kickstart talks with Pyongyang.

"The proposal represents an effort to

end the impasse, increase confidence between the parties and build towards a breakthrough on the issue of the denuclearisation of the Korean peninsula," said Moon Chung-in, a former special

'It can't be too early to do something . . . The US doesn't want "forever wars" and neither do we'

adviser to the president who chairs the Sejong Institute think-tank.

But some US policymakers worry such a declaration could undermine the legitimacy of Washington's decades-long military presence on the peninsula, where 28,500 American troops are stationed. "There is a concern in Washington that an end-of-war declaration could serve as a pretext for North Korea

and China to question the US's military presence not just on the peninsula, but in the region more widely," said Soo Kim at the Rand Corporation think-tank.

Senior South Korean officials have made optimistic statements in recent weeks. Chung Eui-yong, the foreign minister, said Seoul and Washington had "effectively" agreed on the text of a draft declaration, while Moon said on a visit to Australia last month that the parties to the war had agreed to his proposal "in principle".

But sceptics insisted the South Korean government had put a brave face on a policy struggling to gain traction.

Jake Sullivan, US national security adviser, has said of the proposal that the US and South Korea "may have somewhat different perspectives on the precise sequence or timing or conditions for different steps".

Even if Seoul and Washington were

able to resolve their differences, said analysts, there was little indication that North Korea was prepared to engage.

Pyeongyang maintains that any progress in discussing a formal declaration depends on Washington abandoning its "hostile policy" towards the North.

Moon's plans have also been hampered by the deterioration in relations between the US and China.

For its proponents, however, the proposal is as much a moral imperative as a diplomatic gambit. "The unresolved status of the Korean war is an anomaly and an affront to those who fought in that war," said Jessica Lee at the Quincy Institute for Responsible Statecraft.

"It can't be too early to do something that is already decades overdue," said Moon Chung-in of the Sejong Institute. "The US doesn't want 'forever wars' and neither do we."

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# Companies & Markets

## Buyout firm TPG aims for valuation over \$9bn at listing

- ▶ IPO to tap interest in private equity
- ▶ US group plans to raise up to \$877m

ANTOINE GARA — NEW YORK

TPG plans to raise as much as \$877m in an initial public offering that could value the US buyout firm at more than \$9bn, as it seeks to tap a wave of investor interest in private equity.

After laying out its intention to go public last month, TPG, which was co-founded by David Bonderman and Jim Coulter in 1992, said yesterday that it planned to sell 28.5m shares at between \$28 and \$31 each.

TPG resisted going public following the financial crisis, a route taken by rivals including Blackstone, KKR and Apollo and one that has paid off handsomely as their shares have surged. The Texas-based group, whose investments

include Spotify, Uber and Airbnb, has \$109bn in assets.

TPG has said it will convert from a private partnership into a corporation with a single class of stock within five years of its listing, as part of its ambitions to tap public investors to finance its expansion.

In a filing with regulators yesterday, TPG also disclosed that China Life Insurance, which acquired a \$250m stake in TPG in 2014, will sell as many as 5.6m shares in the IPO.

Forty per cent of the proceeds from the shares that TPG is selling will be used to purchase holdings from existing outside investors, the firm said in its prospectus, while the remainder will be used to finance expansion into new business lines and markets.

TPG executives, including Bonder-

man and Coulter, as well as chief executive Jon Winkelried, a former top Goldman Sachs banker, own a total of about 240m shares and units, according to yesterday's filing. They would be worth more than \$7.4bn if TPG sold the shares at the top of its price range.

While the firm did not break out most of the individual holdings, it disclosed that Bonderman, who is chair of the firm, has pledged 24.99 per cent of the partnership units he owns to an unnamed financial institution as collateral for a loan.

TPG's expected market value would be dwarfed by competitors, including Carlyle and Apollo. Blackstone, the industry's largest firm, is valued at more than \$150bn.

After disastrous bets on Texas utility TXU and casino empire Caesars Entertainment, TPG has over the past decade sought to reposition itself as one of the buyout industry's top investors in fast-growing companies.

It has also built a successful healthcare buyout franchise, and Rise, a business with \$13bn in assets aimed at environmentally and socially beneficial investments. However, TPG's focus on traditional private equity investments means it still relies on performance fees for about 80 per cent of its income.

By contrast, Blackstone, Apollo and KKR have cut their dependence on the large, but erratic, fees generated by leveraged buyouts and have shifted into steadier credit, insurance and real estate investments.

TPG is expected to embark on a similar push to diversify, with the firm saying in its prospectus that it would use proceeds from the IPO to help fund new investment strategies and pursue acquisitions.

TPG declined to comment beyond the filing.

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## Supercharged Mercedes' 1,000km electric car prototype aims to eliminate range anxiety



New direction: Mercedes says it will apply the technology in its Vision EQXX to a production car

JOE MILLER — FRANKFURT

Mercedes-Benz has revealed an electric car that it claims can travel more than 1,000km on a single charge, in an attempt to convince customers that a lack of charging infrastructure need not be a barrier to buying a battery-powered vehicle.

The range, far in excess of the industry average of about 300km, was calculated using internal digital simulations of real-life traffic conditions.

However, the German manufacturer said that a road-legal version of the Vision EQXX, which will be shown off in the spring, will be capable of covering almost double the distance of a fully charged Tesla Model S.

The car's "toolbox", developed with the help of Mercedes' Formula One and Formula E teams, will be used in a compact model similar to the A Class, the Stuttgart-based carmaker added.

The vehicle will be available from

2024 or 2025, but will probably not have the full range of the prototype.

Instead, it will utilise the density of the battery in the EQXX and a solar roof to make a more efficient and lightweight car.

"All the elements that we see in this car will make it into series production," said Markus Schäfer, Mercedes' chief technology officer.

"Probably we don't need all this range in a compact car, but now we can downsize the battery, we can have even a much smaller battery than we see here in the EQXX... this means lower costs in the vehicle."

Last year, Mercedes launched an electric version of its classic saloon, the EQS, which is capable of travelling more than 650km on a single charge.

The battery pack in the Vision EQXX has 50 per cent less volume and is 30 per cent lighter than that in the EQS, the company said.

Mercedes is not the first to claim it

has cracked the 1,000km barrier. In November, China's Guangzhou Automobile Group unveiled the Aion LX Plus, which it claimed could drive more than 1,000km on one charge.

But the company said its technological advances would underpin a number of small and medium electric vehicles in coming years, and that the breakthrough showcased the strength of its supercar engineering arms.

Mercedes, which has pledged to be an electric-only brand by 2030 if the "market conditions allow", has come under fire for its ownership of a Formula One team, whose cars run on fossil fuels.

The fact that several components of the EQXX, such as the inverter, were developed with racing teams proved "that innovations from motorsport, where powertrains are already highly electrified, have immediate relevance for road-car development", Schäfer added.

## Ex-Swedbank chief charged over Baltics dirty money

RICHARD MILNE  
NORDIC AND BALTIC CORRESPONDENT

The former chief executive of Swedbank has been charged with fraud and market manipulation, becoming the highest-ranking Swedish banker to be drawn into a sprawling money-laundering scandal in the Baltics.

Birgitte Bonnesen repeatedly spread misleading information suggesting that Swedbank did not have any money-laundering problems in its Estonian operations, Thomas Langrot, chief prosecutor at Sweden's Economic Crime Authority, said yesterday.

Bonnesen was in charge of Sweden's oldest bank from 2016 until she was fired by its board in 2019. She previously headed its Baltic business.

Swedbank and Denmark's largest lender, Danske Bank, are both still under criminal and civil investigation by US authorities for money-laundering scandals in which hundreds of billions of euros of high-risk payments flowed through their branches in the Baltics.

A report by law firm Clifford Chance, commissioned by Swedbank, found the bank had carried out €37bn of deals with a high risk for money laundering from 2014-2019. An internal Swedbank report, seen by public broadcaster SVT, found about €80bn of money flowed through the non-resident client business of the bank in the Baltics from 2008 until 2013, most of it from Russia and other ex-Soviet states.

Swedbank cancelled Bonnesen's severance pay in March 2020 after the Clifford Chance report judged that statements that she made in late 2018 and early 2019 were "inaccurate or presented without sufficient context".

Bonnesen told journalists in October 2018 that an internal report into Swedbank's dealings with Danske — then under the spotlight for its own €200bn money-laundering scandal — contained "nothing" in the way of warning signs.

"Now we have gone through everything and we have finished this review, because there is nothing," she said, according to a transcript of the meeting. "We have gone through all the names that you have seen in the media and in the Danske report; none of them have been customers in Swedbank."

Langrot said there was evidence of a "cover-up" to try to stop Swedbank's money-laundering issues coming out.

Bonnesen's lawyer did not immediately respond to a request for comment.

## Huarong debt saga leaves investors divining Beijing's intentions

INSIDE BUSINESS

CHINA

Thomas Hale



When China Huarong failed to release its financial results last April, investors sought to read the political runes about the country's biggest bad-debt manager.

The former chair of the company, Lai Xiaomin, had been executed for corruption weeks earlier. In the absence of any official statement on Huarong's results, investors began to wonder whether widespread expectations of government support were this time misplaced.

Huarong, majority-owned by the Ministry of Finance and a big international borrower, had expanded far beyond its original remit under Lai's tenure. It was suddenly a test case for Beijing's approach to corporate failure.

After months of uncertainty, a bailout eventually arrived. In August, the company disclosed record losses of \$16bn and, in November, details of a \$6.6bn capital injection from a consortium of state-backed firms led by Citic, the financial conglomerate, were unveiled. Last month, it shed more assets.

Huarong's story has since receded from the limelight, dwarfed by a property crisis centred on privately owned developer Evergrande. Its offshore perpetual bonds, having sunk as low as 54 cents in May, are now trading close to their par value. But while some of the

uncertainties have lifted, its case remains an example of the lingering opacity across China's fast-evolving financial system.

One of the most striking details of Huarong's trajectory, which is echoed in other areas of corporate China, is the expansion of its balance sheet. Originally one of four bad-debt managers designed to contain the spillover from the Asian financial crisis in the late 1990s, its total assets soared from Rmb515bn in 2012 to Rmb1.7tn at the end of 2019. In its long-delayed 2020 annual report, it blamed a "disorderly expansion" under Lai for its deviation from "its main responsibilities".

This expansion came in the context of an international shift on the part of corporate China, with now-fallen companies such as HNA and Anbang driving up the country's foreign direct investment.

Huarong also moved away from simply buying distressed assets. In one case, it funded an offshore bond issued by Country Garden, China's biggest property developer. Huarong's status as government-backed lowered its borrowing costs on international markets — it borrowed about \$20bn, compared with \$19bn by Evergrande, the world's most indebted developer.

But while the case of Huarong highlights China's capacity for dramatic debt-funded growth, it also embodies the lack of transparency over the exact nature of where the proceeds are directed. Investors appear to accept the opaqueness because of the growth, especially in the absence of bond market returns elsewhere in the past decade. And while the company's biggest

investor was the Ministry of Finance, it and other parts of the government may have known very little about the asset allocation drive undertaken by Lai.

Huarong said the reason for the delay in the financial results was that its auditors needed more time and that a "relevant transaction" was being finalised. However, the lack of information surrounding the entire Huarong episode from April onwards led to speculation over the government's motives.

The delay in publication of its results, for example, was cautiously interpreted by some investors as a deliberate signal from Beijing to encourage them to rethink their assumptions over state support. The lag also could have been caused by many other factors, including the hidden politics of the resolution of Huarong's problems or even the authorities' attempts to obtain information.

While it is often represented as a singular entity, the Chinese government can be more a nexus of competing political factions on issues such as Huarong. That makes distressed-debt situations harder to read. While regulators have reformed aspects of financial services and asset management in China, the Huarong saga shows the government will still temper market forces, especially in situations where it has a direct involvement.

"I would not say China is moving fast on market-based reforms based on what I've seen, certainly not for the state-owned enterprises," said Ron Thompson, a restructuring expert at Alvarez & Marsal. "In pretty much every case [of restructuring] the government has some semblance of involvement."

That means investors will have to continue trying to read the political runes in China.

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## COMPANIES &amp; MARKETS

## Telecoms

## AT&amp;T and Verizon to delay 5G rollout in US

Operators agree to further pause while risk of aircraft interference investigated

SARA GERMANO — NEW YORK

AT&T and Verizon have agreed to further delay the rollout of 5G wireless services in the US after additional consultation with regulators over the network's potential interference with aviation safety, in an about-face one day after the telecoms groups vowed they would forge ahead.

Both operators said they would

postpone the debut of their ultrafast wireless networks, scheduled for today, by two weeks, bowing to a request from the transportation department and the Federal Aviation Administration submitted on December 31.

The move was a stunning reversal by the two companies, whose chief executives on Sunday pledged in a joint letter to regulators to continue with the scheduled rollout, with service modifications around airports for six months.

Rich Young, a Verizon spokesman, said the two-week delay "promises the certainty of bringing this nation our game-changing 5G network in January".

AT&T said it had also agreed to the two-week delay, but added that it "remain[s] committed to the six-month protection zone mitigations we outlined in our letter".

The FAA thanked the telecoms groups for agreeing to the additional interval and said "we look forward to using the additional time and space to reduce flight disruptions associated with this 5G deployment".

At issue is potential interference from high-speed wireless services with sensitive aircraft equipment used for take-offs and landings. Both sides agreed to a one-month delay from their initial

launch date of December 5 to undertake further safety reviews.

AT&T and Verizon will implement their planned 5G service modifications around airports in the first half of 2022 in addition to the two-week launch delay, said a person familiar with the matter. Terms of the modifications, according to the letter sent on Sunday by the chief executives, included blocking 5G spectrum use around airport runways, and reducing connectivity within about a mile of take-off and landing. These are similar to restrictions in France, where 5G networks are live.

Sara Nelson, international president

of the Association of Flight Attendants-CWA, AFL-CIO trade union, wrote in a tweet that the AT&T and Verizon joint letter "demonstrates the parties are not operating off the same set of facts. The systems, both air traffic and telecom, are not the same in the two countries."

A spokesman for Verizon said that, among hundreds of flights scheduled daily between the US and France, "none of those flights have FAA warnings associated with them, and there have been no direct cancellations of US flights due to the use of these spectrum bands in France. What's the difference? There is none."

Support services. Business exhibitions

## The trade show goes on in the face of Omicron

Sector chiefs predict a strong recovery but consolidation is set to see the weak disappear

ALISTAIR GRAY

"When the world stopped, you kept going." The slogan will greet tens of thousands of construction industry contractors, dealers and distributors who have paid up to \$600 each to attend the World of Concrete trade show this month in Las Vegas — unless the Omicron variant of coronavirus forces a last-minute cancellation.

How many corporate exhibitions can themselves keep going in the new year is once again in doubt. Just as business executives had finally begun reaching for their conference lanyards again after months of restrictions, the fast-spreading virus strain has prompted another round of postponements.

At ExCeL, a venue in east London, the education technology fair Bett, gambling sector event ICE and eyewear exhibition 100% Optical — all of which are supposed to be go-to events in their respective sectors early this year — have been pushed back.

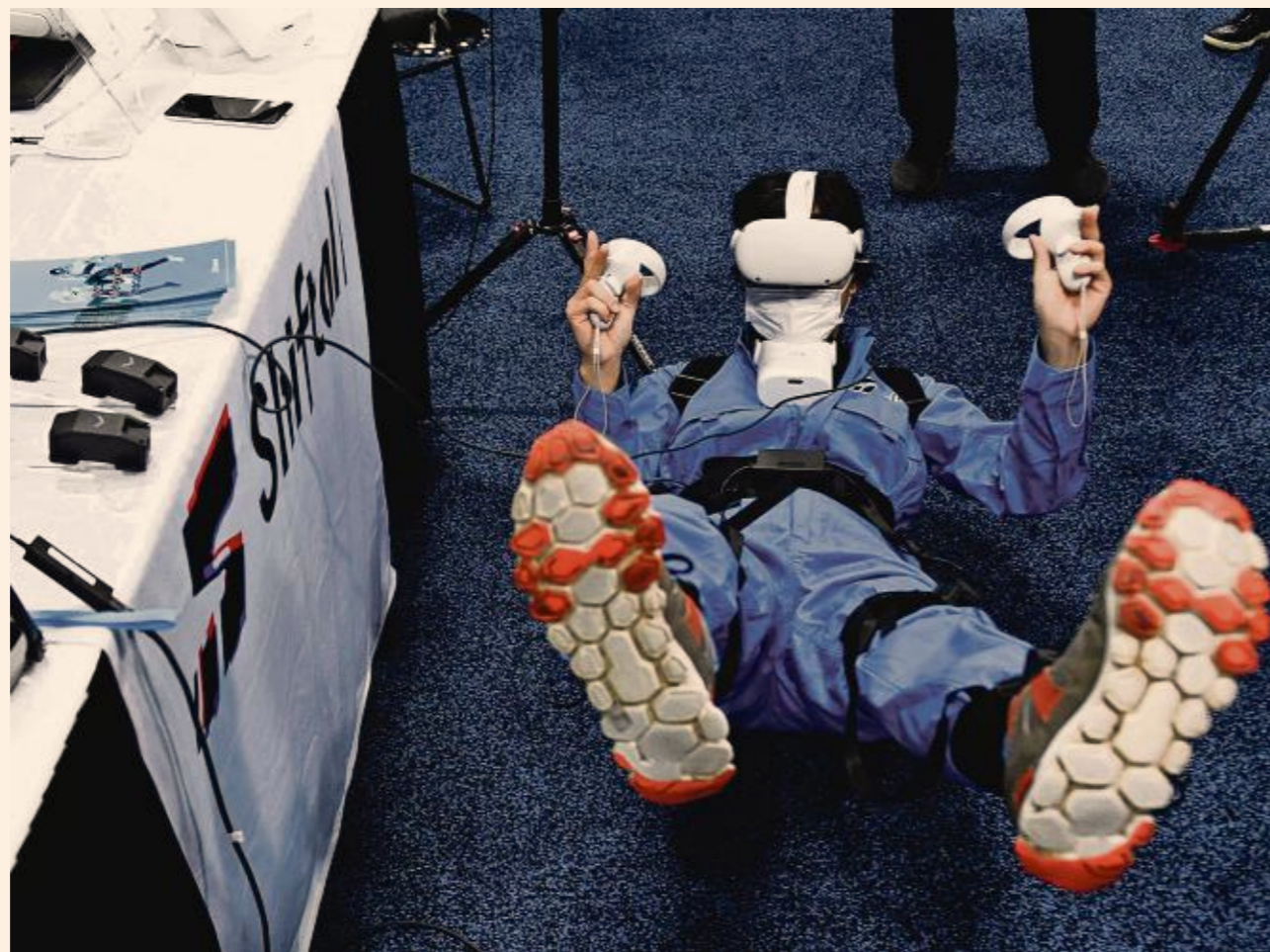
Some exhibitors have withdrawn from shows that are still happening. Amazon, Meta and Twitter are among tech groups that have pulled out of in-person appearances at the Consumer Electronics Show (CES), although organisers are pressing ahead with the event, which starts today also in Las Vegas, although it is closing one day earlier than planned.

Having survived previous coronavirus-induced restrictions and cancellations, battle-hardened executives behind some of the world's biggest trade shows are trying to position their companies to take advantage once the pandemic finally subsides.

"Effectively, we have been scheduling, rescheduling, negotiating, renegotiating every three months for almost two years," said Stephen Carter, chief executive of Informa, the world's largest trade show organiser. "It has been very demanding on our teams, and it's been quite demanding on our relationships with venue partners and contractors."

Even so, he added: "Customers have remained very committed to participating — when they're able to." So confident is Carter in its prospects that he has identified events as one of Informa's priority areas for expansion, alongside academic publishing.

Last month, the FTSE 100 media company laid out plans to dispose of a portfolio of data and consultancy assets

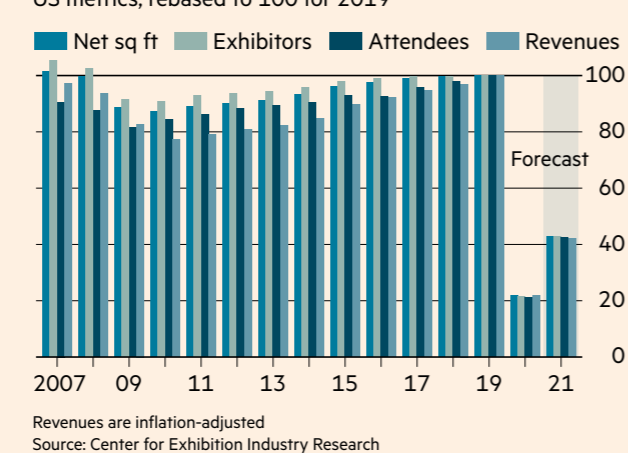


Down but not out: a virtual reality demonstration to publicise the Consumer Electronics Show, which is due to start today in Las Vegas

Patrick T. Fallon/AFP/Getty

## Pandemic wrecks havoc on exhibition industry

US metrics, rebased to 100 for 2019



and niche publications estimated to be worth at least £1.7bn, and to redeploy funds in its events business.

Investors remain circumspect. Shares in Informa are 37 per cent lower than they were at the start of 2020, while Paris-listed GL Events is down 24 per cent over the same period and New York-listed Emerald Holding 61 per cent.

Nevertheless, before the emergence of Omicron, there were encouraging signs for the sector that Zoom-weary delegates were keen to return.

Data from the Center for Exhibition Industry Research (CEIR) show cancellations

rates among US business-to-business exhibitions improved from 98 per cent in the second half of 2020 to 19 per cent in the third quarter of 2021.

Despite a slow start to the year and persistent concerns about coronavirus, CEIR estimates 15.3m people attended such events in the US in 2021 — more than double the previous year, albeit less than half pre-pandemic levels.

"The snapback shows the model is strong," said Paul Thandi, chief executive of NEC Group, owner of the UK's National Exhibition Centre in Birmingham. Still, he added, since the spread of Omicron "exhibitors have become more risk-averse".

Events due to take place at the NEC that have been moved include Lamma, an agricultural machinery show.

Despite the widespread cancellations, few large event organisers have run into serious financial difficulties, in part because their parent companies have not been hit so badly by the pandemic.

One exception is Paris-based Comexposium, which spent much of the past year in a "safeguard procedure", although it exited this in October after shareholders injected €110m.

Some other organisers tapped shareholders for cash at the onset of the pandemic, helping them to weather the

'Short-term, in certain markets, there's going to be continued disruption, which I think will flush out more of the weaklings'

storm. Informa raised £1bn in a placing last year, equivalent to about 20 per cent of its equity capital.

Furloughs and other government support have been lifelines. In cases where authorities imposed restrictions preventing events from going ahead, insurance has also been crucial, despite the sometimes-limited scope of cover.

About £65m of insurance payouts helped Hyve, another London-listed events organiser, return to profit in the year to the end of September.

As in other industries disrupted by coronavirus, executives expect some changes to prove long-lasting.

Mark Shashoua, chief executive of Hyve, said he expected a shake-out of smaller trade shows. Even before the pandemic, he said, there had been a "gravitational pull" towards the largest event in any given sector — a trend that the pandemic had only accelerated.

"If the event and the sector was in the ascendancy before Covid, it's recovering very fast," he said. "If it was a second- or third-tier show, it's not recovering."

Sarah Simon, analyst at Berenberg, anticipates that the fragmented sector will consolidate. "Short-term, in certain markets, there's going to be continued disruption, which I think will flush out more of the weaklings," she said.

Analysts said possible sellers might include Daily Mail and General Trust, which, as well as owning the UK's biggest selling daily newspaper among other titles, also has an events business.

Its portfolio includes ADIPEC, an energy industry exhibition hosted by Abu Dhabi National Oil Company. DMGT was recently taken private by Lord Rothermere, who is said to be focused on his publishing assets.

Companies such as Informa are also trying to more fully exploit the data generated by such events. They have long encouraged delegates to use specialist apps, while recent health and safety requirements have made online registration compulsory in some cases.

Yet unlike conferences, or at least the on-stage discussions that underpin them, trade shows cannot be easily recreated online. It is hard to feel the fabrics, as at the Pure London fashion show, or gauge the prospects for emerging mobile technology, as at MWC Barcelona, remotely.

"You can't replicate face-to-face," said Assor, adding that the shows had facilitated commerce since London's Great Exhibition of 1851.

Chris Skeith, chief executive of the UK's Association of Event Organisers, said the pitch remained straightforward. "The clue's in the name," he said. "They generate trade."

## Automobiles

## Volvo Cars picks former Dyson boss as next chief executive

PETER CAMPBELL

Volvo Cars has picked former Dyson boss Jim Rowan as its next chief executive, replacing Hakan Samuelsson, who ran the company for close to a decade.

Rowan worked at Dyson from 2012 to 2020 and was chief executive from 2017, at a time when the consumer appliances group was attempting to enter the automobile industry.

In 2017, Dyson announced plans to build electric cars but abandoned the project two years later.

Before that, Rowan was the head of operations at BlackBerry owner RIM.

Last February, he joined Ember Technologies, which makes temperature-controlling mugs, as an investor and head of its consumer business. He will leave the group to join Volvo this March.

Volvo is the latest carmaker to choose a leader from outside the industry. Last year, Ferrari appointed Benedetto Vigna from electronics group STMicroelectronics as its chief executive.

Volvo, which was floated last year, is still backed by China's Geely, which under chair Li Shufu has built up controlling stakes or holdings in an array of automotive companies including British sports car brand Lotus, Mercedes-Benz, and Daimler Trucks.

"Volvo Cars is going through a rapid

'We wanted to bring in someone with global CEO experience from outside the automotive industry'

transformation of digitalisation which is why we wanted to bring in someone with global CEO experience from outside the automotive industry," said Li, who is also chair of Volvo Cars.

"Jim is the right person to accelerate Volvo Cars into the future — enabling it to become the fastest transformer in its field and a fully electric company."

Under Samuelsson, Volvo made several strategic decisions to try to position the company for the future.

It was one of the first premium carmakers to decide to phase out diesel cars and, last year, it pledged to go fully electric by 2030.

The group also spun out Polestar, formerly an engine-tuning unit, into a new fully electric performance car brand. Samuelsson will remain on the board of Polestar until the group completes a Spa listing later this year, Volvo said yesterday.

During Samuelsson's tenure, Volvo launched a subscription service offering options such as insurance and repairs to try to create closer links with customers. It also announced a monitoring system that would cause cars to pull over if the person driving was drunk or using a phone.

Volvo Cars was finally listed in October, after several attempts to return to the public markets.

Li said Samuelsson "created a renewed and strong product line, re-established Volvo as a premium brand that is well placed for the future, and enabled the successful listing of Volvo Cars".

Rowan said: "I am delighted to join Volvo Cars at such an exciting time for the company and at such a transformational time for both the industry and consumers."

## Health challenge Medical practice lags behind scientific discovery and wearables technology

PATRICK MCGEE — SAN FRANCISCO

As a researcher at Harvard University, Shruthi Mahalingaiah has been using Apple Watches to track the ovulation cycles of 70,000 women for more than two years in an unprecedented study. But as a doctor, she complains that she is stuck with "dinosaur technology".

The iPhone maker touts the Apple Watch as the "ultimate device for a healthy life", but it is not something Mahalingaiah can use because there has not been enough innovation to validate and incorporate her patient data.

"How we practise is sometimes decades behind scientific discovery," she said. "We have got the personalised monitoring and we've got this whole medical-industrial complex — but how are they going to talk to each other?"

The problem in finding ways to integrate the tech into daily care is partly why the watch, launched in 2015 and worn by more than 100m people, has largely failed to fulfil its promise that "the future of health is on your wrist".

Tim Cook, the company's chief execu-

tive, has repeatedly said that Apple's greatest contribution to the world will be in "health and wellness" and that the Apple Watch is the most visible part of that strategy, with its array of sensors that can measure blood oxygen levels, track movement, sleep and heart rate, and take an electrocardiogram.

When Apple introduced the ECG feature in 2018, Dr Richard Milani, vice-chair of cardiology at Ochsner Health, predicted that it would "turn the tide" for how patients could be treated.

He felt optimistic about how the management of patients with chronic heart conditions would move beyond simply "two or three office visits in a year" to a more holistic approach, involving constant monitoring of symptoms.

Milani said his team is now able to monitor data points from thousands of patients and then use artificial intelligence to predict things such as who is likely to suffer a fall in the next year — the leading cause of hip fractures, brain injury and a host of other problems for people aged 65 and over.

But he acknowledges that "normal

doctors are not doing all this". Michael Breus, a clinical psychologist known as "the sleep doctor", also believes wearables such as the Apple Watch can disrupt the traditional "passive doctor-patient relationship". But he said that "99.9 per cent of doctors" are not on board.

The potential for data to improve preventive medicine is huge. The US Centre for Disease Control and Prevention said that chronic diseases were the "leading driver" of America's \$3.8tn healthcare costs, and were "often" pre-

ventable by exercise, diet and early detection. "If all you had from people were accurate heart rate and accurate activity context throughout the day for someone's full life, you could model whether they have hypertension, whether they have diabetes — all that," said Dr Steven LeBoeuf, co-founder of Valencell, a maker of biometric sensors.

"The problem is, that is not accepted by the medical community and it won't be for quite some time," he added.

Apple has attempted to make some inroads, for example by a partnership

with Johnson & Johnson, the pharmaceutical group, to study how its watches can reduce the risk of stroke.

But critics said Apple's efforts have not matched the promise of its marketing. Sami Inkinen, chief executive of Virta Health, a telemedicine clinic focused on type 2 diabetes, said giving people information was not enough.

"It's like selling someone a scale: it's not very hard to tell people what percentage they are overweight," Inkinen said. "But how do we actually change behaviour and drive results, like getting your blood sugar down, getting you off the medication and getting your weight down? For me, that is completely missing from the Apple Watch."

A research paper published in May corroborated what others found: "wearables are lagging behind their potential", with "little evidence" they "bring about sustained behaviour change".

Apple said its focus has been giving customers tools to monitor health and that it is working with developers in the medical field to drive more personalised patient care. It pointed to a new "shar-



Clinical psychologist Michael Breus said that "99.9 per cent of doctors" were not making the most of the Apple Watch's potential benefits

Antonio Masiello/Getty Images

ing" function that allows users to share data with family, caregivers or doctors.

"And while we're still early in our journey in health, we are invigorated by stories of customers whose lives have been improved — and in their own words, saved — by the technology we design and build," it said.

Meanwhile, most Apple Watch buyers already identify as fit and healthy, according to research at Forrester, suggesting the device is unlikely to be on the wrists of those who need it the most.

"The concern is that people who need these the most may have the least access," said Dr Seth Martin, a cardiologist at Johns Hopkins Hospital.

Carolina Milanese, analyst at Creative Strategies, suggested that, despite its focus on health, Apple was happy selling the watch as a lifestyle accessory for the iPhone and was unlikely to delve more deeply into medical wearables. "If they were really interested in making a difference in health, then they'd open the watch to work with Android," Milanese said. "But they're not doing that."

See [Lex](#)

## COMPANIES &amp; MARKETS

# Theranos verdict opens rift in Silicon Valley

The Holmes conviction is being viewed as a threat to entrepreneurship but also payback for conduct alien to planet tech

MILES KRUPPA AND RICHARD WATERS  
SAN FRANCISCO

In some respects, Elizabeth Holmes resembled a typical Silicon Valley entrepreneur: she hyped up a secretive product, gave Ted talks and adopted the signature Steve Jobs turtleneck.

But in other ways, she operated outside normal Silicon Valley channels, relying on a range of wealthy investors to catapult Theranos, her blood-testing start-up, to a \$9bn valuation at its peak, before its spectacular collapse in 2018.

So after a federal jury found Holmes guilty of defrauding investors on Monday, Silicon Valley investors and other industry watchers remained divided on how to read the verdict.

Tim Draper, a venture capitalist and family friend of Holmes who provided early funding to Theranos, said the outcome made him “concerned that the spirit of entrepreneurship in America is in jeopardy”.

“I still believe in what she was trying to do,” Draper said. “If this scrutiny happened to every entrepreneur as they tried to make this world a better place, we would have no automobile, no smartphone, no antibiotics and no automation and our world would be less for it.”

But Bill Gurley, the Benchmark venture capitalist best known for backing Uber, took a view that has become common among tech investors since Theranos melted down: that the start-up had little to do with Silicon Valley’s culture.

Media outlets had been “unwilling to highlight how far outside traditional Silicon Valley she operated”, he said, adding: “I hope fraud is reined in.”

Other investors tried to draw a line between Holmes’ fraud and normal practice in Silicon Valley.

“Every industry has its share of terrible people and hype merchants,” said Michael Moritz at Sequoia Capital, pointing to fraudsters on Wall Street and elsewhere. “I’m more sanguine about the Valley. Those who got duped by Holmes fell victim because they did not demand answers to obvious questions.”

The verdict delivered by the jury in California nevertheless represented a landmark decision in Silicon Valley, where few start-up founders have faced such public legal reckonings.

Jurors found Holmes guilty on four counts of defrauding investors and she could face decades in prison, though is likely to receive a more lenient sentence and to appeal.

Lawyers said the verdict could make start-up founders and their counsel more cautious about promotional statements while stressing Holmes appeared to clearly overstep boundaries.

The verdict tells founders they should be careful to not “cross the line from enthusiastic optimism into fraudulent misrepresentation”, said Amanda Kramer, a partner at Covington & Burling and a former federal prosecutor. “It’s not that hard of a line to see and to stay on the right side of,” said Kramer. But the norms of start-up culture “make it difficult to be conservative on this issue” without appearing to be “not certain enough about your venture”.

Early on, Theranos leaned on connections Holmes had made at Stanford University and raised money from several prominent venture capitalists. Later, Holmes would charm investors as varied as Rupert Murdoch, the media mogul, and the Carlos Slim, the Mexican tycoon, while filling her board with



Elizabeth Holmes won over investors including Rupert Murdoch and Carlos Slim — FT montage/Bloomberg

Eisenman, a money manager in Houston who had testified about the company’s evasive communication.

Anne Kopf-Sill, a retired biotech executive who attended the trial, was surprised the jury was not unanimous on all counts of defrauding investors “as the evidence felt similar for all of them”.

“I don’t see much broader significance as Theranos and Elizabeth Holmes were singular cases,” Kopf-Sill said, drawing a distinction between the founder’s decision to “lie about events in the present and in the past” and the commonplace exaggeration of “future accomplishments”.

Since Holmes was indicted, Silicon Valley has enjoyed a record boom that has spurred the pace of venture capital investment, vastly inflating the valuations of some start-ups despite their uncertain prospects.

Lawyers who advise start-ups said investors had been skipping background checks and other routine due diligence to win hot deals, in some cases relying on the analysis performed by previous backers.

More fraud cases are likely. In March, federal prosecutors charged the founders of uBiome, a biotech start-up, with conspiracy to commit securities and healthcare fraud, alleging they “turned a blind eye to compliance and pursued at all costs a path designed to bring the greatest investment in their company”.

Lawyers for Zachary Apte and Jessica Richman, the founders, did not respond to a request for comment. Government attorneys have alleged that the founders, who persuaded investors to part with more than \$76m in two rounds of fundraising in 2016 and 2018, are hiding in Germany to avoid prosecution.

“What’s never OK is to raise capital based on claims that the product is working when it isn’t,” said Eric Goldman, a law professor at Santa Clara University. “Those types of fraudulent claims aren’t unique to Silicon Valley. Fraudsters throughout the world are familiar with this method.”

See Opinion & Lex

## Timeline

### How a former investors’ darling ended up in court

**2003** Elizabeth Holmes founds Theranos aged 20 after dropping out of Stanford University

**2004** Theranos raises funding from investors, including Tim Draper’s DFJ

**2013** Walgreens begins offering Theranos tests in Palo Alto, California

**2014** Fortune profiles Holmes and Theranos, revealing the company has been valued by investors at \$9bn

**Sep 2015** Theranos halts its trademark finger-prick blood collection method following FDA scrutiny

**Oct 2015** Wall Street Journal publishes an investigation raising doubts about the accuracy of Theranos tests

**Jan 2016** The Centers for Medicare and Medicaid Services tells Theranos its laboratories pose risks to patients

**Jun 2016** Walgreens ends its partnership with Theranos

**Mar 2017** Theranos settles a lawsuit with Partner Fund Management, which had invested almost \$100m

**Mar 2018** The SEC brings fraud charges against Theranos, Holmes and former president Ramesh Balwani. Holmes and Theranos settle charges

**Jun 2018** The DoJ indicts Balwani and Holmes on charges of defrauding investors and patients

**Sep 2018** Theranos is liquidated

**Jan 2022** Holmes found guilty of conspiring to defraud investors

‘Every industry has its share of terrible people and hype merchants’

Michael Moritz, investor

‘It’s not that hard of a line to see and to stay on the right side of’

Amanda Kramer, lawyer

statesmen such as Henry Kissinger.

In the end, jurors found Holmes guilty of conspiring to defraud investors and committing wire fraud against three different shareholders, including the DeVos family and Partner Fund Management, a hedge fund.

Brian Grossman, who oversaw PFM’s investment, testified that his firm had performed extensive due diligence and come away impressed by Theranos’s purported work with the military and

ability to run a full range of blood tests.

Prosecutors stressed during the trial that Theranos never did meaningful business with the military, and its proprietary devices could not perform all of the tests Holmes touted to investors.

But jurors also found Holmes not guilty on four counts of conspiring to defraud and wire fraud against Theranos patients. They also remained deadlocked on three counts of wire fraud against investors, including Alan

## Technology

### Digital Realty buys African data centre stake

JOSEPH COTTERILL

Africa’s biggest independent data centre builder is being bought by a US operator in a deal valuing the company at \$3.5bn, as global investors race to take advantage of the explosive growth of internet use on the continent.

New York-listed Digital Realty will acquire a 55 per cent stake in South Africa’s Teraco, which operates some of the continent’s biggest “carrier neutral” data centres in Johannesburg, Cape Town and Durban, the companies said.

Teraco’s previous owners, including private equity groups Permira and Berkshire Partners, will remain minority shareholders.

The deal is the biggest yet in one of the world’s last large untapped internet markets, where demand for connectivity and data is surging among hundreds of millions of new phone users.

Teraco, founded in 2008, is at the centre of this boom, with tech giants and cloud computing providers seeking greater “co-location” in Africa, allowing them to house content in data centres closer to users and increase service speeds.

“This highly strategic transaction

immediately cements Digital Realty as the leading co-location provider in Africa, a region experiencing rapid digital transformation . . . Teraco is the industry leader in South Africa and the continent’s connectivity hub,” said A William Stein, Digital Realty’s chief executive.

Teraco at present operates data centres with a power load of 75 megawatts, but has a total planned capacity

‘Teraco has transformed itself into one of the most unique data centre platforms globally’

of nearly 190MW and is constructing new facilities.

The deal will “create a truly global, scaled platform serving our customers in Africa and beyond” and will “capitalise on the favourable industry trends and tremendous market opportunity”, said Jan Hnizdo, Teraco’s chief executive.

In the next few years, African data centre operators are also set to benefit from the completion of subsea internet

cables that are being financed by Google, Facebook’s parent Meta, and other investors.

Teraco also operates NAPAfrica, the continent’s biggest internet exchange point that connects hundreds of telecoms and content providers and that has been a barometer of surging internet activity in Africa.

In 2021, NAPAfrica’s peak traffic breached two terabits a second for the first time, having hit one terabit a second just before the pandemic, a milestone it took eight years to reach.

“Over the last seven years, Teraco has transformed itself into one of the most unique data centre platforms globally,” said Pierre Pozzo, principal at Permira. The company’s organic earnings have grown nearly 20 times since Permira’s investment in 2015, he added.

Barely 1 per cent of the world’s data centre capacity is in Africa, where demand far outstrips supply. Outside South Africa, Nigeria and Ghana are also fast-growing markets for this infrastructure.

In December, Equinix, a US data centre builder, announced a deal worth \$320m to buy MainOne, a large west African operator founded in 2010.

## UK COMPANIES

## Lawyers' pay now marches to private equity's beat

Cat Rutter Pooley



Private equity might just have picked off another British institution. The way London's elite law firms pay their partners is changing. The era of pure lockstep — where partners' pay is determined by length of service, not performance — is all but over.

The shift has been years in the making. But an announcement from New York's Cravath, Swaine & Moore shows that this time is different. The firm originated the model almost 50 years ago. In the meantime, the Magic Circle became synonymous with it. In December, Cravath abandoned it. Days later, Linklaters announced changes to its lockstep, following Clifford Chance, Freshfields

and Allen & Overy. It is fitting that a decision by a US firm serves as a marker for change in London's elite legal market because it is the private equity-driven expansion of US firms into London that has called time on the Magic Circle's defining pay structure. Of the City's top tier, only Slaughter and May (where I worked as a junior) maintains the model intact.

The collegiality lockstep ostensibly encourages has been a recruitment tool for the City's domestic firms in a challenging market. Lockstep offers security. Stay, play nicely, and you will earn more. Though some US outfits — Cravath among them — adopted lockstep too, the more expansionist offered pay for performance. For the Magic Circle, collegiality has been a differentiating factor in their home market.

London's lockstep has admittedly been under threat from tinkering for decades. City firms' own empire-build eroded it in the early 2000s. Opening less profitable offices in far-flung

jurisdictions strained a system which, in its strictest form, requires paying everyone of the same seniority the same.

But while partnerships adapted, creating regional profit pools, the system endured in the Magic Circle with surprisingly few substantial amendments. In 2005, as Clifford Chance voted on varying pay by region, my colleague John Gapper predicted "it cannot be long before City firms pay partners according to their value as individuals".

"Unless they do so, they will lose a lot of talent" to more profitable US rivals, he said. The firms by and large resisted, amid considerable internal tension. They lost a lot of talent.

What has changed in the 17 years since is the extent of the threat in the UK. In the past decade or so, the private equity boom has transformed the legal market on both sides of the Atlantic.

The stream of private equity deal-making funded exponential expansion at both Kirkland & Ellis and Latham & Watkins, with its high-yield bond exper-

tise. They used the lucrative stream of work to fund expansion in other practice areas and countries. Both are now powerhouses of City M&A work.

It also turbocharged the value of individual lawyers. The US firms have hired virtually all the top-tier private equity lawyers in London. That has hit London partnerships such as Freshfields, with

**The US firms have hired virtually all the top-tier private equity lawyers in London**

well-respected private equity teams vulnerable to poaching, and had a ripple effect among other dealmakers.

And while traditional blue-chip clients have wanted a one-stop shop for deal advice, private equity groups have proved more flexible. That has enabled the US law firms that advise them to eschew less profitable specialisms —

employment advice, say — that drag on rainmakers' pay in a lockstep system.

Clearly there are other factors at play too. US firms have been abandoning lockstep too. Changing cultural norms mean fewer employees (and even partners) expect to stay for life.

Firms have not abandoned lockstep entirely. Most include some element of seniority-based pay. A few, astoundingly profitable anachronisms like Wachtell, Lipton & Katz in New York and Slaughters in London endure. They have resisted overseas expansion. Elsewhere, the loosening is inexorable.

The private equity boom will (probably) fade. US practices in the City may then recede; partners may return to the Magic Circle firms they fled. Yet a more restless culture will endure. So too will years of acrimony between those who feel they are underpaid and their seniors. Firms will need to show creativity in pay more than ever.

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## Financials

## Rokos hedge fund made £900m profit in early days of pandemic

ADAM SAMSON AND LAURENCE FLETCHER

UK hedge fund manager Chris Rokos and his partners made more than £900m in profits during the initial wave of the pandemic, after a stellar performance that has since soured amid bond market turbulence.

Rokos Capital Management, one of the world's biggest macro hedge fund firms, generated £914m in profits in the 12 months to March 31 2021, income that is available to be divided up among the hedge fund's partners, according to a filing with Companies House. Rokos, a co-founder of rival Brevan Howard, earned £509m, the largest share of the profit.

The windfall came after Rokos's fund delivered returns of 44 per cent in 2020, its best annual performance to date. The firm did not immediately comment on its latest financials.

The fortunes of the fund changed in the months that followed when several bouts of severe volatility in the debt market dealt a strong blow to its performance. The fund posted negative returns of 26 per cent in 2021.

A person familiar with the fund's record described the performance as "disappointing", following a "bumper" year. The figures were first reported by Bloomberg.

In spite of last year's losses, Rokos had been able to raise \$1bn in additional capital from investors in recent days, the person said, in a sign that some clients viewed the performance setback as temporary. The firm also aims to raise a

**Macro funds notched up returns of minus 1 per cent last year on average, says Goldman Sachs**

further \$1bn, which would take its total assets to about \$14bn.

Macro funds notched up returns of minus 1 per cent last year on average, according to Goldman Sachs, as a number of managers struggled to gauge the effects of higher inflation on bond markets. Mayfair-based Rokos, which specialises in betting on how broad economic trends will affect global markets, was wrongfooted early in 2021 when a sudden jolt higher in inflation expectations triggered a drop across equity and bond markets.

Rokos was hit again in October, when concerns over elevated global inflation prompted bets that central banks would need to speed their exit from aggressive stimulus measures that had propped up the world economy since the depths of the coronavirus crisis in 2020.

At the same time, investors began worrying that policymakers might overcompensate in their bid to counter rapid price growth, denting the longer-term economic outlook.

Shorter-term bonds, which are highly sensitive to monetary policy expectations, sold off sharply in October, pushing the yields on those assets higher. Longer-term bond yields rose more modestly over the period. This flattening of the so-called yield curve disrupted a popular hedge fund bet that long-term yields will rise more quickly than shorter-term ones as the world economy recovers from the pandemic.

The painful run for Rokos in 2021 comes as the industry has struggled to attract new capital. Rokos, whose personal fortune is estimated at £1.25bn by the Sunday Times Rich List, is one of the UK's most successful hedge fund traders. While at Brevan Howard he made more than \$1bn in trading profits in both 2007 and 2011.

Transport. Abandoned stock

## Cargo salvage booms as supply chains falter

The industry has played a vital part in freeing warehouses and ports of unwanted products

HARRY DEMPSEY

Global supply chain problems have thrown up everything from abandoned containers full of rotten red cabbages to beer kegs and dog blankets.

The stranded, unwanted or delayed goods have created a boom in the business of cargo salvage — and a group of companies rarely in the spotlight that keeps world trade ticking over.

"We're ridiculously busy with people going bust and cancelling goods. These containers are costing a lot of money sitting on the ports," said Jake Slinn, director of British cargo salvager and stock buyer JS Global.

The exact size of the cargo salvage and excess inventory market is unknown, but these groups are handling thousands of goods that either need destroying or reselling as demand for their services rises. They have also become increasingly important for shipping groups, logistics companies and insurers as goods become stranded because of supply bottlenecks and the lengthening time it takes to transport freight.

It now takes more than 100 days between pick-up from Asian exporters and handover at European or US ports, up from less than 60 days in 2019, according to San Francisco-based freight forwarder Flexport.

The goods are often delayed further once they reach land because of lorry driver shortages and crammed warehouses with limited storage space.

However, despite the growing opportunities for his business, Slinn said buying discarded containers could still be a gamble. "We're taking punts on a lot of containers as we are unsure what the goods are inside. You never know what you're going to get," he said.

He has disposed of thousands of counterfeit masks, crates of red cabbages unfit for consumption and a batch of tyres sent to Dublin by a rogue exporter.

Other groups that have benefited from the resale boom are auction platforms. They are used to resell goods, which wind up at distribution centres or factory floors, as well as at the ports.

Charlie Wilson, head of online marketplace Salvex, said out-of-season goods and redundant industrial parts were often put on the block for sale. "We've experienced a boom," he added. "This is like a global hurricane. We're hearing the same stories in Kenya, LA



**Hard to swallow: buying discarded containers can be a gamble as with this one full of red cabbages unfit for consumption**

Jake Slinn/JS Global Group

and all over Europe." He estimated the supply of salvaged goods to his platform had risen about 15 per cent year on year.

Auction Technology Group, a London-listed marketplace operator, said industrial and commercial goods sold on its platforms rose to £4.6bn in its 2021 financial year, 38 per cent higher than the previous year.

Richard Lewis, chief operating officer, added that its auction platforms had also enjoyed strong growth in listings of items returned by online shop-

pers, who bought more in the pandemic.

However, stock clearance companies — many of which also buy salvaged stock — have had a bumper ride.

Michael Harrow, of stock clearers SG Trading, said these type of businesses typically do well during recessions.

"We like to think of ourselves in a crude sense as being undertakers. We are called on when there are problems with businesses, supply chains and administrations," he said.

But it was harder to thrive and value

**'We're ridiculously busy with people going bust and cancelling goods'**

goods during the pandemic because sales routes such as street markets, car boot sales and independent wholesalers had disappeared as retail has shifted online, he added.

US technology and logistics giant Amazon has been increasingly shaping the abandoned stock and surplus cargo markets. JS Global's Slinn has seen pallets of stock he has handled resold on Amazon, while other traders reported sourcing stock from third-party sellers on the platform who claimed the sale of Amazon-branded goods caused a collapse in sales of their own products.

Insurers have also been helped by a related fall in claims.

Mike Yarwood, managing director of loss prevention at transport and logistics insurer TT Club, said claims had "dropped off" because of higher tolerance for defects among importers, although the group warned the risks from abandoned cargo were escalating.

However, despite the boom in business for many groups, some companies that deal with retailers have struggled because they have been less willing to give up on stock, given the difficulties in getting hold of new goods.

Some retailers are also more inclined to discount and sell goods themselves rather than pass them on to stock liquidators, said one supplier to large UK budget retailers such as Poundland, B&M and Lidl.

"I've been buying stock for 40 years and it's the hardest year I've ever known," said Robert Myers, managing director of Heathside Trading, which buys surplus toys and home goods. "The value of stock on people's balance sheets is so much higher because of the [elevated] cost of transport."

Increasingly, multinationals also demand goods be destroyed rather than resold, while health and safety rules make it harder to sell damaged goods.

Big international companies are paranoid about their branded products hitting the market either faulty or at a cheaper price, said Steve Parry, director of CWH Johnsons International, a surveyor of cargo. "Once upon a time, you could sell anything," he added.

Still, supply chain disruption is expected to continue well into 2022, meaning demand for cargo salvagers and stock resellers is unlikely to abate, particularly if the Covid crisis deepens, disrupting global transport further.

"You're going to see a trend upwards of insurance claims [as goods go missing or get stuck in transit] in the next year, then it will fall off when they get it sorted," said Tom Enders, owner of Michigan-based The Salvage Groups.

## Travel &amp; leisure

## Premier League football club Southampton taken over by Serbian media tycoon for £100m

SAMUEL AGINI AND OWEN WALKER

Southampton has become the latest English Premier League side to change hands after a Serbian media mogul agreed a takeover deal that values the football club at up to £250m.

Dragan Solak, founder and chair of United Group, a European telecoms and media company, has acquired an 80 per cent stake, his Sport Republic investment vehicle said yesterday.

The transaction gives the club an enterprise value of £200m-£250m, including debt, according to people with knowledge of the matter. Sky News first reported the deal.

Solak is acquiring the stake from Gao Jisheng, a Chinese real estate magnate who has controlled the club since 2017.

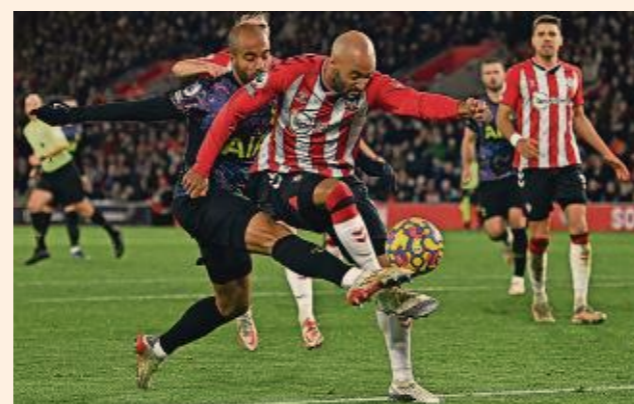
Gao's decision to offload his stake continues the trend of Chinese owners selling out of European clubs and shows how the pandemic has accelerated takeover activity in the Premier League.

The deal follows the £305m acquisition of Newcastle United by Saudi Arabia's sovereign wealth fund and the purchase of a 27 per cent stake in West Ham United by Daniel Kretinsky, the Czech tycoon, late last year.

Solak will pay £100m for the 80 per cent stake in Southampton, with Katharina Liebherr retaining the remaining 20 per cent, said people with knowledge of the matter.

Henrik Kraft, chair of Sport Republic and a former partner at private equity firm KKR, said: "Whilst Southampton is Sport Republic's first acquisition, we

expect more investments to follow over the coming years. Our ambition is to build a portfolio of high influence stakes in football clubs and other sporting assets across the world."



United Group, majority-owned by BC Partners, a private equity firm, since March 2019, holds the media rights to screen the Premier League in most of the Balkans, including Serbia, this

**Target: Southampton's Nathan Redmond is tackled during a match with Tottenham Hotspur. The club's new owner is buying the stake of a Chinese real estate magnate**

Glyn Kirk/AFP/Getty Images

season. Telekom Srbija, its state rival, is set to take on the rights from 2022/23 in a six-season deal, however. Solak is chair of the advisory board at United Group. Southampton, which plays its home matches at the 32,384-capacity St Mary's stadium in the south of England, sits in 14th place in the Premier League. There are 20 clubs in the competition.

The team has played in the country's top division since promotion in 2012 but has never won the Premier League title. It beat Manchester United in the 1976 FA Cup final.

Companies House filings showed that Southampton's pre-tax loss widened to almost £76m in the 2019/20 season from £41m the previous year, as revenues fell to £126m from £144m, coinciding with matches being called off

because of the coronavirus pandemic.

Southampton is one of several clubs to have borrowed funds from MSD Partners, a football lender linked to Michael Dell, the computing billionaire, via the St Mary's Football Group holding company.

The £78.8m loan was previously disclosed in its accounts. MSD has also lent to Burnley and West Ham, two other Premier League clubs in which large stakes have recently changed hands.

Additional reporting by Marton Duna



**The business of tennis**  
The FT follows two players fighting to get to the top and get paid  
ft.com/video

## COMPANIES &amp; MARKETS

Fixed income. Reverse repo

# Record cash pile parked in Fed facility set to shrink



Investors expected to draw funds as shortage of attractive low-risk assets starts to abate

KATE DUGUID AND COLBY SMITH  
NEW YORK

Surging demand for a US Federal Reserve facility where investors stash cash overnight is set to ebb in 2022 after a record run last year as a shortage of low-risk assets that generate positive returns starts to abate.

Investors parked record sums in 2021 in the overnight reverse repo facility where cash is exchanged for ultra-safe securities such as US Treasuries. Daily usage of the RRP averaged \$1.6tn in December, surging to a record \$1.9tn on the final day of the year. Average daily usage for December 2020 was zero.

The facility, which acts as an investment of last resort, has attracted elevated demand because of a shortage of safe, short-dated Treasury bills that left investors such as money market funds with fewer safe places to deploy cash.

But in 2022 the RRP's popularity will begin to wane, strategists say, as the flood of cash injected into financial markets to counter the damaging effects of the pandemic begin to be unwound. This will bring more alternatives for investors and potentially lift the fortunes of struggling money market funds that invest in short-dated assets.

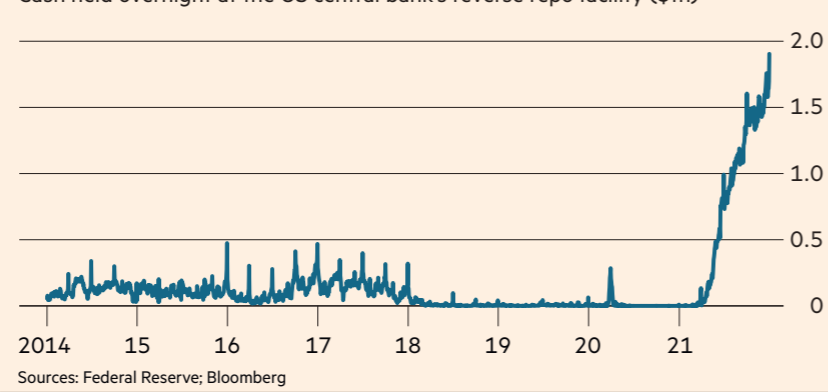
"We do think that we are quite close to seeing overnight reverse repo peak," said Mark Cabana, head of US rates strategy at Bank of America.

"What it means for money funds is that they finally have other attractive alternatives. The only reason that money funds invest with the Fed is because it is their least worst option."

Cuts to Treasury bill issuance in 2021

## Record demand for Fed facility expected to ebb in 2022

Cash held overnight at the US central bank's reverse repo facility (\$tn)



Sources: Federal Reserve, Bloomberg

in favour of longer-term debt have been part of what has driven usage of the RRP facility so high.

Moreover, the Fed's massive bond-buying programme has had the central bank pumping up the amount of cash flowing into the financial system.

Demand from money market funds, which are among the biggest purchasers of Treasury bills, was so high that it drove yields on the government debt briefly into negative territory.

Stimulus money tied to the multiple aid packages passed by Congress also lifted Americans' savings rates, which in turn increased bank deposits. Banks, which in March had stricter capital requirements reimposed, began counselling clients to move their money from deposits into money funds.

But following the passage of new legislation to lift the US government's borrowing limit in December, the Treasury department is now expected to rebuild its cash balance and increase its issuance of short-term securities, providing much-needed relief.

Between now and the end of January, Cabana said he expected the Treasury's cash balance to rise about \$600bn.

The Fed in December also announced

that it would accelerate the scaling back of its asset-purchase programme, helping to further alleviate the acute mismatch between the amount of cash looking for a home and the number of securities available to buy.

While the RRP figures are eye-popping, Fed officials have indicated little concern about the record-setting usage of the facility in 2021. When asked about the seemingly insatiable demand to park cash overnight at the central bank in July, Jay Powell, chair, said the facility was "doing what it's supposed to do".

Minutes from subsequent policy meetings also suggested broad consensus across the Federal Open Market Committee that the facility was working as intended.

To maintain its effectiveness, the Fed has repeatedly made adjustments to the facility's terms. The central bank expanded the number of eligible counterparties that can access the RRP and increased the amount of money they can put into it each day — an adjustment it made as recently as September when it bumped up the daily counterparty limit to \$160bn.

It also began paying interest on the

Safe house: many investors chose to stash their cash at the Fed — Kerem Yucel/Anadolu Agency via Getty

money held there overnight in June in a bid to support the smooth functioning of short-term funding markets. That move came alongside a decision to raise the interest it pays on excess reserves, which are deposited at the Fed by banks.

More recently, however, one senior Fed official cited elevated RRP usage as another signal that the central bank should move more quickly away from its ultra-accommodative monetary policy stance that has been in place since the start of the pandemic.

"It's pretty clear we can go faster on the balance sheet, because I looked at the RRP facility, and there's about \$1.5tn of reserves that are being handed to us every day from the financial sector," said Christopher Waller, a governor, in mid-December as he laid out the case for the Fed to begin shrinking its balance sheet by the summer.

"We put so much liquidity in the system that the market doesn't really want."

The benefits of increased bill issuance are likely to accrue most significantly to the \$4tn money market fund industry after a grueling year.

Negative yields in the market in 2021 erased profits and forced funds to turn away new investors.

Money market stress, however, may reappear later in the year, some strategists warn. Though the Treasury is slated to auction more bills in the near term, debt issuance in 2022 overall is expected to fall as funding needs for fiscal programmes have dropped.

"Once bill supply ramps up more materially, that will pull some cash from RRP. But just the outright size of the Fed's balance sheet and the level of reserves I think will ensure that we see some pretty big numbers there on a daily basis for at least the next few quarters," said Ben Jeffery, rates strategist at BMO Capital Markets.

'We put so much liquidity in the system that the market doesn't really want'

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## Commodities

## China coal futures rise on Indonesia export ban

WILLIAM LANGLEY — HONG KONG  
NEIL HUME — LONDON

Chinese coal futures rose ahead of a review of an export ban announced at the weekend by Indonesia, one of the world's largest exporters of the fossil fuel, stoking fears of knock-on effects for the global economy.

The most active contract traded on the Zhengzhou Commodity Exchange rose as much as 8 per cent yesterday compared with its Friday closing price, with several other contracts also up more than 6 per cent at midday.

Indonesia's state utility provider said on Monday that the country's coal supply situation was facing a "critical period".

This followed an energy ministry announcement at the weekend that the government would seek to ban coal exports for the month of January.

The energy ministry said the ban would help to avoid outages at power plants run by the state utility PLN. The ban has fuelled fears of further increases in commodity prices after pandemic-related supply shortages around the world.

As well as being China's largest foreign source of coal, Indonesia is also an important supplier to India and south-east Asia. The country provided a

'The move could potentially have knock-on effects in China and India'

Warren Patterson, ING

record of more than 21m tonnes of coal to China in September.

"The move could potentially have knock-on effects in China and India," said Warren Patterson, head of commodities strategy at ING.

Coal prices in China have been particularly volatile during the pandemic with futures surging to as much as Rmb2,301 (\$362) in October as the country's economic recovery increased demand while lockdowns to combat the Delta coronavirus variant cramped supply. That compared with about Rmb700 for most contracts traded in Zhengzhou yesterday.

Coal prices in China later dropped after Beijing introduced measures including instructing domestic miners to increase production.

In a statement on Monday, PLN warned that ensuring supply was in the "national interest" and should be "prioritised" ahead of a review of the ban by ministers today.

President Joko Widodo said supplying PLN was "a must" and called on coal producers to fulfil domestic needs before exporting.

Analysts at Morgan Stanley said the potential loss of Indonesian coal exports, which account for about 40 per cent of the so-called seaborne market, could trigger a similar coal price rise to that of October.

At that time, the price of high-energy Australian coal, the benchmark for the Asian market, rose to a record of more than \$270 a tonne. It is at present trading at about \$150 a tonne.

## Commodities. Battery materials

# Vale aims to transform misfiring metals unit to win Tesla business

NEIL HUME  
NATURAL RESOURCES EDITOR

Vale is best known as one of the world's biggest producers of iron ore from its sprawling Brazilian operations, but its chief executive wants to change that.

For Eduardo Bartolomeo, being seen as a "one geography, one mineral company" is dangerous and Vale should be trying to highlight the value of its industrial metals business, which he says has the potential to be a key supplier of battery materials to the North American car industry.

Achieving that will be no easy task. To supply Tesla, Ford, General Motors and others with the necessary copper, nickel and cobalt to scale up production of electric vehicles, Bartolomeo will have to transform the performance of the misfiring metals division.

"We think we can be the supplier choice," Bartolomeo told the Financial Times during a recent visit to London to meet investors. "But we need to produce. We need to get the production up. That's fundamental. Then we need to get the reserves and resources."

He has already made one decisive move, replacing the head of the

business, Mark Travers, with Deshnee Naidoo, a former executive at India's Vedanta Resources.

But this is just a first step after, by his own admission, another challenging year for the division in 2021 with a labour dispute in Canada, a fire at the Solobo copper mine and a temporary halt of nickel production at its Onca Puma project in Brazil.

On top of that, 39 workers were rescued after being trapped in the underground Totten mine in Ontario.

While output is forecast to recover in 2022, Bartolomeo, who ran the base-metals business before he was appointed chief executive in April 2019, knows there is a lot of work to do if Vale is to fulfil its ambition of capturing 30-40 per cent of the North American market for battery-grade nickel in five years.

"We are talking to Ford, GM, we are talking to all of them," he said, pointing out that Vale had already struck a deal to sell 5 per cent of its annual highest grade Class 1 nickel output to a US carmaker, widely rumoured to be Tesla.

A typical electric-vehicle battery pack needs about 35 kilogrammes of nickel, according to the IMF, while charging

stations require substantial amounts of copper.

Key to Bartolomeo's plan are Vale's Canadian operations including Sudbury — one of the largest integrated mining complexes in the world — and its Thompson mine in Manitoba, which he says may contain 5m tonnes of nickel.

The company is also evaluating options to build a processing plant capable of producing nickel sulphate, a key component in lithium-ion batteries that power electric cars.

"We are an upstream company. We don't want to go downstream but if there is something that is economically

reasonable we will do that," he said. "There is an open conversation with the Quebec government."

If Bartolomeo can deliver on his vision, it could reduce the sensitivity of Vale's share price to the volatile iron ore market, which in turn takes its direction from the health of the Chinese economy and policymakers in Beijing.

That sensitivity was particularly pronounced in 2021, when the steelmaking commodity soared to a record high above \$230 a tonne in May before sinking below \$100 in November after China slapped output curbs on its huge steel industry in an effort to cool the wider

economy and reduce pollution. Iron ore is currently trading at \$120 a tonne.

"The way our share price sunk [in 2021] was exactly the way iron ore sunk," said Bartolomeo, bemoaning the fact that investors are yet to look at Vale's base-metals business the way they do the aluminium assets of rival Rio Tinto or the oil and gas division of BHP, another big iron ore producer.

In local currency, by December 2021 Vale's share price has fallen almost 26 per cent since the summer, against Rio (off 20 per cent) and BHP (8 per cent). Bartolomeo said there were several paths that Vale, which has just exited coal, could take to highlight the value of the base-metals division.

One way is to create a standalone subsidiary and bring in outside investors as it did with its logistics unit VL in 2013. "That can be an option," he said.

But before any of that can happen, the business has to fire up. "That's why it is fundamental to transform base metals next year," he said.

Vale is targeting copper production of up to 350,000 tonnes in 2022, up from 300,000, and as much as 190,000 tonnes of nickel, up from 170,000 tonnes. Some investors are cool on

Bartolomeo's plan, saying that Vale should focus on "optimising" the costs of its giant iron ore business and simply demerge the metals business. "It's never going to matter," said one Vale investor.

Analysts are more sympathetic. "Nickel is a future-facing commodity and there is a good underlying copper business at Vale," said Tyler Broda at RBC Capital Markets, who values the metals business at \$17bn against \$75bn for the core iron ore operation. "There's growth in the portfolio, which you can't get everywhere."

Broda expects the metals business to generate earnings before interest, tax, depreciation and amortisation of \$3.2bn, against \$27.7bn for iron ore.

For now, the focus of analysts and investors remains on the steelmaking commodity. Bartolomeo believes that prices have bottomed out and that Chinese steel production, which fell sharply in the second half of last year because of the government output curbs, will pick up after the Winter Olympics in Beijing in February.

"They are talking about 1bn tonnes of [steel] production again," said Bartolomeo. "And the rest of the world will grow [in 2022]."



Eduardo Bartolomeo: 'we think we can be the supplier choice' — Dado Galdieri

## COMPANIES &amp; MARKETS

## Key to 2022 will be how inflation is brought down

Mohamed El-Erian

## Markets Insight

Markets spent most of 2021 trading on assurances from central banks, and the US Federal Reserve in particular, that inflation would be transitory and monetary policy would continue to remain in uber stimulus mode.

That powerful conditioning fuelled the "everything rally" in markets, but 2022 will be different.

Markets will no longer have predictably massive liquidity injections to power them through uncharted and choppy economic waters.

Crucially, investors will have to take a view on the durability and impact of the inflation surge, including the drivers of its eventual demise.

For more than a decade, large-scale central bank purchases of assets boosted not just those being bought in markets but also virtually all other assets, be they financial or physical (such as housing, art and other collectibles). This was particularly the case in 2021 when cash injections from central banks were at record monthly levels.

After consistently dismissing the threat of inflation, the Fed's "better late than never" pivot on the issue is part of a general shift in global central banking towards less monetary policy stimulus.

While its policy stance will remain accommodative for quite a while, the world's most powerful central bank is now set to completely stop its asset purchases by the end of the first quarter.

An increasing number of other central banks (not only in the emerging world but also in some advanced economies such as Norway and the UK) have embarked on interest rate hiking cycles.

All this comes at a time when fiscal policy in many countries is on the verge

of being less stimulative, even though Omicron is damping economic growth.

Having started late, the Fed faces challenges in reducing stimulus at a time when fiscal policy is less stimulative; market-based financial conditions are being gradually eroded by inflation and solid consumer spending; and Omicron is fuelling inflationary pressures through disruptions to supply chains and availability of workers.

These challenges will not stop the Fed from increasing interest rates once it ends its asset purchases. But they do

## The possibility of the Fed losing its nerve on interest rates would be viewed by markets as constructive

raise important questions as to the durability of the hiking cycle.

Already markets are pushing against the notion that actual policy will validate the interest rate path projected by Fed officials at their December policy meeting. What is not clear is whether this would be a question of willingness or ability.

The possibility of the Fed losing its nerve, as it has done repeatedly in recent years, would be viewed by markets as constructive in the short term.

It would keep the central bank engaged in offsetting hits to asset prices, which is particularly supportive for equities that benefit from the "least dirty shirt phenomenon" (not comprehensively attractive but better than the vast majority of other asset classes).

It would be even more supportive if



this coincided with an orderly reduction in inflationary pressures, still the consensus view.

This is still possible — just — if the Fed does more immediately to catch up with developments on the ground.

The "inability" scenario would be more problematic. Here, a system conditioned by more than a decade of floored interest rates and ample liquidity would quickly prove unable to tolerate higher rates.

Tighter financial conditions, while warranted by persistent inflation, would foster a highly unfriendly combination of financial instability and lower private demand.

In its extreme — that of stagflation — policies become a lot less effective at a time just when markets are dealing with the trifecta of hitherto underpriced liquidity, credit and solvency risk.

Inflation would eventually come down in this "inability scenario" but through a process that risks a sudden sharp drop in economic activity.

As the new year unfolds, both the Fed and markets have a huge stake in inflation coming down in an orderly way. But the window of opportunity for policy to achieve this is rapidly closing.

The alternative is a disorderly drop, which would involve the even bigger Fed policy error of having to be too abrupt in tightening monetary policy after being way too slow previously.

In addition to the direct damage to the economy, this would probably lead to financial market accidents that amplify another round of unnecessary, and much larger, harm to livelihoods.

Mohamed El-Erian is president of Queens' College, Cambridge, and an adviser to Allianz and Gramercy

## The day in the markets

## What you need to know

- UK's blue-chip benchmark reaches highest level in more than 10 months
- European stocks climbed to record high for second consecutive session
- Previous pandemic winners weigh on Wall Street stocks

Core government debt sold off as market jitters about the Omicron coronavirus variant calmed and investors looked ahead to central banks raising rates.

The yield on the benchmark 10-year US Treasury note, which moves inversely to its price, jumped 5 basis points to 1.68 per cent after climbing sharply on Monday.

The yield on the comparable UK gilt added 11 bps to 1.08 per cent, as traders bought shares in UK and European businesses whose fortunes were pegged to economic growth and the easing of Covid-19 restrictions.

London's FTSE 100 closed up 1.6 per cent, the blue-chip benchmark's highest level since February last year. The UK's more domestically focused FTSE 250 rose 1.8 per cent, led by travel shares.

Across the Channel, the region-wide Stoxx Europe 600 gauge added a further 0.8 per cent yesterday, building on a record high set in the previous session.

Traders seized on early data that suggested that the highly transmissible Omicron variant may cause less severe illness than previous strains.

As investors became more optimistic, they also raised their expectations of the US Fed and other central banks raising interest rates, said Roger Lee, head of UK equity strategy at Investec. This made fixed income-paying securities, such as bonds, less appealing. "If this is the last

## UK gilts sell off as Omicron fears abate

10-year government bond yields (%)



Source: Refinitiv

stage of Covid then rates have to go up because inflation has to be contained," he said. Consumer price increases in the US are running at their fastest annual pace since 1982.

The tech-focused Nasdaq Composite was down 1.6 per cent at lunchtime in New York, as shares in groups typically viewed as beneficiaries of pandemic-related curbs fell. Home exercise-bike group Peloton and videoconference company Zoom were both about 6 per cent lower. The broader S&P 500 gauge slipped 0.1 per cent.

Analysts were also growing concerned

about US equity markets becoming overly reliant on the performance of large tech companies.

"If the crutch of Big Tech was kicked away, then watch out," said Patrick Spencer, vice-chair of equities at RW Baird. "The worry is that one of these very big tech stocks declines and that starts a waterfall of selling."

In Asia, Tokyo's Nikkei 225 closed 1.8 per cent higher, while Hong Kong's Hang Seng index edged up 0.1 per cent.

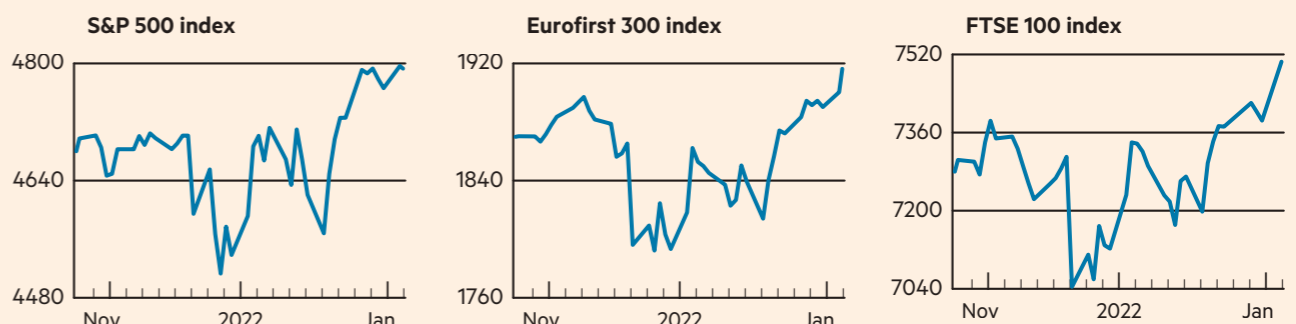
Brent crude rose 1.5 per cent to \$80.55 a barrel, the oil benchmark's highest level since late November. **Naomi Rovnick**

## Markets update

	US	Eurozone	Japan	UK	China	Brazil
<b>Stocks</b>	<b>S&amp;P 500</b>	<b>Eurofirst 300</b>	<b>Nikkei 225</b>	<b>FTSE100</b>	<b>Shanghai Comp</b>	<b>Bovespa</b>
Level	4792.87	1916.30	29301.79	7505.15	3632.33	103944.50
% change on day	-0.08	0.84	1.77	1.63	-0.20	0.02
<b>Currency</b>	<b>\$ index (DXY)</b>	<b>\$ per €</b>	<b>Yen per \$</b>	<b>\$ per £</b>	<b>Rmb per \$</b>	<b>Real per \$</b>
Level	96.343	1.131	116.120	1.355	6.374	5.668
% change on day	0.135	0.177	0.711	0.743	0.016	0.081
<b>Govt. bonds</b>	<b>10-year Treasury</b>	<b>10-year Bund</b>	<b>10-year JGB</b>	<b>10-year Gilt</b>	<b>10-year bond</b>	<b>10-year bond</b>
Yield	1.680	-0.123	0.084	1.011	2.783	10.795
Basis point change on day	6.380	-0.100	1.680	11.100	1.000	117.700
<b>World index, Commods</b>	<b>FTSE All-World</b>	<b>Oil - Brent</b>	<b>Oil - WTI</b>	<b>Gold</b>	<b>Silver</b>	<b>Metals (LMEX)</b>
Level	499.19	80.25	77.28	1805.85	23.09	4502.00
% change on day	0.20	1.57	1.75	0.65	1.41	0.03

Yesterday's close apart from: Currencies = 16:00 GMT; S&P, Bovespa, All World, Oil = 17:00 GMT; Gold, Silver = London pm fix. Bond data supplied by Tullett Prebon.

## Main equity markets



## Biggest movers

	US	Eurozone	UK
<b>Ups</b>	Ford Motor 11.09	Galp Energia 5.13	Int Consolidated Airlines S.a. 11.26
	Occidental Petroleum 7.98	Daimler 4.96	Bp 6.20
	Halliburton 6.48	Societe Generale 4.83	Intercontinental Hotels 5.17
	Hess 6.17	Lufthansa 4.79	Barclays 5.17
	General Motors 6.12	Commerzbank 4.75	Hsbc Holdings 5.09
<b>Downs</b>	Servicenow -6.11	Novo Nordisk -2.96	Dechra Pharmaceuticals -8.73
	Advanced Micro Devices -5.37	Asml Holding -2.91	Ocado -7.27
	Tesla -4.79	Infineon Tech -2.20	Fresnillo -4.50
	Twitter -4.73	Grifols -2.00	Segro -3.69
	Nvidia -4.72	Schindler -1.95	Scottish Mortgage Investment Trust -3.44

Prices taken at 17:00 GMT

Based on the constituents of the FTSE Eurofirst 300 Eurozone

All data provided by Morningstar unless otherwise noted.

## Wall Street

Carmaker **Ford Motor** shifted up a gear after announcing it was scaling up its electric vehicle ambitions.

Production capacity for its all-electric F-150 Lightning pick-up was being nearly doubled to 150,000 vehicles per year "to meet soaring customer demand", it said.

A ratings upgrade helped lift conglomerate **General Electric**.

Credit Suisse revised its recommendation to "outperform" from "neutral", arguing GE's pull back since detailing plans in November to form three public companies represented a buying opportunity. "As we look across 'mega' cap stocks with leverage to cyclical aerospace recovery, we see more upside potential in GE," said the broker.

Medical equipment maker **iCAD** fell as much as a fifth after its forecasts disappointed.

For the fourth quarter of 2021, it expected revenue of between \$7.8m and \$8m, which fell well short of the \$10.7m expected by analysts polled by Refinitiv.

This was primarily due to "disruption" from Omicron-triggered staff shortages limiting "availability of hospital decision makers to issue purchase orders", it said.

Energy companies tracked a rally in crude with **Diamondback**, **Hess**, **Marathon**, **Occidental Petroleum**, **Devon**, **Baker Hughes** and **ExxonMobil** all climbing. **Ray Douglas**

## Europe

News of a divestment at France's **CGG** pushed the manufacturer of geophysical equipment higher.

It is selling its physical storage assets and associated services of its smart data solutions business to Oasis and Access, two providers of record management services. Access would acquire CGG's three North American sites and Oasis its four European venues. The purchase price was not disclosed.

French biopharma group **Abionyx Pharma** leapt more than 17 per cent after receiving some promising regulatory news.

The French Drug Safety Agency granted a compassionate access authorisation for its coronavirus treatment CER-001.

Such approvals are awarded to proprietary drugs that do not yet benefit from a market authorisation and are not the subject of a clinical trial.

The company said: "CER-001... may have the potential to improve the clinical outcome of patients with Covid-19."

A downgrade weighed on **Novo Nordisk**, the Danish healthcare group.

Deutsche Bank lowered its recommendation to "hold" from "buy", citing issues over supply constraints and it nearing the broker's price target.

This past year, Novo Nordisk has risen around 60 per cent. **Ray Douglas**

## London

**SigmaRoc**, which specialises in buying construction materials assets, jumped after announcing that it was acquiring Johnston Quarry, a supplier of construction building stone and agricultural lime for soil improvement.

The London group said the £35.5m acquisition, which was expected to be completed in the next few weeks, would "immediately" enhance its underlying earnings.

As part of the deal, SigmaRoc had also conditionally agreed to purchase two more quarries from the seller, together with additional mineral reserves, for about £14.5m.

Low-cost airline **Wizz Air** took off after revealing a surge in travel numbers. It carried 2.64m passengers in December, up almost 300 per cent on the same month a year earlier.

The move was part of a wider rally for stocks linked to travel and leisure as worries about the severity of the Omicron strain of coronavirus abated.

Wizz Air's rival **easyJet** climbed, as did British Airways owner **IAG** and **Informa**, the exhibitions organiser.

Betting technology group **Sportech** rose on news that its subsidiary was selling its contract for the supply of lottery systems to Loteria Electronica Internacional Dominicana to Inspired Entertainment. **Ray Douglas**

## The Universe of Data

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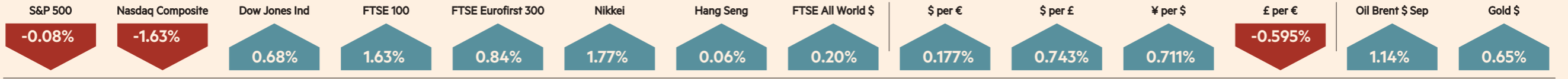
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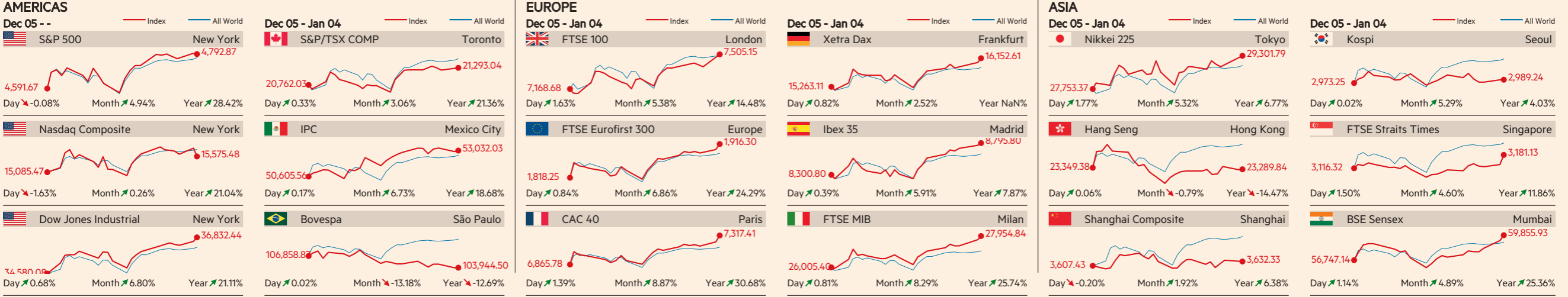
# MARKET DATA

## WORLD MARKETS AT A GLANCE

Change during previous day's trading (%)



Stock Market movements over last 30 days, with the FTSE All-World in the same currency as a comparison



Country	Index	Latest	Previous	Country	Index	Latest	Previous	Country	Index	Latest	Previous
Argentina	Merval	6520.98	6579.78	Cyprus	CSE M&P Gen	68.46	68.68	Italy	FTSE Italia All Share	30567.50	30335.04
Australia	All Ordinaries	7625.80	7779.20	Czech Republic	PIC	1437.04	1416.32	Poland	WIG	70432.26	70077.55
Austria	ATX	3957.89	3865.31	Denmark	OMXC20	1822.04	1850.21	Portugal	PSI 20	5670.45	5637.91
Belgium	BEL 20	3814.30	4235.28	Egypt	EGX 30	11897.40	-	Spain	IBEX 35	4231.24	4253.63
Brazil	Ibovespa	10394.50	10321.59	Estonia	OMX Tallinn	2070.07	2025.96	Saudi Arabia	TADAWJ All Share Index	11356.80	11327.52
Canada	S&P/TSX Comp	17293.04	17222.34	Finland	OMX Helsinki General	1730.25	1723.65	Slovakia	SAX	3973.49	3953.50
Chile	S&P/CLX IGPA Gen	21324.74	21567.54	France	CAC 40	7317.41	7217.22	Slovenia	RSI TOP	1627.58	1627.75
China	FTSE A200	12997.96	13073.17	Germany	M-DAX	5665.19	5595.87	South Africa	FTSE/JSE All Share	7552.06	7372.60
Colombia	FTSE BSE	9000.71	8200.50	Greece	Athens Gen	908.00	898.84	Sweden	FTSE/JSE Res 20	72391.69	70540.20
Croatia	CROBEX	2013.05	2011.29	Hong Kong	Hang Seng	22274.75	21710.28	Switzerland	SMI Index	12900.97	12939.17
Cuba	IGB	1261.81	1260.21	Hungary	Bux	51785.29	51924.62	Taiwan	TSEI	16526.36	16526.36
Czechia	FTSE 100	7505.15	7515.00	India	BSE Sensex	59855.93	59183.22	Thailand	Bangkok SET	1670.28	1657.62
Denmark	FTSE 250	1142.33	1142.33	Indonesia	Nifty 50	15187.75	15204.60	Turkey	BIST 100	1963.59	1926.66
Egypt	FTSE 300	189.18	189.18	Israel	Tel Aviv 125	2088.85	2073.08	USA	S&P 500	3602.44	3626.06
France	FTSE 400	68.52	68.52	Japan	Nikkei 225	21293.04	21293.04	Venezuela	FTSE All World \$	2600.50	2600.50
Germany	FTSE 500	15.08	15.08	Korea	KOSPI	2599.24	2599.24	Vietnam	VNI	1525.58	1485.97
Greece	FTSE 600	15.08	15.08	Malaysia	FTSE Bursa KL	1541.50	1540.95	Cross-Border	DJ Global Titans 50	548.55	563.45
Hong Kong	FTSE 700	15.08	15.08	Mexico	IPC	5303.03	5303.03	EU Stock \$ 50 (Eur)	FTSE 400 Global ID	11804.04	11804.04
India	FTSE 800	15.08	15.08	Netherlands	AEX	804.28	803.21	Europe 100 ID	FTSE Gold Min \$	1383.49	1372.06
Indonesia	FTSE 900	15.08	15.08	New Zealand	NZX 50	1133.27	1130.94	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Italy	FTSE 1000	15.08	15.08	Poland	WIG	70432.26	70077.55	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Japan	FTSE 1500	15.08	15.08	Portugal	PSI 20	5670.45	5637.91	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Korea	FTSE 2000	15.08	15.08	Romania	BEL 20	3814.30	4235.28	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Malaysia	FTSE 3000	15.08	15.08	Russia	MOEX	3973.49	3953.50	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Mexico	FTSE 4000	15.08	15.08	Saudi Arabia	TADAWJ All Share Index	11356.80	11327.52	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Netherlands	FTSE 5000	15.08	15.08	Slovakia	SAX	3973.49	3953.50	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
New Zealand	FTSE 6000	15.08	15.08	Slovenia	RSI TOP	1627.58	1627.75	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Poland	FTSE 7000	15.08	15.08	South Africa	FTSE/JSE All Share	7552.06	7372.60	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Portugal	FTSE 8000	15.08	15.08	Sweden	FTSE/JSE Res 20	72391.69	70540.20	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Romania	FTSE 9000	15.08	15.08	Switzerland	SMI Index	12900.97	12939.17	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Russia	FTSE 10000	15.08	15.08	Taiwan	TSEI	16526.36	16526.36	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Saudi Arabia	FTSE 11000	15.08	15.08	Thailand	Bangkok SET	1670.28	1657.62	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Slovakia	FTSE 12000	15.08	15.08	Turkey	BIST 100	1963.59	1926.66	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Slovenia	FTSE 13000	15.08	15.08	USA	S&P 500	3602.44	3626.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
South Africa	FTSE 14000	15.08	15.08	Venezuela	FTSE All World \$	2600.50	2600.50	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Sweden	FTSE 15000	15.08	15.08	Vietnam	VNI	1525.58	1485.97	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Switzerland	FTSE 16000	15.08	15.08	Cross-Border	DJ Global Titans 50	548.55	563.45	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Taiwan	FTSE 17000	15.08	15.08	EU Stock \$ 50 (Eur)	FTSE 400 Global ID	11804.04	11804.04	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Thailand	FTSE 18000	15.08	15.08	Europe 100 ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Turkey	FTSE 19000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
USA	FTSE 20000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Venezuela	FTSE 21000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Vietnam	FTSE 22000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Cross-Border	FTSE 23000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
EU Stock \$ 50 (Eur)	FTSE 24000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
Europe 100 ID	FTSE 25000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
FTSE 400 Global ID	FTSE 26000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
FTSE Gold Min \$	FTSE 27000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
FTSE Gold Min \$	FTSE 28000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
FTSE Gold Min \$	FTSE 29000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06
FTSE Gold Min \$	FTSE 30000	15.08	15.08	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06	FTSE 400 Global ID	FTSE Gold Min \$	1383.49	1372.06

(c) Stock (u) Unavailable. 1 Correction. Subject to official recalculation. For more index coverage please see www.ft.com/worldindices. A fuller version of this table is available on the fcm research data archive.

## STOCK MARKET: BIGGEST MOVERS

Country	Index	Latest	Previous	Country	Index	Latest	Previous	Country	Index	Latest	Previous
USA	S&P 500	3602.44	3626.06	UK	FTSE 100	7505.15	7515.00	USA	S&P 500	3602.44	3626.06
USA	Nasdaq Composite	15,085.47	15,575.48	UK	FTSE 250	1142.33	1142.33	USA	Nasdaq Composite	15,085.47	15,575.48
USA	Dow Jones Industrial	36,832.44	36,832.44	UK	FTSE 300	189.18	189.18	USA	Dow Jones Industrial	36,832.44	36,832.44
UK	FTSE 100	7505.15	7515.00	UK	FTSE 400	68.52	68.52	UK	FTSE 100	7505.15	7515.00
UK	FTSE 250	1142.33	1142.33	UK	FTSE 500	15.08	15.08	UK	FTSE 250	1142.33	1142.33
UK	FTSE 300	189.18	189.18	UK	FTSE 600	15.08	15.08	UK	FTSE 300	189.18	189.18
UK	FTSE 400	68.52	68.52	UK	FTSE 700	15.08	15.08	UK	FTSE 400	68.52	68.52
UK	FTSE 500	15.08	15.08	UK	FTSE 800	15.08	15.08	UK	FTSE 500	15.08	15.08
UK	FTSE 600	15.08	15.08	UK	FTSE 900	15.08	15.08	UK	FTSE 600	15.08	15.08
UK	FTSE 700	15.08	15.08	UK	FTSE 1000	15.08	15.08	UK	FTSE 700	15.08	15.08
UK	FTSE 800	15.08	15.08	UK	FTSE 11000	15.08	15.08	UK	FTSE 800	15.08	15.08
UK	FTSE 900	15.08	15.08	UK	FTSE 12000	15.08	15.08	UK	FTSE 900	15.08	15.08
UK	FTSE 1000	15.08	15.08	UK	FTSE 13000	15.08	15.08	UK	FTSE 1000	15.08	15.08
UK	FTSE 11000	15.08	15.08	UK	FTSE 14000	15.08	15.08	UK	FTSE 11000	15.08	15.08
UK	FTSE 12000	15.08	15.08	UK	FTSE 15000	15.08	15.08	UK	FTSE 12000	15.08	15.08
UK	FTSE 13000	15.08	15.08	UK	FTSE 16000	15.08	15.08	UK	FTSE 13000	15.08	15.08
UK	FTSE 14000	15.08	15.08	UK	FTSE 17000	15.08	15.08	UK	FTSE 14000	15.08	15.08
UK	FTSE 15000	15.08	15.08	UK	FTSE 18000	15.08	15.08	UK	FTSE 15000	15.08	15.08
UK	FTSE 16000	15.08	15.08	UK	FTSE 19000	15.08	15.08	UK	FTSE 16000	15.08	15.08
UK	FTSE 17000	15.08	15.08	UK	FTSE 20000	15.08	15.08	UK	FTSE 17000	15.08	15.08
UK	FTSE 18000	15.08	15.08	UK	FTSE 21000	15.08	15.08	UK	FTSE 18000	15.08	15.08
UK	FTSE 19000	15.08	15.08	UK	FTSE 22000	15.08	15.08	UK	FTSE 19000	15.08	15.08
UK	FTSE 20000	15.08	15.08	UK	FTSE 23000	15.08	15.08	UK	FTSE 20000	15.08	15.08
UK	FTSE 21000	15.08	15.08	UK	FTSE 24000	15.08	15.08	UK	FTSE 21000	15.08	15.08
UK	FTSE 22000	15.08	15.08	UK	FTSE 25000	15.08	15.08	UK	FTSE 22000	15.08	15.08
UK	FTSE 23000	15.08	15.08	UK	FTSE 26000	15.08	15.08	UK	FTSE 23000	15.08	15.08
UK	FTSE 24000	15.08	15.08	UK	FTSE 27000	15.08	15.08	UK	FTSE 24000	15.08	15.08
UK	FTSE 25000	15.08	15.08	UK	FTSE 28000	15.08	15.08	UK	FTSE 25000	15.08	15.08
UK	FTSE 26000	15.08	15.08	UK	FTSE 29000	15.08	15.08	UK			

MARKET DATA

FT500: THE WORLD'S LARGEST COMPANIES

Table with multiple columns for market data, including company names, prices, changes, and various financial metrics. It is organized into sections for different regions like Australia, Canada, China, Europe, and the US.

FT 500: TOP 20

Table listing the top 20 companies in the FT 500 index, including company names, prices, and percentage changes.

FT 500: BOTTOM 20

Table listing the bottom 20 companies in the FT 500 index, including company names, prices, and percentage changes.

BONDS: HIGH YIELD & EMERGING MARKET

Table showing bond market data for high yield and emerging markets, including ratings, prices, and yields.

BONDS: GLOBAL INVESTMENT GRADE

Table showing global investment grade bond market data, including ratings, prices, and yields.

INTEREST RATES: OFFICIAL

Table of official interest rates for various countries and currencies.

BOND INDICES

Table of bond indices for different regions and asset classes.

VOLATILITY INDICES

Table of volatility indices, including VIX and other market volatility measures.

GLILTS: UK CASH MARKET

Table of Gilts (UK government bonds) in the cash market.

INTEREST RATES: MARKET

Table of market interest rates for various instruments.

CREDIT INDICES

Table of credit indices for different regions and asset classes.

BONDS: BENCHMARK GOVERNMENT

Table of benchmark government bond data.

GLILTS: UK FTSE ACTUARIAL INDICES

Table of UK FTSE actuarial indices for Gilts.

COMMODITIES

Table of commodity prices for various goods like oil, wheat, and metals.

BONDS: INDEX-LINKED

Table of index-linked bond data.

BONDS: TEN YEAR GOVT SPREADS

Table of ten-year government bond spreads.

GLILTS: UK FTSE ACTUARIAL INDICES

Table of UK FTSE actuarial indices for Gilts.

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Main Market

Main Market table with columns for Sector, Company, Price, %Chg, 52 Week High/Low, and Vol. Includes sections for Aerospace & Defence, Banks, Basic Resource (Ex Mining), Chemicals, Construction & Materials, Electronic & Electrical Equip, Financial General, Health Care Equip & Services, Industrial Engineering, Leisure, Hous, Leisure & Pers Goods, Mining, Pharmaceuticals & Biotech, Real Estate, Retailers, Support Services, Tech - Software & Services, Telecommunications, Tobacco, Travel & Leisure, Utilities, and Zero Dividend Preference Shares.

AIM

AIM table with columns for Sector, Company, Price, %Chg, 52 Week High/Low, and Vol. Includes sections for Aerospace & Defence, Banks, Basic Resource (Ex Mining), Chemicals, Construction & Materials, Electronic & Electrical Equip, Financial General, Health Care Equip & Services, Industrial Engineering, Leisure, Hous, Leisure & Pers Goods, Mining, Pharmaceuticals & Biotech, Real Estate, Retailers, Support Services, Tech - Software & Services, Telecommunications, Tobacco, Travel & Leisure, Utilities, and Zero Dividend Preference Shares.

Investment Companies

Investment Companies table with columns for Conventional (Ex Private Equity), Conventional - Property ICs, and Guide to FT Share Service. Includes sub-sections for Direct Property, Zero Dividend Preference Shares, and Investment Companies - AIM.

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# MANAGED FUNDS SERVICE

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Lothbury Property Trust (UK)</b> 155 Bishopsgate, London EC2M 2TD +44(0) 20 3551 4900 <b>Property &amp; Other UK Unit Trusts</b> Regulated						
Lothbury Property Trust GBP	£ 199.76	219.21	50.29	2.72	8.11	0.26

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Milltrust International Managed Investments SPC</b> em@milltrust.com, +44(0)20 8123 8316, www.milltrust.com <b>Regulated</b>						
Milltrust Alaska Brazil SP A	\$ 71.23	-	2.34	0.00	-5.23	-
Milltrust Laurium Africa SP A	\$ 102.95	-	-0.08	0.00	6.65	-
Milltrust Marcellus India Fund	\$ 149.99	-	2.33	0.00	22.15	-
Milltrust Singular ASEAN SP Founders	\$ 158.42	-	1.01	0.00	1.51	-
Milltrust SPARK Korea Equity SP A	\$ 154.83	-	-0.64	0.00	-11.07	-
Milltrust VTB Russia Fund SP	\$ 147.73	-	0.09	0.00	20.66	-
Milltrust Xingtai China SP A	\$ 143.48	-	0.18	0.00	0.15	-
The Climate Impact Asia Fund SP (Class A)	\$ 100.86	-	-0.68	-	-	-
The Climate Impact Asia Fund (Class B)	\$ 100.63	-	-0.69	-	-	-

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>M &amp; C Securities (1200F)</b> PO Box 9038, Chelmsford, CM99 2XF www.mandc.co.uk/charities Eq, Dealing: 0800 917 4472 <b>Authorised Inv Funds</b>						
Charifund Inc	1574.94	-	18.74	4.72	18.67	8.32
Charifund Acc	2653.83	-	349.25	3.99	19.05	8.45
M&C Charistart Charistart Interest Fund (Darband) Inc	£ 1.21	-	0.00	2.06	-1.46	-
M&C Charistart Charistart Interest Fund (Darband) Acc	£ 42.24	-	-0.08	1.53	-1.46	-
M&C Charistart Multi Asset Fund Inc	£ 0.92	-	0.01	3.62	13.17	-
M&C Charistart Multi Asset Fund Acc	£ 105.40	-	0.70	2.91	13.17	-

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Ministry of Justice Common Investment Funds</b> (UK) <b>Property &amp; Other UK Unit Trusts</b> Regulated						
The Equity Idx Tracker Fd Inc	£ 2653.00	-	13.00	1.37	16.88	11.58
Distribution Units						

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>MMP Investment Management Limited</b> (GSY) <b>Regulated</b> <b>Multi-Manager Investment Programmes PCC Limited</b>						
UK Equity Fd CI A Series 01	£ 314.53	317.93	-146.27	0.00	20.13	4.92
Diversified Absolute Rtn Fd USD OI AFZ	\$ 1701.68	-	-58.67	-	-2.16	4.35
Diversified Absolute Return Stly Cell AFZ	£ 1992.76	-	-54.88	-	-2.30	2.97
Global Equity Fund A Lead Series	£ 1843.01	1849.22	-20.31	-	13.76	7.56

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Mirabaud Asset Management</b> (LUX) www.mirabaud.com, marketing@mirabaud-am.com Conviction based investment vehicles details available here www.mirabaud-am.com <b>Regulated</b>						
Mir - Gbl Strat. Bid I USD	\$ 124.62	-	-0.13	0.00	1.91	4.90
Mir - DiscEur D Cap GBP	£ 226.70	-	1.07	0.00	25.56	21.53
Mirabaud - UK Equity High Alpha	£ 169.62	-	0.13	0.00	16.22	15.99

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Marlborough Fd Managers Ltd (1200F)</b> (UK) Marlborough House, 59 Charley New Road, Bolton, BL1 4DP 0808 145 2500 www.marlboroughfunds.com <b>Authorised Inv Funds</b>						
Balanced	245.48	245.48	0.63	0.16	11.28	10.26
Bond Income	50.38	50.38	-0.25	2.93	-2.66	3.12
Cautious Inc	92.13	92.13	0.21	1.40	5.54	4.67
Emerging Markets	395.22	395.22	1.35	0.40	9.03	8.50
Conservative P Acc	101.13	-	-0.45	-	-	-
European Multi-Cap	838.30	838.30	4.87	0.81	32.00	26.83
Extra Income	94.83	94.83	0.69	3.37	13.92	11.03
Far East Growth A Inc	277.59	277.59	1.15	0.62	9.99	10.13
Global	332.22	332.22	1.25	0.00	14.27	14.68
Global Bond Inc	153.12	153.12	-0.95	2.40	-2.50	2.88
High Yield Fixed Interest	71.66	71.66	-0.64	3.72	3.37	5.74
Marlborough Nano Cap Growth A Acc	210.31	210.31	3.98	0.00	32.22	2.30
Marlborough Technology Fund A	1101.80	1101.80	2.80	0.00	21.30	29.21
Multi Cap Income A Inc	159.43	159.43	1.47	3.54	20.58	9.65
Nano-Cap Growth A Acc	278.00	278.00	1.88	0.00	22.53	21.89
Special Situations A Acc	2469.98	2469.98	14.13	0.00	20.12	18.64
UK Multi-Cap Growth A Inc	461.69	461.69	1.90	0.00	16.95	17.77
UK Micro Cap Growth A	1176.01	1176.01	3.95	0.00	23.78	22.14
US Multi-Cap Income	776.51	776.51	-8.06	1.12	26.45	21.96



Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Oasis Crescent Growth Fund (UK) ICVC (UK)</b> <b>Regulated</b>						
Oasis Crescent Global Equity Fund (USD A Dist)	\$ 39.81	-	-0.13	0.20	13.54	13.13
Oasis Crescent Global Income Fund (USD A Dist)	\$ 10.99	-	0.00	2.46	1.15	4.67
Oasis Crescent Global Low Equity Fund (USD D Dist)	\$ 13.83	-	-0.01	0.08	9.72	7.29
Oasis Crescent Global Medium Equity Fund (USD A Dist)	\$ 15.25	-	-0.02	0.03	10.64	8.48
Oasis Crescent Global Property Equity Fund (USD A Dist)	\$ 10.73	-	0.03	0.32	32.61	10.49
Oasis Crescent Global Short Term Income Fund (USD A Dist)	\$ 0.98	-	0.00	1.62	0.55	2.08
Oasis Crescent Variable Fund (GBP A Dist)	£ 10.56	-	-0.04	0.01	11.85	4.74

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>PLATINUM CAPITAL MANAGEMENT</b>						
<b>Platinum Capital Management Ltd</b> <b>Other International Funds</b> <b>Regulated</b>						
Platinum All Star Fund - A	\$ 159.23	-	-	-	13.83	7.83
Platinum Global Growth UCITS Fund	\$ 13.23	-	-0.14	0.00	-1.93	12.19
Platinum Sector Rotation UCITS Fund (USD Dist)	\$ 9.27	-	0.03	0.00	15.59	1.56
Platinum Global Dividend UCITS Fund	\$ 59.36	-	-0.11	0.00	5.79	4.88



Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Polar Capital Funds Plc</b> (IRL) <b>Regulated</b>						
Adaptation & Artificial Intelligence 7I USD Acc	\$ 20.80	20.80	-0.05	0.00	16.59	31.30
Asian Starts I USD Acc	\$ 18.79	-	0.20	0.00	3.70	23.40
Biotechnology I USD	\$ 41.11	41.11	-0.17	0.00	4.69	24.62
China Stars I USD Acc	\$ 13.96	13.96	0.19	0.00	-15.34	17.25
Emerging Market Stars I USD Acc	\$ 15.05	-	0.16	0.00	-0.53	21.12
European Ex UK Inc EUR Acc	€ 13.66	13.66	-0.01	0.00	18.78	8.21
Financial Opps I USD	\$ 16.25	-	0.03	1.48	19.72	13.43
Global Convertible I USD	\$ 16.10	16.10	0.02	0.00	-7.75	8.99
Global Insurance I GBP	£ 8.27	-	-0.01	0.00	16.70	10.92
Global Technology I USD	\$ 96.45	-	-0.55	0.00	10.71	34.99
Healthcare Blue Dip Fund I USD Acc	\$ 19.62	19.62	-0.07	0.00	22.32	17.58
Healthcare Dis I Acc USD	\$ 15.47	-	-0.02	0.00	2.99	-
Healthcare Opps I USD	\$ 70.39	-	-0.03	0.00	9.00	15.46
Income Opportunities B2I GBP Acc	£ 2.85	2.85	0.00	0.00	21.96	10.40
Japan Value I JPY	¥ 130.40	130.40	1.71	-	14.78	6.95
North America I USD	\$ 38.79	38.79	-0.11	0.00	23.57	22.12
Smart Energy I USD Acc	\$ 10.64	10.64	0.02	-	-	-
Smart Mobility I USD Acc	\$ 10.57	10.57	0.01	-	-	-
UK Val Opp I GBP Acc	£ 14.64	14.64	0.07	0.00	20.10	12.07

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Polar Capital LLP</b> (CYM) <b>Regulated</b>						
European Forager A EUR	€ 226.22	-	0.69	0.00	22.13	7.47

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Private Fund Mgrs (Guernsey) Ltd</b> (GSY) <b>Regulated</b>						
Monument Growth 29/12/2021	£ 580.38	586.25	12.46	0.00	10.29	10.20

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Prusik Investment Management LLP</b> (IRL) Enquiries: 0207 493 1331 <b>Regulated</b>						
Prusik Asian Equity Income B Dist	£ 181.58	-	-2.45	4.49	6.78	4.13
Prusik Asia Emerging Opportunities Fund A Acc	£ 219.20	-	2.32	-	14.17	15.52
Prusik Asia Fund U Dist.	£ 262.65	-	-1.07	0.00	11.19	16.54

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Orbis Investments (U.K.) Limited</b> (GBR) 28 Dorset Square, London, NW1 6GG www.orbis.com 0800 358 2030 <b>Regulated</b>						
Orbis OEIC Global Cautious Standard	£ 10.98	-	0.00	0.02	5.65	3.16
Orbis OEIC Global Balanced Standard	£ 16.99	-	0.01	2.35	9.66	8.02
Orbis OEIC Global Equity Standard	£ 21.52	-	-0.04	1.89	10.60	14.18
Orbis OEIC UK Equity Standard	£ 10.88	-	0.02	2.31	32.20	13.77

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Purisma Investment Fds (UK) (1200F)</b> (UK) 65 Gresham Street, London, EC2V 7NQ Order Desk and Enquiries: 0345 922 0044 <b>Authorised Inv Funds</b> <b>Authorised Corporate Director - Link Fund Solutions</b>						
Global Total Fd PCG A	433.61	-	0.83	0.02	24.73	24.52
Global Total Fd PCG B	428.36	-	0.80	0.00	24.42	24.21
Global Total Fd PCG INT	421.43	-	0.79	0.00	24.10	23.90

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Purisma Investment Fds (CI) Ltd</b> (JER) <b>Regulated</b>						
PCG B	363.72	-	-0.16	0.00	24.22	24.38
PCG C	354.55	-	-0.16	0.00	23.96	24.12



Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Ram Active Investments SA</b> (UK) www.ram-ai.com <b>Other International Funds</b> <b>Regulated</b>						
RAM Systematic Emerg Markets Eq	\$ 242.48	242.48	-0.13	-	12.65	14.60
RAM Systematic European Eq	€ 617.21	617.21	1.89	-	30.26	16.40
RAM Systematic Global Sustainable Income Eq	\$ 166.52	166.52	0.15	0.00	25.81	14.01
RAM Systematic Global Eq Sustainable Alpha	€ 113.92	113.92	-2.14	-	14.84	-0.59
RAM Systematic Long Short European Eq	€ 154.96	154.96	-0.51	-	18.91	1.80
RAM Systematic US Sustainable Eq	\$ 447.98	447.98	0.32	-	25.93	19.77
RAM Tactical Global Bond Total Return	€ 152.71	152.71	0.05	-	-2.55	2.53
RAM Tactical II Asia Bond Total Return	\$ 155.95	155.95	-0.01	-	-0.63	4.37

Fund	Bid	Offer	+/-	Yield	1Yr	3Yr
<b>Royal London</b> (UK) 55 Gracechurch Street, London, EC3V 9JL <b>Authorised Inv Funds</b> <b>Regulated</b>						
Royal London Sustainable Diversified A Inc	£ 2.73	-	-0.01	0.56	10.04	15.04
Royal London Sustainable World A Inc	401.50	-	-1.50	0.00	15.41	21.66
Royal London Corporate Bond Mth Income	91.62	-	-0.58	3.39	-1.94	4.58
Royal London European Growth Trust	221.40	-	1.10	0.44	18.94	16.35
Royal London Sustainable Leaders A Inc	858.30	-	5.70	0.71	20.32	17.43
Royal London UK Growth Trust	704.10	-	8.20	0.90	21.83	12.84
Royal London UK Income With Growth Trust	219.30	-	0.30	4.21	11.25	7.31
Royal London US Growth Trust	393.60	-	-0.30	0.00	31.16	25.18

Fund	Bid
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## ARTS

# How Cyrano lost his nose

A new screen musical brings a twist to the classic tale. Star Peter Dinklage and writer Erica Schmidt talk to Peter Aspden

For a dramatic work that was essentially focused on a misshapen body part, Edmond Rostand's 1897 romantic blockbuster *Cyrano de Bergerac* yielded some surprisingly resonant consequences. One of them occurred during the first world war, when young French women, said to be inspired by the passionate letters between the play's luckless-featured lead character and the object of his hidden affections, Roxanne, wrote similarly ardent notes to anonymous soldiers in the trenches.

The finer points of the play's love triangle, in which Cyrano uses his handsome fellow officer Christian as a front for his feelings, fooling Roxanne into falling for a combination of one man's eloquence and the other's physical allure, were doubtless a nuance too far for these *marraines*, or godmothers, who were turning their sentimental longings into patriotic duty. But they had clearly absorbed the lesson of Rostand's work: that nothing was more criminal than to allow the "truth of feeling" to remain unexpressed.

That moral is also the guiding light of the new musical film *Cyrano*, directed by Joe Wright (*Pride and Prejudice*, *Atonement*), scripted by Erica Schmidt and starring in the title role Peter Dinklage, known globally for his multi-garlanded performances as the lovably malevolent Tyrion in *Game of Thrones*.

Schmidt has based the screenplay on her own stage version of the play, which dispensed altogether with the comedic conceit for which *Cyrano* is best known. "I wanted to see what it would be like if *Cyrano* didn't have the false nose, but more than that, if he didn't spend the play talking about his false nose," she says in a video call. "What if we left out

what it was that he didn't love about himself, so you're left to wonder and make up your own idea?"

The casting of Dinklage, to whom Schmidt is married, came later, when she invited members of the rock group The National (whom she "pursued feverishly" to do the music) to their house for a reading of her rewrite.

"Peter said, 'Maybe I could read it?' Now when your life partner is a massive celebrity who everyone knows, there is a way in which everything becomes all about him, so I have to be frank and say I was a little resistant," she says. "But by the time he'd read it, it was

'Who is to say what romantic leading people should be? They have been pretty white people for too long'

clear he was absolutely perfect for it. So much about Peter's own character was so similar: the razor-sharp intellect, his wit, his sense of humour." Dinklage's dwarfism was scarcely considered. "I wanted to suggest that if it was Peter's height that you saw as a direct stand-in for the nose, that was what you were seeing. We deliberately never said anything to reference [his] size. And I think that was part of what he was drawn to."

For his part, Dinklage confesses he "worked" his way into the part. "It wasn't written for me at all," he says in a separate call. "But I thought to get rid of the nose was a real advancement to the story. Because if you see a handsome actor with a fake nose, you know it's a



Above: Peter Dinklage as Cyrano in a new musical film of Edmond Rostand's 1897 play. Left: Haley Bennett as Roxanne  
© 2021 Metro-Goldwyn-Mayer Pictures Inc

fake nose, it's inherently theatrical. For someone like me, who is physically unique, I would watch it and think, 'What is he complaining about? His nose isn't that big!'

"It seemed that Rostand was trying to get at something deeper than what the 'nose' was telling us. Which is that universal feeling of being unworthy of someone you love, and unworthy of being loved, and hiding from it. And that is something we can all relate to, not just

anybody who is physically different."

It was the complexity of *Cyrano*'s character that most attracted Dinklage to the role. "For actors, the more complicated the role, the better. And *Cyrano* is quite a contradiction. He has such bravado, he really commands the room, he is great with his men and a confident fighter. But in the face of love, his knees start buckling. And he doesn't know how to convince himself of his own worth."

Did he draw on Tyrion, another famously deft verbal craftsman, in his reading of the role? "Both are witty characters. But Tyrion is very confident when it comes to the partners he is attracted to. He has no problems speaking his mind, and is pretty blunt in getting what he wants."

The character *Cyrano* wants, Roxanne, feistily played by Haley Bennett, is another who has been reconfigured in Schmidt's version of the story. "I wanted her to have more agency than in the

original," she says. "At the end, when she finds out she has been lied to and deceived for 15 years, she really doesn't say anything. I thought, 'What if she was angry? What about the life she could have had? I wanted her to be messy and have fights.'"

"She is almost punk rock, not what we think of as punk rock, but for the 1600s," adds Dinklage. "That's one of the reasons *Cyrano* loves her."

Wright gives the movie a distinctive shape, beginning his story with brawls and banquets in the sumptuous Sicilian Baroque town of Noto (dances are devised by the Belgian choreographer Sidi Larbi Cherkaoui), and ending it in the hostile and sparse landscape of Mount Etna, where the love triangle turns into a philosophical debate on the nature of love.

Here is where the yearning ballads of

The National are at their most effective, delivered with no little style by Dinklage's expressive baritone voice, sung live during filming rather than post-dubbed. "You want to hear the heavy breathing and the fatigue," says Dinklage of the benefits of singing on set. "I would be incapable of doing [otherwise] without cracking up."

Schmidt says the change of pace was deliberate. "[At the end] I made the dialogue very, very spare, I cut the cast down from 40 to 10, and really focused on the intimacy of the relationships. Roxanne's journey is very simple. She wants this impossible dream of falling in love at first sight, with a mind as well as a face and body. She chooses to believe that dream is possible, but that doesn't make her stupid, or naive. I love that about her."

She adds that the story of conducting a romance via letters has an extra significance in today's culture, compared to that of a couple of decades ago. "We are so obsessed with presenting 'the best possible version of ourselves' through social media, selfies, dating apps. When you curate a version of yourself that exists online, it is a true version but it is also a lie. *Cyrano* and Christian create this lie – but it is also true that they both love Roxanne."

I ask Dinklage if the release of *Cyrano* coming so soon after Steven Spielberg's *West Side Story*, another fable of love frustrated by conceptions of otherness, is a coincidence. "It is a fascinating time we are living in, especially in America, which feels like a failed experiment," he responds. "But in the arts, from our corner of the sandbox, it is our responsibility to advance the needle forward to create a more open-minded, racially diverse, creatively fulfilling place."

And the tragedy of *Cyrano*, entangled in 17th-century distaste and prejudice, can play its part in that? "It is about time we opened up the box. Who is to say what romantic leading people should be? They have been pretty white people for too long. A love story is not just the domain of the beautiful. It is part of all of our lives, and it affects us all differently."

In UK cinemas from January 14 and US cinemas from January 28



Power couple: actor Peter Dinklage and Erica Schmidt, writer of the new film  
Bruce Gilkas/WireImage/Getty Images

## On a quest to explore morality

### GAMING

Tom Faber



Is it ever justifiable to punish an entire community for the sins of a single member? This question is at the heart of *The Forgotten City*, a mystery game that offers a thoughtful exploration of ethics and some of the past year's most compelling narrative design. You awaken on the banks of the modern-day river Tiber with no idea how you got there. A mysterious woman offers to ferry you back to civilisation if you can find her friend, who went to explore some nearby ruins and never returned. Soon you are tumbling down a hole into a city built across a vast, luminous cave system.

Between the elegant aqueducts, the market stalls and the grand temple perched on a high bluff are residents in togas and centurion garb – you have fallen not just through space, but also backwards in time. A magistrate explains that everyone in this hermetic community is beholden to a law known as the "Golden Rule": if a single person sins, then every inhabitant will be transformed, Midas-like, into gold. Now the gleaming golden statues that litter the town can be understood as previous victims of this curse, frozen in postures of fear, fury and supplication.

The magistrate knows that somebody is going to sin today, and it's your job to find out who before it's too late. The 20-odd locals each have a compelling mystery to solve: why is the soldier struggling with his sexuality? What caused the midwife to lock herself away and conduct ghoulish experiments on the golden statues?

As you set about resolving these questions, it becomes apparent that each is woven into a larger narrative tapestry, eventually revealing why you are here, who created the Golden Rule and whether there is any chance of

escape from this mysterious purgatory. Inevitably somebody will sin, triggering the Golden Rule and transporting you back to the beginning of that same day. While the locals plod through their routines once more, you return armed with new knowledge and items, learning to leverage this time loop to make progress in your investigation.

*The Forgotten City* started life in 2015 as a mod for *Skyrim* that was downloaded 3m times and became the first mod to win a Writer's Guild award. Over the next five years, a team of three people spun the concept into a standalone game. The limits of their resources mean the game has some rough edges –

If a single person sins, then every inhabitant will be transformed, Midas-like, into gold

the writing and storytelling are superb, but facial animations are wooden and the few combat sections feel clunky. Yet it benefits from the single-minded passion that defines the best mods: this is the work of creators who had the freedom to explore their idea.

The team consulted with academics to ensure the historical accuracy of their depiction of ancient Rome, and

throughout town you will find objects that provide contextual information. One of the game's most interesting ideas is its exploration of how successive civilisations layer their culture and architecture directly on top of their predecessors', creating a palimpsest of human progress that too often goes unobserved.

The conceit of the Golden Rule is inspired by the real Roman practice of "decimation", a form of military discipline in which every 10th soldier in a unit was executed to punish large-scale crimes. Yet in *The Forgotten City*, specifics around the rule are deliberately unclear. What is defined as a sin? The game's dialogue trees become a combat of wits, climaxing in sophisticated Socratic debates that probe the nature of absolute morality.

Though *The Forgotten City* is unafraid of its weighty themes, it remains light on its feet thanks to charming characters and healthy doses of humour.

Each of its intellectual debates is anchored in human stories with real life-and-death consequences. This is the rare game that stays with you long after it ends not because of tense combat or stunning visuals, but because of a searching moral core that refuses to be settled.

Available on Windows, PS4/5, Xbox One, Xbox Series X/S, and Nintendo Switch (in some territories)



'The Forgotten City' takes players back in time to ancient Rome

FT FINANCIAL TIMES

SPECIAL REPORT:  
ASIA-PACIFIC CLIMATE LEADERS 2022

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# FT BIG READ. US ADDICTION CRISIS

With more than 270 fatal overdoses on average every day, authorities are under pressure to treat, rather than prosecute, users, but can the Biden administration afford to turn away from the US 'war on drugs'?

By Jamie Smyth, Caitlin Gilbert and Christine Murray

Rosalind Pichardo didn't just get her nickname "Mama Sunshine" because of her cheery disposition. For several hundred drug users in Kensington, a rundown neighbourhood in Philadelphia, she has been their lifeline: bringing each of them back from the edge of death after they overdosed.

"I revived a guy who OD'ed on the street this morning on my way to work," says Pichardo, speaking matter of factly outside her workplace — Prevention Point — one of the largest needle exchange sites in the US. "Unfortunately, overdoses happen everyday in this neighbourhood."

It is not just Philadelphia. On average more than 270 people — the equivalent of 10 or 12 high school classes — overdosed and died in the US every day in the year to April 2021. This added up to a new record annual toll of more than 100,000 lives in a country caught in the grip of an addiction crisis. Almost two-thirds of those deaths were caused by fentanyl, a synthetic opioid which can be 50 times as potent as heroin and has recently displaced other legally prescribed painkillers as the main driver of fatal overdoses.

Health experts say that some of those who died probably didn't even know they were taking fentanyl, which has become a common contaminant in a range of street drugs from counterfeit pills to cocaine. Many overdose victims are recovering addicts who relapsed during the pandemic, they add.

The mounting death toll has alarmed US policymakers, who had hoped that a crackdown on doctor and pharmacy "shopping" by prescription painkiller users and multibillion-dollar settlements with pharmaceutical companies would ease an opioid crisis that has claimed more than 500,000 lives over the past decade.

Instead, the crisis has worsened. And is accelerating a shift by some state and federal authorities to address the problem as a public health issue rather than a criminal justice one: to accept illegal drug use occurs, minimise its effects via harm reduction policies and save lives.

Such a move away from the five-decade-old "war on drugs" is politically risky for the Democrats in particular, as Republicans step up attacks on the Biden administration, alleging it is soft on crime ahead of midterm elections in November. But health experts say that continuing to prioritise enforcement over treatment will translate into tens of thousands more deaths.

The most contentious issue is the use of supervised injection sites, with many conservative politicians and some community leaders opposed to schemes which they argue encourage drug use.

In November, New York City opened the nation's first supervised injection sites to be approved by city authorities, ignoring a federal law which prohibits their operation for the use, sale or stor-

'Encouraging even more drug abuse has to be the stupidest idea that has been proposed to combat the addiction crisis'

ing of drugs. The Biden administration now faces a critical decision: change the law and further embrace harm reduction efforts or do nothing and embolden opponents who want to close such sites.

Dr Rahul Gupta, director of the White House Office of National Drug Control Policy, has said he wants to evaluate the science and data behind supervised sites, hinting that a change in policy is under consideration. "We want to learn and we want to make sure that every possible door we can open up to help people and connect them to treatment is available," he told CNN in December.

For Joy Brunson-Nsubuga, a clinical addiction specialist, the demand is clear. "People are not getting the care that they need because of the [stigmas around addiction]," she says. "[We are] losing individuals in our community that we could have saved."

### Political minefield for Biden

Since 1971, the "war on drugs" has cost the US an estimated \$1tn — spent largely on locking up offenders — without solving America's illegal drug problem. In contrast, advocates of supervised injection sites say they have prevented more than 17,000 overdoses in Canada since 2017. They argue that such schemes pay for themselves, with every \$1 spent on the sites generating \$2.33 in healthcare savings, according to a study published in the *Journal of Drug Issues*.

Since 2015, some US city and state authorities have been distributing Narcan nasal sprays, which can help resuscitate those who have overdosed, and fentanyl test strips, which enable drug users to test if a drug is contaminated.



US cities, including Philadelphia, above, are experiencing record numbers of fatal overdoses. Rosalind Pichardo, bottom, works with addicts at a needle exchange in the city. Above right: a Narcan nasal spray, which health experts say can help save the life of an overdose victim but the use of which is restricted in some US states

Teun Voeten/SIPA USA

Although safe injection sites are a key feature of overdose prevention in Canada, Europe and Australia, they have proved divisive in the US. In 2019 the Trump administration blocked the opening of what would have been the first such facility in Philadelphia. Days before Christmas protesters picketed outside one of the newly opened sites in New York, where Republican lawmakers have introduced legislation to Congress to defund the projects, which were

backed by the former New York City mayor, Bill de Blasio, a Democrat.

Supporters say such sites save lives. Critics argue they provide an official seal of approval for illegal drug taking.

And despite its support for other harm reduction measures, the Biden administration is yet to overturn the federal government's opposition to supervised injection sites. The US attorney's office was scheduled to file a response today to a lawsuit mounted by the Philadelphia project, which is calling for the Trump ban to be overturned. But both parties agreed a 60-day extension to the deadline last week.

If the US attorney's office were to end the federal government's opposition to supervised injection sites it would provide a green light to similar projects in several states, say legal experts. But it could also open a new front for Republican attacks on a Democratic administration, which they already accuse of not being hard enough on the Mexican drug cartels driving the fentanyl trade.

"There is a long history of the 'war on drugs' and famously President Reagan's wife Nancy led a campaign 'Just Say No'. This [supervised injection sites] is clearly the opposite of saying 'no', it is acquiescence," says Howard Husock, senior fellow at the American Enterprise Institute, a right-leaning Washington-based think-tank. "The social conservatives could make hay with this."

### 'It's like drowning'

Overstretched hospitals in Philadelphia and other US cities have been dealing with the fentanyl crisis on top of the coronavirus pandemic. Now, some health experts are urging state and federal authorities to do whatever it takes to solve the overdose crisis.

"It is the worst that I have seen. Almost every day in the work that I do I hear about someone who has lost a sibling, a friend or a loved one. It is just devastating," says Jeanmarie Perrone, professor of emergency medicine at the University of Pennsylvania Hospital.

Perrone says heroin users, some of whom graduated on to the drug after becoming hooked on prescription painkillers, are now turning to fentanyl. And other illegal drugs are now being deliberately laced with fentanyl — which is cheap to make, easy to transport and highly addictive, making it more lucrative for the cartels.

Overdose deaths hit a record 1,214 in Philadelphia in 2020, a 6 per cent increase on 2019. Fentanyl was involved in 81 per cent of them.

"It's like drowning," says Perrone, who has become used to treating overdose victims. "Fentanyl depresses the respiratory effort and people stop

breathing. They go a few minutes without oxygen, the heart rate slows and they have a cardiac arrest."

Prevention Point's executive director José Benítez, led the unsuccessful push to open the supervised injection site in Philadelphia in 2019. "There is one data point that really stands out," he says, "no one has [ever] died of an overdose at a safe injection site."

### The rise of fentanyl

Tonja Myles, an ordained minister in Baton Rouge, Louisiana, has spent almost 30 years working with people struggling with addiction. She echoes the view of many health experts, that persuading drug users to seek treatment is more important now than ever before because of the rise of fentanyl.

"People used to say, well [the opioid epidemic] is just a white, middle-class thing, but, no, it's everybody, because nobody is safe. [Fentanyl's] crossing all barriers," she says. "[Fentanyl] doesn't care if you're black, white, rich or poor, from the kerbside to the country club, it's killing people all over the place."

East Baton Rouge Parish has one of the highest rates — at least 307 in 2021 — of fatal overdoses in the country. Molly was 37 when she overdosed in April 2020 on fentanyl-laced heroin. It was the second such tragedy to hit the family: in 2015, her father Randy found his son, Mike, dead at home from a heroin overdose. Both siblings had struggled for years with opioid addiction.

"If I mapped out his life, from the time he was 15 till the day he died, all he was doing was going in and out of rehab... and Molly was just kind of following his same path," says Randy, who asked not to use his real name. "I think a



'I revived a guy who OD'ed on the street this morning on my way to work. Overdoses happen everyday [here]'

lot of places are money hungry, they get them in and out. You felt like they were supposed to be helping them but kicking them out ain't helping them."

Jon Daily, the head of the overdose prevention task force within the East Baton Rouge District Attorney's Office, has been following fentanyl's rise since it first took hold in Louisiana in 2019.

"The crackdown in the early 2000s on the doctor shopping and pill dumping has been effective in that it's decreased the overdoses from prescription pills," says Daily. "But it's only fuelled the trade in illicitly manufactured fentanyl, which is what's killing everybody."

Last year, the US Drug Enforcement Administration seized around 1,500lb of fentanyl — an amount which, it says, is enough to kill every American.

Jaime Arredondo, a researcher with the Canadian Institute for Substance Use Research, believes Mexico is a victim of demand from the north, and that the problems caused by fentanyl require a public health strategy. "It's very reductionist to see it just as a security issue," he adds, "instead we should also be looking at the health issues."

### Policy shift or wishful thinking?

Translating that into political change has for years seemed unlikely. Yet, there is optimism among health experts that the Biden administration will overturn national government opposition to funding supervised injection sites. In April, it signalled a pivot in policy towards support for harm reduction schemes when it announced federal money could be used for the first time to buy fentanyl test strips. It has also made



it easier to access medications — such as methadone — to treat addiction and called on Congress to back an \$11bn budget request to expand access to substance abuse schemes.

But the administration is not backing away from enforcement and plans to make permanent a Trump-era decision to ban fentanyl substances.

Adoption of harm reduction remains piecemeal across the US and still faces legal barriers. Possession of fentanyl test strips, for instance, remains illegal in as many as 30 states, where existing laws ban drug paraphernalia which includes controlled substances testing. Some state laws still restrict access to Narcan due to concerns that providing easy access to the overdose treatment could increase opioid use — an opinion that runs counter to a study by the Boston University School of Medicine.

"Encouraging even more drug abuse has to be the stupidest idea that has ever been proposed to combat the addiction crisis," says Lee Zeldin, a Republican congressman representing New York.

Republicans in New York state have called on Biden to direct the Department of Justice to close down the "illegal" injection sites. So far Biden, a co-author of several tough anti-drug measures while a senator, has not offered public support to safe injection sites.

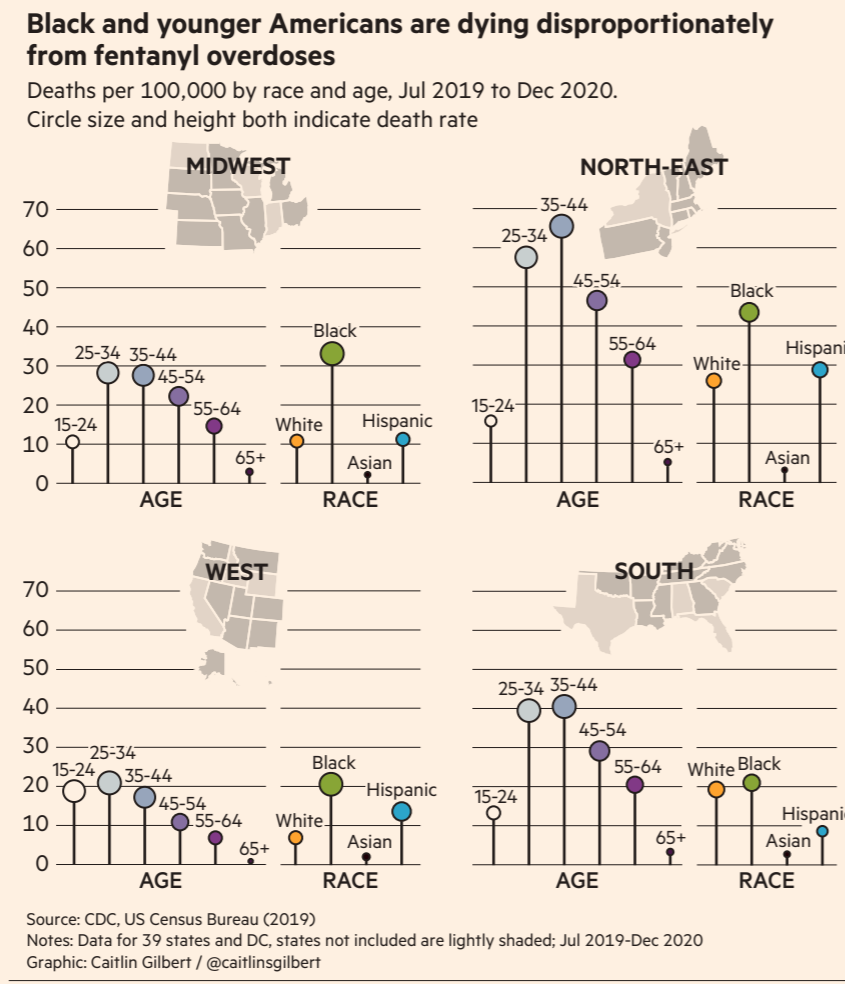
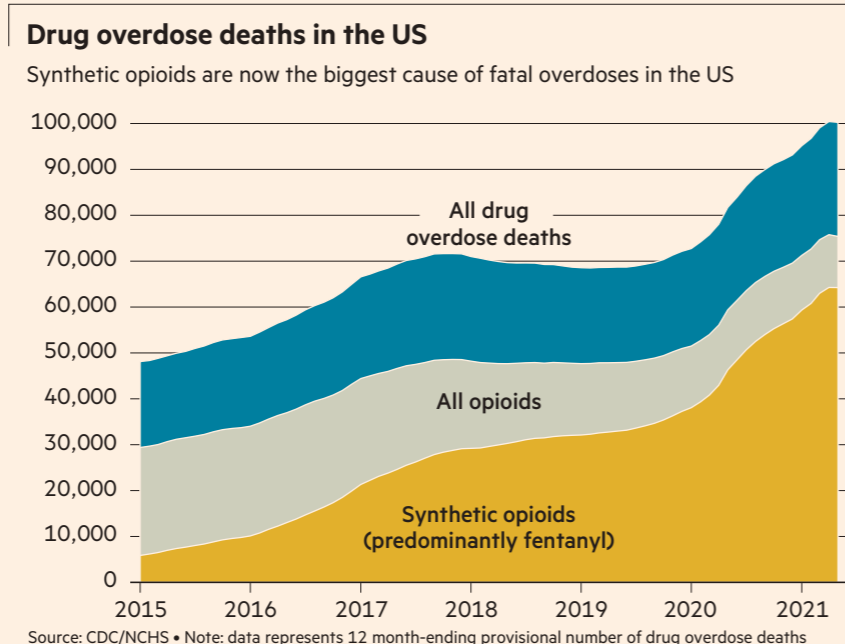
In December, the National Institute on Drug Abuse, a federal government research institute, published a report on supervised injection sites which concluded that they "may represent a novel way of addressing some of the challenges presented by the overdose crisis."

"We have a horrible situation right now, with so many people dying. And we need to do everything that we can to minimise that," says Nora Volkow, director of the NIDA.

She says there needs to be a shift away from the prevalent culture in the US of criminalising the user, which does not deter drug taking. More treatment options and widespread availability of Narcan and fentanyl test strips, she adds, would be important measures. However, Volkow stops short of advocating safe injection sites, saying further study of any pilot schemes is needed.

Advocates disagree, saying that studies of similar sites opened in Switzerland and Australia more than two decades ago provide that research. But they are hopeful that reform is on the way.

"In the Biden administration you've seen a little more understanding and embracing of harm reduction approaches than we have ever had in the country," says Prevention Point's Benítez. "I think we are just now getting a cultural shift and it's looking like policy changes are coming down the road."



Source: CDC, US Census Bureau (2019)  
Notes: Data for 39 states and DC, states not included are lightly shaded; Jul 2019-Dec 2020  
Graphic: Caitlin Gilbert / @caitlingilbert



# FINANCIAL TIMES

'Without fear and without favour'

WEDNESDAY 5 JANUARY 2022

## Natural gas can only be 'green' for now

European proposals are right to add strict conditions on the fuel

The purpose of the European Commission's green taxonomy is clear. To hit its ambitious climate goals — reaching net zero greenhouse gas emissions by 2050 — the EU needs to mobilise a flood of capital to finance the necessary investment, funnelling bank loans, bond investors and stock markets towards environmentally friendly "green" technologies and away from unfriendly "brown" ones. Where best to draw the line, however, is far less straightforward. The scale of the task demands a radical approach; to meet its goals the EU must start rapidly phasing out fossil fuels now. But it also requires a recognition of just how difficult it will be to deploy sufficient renewable energy.

Including natural gas as a "transitional fuel" is justified, but only temporarily and with strict conditions. Partly the reasoning for labelling the fossil fuel as "green", in a proposal published at the new year, is political. The commission anticipates the need for a grand bargain between the nuclear-dependent France and more coal-reliant countries in the east, which will need natural gas to transition away from the black fuel, as well as Germany, where scepticism of nuclear power, which the commission also rightly classified as green, is widespread. While the scheme needs only to achieve a qualified majority to pass, the commission does not wish to over-rule any large countries. Pursuing a compromise is the best way to make progress.

Europe must begin moving away from coal immediately, using natural gas as a temporary bridge. Yet around a quarter of the EU's total energy currently comes from gas and, the trade bloc says that, to meet its 2050 target, it will need to reduce emissions by at least 55 per cent by 2050. The commission is therefore right to insist on conditions for any new natural gas infrastructure to genuinely reduce

emissions, rather than to be used as an additional source of power.

Natural gas power plants can qualify for the label in one of two ways. One is if they produce less than 100g of carbon dioxide equivalent for every kilowatt hour of electricity over the project's lifetime — the average carbon intensity of EU energy is 230 grammes of greenhouse gases for every kilowatt hour. The second is if they meet several conditions, including being built before 2030, emitting less than 270g of CO2 per kilowatt hour and not providing a substantial amount of additional electricity capacity compared with the plants they replace. Such conditions mean that gas will need to be combined with carbon capture technology when its role as a "bridge" is over.

These conditions should be tightened in future. The taxonomy must not be rigid and should recognise that instead of a binary distinction between green and brown, climate change mitigation technologies are instead on a spectrum that includes "olive" alongside the bright green and the dark brown. Technological advancement, too, especially in terms of carbon capture and storage could eventually change the justification for some investment projects. EU's policy should keep pace.

Ultimately natural gas is not a green source of energy. Including it on the list — intended to be the international "gold standard" — risks imperilling Europe's climate leadership, emboldening countries elsewhere to continue building new gas plants (South Korea included liquid natural gas in its taxonomy last week). Natural gas does, however, have a temporary role during the transition. Rich, democratic countries must demonstrate how best to get to net zero not only from a technological point of view but also politically, managing and spreading the costs.

## Covid has provided a wake-up call for workers

The pandemic has shifted mindsets if not yet the balance of power

It is often harder to identify tipping points while they are happening than after the fact. But that has not stopped people from questioning whether a lasting shift in the labour market is under way. After 40 years in which capital has had the whip hand over labour, is worker power on the rise?

If so, it would mark a profound change of economic direction for much of the rich world. Since 1985, trade union membership has halved on average across OECD countries, while coverage of collective agreements signed at the national, sector or company level has declined by a third. At the same time, workers have been taking a smaller share of the pie. Real median wage growth has failed to keep pace with productivity growth on average across 24 OECD countries over the past two decades.

But the pandemic has precipitated a shortage of workers in many countries that caught employers off-guard. Migrants have returned to their home countries, older people have retired early, and childcare or health problems have led others to exit the labour market.

Workers have sought to capitalise on their sudden scarcity value. In the US, unionised workers have launched a series of strikes, from John Deere to Kellogg. Workers have also begun trying to organise in low-paid sectors without a history of union presence, from Starbucks to Amazon. In the UK, the proportion of employees who are union members has begun to creep higher after decades of decline. Workers are also finding new ways to fight for what they want. Organise, a UK-based worker campaign platform, now has more than 1m members after growing rapidly through the pandemic.

Policymakers in some countries are trying to help tilt the balance. Joe Biden, US president, has promised to

be "the most pro-union president you've ever seen" and wants to pass legislation to make it easier for them to organise. The European Commission has published draft legislation which it says will put a stop to gig economy companies wrongly classifying people as "self-employed" to avoid giving them worker rights and protections.

Slow-moving demographic factors could contribute too. Some economists believe a global glut of workers in recent decades is set to end as population growth slows and the global share of working-age people begins to shrink. This could bolster wage growth by making staff relatively harder to find.

Alternatively, workers might find their moment of leverage proves short-lived. More jobs and tasks are likely to become susceptible to automation as robotics and artificial intelligence improve. The rise of remote working and crowd platforms, which break jobs into small tasks, could lead to a fresh wave of globalisation that hits white-collar staff in the industrialised world.

Increased use of algorithms to hire, assess and monitor workers is already beginning to feel disempowering for those on the receiving end. Gig workers managed by algorithms have told this news organisation how frustrating it is to be disciplined by machines that cannot be appealed to nor questioned.

Whether or not the balance of power between capital and labour has changed for good, the pandemic has been instructive for both sides. Employers have discovered that staff availability is not a given, but a business risk to mitigate against. Many are paying more attention to recruitment and retention, and not just in the professional world. And a new generation of workers, from shelf stackers to delivery drivers, have learned just how essential they really are.

## Letters

I note that PwC is worried about its ability to recruit and retain the young auditors on whom its business model depends ("Focus on audit failures deters recruits, warns PwC UK boss", Report, December 29).

It blames this on the government and regulators for making critical comments about audit, but the problem is of its own making.

First, the profession continues to insist that audited accounts exist solely for the benefit of the suppliers of capital to companies when it is apparent that the duty of the auditor

should be to society at large. Who wants a job as a servant to capital?

Second, while seeking to reduce their obligations to society auditors have reduced the audit process to a box-ticking process. Who wants a career in box-ticking? Third, despite these reductions in scope that auditors have engineered, they are still found to be substandard at least 30 per cent of the time. Who wants to be trained by those who can't do their jobs?

Fourth, the audit profession is still trying to keep climate and other environmental, social and governance

reporting as far from the numerical dimensions of the financial reporting of profits and losses as it can. Many young people think that auditors are part of the climate change problem and are nowhere near offering solutions, as yet. Who wants to work for an industry perceived to be a climate change denier?

Auditors' problems are of their own making. If they both cleaned up their acts and redefined accounting as a profession that held corporations to account for both the good and harm they do in society then they could

make accounting and audit an engine for change. Their recruitment problem would be solved overnight. Instead they are seen by some as the "whitewashers" of the status quo. No wonder no one wants to work for them. Young people are sending a message to the audit profession. It should listen, take note and change rather than moan.

**Richard Murphy**  
Professor of Accounting Practice, Sheffield University Management School  
Director, Corporate Accountability Network, Ely, Cambridgeshire, UK

## Pragmatism should prevail over principle in Ukraine

In international affairs grand principles only survive as long as they reflect the balance of power. The principle you enunciate in your editorial on Ukraine (FT View, December 30) that "European nations are free to choose their own systems and alliances" has held for just the past 30 years of US global dominance. Indeed, the reason it is confined to Europe is because it suits the US there, but much less so in other parts of the world (Afghanistan, Cuba, Venezuela, Syria . . .).

US dominance is now fading. Ukraine is looking increasingly like a test case where Russia is prepared to fight to prevent closer integration with Nato while the US and its allies are not prepared to go beyond more (so far entirely ineffective) economic sanctions. Time, perhaps, to focus less on grand principle and more on finding a pragmatic way out of a very dangerous crisis (as Biden, to his credit, seems to be doing).

**Sir Anthony Brenton**  
Cambridge, Cambridgeshire, UK

## Putin stand-off may have ramifications for Taiwan

There is a sharp contrast between US president Joe Biden and Vladimir Putin, his Russian counterpart ("A twin-track strategy to deter Putin over Ukraine", FT View, December 30). Biden's skills were developed as a congressional legislator, a job that involved seeking compromise. Putin was trained as a KGB agent developing deception skills.

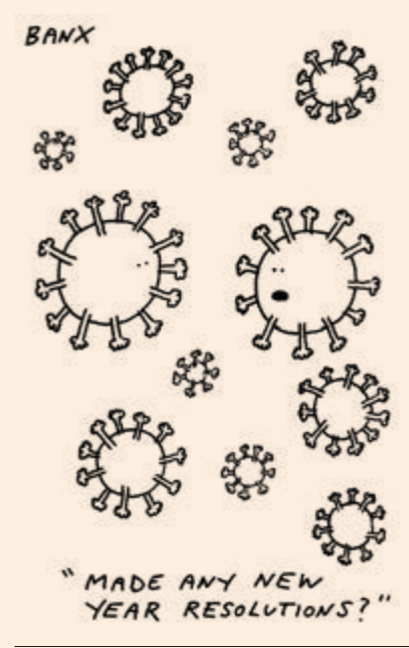
Both come to the meeting in Geneva with leverage. Biden has the sanctions that Putin can't match. Putin has amassed a military force on the Ukraine border that Nato is not prepared to match.

This has the potential to be a dangerous stand-off. If Biden caves in to Putin's demands, Nato and the US become a "paper tiger" with ramifications that could extend to China's provocations over Taiwan. As an autocrat Putin cannot appear weak and expect to remain in power. This confrontation is becoming very risky.

**Ed Houlihan**  
Ridgewood, NJ, US

## Falklands veteran sounds warning on army reforms

So the British army is to alter its recruitment targets in order to address the damaging parts of its male culture, at the behest of MPs ("UK government and generals criticised over efforts to curb harassment in army", Report,



FT.com, November 8). How many of those MPs have any idea of the reality of combat? I suggest they read Siegfried Sassoon's poem *The Kiss* as a reminder.

It is nearly 40 years since I ordered my platoon to fix bayonets before taking Mt. Longdon, in the Falklands war. We may not wish to engage in messy foreign entanglements but we will surely find ourselves dragged into them again (Ukraine perhaps).

It will then be too late to find we have thrown the baby out with the bath water.

**Jonathan Shaw**  
Major General (Retd)  
Winchester, Hampshire, UK

## Echoes of 2008 in today's US inflation outlook

In assessing this year's US inflation outlook, Rana Foroohar adds, as an afterthought, the historic issue of debt and asset bubbles from decades of falling interest rates and unprecedented quantitative easing (Opinion, January 4).

This is rather surprising given today's bubbles are very much more pervasive and debt levels very much higher than they were in 2008.

Whereas in 2008 the bubbles were largely confined to the US housing and credit markets, today they are to be found in almost every corner of the world's asset and debt markets.

One would think that just as the bursting of the 2008 bubbles led to a prolonged period of very low inflation, so too will the bursting of today's more pervasive bubbles when global liquidity dries up or when China's property and credit-led economic growth model runs out of steam.

**Desmond Lachman**  
American Enterprise Institute  
Washington, DC, US

## Labour is finally learning to love Blair again

Sir Tony Blair, as he is now royally designated, has a dictum for winning elections. Before Labour can gain any sort of hearing from British voters, two (pretty low) bars must be passed: the party must be trusted on security, and it must appear to like the country it seeks to govern. Over its past decade marinating in opposition, it has failed on both.

Labour's former prime minister remains despised by some of the party and the wider public — more than half a million people have signed a petition calling for his knighthood to be rescinded — but his textbook on how to win elections is being reopened. In post-Brexit Britain, where identity is potent, the party's challenges over patriotism are more critical than ever.

The ex-leader's influence on another knight, Sir Keir Starmer, is manifestly clear. In a hopey-changey speech yesterday, the opposition leader sought to "celebrate the country we live in". Straight out of Blair's playbook, he name-checked the Queen, football, the Commonwealth and the BBC — with talk of "security" throughout. The only thing missing was a direct reference to The Beatles.

Starmer wielded patriotism as an impetus for change. Invoking Clement Attlee's 1945 election triumph, he argued: "I don't think you cease to be a patriot because you notice your country has flaws. On the contrary, the reason we in this party want to correct those flaws is precisely because we are patriotic." He also

## France's EU presidency must back silver economy

The call by Messrs Mario Draghi and Emmanuel Macron for a new growth strategy under France's EU presidency should be guided by three principles aligned with their point about "demographic evolutions changing the structure of our societies" (Opinion, December 24).

First, there should be an unalterable commitment to the "silver economy" which must be at the heart of the age demographic transformation — so that living to 100 becomes a matter of course. How and when we work, retire, learn and consume must reflect the age demographic character of European society.

Second, reimagining spending on health innovation as an investment, rather than a cost, in order to change the dynamic of health in old age.

From Alzheimer's to osteoporosis, vision and hearing loss to CVD, our greater vulnerability to infections and communicable disease such as flu, shingles, pneumococcal pneumonia and Covid-19 demand innovative treatments and technologies for healthier ageing and health systems' sustainability.

Third, a complete rethinking of how we care for our parents and grandparents as they age. Elder caregiving at home will be a job creator that marries high touch and high tech, where our living rooms become our hospitals and clinics.

European society in the 21st century requires more and different care of the elderly, elevating the job as a central part of healthcare provision.

**Michael W Hodin**  
Chief Executive, Global Coalition on Ageing; Managing Partner, High Lantern Group; Fellow, Harris Manchester College, University of Oxford, UK

## Churchill correctly foresaw the perils of appeasement

Too bad Janan Ganesh views the issue of appeasement as one of mere aesthetics ("Conservatives must grow out of the 'appeasement' trope", Opinion, December 22). He complains that "the strength-at-all-costs school of foreign policy is not just ugly, it is counter-productive".

Appeasement entered the vernacular after the British government chose to sell out Czechoslovakia to Hitler. Churchill correctly predicted the result of appeasing Hitler's demands.

Strength begets peace while weakness begets war, and nothing is as aesthetically ugly as war.

**Michael J Bond**  
Mercer Island, WA, US

## China has a point when it comes to Musk's satellites

I laughed at Elon Musk's reply to China and his analogy with cars on earth ("Musk rejects claims his satellites are squeezing out rivals in space", Report, December 30).

Cars do not rush around the entire circumference of the earth at vast velocities every hour. They are contained within roads and agreed road rules. They travel at low speeds and can easily take avoiding action. A satellite has to maintain a high speed to counteract the gravitational pull of earth. The space station, for example, travels at over 17,000 miles per hour.

So a satellite sweeps out an area of space each hour in a way cars just do not. Crossing these bands are the space equivalent of surface chippings and pheasants, unpredictable bits of space junk, plus whatever space rock wanders our way. If they hit the satellite it will disintegrate due to the velocities — resulting in more space junk travelling in unpredictable orbits.

We have signed up for Musk's Starlink because of the appealingly slow roll out of broadband speeds to rural areas in the UK. Despite this, I have to point out that the regulation of near earth space is long overdue.

The Chinese have a point.  
**Lesley Ellis**  
Tarland, Aberdeenshire, UK

## Lamenting the lost allure of a Rolls-Royce institution

The remarkable reputation of the Foreign Office was not simply that it was a Rolls-Royce institution, but that it was the Rolls-Royce institution of another Rolls-Royce institution: the British civil service ("Austerity drive takes toll on Foreign Office", Report, December 29). Unfortunately, the Foreign, Commonwealth and Development Office (FCDO), like the rest of the civil service, is failing to persuade the brightest graduates to pursue government careers.

The civil service hires only in the final year of university, by which point many ambitious students have already accepted offers following second year internships. Even if applicants were to choose to wait for the civil service, they're likely to be put off by job insecurity, mediocre pay, opaque career progression and potential blame for policy failures.

Ministers ought to more carefully consider whether their reforms are inadvertently binning both the wheat and the chaff.

**Gustav Brincat**  
Third Year LLB Candidate  
London School of Economics, UK

Beyond talking up how much he loves Britain, Starmer's 2022 mission must be to define what Labour wants to do. That cannot be reverting to a centre ground of politics that no longer exists, or opposing whatever Prime Minister Boris Johnson does for the sake of it. Labour may take comfort that it has moved ahead in the polls, yet much of that is thanks to the unpopularity of the government.

If Johnson's gamble on averting further Covid restrictions pays off, the Tories expect to slide back into the lead. Starmer's biggest challenge, however, is his party. Last year, 61 per cent of the general public described themselves as patriotic, but 44 per cent of Labour voters did so versus 88 per cent of Tory voters.

For all his realignment hopes, a ghost still haunts Starmer. He was asked yesterday why he opted not to reference Jeremy Corbyn, his leftwing predecessor who lost two general elections but remains dear to many hearts in the party. "I have always cited Attlee, Wilson and Blair precisely because they won," he curtly noted.

With Corbyn no longer a Labour MP and with no prospect of him returning to the fold, Starmer is attempting to draw a line under his era. Fifteen years after Blair left office, Labour is accepting what his governments achieved — a sure sign that the party may be getting serious about winning elections again.

sebastian.payne@ft.com

# Opinion

## Civil disorder could be America's future

**POLITICS**

**Janan Ganesh**



Some 50 winters ago, the UK home secretary Reginald Maudling gave up on the outright defeat of Irish Republican terrorism. What might be feasible, he said, almost spoofing the British art of managing decline, was to keep the bloodshed down to "acceptable" levels. What was at the time a quite sensational gaffe went unmarked on its semicentennial last month. This was a sheepish admission that he had not been callous or defeatist, but prescient.

A year on from the US Capitol siege, there is talk, even among unexcitable scholars, of a second civil war. That remains an epic stretch. Red and Blue America do not map on to contiguous geographic blocs, as the Confederacy

and the Union did. The central state is unrecognisably stronger than it was in 1861. There is (for now) no single precipitating issue to equal South Carolina's declaration of secession. In the medical parlance of today, what is more plausible than war is disorder of a chronic and endemic nature. What is plausible is an "acceptable" level of violence.

Find this alarmist or much too optimistic, according to taste. But the first of these objections (that January 6 2021, was not so bad, and anyway a one-off) is harder to take seriously. It is often paired with the kind of giggling taunt about liberal hysteria and "Trump Derangement Syndrome" that stopped being conscionable when people died on the Capitol grounds.

There are several reasons to worry about the future. One is the past. It would not take an exotic sequence of events for violence to become a feature of politics in the coming decades. It would just take a regression to, if not quite the mean, then a recurring theme in US history.

In the half-century after the election

of Abraham Lincoln, there were three presidential assassinations and a civil war that claimed almost as many lives as all other US wars combined. Ethnic violence flared between the world wars. The 1960s brought a new round of assassinations and urban riots so bad that some northern cities only half recovered. If anything was aberrant, it

**The most distressing thing about politics is that even those who recognise the threat are lost for an answer**

was not January 6, then, it was the relative calm of recent decades. And even that lull included, in Oklahoma, the nation's worst ever act of domestic terrorism.

It would be easier to relax about these precedents had the siege shocked Republicans into better behaviour over the past year. At first, there were tantalising signs. Kevin McCarthy, who leads the party in the House of Representa-

tives, was full-throated against what he called the "mob". He has since been on a journey. The "majority party", he said this week of the Democrats, are still ducking the "central question" of "how the Capitol was left so unprepared". I suppose that is one definition of the central question.

As bad as it was, the turbulence of the 1920s or 1960s was not aligned to a particular party or candidate. That freed up any politician to confront it without being seen to betray their own side. If that has changed, it is another reason to fear for the tenability of America's civic peace.

But still not the main reason. A year on, the most distressing thing about politics is that even those who recognise the threat are lost for an answer. Voting reform, social media regulation and the better teaching of civics in schools are still put forward as fixes. Each is worthwhile on its own terms.

None can do more than tinker at the edges of the problem. In her data-rich new book, *How Civil Wars Start*, the academic Barbara F Walter sees a US ripe for terrible internal violence. But

no chapter is scarier than the one that tries to hold out hope. The mismatch of disease and treatment is huge, and not through lack of imagination on her part.

All it takes for evil to triumph, Edmund Burke is meant to have said, is that good people do nothing. Even aside from the likely misattribution, the quote is wrong-headed. It implies that cowardice is the eternal problem. More often, it is just a lack of good answers.

A large minority of Americans regard the opposing political party as more or less illegitimate. Few are old enough to remember that politics can be so dangerous as to start total wars. If neither of these issues is unique to the US, they are compounded by one that is: the state has no formal monopoly on the legitimate use of violence.

What exactly is to be done about factors so vast and ingrained? *How a Chronic If Not Existential Level of Violence Starts* is a drab thesis. It is also a grimly credible one.

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## Russian truculence causes Nordic concern

**EUROPE**

**Tony Barber**



In preparation for Vladimir Putin's imminent meeting with Joe Biden, the Kremlin published a set of demands on European security, including a ban on Nato expansion and the deployment of offensive weapons near Russia's border. The backdrop to this démarche was Moscow's intensifying military pressure on Ukraine and its resentment at Nato's admission of 14 central and eastern European countries between 1999 and 2020.

For Sweden and Finland, the Russian demands give extra cause for concern. For 30 years the traditionally neutral duo have drawn close to Nato, without applying to join the US-led alliance. On December 24 Maria Zakharova, the Russian foreign ministry spokeswoman, stated that, if Sweden and Finland were to become Nato members, "this would have serious military and political consequences".

From a Swedish and Finnish point of view, such warnings look disturbingly like an attempt to limit the foreign and security policy choices of democratic, independent states. The question is whether Russia's truculence may backfire by prompting Stockholm and Helsinki one day to seek the safety of formal Nato membership and the alliance's Article 5 mutual defence clause.

For the moment, that seems unlikely. A Finnish government defence report, published in September, kept open the option of applying to Nato. But in reality Finland's political parties are divided on the question and the public shows

**In Putin's eyes, Ukraine is simply not a legitimate state in the way that Sweden and Finland are**

no great enthusiasm for full Nato membership.

It is a similar story in Sweden. In December 2020 a parliamentary majority emerged for the first time in favour of adopting a Finland-style "Nato option". However, when Magdalena Andersson, the Social Democratic prime minister, set out her government's policies on November 30, she said explicitly: "Sweden will not apply for membership of Nato." Andersson nevertheless made clear that "Sweden is deepening its defence co-operation with Finland and other Nordic neighbours, within the EU, with the US and in partnership with Nato".

Even this cautious statement illustrates how far Sweden and Finland have changed their defence and security postures since the cold war. Sweden, neutral since the Napoleonic wars, maintained that stance despite incidents such as the "Whiskey on the Rocks" episode of 1981, when a Soviet Whiskey-class submarine ran aground near the Swedish naval base of Karlskrona.

Finland's neutrality was more restricted, the result of a so-called friendship treaty signed under Soviet pressure in 1948. Acutely aware that their country had formed part of the 19th-century tsarist empire, Finns learned to live with their unusual status, under which they had limited room for manoeuvre in foreign policy but were able to develop into a prosperous democracy, rather than being turned into an eastern European-style communist satellite state.

After the Soviet Union's collapse, Sweden and Finland signed up for Nato's Partnership for Peace programme in 1994, just before they entered the EU. And in 2016 they signed host nation support agreements with Nato, which offer alliance forces access to Swedish and Finnish territory in the event of a military emergency. In short, there may be little need for Sweden and Finland to become full Nato members, because it already seems close to inconceivable that the alliance would stand aside if they came under attack.

What lessons do these arrangements hold for Ukraine? Not many, sadly. In Putin's eyes, Ukraine is simply not a legitimate state in the way Sweden and Finland are. The challenge for Biden is not to bring Ukraine into Nato – an objective which, in any case, many Nato allies are lukewarm about – but how to make Putin accept Ukraine's inalienable right to national independence.

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## We must plan for a permanent pandemic

**ECONOMICS**

**Martin Sandbu**



Two years into the pandemic, much of Europe is holding its breath, hoping Omicron is less virulent than earlier coronavirus variants so that even record infection numbers don't reap the death and sickness rates of earlier waves. In the US, too, Omicron is spreading like wildfire. Leaders seem uncertain about which restrictions to impose, and are scrambling to put in place everything from sufficient testing capacity to support measures for renewed economic disruption.

We have evidently neither controlled the pandemic nor learned to optimise our policy responses, despite two years of experience. There is no excuse for this. Omicron, like any particular mutation, came unannounced. But the arrival of mutations is a predictable – and predicted – outcome of infections continuing to spread, which the world has failed to prevent.

"Zero-Covid" has not worked, because it has not been tried in enough countries. The few governments with an uncompromising repression strategy have largely succeeded in keeping cases at an enviably minimal level. They have suffered neither greater economic hard-

ship nor, over time, more onerous deviations from normal behaviour, than countries permitting higher transmission rates.

Quite the contrary: clamping down harder at the first signs of community contagion makes it possible to ease up sooner and enjoy normal economic activity for longer. South Korea and New Zealand, for example, have over time had lighter restrictions in place than the UK and parts of the US, and even than Sweden for much of the pandemic. The greatest cost of zero-Covid strategies – harsh limits on cross-border travel – are only necessary because partner countries have been more tolerant of contagion. The lack of global commitment may indeed have made zero-Covid unsustainable, though that is hardly a justification for those who actively undermine it.

The priority now is to handle the reality that Covid-19 is here to stay. Given Omicron has caught leaders unprepared, the consequences of a mutation that is both more contagious and more virulent hardly bears thinking about. But the risk of another, potentially more lethal, variant is incontrovertible. Scientists have long told us to expect regular zoonotic contagion. Failing to imagine what that means is no longer forgivable. A whole new order of preparedness is therefore imperative. If waves of coronavirus variants, or new pathogens, are likely to hit us regularly, we need a system of emergency responses entrenched in law and practice. Everyone needs to know these can be trig-



gered at short notice. Our best case future is one where "normality" can be shifted to a crisis regime at the flick of a switch, when contagion intensifies.

Pre-planned emergency responses would specify three things. First, a set of behavioural rules, such as compulsory mask wearing, distancing, remote working and testing. Second, a set of brakes on the activities most conducive to contagion – typically hospitality and live entertainment – possibly differentiated according to participants' likely immunity. Third, predictable economic support for the activities hit by such emergency measures, including furlough and subsidies. Our inspiration should be other types of pre-planned emergency responses: fire and safety drills, military war games, police play-

**Our best case future is one where 'normality' can be shifted to a crisis regime at the flick of a switch**

books for anti-terrorism operations. A more sinister analogy is evacuation advice given historically to the public for bombing raids and nuclear attacks.

The advantages of advance plans for pandemic outbreaks are threefold. First, economic damage is minimised if businesses know exactly which restrictions and support schemes to expect should a pandemic emergency be triggered, and can organise their business model around such an eventuality.

Second, advance planning greatly facilitates government decision-making. A ready set of measures to be "switched on" in a crisis is vastly preferable to reinventing the wheel each time – and more likely to avoid the errors of hurried decision-making. One may even hope that the existence of an emergency regime would focus minds on boosting equipment stores and test, trace and vaccination capacity ahead of time rather than after the fact.

Third, the previous two advantages would reduce the political cost of acting early. Procrastination has been one of our deadliest enemies. What the exam-

ples above show is that it takes more severe restrictions to bring a higher rate of contagion under control. Put differently, we limit social interactions to bring the "R number" below one – but R must be kept below one for longer if the case rate has been allowed to rise too high beforehand.

Misunderstanding this is the original sin of politicians who resist restrictions ostensibly for the sake of freedom or economic growth. Both fare better with the occasional swift imposition of a predictable emergency regime for a few weeks than under our current policy mess. In wars and pandemics, as former US Treasury secretary Tim Geithner said of financial crises, "plan beats no plan". Of course, details should be frequently updated with the latest knowledge, for example, of which restrictions best limit contagious interaction.

Planning for a permanent pandemic, rather than pretending it does not exist, is what learning to live with the virus really means.

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## Theranos verdict is a cautionary tale for failing entrepreneurs

**BUSINESS**

**Brooke Masters**



Make it until you make it" may work in Silicon Valley, but that slogan doesn't fly in federal court.

A San Francisco jury found Theranos founder Elizabeth Holmes guilty on Monday of conspiracy to defraud investors in her blood-testing start-up, and of three counts of wire fraud. The Stanford University dropout wooed investors with promises to revolutionise healthcare by running multiple blood tests from a single drop of blood. But the company's \$9bn valuation collapsed after questions were raised about its technology in 2015.

This verdict will reverberate around the technology and investment communities, as well it should. New US listings raised a record \$316bn last year, but

many of the companies are already struggling to meet sky-high expectations. The Holmes trial provides a stark lesson in what not to do next.

While entrepreneurs routinely promise investors the moon and fall short, Theranos engaged in outright deception. Holmes admitted on the stand that she had doctored documents to affix drug company logos and that her "Edison" machine could perform only 12 kinds of tests, despite her public claims of more than 200.

Fraud trials of US corporate executives have been few and far between in recent years. Some credit the Sarbanes-Oxley corporate accounting reforms, adopted in the wake of a series of scandals in the early 2000s, with improving the accuracy of public company reports. Others argue that the Department of Justice took its eye off the ball on white collar crime, something President Joe Biden has promised to reverse.

Either way, technology companies, particularly those that have not yet sold shares to the public, have historically enjoyed more leeway on their promises, even as valuations soared into the bil-

ions. Now some of those superstars have fallen to earth and a reckoning is coming. Former Nikola chief executive Trevor Milton has been charged with criminal fraud and pleaded not guilty over claims he lied to investors about the electric truck company's technology.

As a rare female founder, and one who deliberately courted comparisons with Apple's Steve Jobs, Holmes won over a

**As a rare female founder, Holmes won over a star-studded board and drew breathless coverage**

star-studded board and drew breathless media coverage of both her meteoric rise and dramatic fall.

But this result was not the product of a hasty rush to judgment: the guilty verdicts came after a 15-week trial and more than 50 hours of deliberation. Theranos employees testified about the gap between her claims and reality, while investors described her mesmer-

ising pitches for finance. The jury was unpersuaded by Holmes' efforts to deflect blame on to others at the company, including former president Ramesh Balwani, whom she accused on the stand of mental and physical abuse.

Holmes is expected to appeal, a process that could take years. But the split verdict will make it harder for her to argue that she was unfairly scapegoated. Jurors comprehensively rejected efforts to hold her responsible for patients who received erroneous blood test results.

They appear to have taken seriously the judge's instruction that the patient charges would require them to find that Holmes had persuaded customers to use her tests instead of a traditional lab. The jurors also failed to reach a verdict on three counts involving investors who put money in even after Holmes rebuffed their requests for additional information.

Some apologists are already saying that Holmes should be spared prison because she has been punished enough. That is ridiculous. Privileged people who use their connections and creden-

tials to steal do just as much damage to our society as those who employ cruder methods. There is also a school of thought that tough sentences for business fraud will deter other entrepreneurs or make it too difficult for talented people to reinvent themselves after failure. This too is overstated.

Investors readily trust people whom they believe in. Just look at WeWork co-founder Adam Neumann, who was forced out as chief executive when the co-working community's initial public offering flopped. He was accused of hubris and hype, but not malfeasance. This week it emerged that he is reinventing himself as an apartment landlord, with plans to shake up rental housing.

Thousands of technology start-ups have impressed investors into parting with their money in recent years and some of those companies will inevitably disappoint. Holmes' conviction is a timely warning that there is a crucial difference between rosy optimism and outright fraud.

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# Lex.

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## Theranos: five lessons for investors

Blood-testing start-up Theranos has become a parable of Silicon Valley over-reach. But the trial of founder Elizabeth Holmes, who has just been found guilty of fraud, contains wider lessons for investors. Here are five:

First, they should apply scientific scepticism to fantastical scientific claims. The starting point should have been Theranos's claims it had cracked the problem of drawing blood for tests from a finger. Capillary blood, unlike venous blood drawn from an arm, contains fluids from tissues and cells that make measurements less accurate. Hype is intrinsic to the culture of Silicon Valley. But overpromising is unacceptable in healthcare, where real human misery may result.

Second, investors must distinguish between protection for IP and secrecy so intense it signals cover-ups. There was no reason why Theranos should not have made its proprietary equipment available for testing by experts, who would have published findings in a peer-reviewed journal. In healthcare, such transparency is essential, though there are concerns that Silicon Valley's paranoid culture is eroding it. John Ioannidis, a Stanford professor and early Theranos sceptic, co-authored a paper showing that more than half of healthcare unicorns have few citations of their work.

The third lesson is that charisma carries some bosses further than their capabilities merit. Holmes's status as a rare female in a male-dominated world combined with her self-belief and charisma to create a "halo" effect that stifled disbelief. Her charm has been compared to that of Bernard Madoff, the US financier who perpetrated the largest Ponzi scheme in history.

Fourth, investors must make up their own minds, discounting celebrity endorsements. Holmes cosied up to establishment titans such as George Shultz, Jim Mattis and Henry Kissinger. She created the illusion that her technology was validated using the logos of pharmaceutical groups such as Pfizer on Theranos documents.

The bigwigs gulled by Holmes avoid a portion of hindsight blame by virtue of her penchant for fraud, but there was also glaring illogicality. This was to assume big breakthroughs are as likely

in the intractable physical world – in this case, blood testing – as they are in manipulable cyber space.

The fifth lesson is that a proposition that seems too good to be true generally will be.

## China algos: power sauce

Recommendation algorithms define our online reality. They show us information and products relating to our interests on US-based websites such as Google and Amazon.

The technology, often so prescient it borders on creepy, has made Chinese counterparts very profitable too. Cue tougher scrutiny from a state intent on trust busting – and controlling citizens's access to news and opinions.

The algorithms, the "secret sauce" of many tech businesses, are just one target of China's latest crackdown on business. Regulators want full disclosure of how tech groups crunch big data and users' viewing histories to show them products or content.

Potential state interference in algorithms poses a bigger threat to business models than recent security reviews for techs hoping to list overseas. Ad sales, locally called "online marketing services", are a core revenue stream for tech groups. They typically account for a substantial portion of turnover, regardless of core business. Tencent, for example, got almost a fifth of its total revenues from ads in 2020 despite its main business being gaming. Ad sales directly correlate to how many users stay on-site, and for how long they do so.

That sets techs up for conflict with regulators who want to dilute algorithms they blame for internet addiction and online overspending. News organisations will also face tougher scrutiny for how they channel eyeballs. Regulators will require websites to allow users to switch off algorithmic recommendations.

Watchdogs have set themselves a complicated task, requiring extensive security assessments and inspection of code. Techs face losing competitive edge if their proprietary technology is tweaked or their algos leaked to rivals.

Web users could find officialdom has even more access to their personal data. By seizing control of algorithms,

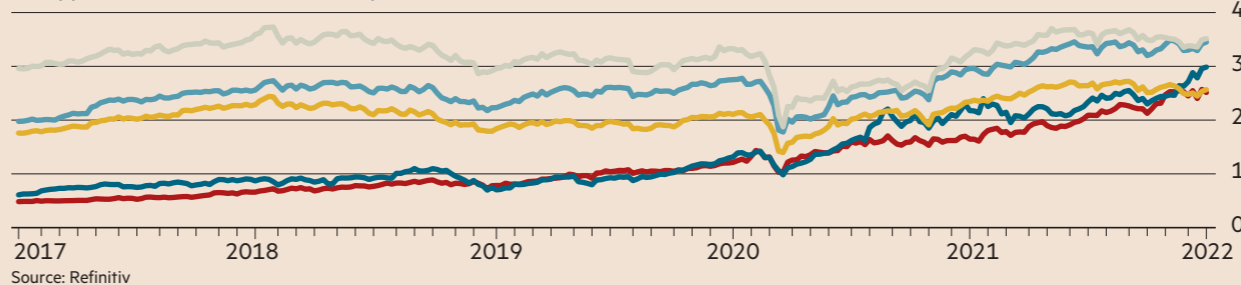
## Apple: 3 trillion reasons why

The capitalisation of the smartphone group has now surpassed that of the entire German stock market. Apple's enterprise value growth has also conclusively outstripped that of sales. But the US company plays second fiddle to Samsung in sales volumes.

### Apple is bigger than the German market

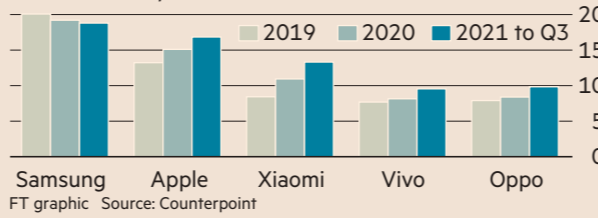
Market value (\$tn)

Apple Microsoft Germany total market index UK total market index France total market index



### Global smartphones sales

Market share by number of units (%)



It took Apple 42 years to become a trillion-dollar company, two years to double it (August 19 2020) and just over 16 months to hit a \$3tn market cap. The fact that the latest leap has occurred without much hardware innovation shows how quickly it has upturned its own business model.

Instead of shares rising after new product releases, the valuation rests on Apple's record 70 per cent gross margins in subscriptions and rapid sales growth in legacy products such as the iPhone. The latest iPhone 13 model comes with fast 5G download speeds but no big design changes.

Yet Apple is the beneficiary of an upgrade cycle regardless. Consumers who hung on to handsets for years, uninspired by previous models, are

ready to switch. Carriers such as AT&T are offering discounts for upgrades. Despite a chip shortage, iPhone sales grew 39 per cent in the past quarter, Apple's fastest-growing unit.

Demand is strong in the US and China. This year, Apple surpassed Vivo to become the top smartphone brand in China for the first time since 2015, according to Counterpoint Research.

There has been a change in the business mix. In the 2018 fiscal year, Apple's "other" category of sales – which included AirPods and Apple Watches – was \$17bn, or 6.5 per cent of sales. In the most recent fiscal year, sales of what is now the "Wearables" category more than doubled, accounting for 10.5 per cent of sales.

What has not changed is Apple's

prodigious cash creation. Free cash flow for the past fiscal year was close to \$93bn. But the aggressive buyback programme has lowered reserves, meaning the gap between enterprise value and market cap has narrowed.

Regulation threatens to scupper the next trillion-dollar price jump. In the UK, the antitrust body suggests internet users are losing out because of Apple and Google's ecosystem duopoly. Apple has already dropped app store fees in the US. In China, it is contorting itself to avoid fights.

New products should help to distract from such concerns. Apple is expected to release its first artificial reality headset this year. In the metaverse, a \$4tn valuation could already be on the horizon.

pruned the number of outlets from 11,355 in 2012 to 6,965 last October.

Rather than maintaining pricey bricks and mortar in sparsely populated spots, they can share the load. For example, at one hub, the big five banks each man the fort one day a week. Business is small and basic: two-fifths of all transactions are deposits. Profits would be equally diminutive.

Some carp that hubs allow banks to weasel out of their duty to ensure accessibility for all customers. But other utilities join forces. Consider phone masts. Vodafone pencilled in cash flow benefits of €800m over 10 years from its 2019 network-sharing agreement with Telecom Italia.

But it is getting tougher for banks to justify cross subsidies for Cinderella services such as branches. Online

fintechs are offering more services to customers for free, piling pressure on banks to make their offerings more attractive. Witness, for instance, the withdrawal of US banks from charging overdraft fees, an income stream that bolsters low-cost checking accounts.

Retail banks, and their regulators, need to rethink business models. This is not just because of competition from upstarts. Cash is in abeyance, used in just 13 per cent of UK point of sale transactions in 2020, according to FIS/Worldpay, and less than a tenth in Sweden, Hong Kong and Australia.

Digital wallets and schemes like "buy now, pay later" are grabbing market share. High streets themselves are in decline. Banking hubs are not problem-free. But they represent a useful short-term solution.

Beijing may have found the most effective way yet to tighten its grip over its tech giants, and its citizens too.

## UK retail banks: hubba, hubba

The verdict is in: banking hubs are a good thing. Small businesses and retail customers liked pilot schemes where banks pooled resources in remote areas of the UK. Feedback, says Community Access to Cash Pilots, is "staggeringly good". Customers and proponents are calling for hundreds more.

This is helpful for the high street banks. They need a get-out-of-jail-free card. Regulators are on their backs to stop cutting branches. A cull has

## TPG IPO: buyout holdout trails Blackstone

It comes as no surprise that TPG Inc is today worth just a fraction of one-time arch-rival Blackstone. Yesterday, the US private equity group unveiled the initial pricing range for its upcoming float. This implies a market capitalisation of just over \$9bn.

Blackstone's equity value, by contrast, is \$150bn. Much of that can be attributed to the chasm in assets, which the House of Schwarzman has gathered assiduously. It now manages about \$730bn, almost seven times more than TPG, co-founded by David Bonderman and Jim Coulter in 1992.

The type of assets matters too. Nascent listed private equity manager Blue Owl best underscores that point. It went public last year via a Spac deal. Today, Blue Owl sports a \$20bn market cap on assets of less than \$100bn.

Unlike TPG, it does not participate in leveraged buyouts. Rather, it buys stakes in other alternative capital managers and makes direct loans into LBOs. Blue Owl's fees are steady and avoid the boom-and-bust cycles that define traditional buyout firms.

TPG's rivals have switched into duller areas of investing in the decade that they have been listed. They have maximised the predictable management fees that public market investors crave. TPG admits that 80 per cent of its assets can still be attributed to conventional private equity. Ironically, it is a great moment for that métier. The gross internal rate of return on TPG's 2019 \$11bn fund exceeds 100 per cent, although net IRR plummets to 55 per cent after fees.

According to the prospectus, realised performance fees of nearly \$750m in the first nine months of 2021, driven by a hot stock market, were six times the figure for the same period in 2020.

TPG's 2021 ratio of "distributable" cash earnings to management fees was seven times. At Blackstone, that ratio was less than two times. TPG has a fine 30-year record of buying companies and selling them for hefty gains.

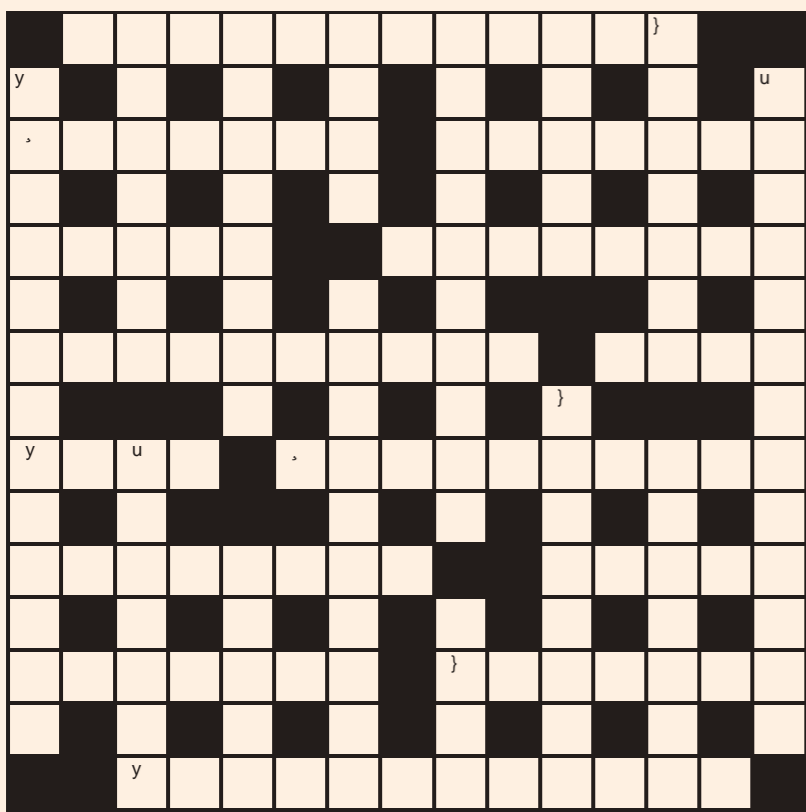
That will not be enough, however, to ensure heavy demand from investors.

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## CROSSWORD

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### ACROSS

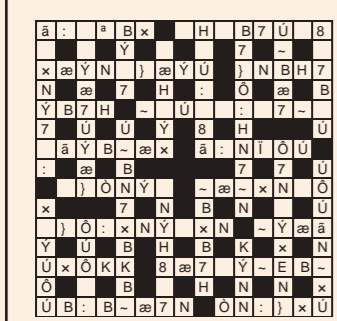
- Beat hopeless types flaming quickly (7-5)
- Sending up children's author (7)
- Packages from Italy are almost back, item in case seen shortly (7)
- Pole, British PM once (5)
- Very occasional wounding of picadors (8)
- Cleared of blame, English XI perhaps admired (10)
- Flag is raised in Spain, primarily (4)
- Father shackled by mother, I solemnly recalled (4)
- Underwear removed including smalls, editor unhappy (7,3)
- At start of winter, perhaps, ten turned blue (8)
- Mount tethered by equestrian I see, from behind (5)
- French castle: discussion on content of its moat? (7)
- Old PM discards that, his awful prize (7)
- Bottle bottle? (5,7)

### DOWN

- On fire, conflagration ultimately out of control – is it? (7)
- The king proving corrupt, daughter given honour (8)
- Country on the way out? (4)
- Earl Grey and others entertained by band – exciting show? (10)
- O Romeo, Romeo! (5)
- Cherry tree's part dug up, as requested (2,5)
- How material may be reinforced, repairing belt with thin tacks (7,6)
- Coins 1, 2 and 5 perhaps? (6,2,5)
- Requiring no further peroxide treatment? I guess that's OK (4,6)
- Sew near hem he's left, after repairing trousers etc (8)
- Vehicle beginning to drive after stop signal – that signal says 'go!' (3,4)
- Nothing in family good – sounding like a swine? (7)
- Conservative and Socialist split (5)
- Repeat the music with gusto, finally (4)

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