FINANCIAL TIMES

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Biden opts for Fed continuity by naming Powell for second term

- Brainard picked as vice-chair
- Prices and jobs pose policy test
- Progressives criticise choice

COLBY SMITH — NEW YORK
JAMES POLITI — WASHINGTON

Joe Biden has nominated Jay Powell to serve a second term as chair of the Federal Reserve, opting for continuity at a delicate moment for the US economy as it grapples with persistently high inflation and a patchy labour market recovery.

Lael Brainard, considered Powell's fiercest competitor for the top job, was selected for the role of vice-chair, a position currently held by Richard Clarida.

Biden said Powell and Brainard had helped "steer us through the worst downturn in modern American history and put us on the path to recovery".

He added: "I'm confident that chair Powell and Dr Brainard's focus on keeping inflation low, prices stable and delivering full employment will make our economy stronger than ever before."

Biden did not appoint anyone to the handful of vacant spots on the Fed board, including vice-chair for supervision, responsible for banking regulation. The White House said he aimed to make those appointments next month.

The decision ends months of speculation over the Biden administration's appetite to reshape the Fed. It comes as the central bank is actively debating how to fine-tune monetary policy in the face of supply-related disruptions and mounting inflationary pressures.

This month the Fed began winding down its monthly $120bn asset purchase programme, with the intention to end the stimulus next summer.

But recent inflation data, which last month showed US consumer price growth jumping at the fastest pace in roughly three decades, have raised the prospect that the Fed will have to discard its patient approach to monetary policy by accelerating the "taper" of the bond-buying programme before raising interest rates multiple times next year.

Powell, 68, was elevated to Fed chair by Donald Trump in 2017 after serving as a governor from 2012 and once worked as a top Treasury official under George HW Bush. He was seen as the least controversial choice for Biden, particularly as Powell's bipartisan support is likely to ease the passage of his confirmation process through the Senate.

Powell's backers also made the case that at a time of pronounced economic uncertainty, a leadership change might generate unnecessary market volatility.

Having led the central bank's pandemic response, Powell won plaudits for preventing more extreme market panic and steering the US economy through one of its worst contractions.

In sticking with Powell, a Republican, Biden disregarded progressives' criticism of the incumbent's record on regulation, which resulted in what they see as a dilution of post-financial crisis rules.

Elizabeth Warren, the leftwing Democratic senator from Massachusetts, said she opposed Powell's renomination and would vote against him. But she backed Biden's nomination of Brainard as vice-chair. "Powell's failures on regulation, climate and ethics make the still-vacant position of vice-chair of supervision critically important," she said.

After the announcement, eurodollar futures, a closely watched market measure of interest rate expectations, indicated that at least three quarter-point interest rate rises are now being fully priced in by December 2022. The two-year Treasury yield rose to its highest level since March 2020.

Additional reporting by Kate Duguid and Lauren Fedor

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Bond bulls hold firm page 10

Jay Powell speaks to the media after Joe Biden, left, unveiled his renomination
Jim Watson/AFP via Getty

> Joe Biden chose wisely in nominating Jay Powell. The elevation of Lael Brainard will reinforce the impression of steadiness at the monetary helm

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Briefing

▸ EY sues over German Wirecard report
The accounting firm has filed a criminal complaint in Munich over a German newspaper's publication of a classified parliamentary report into its work for disgraced payments company Wirecard.— PAGE 6

▸ EU bid to protect banking single market
Brussels has proposed plans to quash the national deals allowing banks outside the EU to sell services into the bloc, dealing a blow to lenders in London that rely on them to ease Brexit's impact.— PAGE 2

▸ Paytm shares plunge for second day
The Indian fintech group has fallen again, leaving its shares 37 per cent lower than the IPO price and wiping $8bn from the company's value in two days of trading.— PAGE 6

▸ Rare challenge to China Covid data trawl
Three top Chinese doctors have openly questioned monitoring of phone location data to trace contacts of those infected, saying it has led to an overuse of medical resources and causes public panic.— PAGE 4

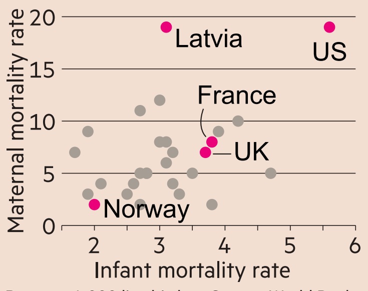
▸ Eni to keep 70% of renewables spin-off
The Italian energy group has said it plans to retain a big stake in the renewable power business it intends to list under the new name of Plenitude in response to pressure to pivot to greener sources.— PAGE 8

▸ Romania parties agree broad coalition
The two big centre-left and centre-right parties have agreed to form a government, ending weeks of paralysis as the country faces a rise in coronavirus cases and steeply climbing energy prices.— PAGE 2

▸ ECB in 'urgent' climate alert to banks
The European Central Bank has told banks to ramp up plans to protect their businesses from climate change risks after finding that no bank under its watch was close to meeting its expectations.— PAGE 2

Datawatch

Deaths in childbirth
Developed countries (2019 or latest)



Rate per 1,000 live births   Source: World Bank

The US had the highest delivery room mortality rate in 2019 when compared with countries with a similar GDP. While infant mortality hit an all-time low that year, with 5.6 deaths per 1,000 live births, it is much higher than France and the UK

Chinese ban sparks race to relocate crypto miners

Now might be a good time to buy an Antminer S19. Data analysis by the FT since China's ban on cryptocurrency mining has shown the price of the machine popular with industrial miners fell by more than 40 per cent. Fourteen of the biggest mining companies have moved 2m machines out of China, with the lion's share going to Canada, the US, Kazakhstan and Russia. But older machines have gone to Paraguay or Venezuela, where electricity is cheaper.

Mining boom ▸ PAGE 9

Artwork by Kapoor and Bailey sold for millions as NFTs without consent

CRISTINA CRIDDLE — LONDON

Star Wars Stormtrooper helmets by artists including Sir Anish Kapoor and David Bailey have been photographed and turned into non-fungible tokens and sold for millions of pounds without their consent.

Curator Ben Moore took photographs of some of the helmets from a project called Art Wars, created by more than 300 artists since 2013, and sold them for cryptocurrency as NFTs on the trading platform OpenSea yesterday.

More than 1,600 ethereum (£5m) had been transferred since the collection of 1,138 images was put on sale yesterday. One NFT attributed to Kapoor sold for 1,000 ethereum. Another work attributed to Bailey sold for 120 ethereum.

Around 12 artists are considering legal action against the project, according to legal representatives.

A representative for Bailey said he had not given permission or received any of the proceeds of the sale. They said they would be looking into the matter. Kapoor's team declined to comment.

The Art Wars NFT page on OpenSea was taken down yesterday. OpenSea did not respond to a request for comment.

The dispute highlights the debate around ownership of NFTs. Buyers of NFTs do not own the physical artwork and digital versions are sometimes sold without the original owners' permission, leading to conflict over intellectual property.

Moore sent an email to artists on November 4 informing them of the collection, but some artists' lawyers said the emails went into their junk folders.

Moore did not deny claims he created the NFTs without permission from the artists. "[Art Wars] regrets that some of the artists were taken by surprise, and have since expressed a preference not to be included — of course, we've respected those wishes," he said.

Any artists remaining in the project would "receive royalties in the usual way", he added.

Meanwhile, a recording of Moore on social media yesterday appeared to show him wearing a Stormtrooper helmet, shooting a gun in the air and bragging about making "two mil on NFT".

Artist Helen Downie, who goes by the name Unskilled Worker, is threatening legal action after photographs of two of her helmets were sold as NFTs. "If exploiting artists' IP goes unchallenged, this behaviour will ruin and corrupt what is a truly exciting space for artists and collectors alike," she said.

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World Markets

STOCK MARKETS

	Nov 22	prev	%chg
S&P 500	4708.71	4697.96	0.23
Nasdaq Composite	15940.30	16057.44	-0.73
Dow Jones Ind	35805.93	35601.98	0.57
FTSEurofirst 300	1878.78	1881.74	-0.16
Euro Stoxx 50	4346.16	4356.47	-0.24
FTSE 100	7255.46	7223.57	0.44
FTSE All-Share	4147.35	4135.12	0.30
CAC 40	7105.00	7112.29	-0.10
Xetra Dax	16115.69	16159.97	-0.27
Nikkei	29774.11	29745.87	0.09
Hang Seng	24951.34	25049.97	-0.39
MSCI World $	3219.90	3226.37	-0.20
MSCI EM $	1269.22	1273.87	-0.36
MSCI ACWI $	754.92	756.58	-0.22

CURRENCIES

	Nov 22	prev		Nov 22	prev
$ per €	1.125	1.132	£ per $	0.746	0.743
$ per £	1.340	1.346	€ per £	1.192	1.189
£ per €	0.839	0.841	¥ per €	129.047	128.866
¥ per $	114.745	113.865	£ index	82.148	82.090
¥ per £	153.758	153.250	SFr per £	1.248	1.247
SFr per €	1.048	1.049			
€ per $	0.889	0.884			

COMMODITIES

	Nov 22	prev	%chg
Oil WTI $	76.63	75.94	0.91
Oil Brent $	79.53	78.89	0.81
Gold $	1861.05	1861.10	0.00

INTEREST RATES

	price	yield	chg
US Gov 10 yr	149.19	1.60	0.07
UK Gov 10 yr		0.84	0.05
Ger Gov 10 yr		-0.31	0.04
Jpn Gov 10 yr	115.07	0.07	-0.01
US Gov 30 yr	119.82	1.94	0.04
Ger Gov 2 yr	104.95	-0.75	0.03

	price	prev	chg
Fed Funds Eff	0.08	0.08	0.00
US 3m Bills	0.05	0.05	0.00
Euro Libor 3m	-0.57	-0.57	0.00
UK 3m	0.12	0.11	0.01

Prices are latest for edition   Data provided by Morningstar

A Nikkei Company

Cross-border clampdown

Brussels to curb bank access in blow to UK

Measure to tighten bloc's rules removes post-Brexit cushion for London lenders

LAURA NOONAN — LONDON
SAM FLEMING — BRUSSELS
MARTIN ARNOLD — FRANKFURT

Brussels plans to crack down on a patchwork of national arrangements that allow banks outside the EU to sell services into the bloc, dealing a blow to lenders in London that rely on the arrangements to cushion the impact of Brexit.

The proposal would stop almost all cross-border selling from non-EU countries into the bloc's single market. Banks are keen on cross-border access to the EU because it is cheaper and simpler to do some trade from their main international centres rather than moving capital and staff.

The cross-border clampdown is part of an attempt to streamline how global banks operate in the EU, with Brussels also wanting to give regulators more power to make banks turn some branches into more closely supervised subsidiaries.

It is part of the European Commission's capital requirements directive, which will give a legal basis to the latest global bank capital standards and end discrepancies in what different national regulators allow. It still has to be agreed by Europe's parliament and council.

European Central Bank officials have become concerned about a recent sharp increase in the post-Brexit use of national arrangements and waivers to conduct cross-border business, as banks continued to serve EU clients from London. Cross-border permissions have long been used by banks based in the US, Switzerland and Asia for some of their activities in the EU.

> 'There's obviously been an increasing scepticism about services that are provided from the UK'

Edouard Fernandez-Bollo, who is on the board of the ECB's supervisory arm, warned in September that banks should not use cross-border regimes "to carry out large volumes of activities in the EU in a business-as-usual environment".

"The direction of travel since Brexit has clearly been that the European authorities are looking to get more hands-on supervision and financial services and banking activities inside the EU," said Peter Bevan, a lawyer at Linklaters. "There's obviously been an increasing scepticism about services that are provided from the UK."

The measure put forward by Brussels limits cross-border activity from non-EU countries to "reverse solicitation", where a client approaches a bank without any marketing by the institution.

"Most of western Europe has some kind of cross-border licensing regime," said Caroline Dawson, a lawyer at Clifford Chance. The new measure would "repeal all of them", she said, adding that reverse solicitation was difficult to prove and could not be done at scale.

The national access regimes in Ireland and Luxembourg were among the most flexible in the EU, Dawson said. Luxembourg typically requires a licence only if the provider of a service is physically in the country. Ireland allows most activities on a cross-border basis as long as they do not involve retail clients.

Luxembourg's regulator did not reply to a request for comment. Ireland's central bank said it was "reviewing all aspects" of the EU banking package.

The Swiss Bankers Association said cross-border market access into the EU contributed to open and integrated markets.

The European Commission declined to comment.

Power deal

Rival parties in Romania agree to form coalition after deadlock

MARTON DUNAI — BUDAPEST

Romania's two largest political parties yesterday agreed to form a broad coalition government, ending weeks of political paralysis as the country faced an upswing in coronavirus cases and surging energy prices.

Nicolae Ciuca, a 54-year-old former army general, has been designated as prime minister to head a coalition of the centre-right National Liberal Party (PNL) together with its largest rival, the centre-left Social Democrats (PSD).

Along with the ethnic Hungarian party UMDR, the trio will hold a two-thirds majority in Parliament. The deal is expected to win approval in a parliamentary confidence vote on Thursday.

Romania has had some of the highest infection and death rates in the world for weeks, putting immense strain on its hospitals, as vaccine take-up rates lagged far behind EU peers.

> 'This is an unnatural alliance between former enemies . . . I doubt it will be long lived'

"Romanians expect us to deliver solutions to fight the impact of pandemic and the energy crisis," Ciuca told reporters yesterday.

He said the government would also focus on a social agenda, with growing demands from the PSD for higher pensions and family allowances after inflation reached multiyear highs.

The liberals and social democrats have agreed to hold the premier's job in rotation, changing in 18 months' time. Elections are due in late 2024.

The PSD will control most of the important ministries in what is widely seen as a political victory. The PNL won elections a year ago but its government imploded after a former junior coalition partner pulled out, leading to weeks of attempts to find a new administration.

"This is an unnatural alliance between former enemies," Ion Ionita, a political columnist at Romanian newspapers Adevarul, told the Financial Times. "It depends how the government performs . . . Romania in the next few months may pass the crisis and we'll see how the government survives in the next year. In any case, I doubt it will be long lived."

Months of wrangling within the ranks of the liberals have cost the party popular support: the most recent poll by CURS found that the Social Democrats was the strongest party, with 38 per cent support, compared with 18 per cent for the Liberals. Asked who was responsible for the crisis in the country, the poll found that more than two-thirds faulted either liberal President Klaus Iohannis or his PNL at least to some degree.

"The government is strong enough right now, it has the full support of the president. But both the premier and the liberals are very weak in this government," Ionita said.

The extremist, anti-vaccine AUR party is now the clear third-largest political force in the country, and Ionita said any mismanagement by the next government would probably lead to a further strengthening of the far right.

Parliamentary votes. Law and order

Sweden's populists shift political balance

Wave of gang crime hands party with neo-Nazi roots chance to shape public policies

RICHARD MILNE — STOCKHOLM

Sweden's populist anti-immigration party is talking openly about ways to join or support a potential conservative government and end a decade of political ostracism.

The moves by the Sweden Democrats to create a nascent conservative bloc with two mainstream centre-right parties are changing the balance in the country's politics.

They come as the rival Social Democrats try to stay in power under new leader Magdalena Andersson, who faces a vote tomorrow to try to become Sweden's first female prime minister.

Stefan Lofven resigned this month as prime minister and party leader after losing a parliamentary vote of no confidence.

Long shunned by all other political groups owing to their roots in the neo-Nazi movement, the Sweden Democrats have been brought in from the cold by the centre-right parties as their long-time focus on immigration and law and order has come to dominate the political agenda. Sweden has become a European hotspot for shootings and bombings as part of a gang crime wave.

The Sweden Democrats first entered parliament in 2010 and scored 17.5 per cent in the last elections in 2018, making them the third-largest party.

As the country's political turmoil has increased, they have come closer to their goal of forming a conservative bloc, first teaming up with centre-right parties for a joint immigration policy.

This month, for the first time, they have put forward a joint budget proposal with the two largest centre-right parties, the Moderates and Christian Democrats. Together with another centre-right group, the four parties are one seat short of a majority in parliament.

Mattias Karlsson, the Sweden Democrats' former acting leader and its chief ideologue, told the Financial Times that the party was "quite pragmatic" about gaining influence for its main issues of "national identity, safety and immigration".

He added: "What really matters is what we can get in terms of political content. If we feel we could change society more by being in government we will probably do so. If we believe we could get more by being outside and influencing each budget, then we would. It's not a goal either way."

Pragmatic: Mattias Karlsson. Below, Magdalena Andersson
Mikael Sjoberg/Bloomberg

The joint budget agreement "is another step on the road to normalisation of the Sweden Democrats in party politics. It's easy to forget how controversial they once were," said Nicholas Aylott, associate professor at Sodertorn University.

"Eleven years ago, when the Sweden Democrats first got into parliament, they were utterly ostracised, on both political and personal levels."

Karlsson said the political alignment with the centre-right was "greater than ever" and that the three parties "can talk openly about any topic now".

The Moderates, the largest opposition party, led by Ulf Kristerson, have said they would prefer to govern with other centre-right groups and not have the Sweden Democrats in government.

But the Centre party, one of four nominally centre-right groups, has backed both Lofven and Andersson, leaving the Moderates with little choice other than to cosy up to the Sweden Democrats.

Andersson's talks with the former communists of the Left party broke down yesterday without agreement, leaving her facing two uncertain votes tomorrow: to become prime minister, and pass her budget.

If she fails, the Speaker of the parliament has several options including asking the right to try to form a government or calling extra elections. Elections next September would still have to be held.

Karlsson said he expected the Social Democrats to take a tougher line on crime and immigration under Andersson ahead of elections in an attempt to win back the working class.

"They are going to use this opportunity to go into opposition against themselves," he said.

"There is going to be a lot of crime rules to try to get part of our voters back. But the interesting thing is, the working party has lost their workers."

> 'Eleven years ago, when the Sweden Democrats first got into parliament, they were utterly ostracised'

Sweden has become accustomed to bombings and crimes such as a 14-year-old being shot on Saturday in the central town of Eskilstuna. Rapper Einar, linked to several crime figures and kidnapped by a fellow musician, was recently shot dead in what police described as an execution-like killing.

Karlsson blamed the Social Democrats mostly and the Moderates, in power from 2006-14, for what he called Sweden's "loss of innocence".

He added: "We have accepted more immigrants than we could integrate and in its place an American-inspired gangster culture has taken root."

He said the left preferred to talk about "more teachers, more social workers, and planting more flowers" but the priority should be to tackle the gangs.

"As long as the gangs are still there threatening the social fabric of these areas, you have to go in really hard against them and remove them. And then you go in with social measures."

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European Central Bank

Eurozone lenders told to improve climate change risk plans

LAURA NOONAN — LONDON

The European Central Bank has asked banks to "urgently" improve plans to protect their businesses from climate change risk after a review found widespread shortcomings in lenders' approach to environmental challenges.

The ECB, which has directly supervised the biggest banks across the eurozone for seven years, has completed its first assessment of banks' preparedness to deal with increased climate and environmental risks. It found that no bank under its watch was close to meeting the ECB's expectations.

The central bank said lenders might "eventually" face higher capital demands as it integrated climate risk assessments with its regular work on setting individual banks' capital levels.

The biggest risks to banks comes from exposure to energy companies that do not pivot to more sustainable activities and energy-intensive sectors such as aviation, according to the assessment. Other risks include lending on buildings which are less energy efficient and therefore may have a lower resale value.

Although banks such as HSBC and Bank of America have introduced their own net zero targets, scrutiny has increased in recent years of the sector's lending to carbon-intensive activities.

The ECB's study focused on 112 banks with combined assets of €24tn. Half of those lenders said climate change would have a "material" impact on their businesses over the next three to five years. None of the banks that reported climate risks as "immaterial" had carried out sufficient analysis, wrote Frank Elderson, ECB executive board member and vice-chair of the ECB's supervisory board, in a blog post.

Other shortcomings highlighted by the ECB included a lack of stress testing to see what would happen to banks' businesses in various climate change scenarios, and poor planning for how they should make their business models more resilient in the face of climate change. The banks with the biggest shortcomings have been urged to fix them as part of the ECB's regular supervision.

"Banks urgently need to set ambitious and concrete goals and timelines, including measurable intermediate milestones, to mitigate their exposure to current and future climate and environmental risks," Elderson wrote.

Sasja Beslik, head of sustainability at Denmark's largest pension fund PFA and a prominent environmental, social and governance investor, said he did not expect banks to make "major improvements" in their climate risk management strategies "before they have seen financial losses [from lending to unsustainable industries]".

He added: "Banks are mirroring the real economy; the real economy is not sustainable so the way banks operate is not sustainable."

The ECB said banks' exposure to aviation posed a big threat

The ECB did find some bright spots. Elderson said two-thirds of banks had made "meaningful progress" in factoring climate risk into their lending decisions, by carrying out extra due diligence on borrowers' climate risks or phasing out lending to some of the most exposed industries.

The ECB will publish a report on banks' climate risk disclosures in the first quarter of 2022 and is planning a broader review on banks' strategy, governance and risk management around climate change risk in the first half of next year.

The review will only announce results for the financial system, not for individual lenders.

In the UK, banks last month submitted data for the Bank of England's first climate "stress tests", which the BoE described as "exploratory in nature", with no bearing on capital requirements. Results, which will be presented as aggregate findings for the UK banking system, are scheduled to be published by May.

Powell faces new pressures in second term as Fed chair

Full employment not yet reached at a time of uncomfortably high price rises

COLBY SMITH — NEW YORK
JAMES POLITI — WASHINGTON

Joe Biden's decision yesterday to pick Jay Powell for a second term as chair of the Federal Reserve has long seemed a natural outcome for a president seeking a steady hand at the helm of the US central bank in the face of a number of economic challenges.

But Powell's path to another four-year stint as Fed chair was far from straightforward: he had to overcome a serious challenge from Fed governor Lael Brainard, a trading scandal that has rocked the central bank in recent months, and attacks from progressives over his record on financial regulation.

Powell's passage through the final Senate confirmation process is expected to be smooth, since he has backing from a large number of Democrats and Republicans in the upper chamber.

Nonetheless, he faces significant challenges as he embarks on four more years as America's top monetary policymaker — chiefly, how to manage an economy that is not back to full employment at a time of uncomfortably high inflation.

"If this time next year inflation is a serious problem, the Fed is in a hurry to tighten [monetary policy], and markets are distrustful . . . then Powell's legacy is going to be compromised," said Vincent Reinhart, who worked at the bank for more than 20 years. "In a sense we are going to rewrite his history."

Biden chose Powell, but also tapped Brainard for the vice-chair role, and cast them as a team that would together pull the monetary levers of the US economy.

When Powell was first chosen to lead the Fed in 2018 by Donald Trump, then president, he was seen as an improbable pick — a "historical accident", according to Peter Conti-Brown, a Fed historian at the University of Pennsylvania.

A Republican and lawyer by training without an economics doctorate, Powell ascended to the job only when Trump soured on the sitting chair, Janet Yellen. He was originally appointed by Barack Obama to the Fed's board in 2012, at which point he had not worked in government in the almost two decades since he held a senior Treasury position in George HW Bush's administration.

His renomination by a Democratic president and in the face of progressive opposition is a coup for Powell. "He has shown himself to be a nimble central banker and not tied unduly to dogma or ideology," said Conti-Brown.

The economic collapse caused by the pandemic in 2020 and the policy response that followed cemented Powell's place on the list of celebrated Fed chiefs. "The Fed was at its best in March 2020," said Jeremy Stein, a Harvard academic who was nominated by Obama alongside Powell to serve on the Fed's board of governors in 2011.

"Powell had his Draghi moment and he met it in every way," Stein added, referring to the pivotal point in the eurozone crisis when Mario Draghi, then president of the European Central Bank, pledged to do "whatever it takes" to save the single currency.

As the US shut down in early 2020 and millions of jobs evaporated, the Fed reacted swiftly. Within days it slashed interest rates to zero, intervened aggressively in US government bond markets and unveiled a number of new emergency facilities. "He took our playbook from 2008-09 and he implemented that and doubled down on it," said Donald Kohn, who served as the vice-chair of the Fed in the middle of the 2008 global financial crisis. "He went all-in and invented new things."

A momentous shift in the way in which the central bank thinks about setting monetary policy, which Powell unveiled in August 2020, further underscored the transformational nature of his tenure. Rather than raise interest rates at the first hint of price pressures, as the Fed had done following the global financial crisis, it pledged to run the economy hot in an attempt to produce a more substantial recovery that benefited a broader group of Americans.

In practice, it has meant keeping rates at today's near-zero levels until inflation averages 2 per cent and the Fed achieves maximum employment.

"Jay Powell has framed monetary policy in as inclusive a way as ever in Fed history," said Reinhart, who is now chief economist at Mellon. "That implies that Fed officials are no longer cloistered in the temple. People understand the Fed better and appreciate the Fed more."

But some analysts and former officials warn that Powell may have to burn much of the political capital he has accumulated if inflation is a bigger problem than expected.

"This is one of the most challenging periods for the Fed in decades," said Randall Kroszner, who served as a Fed governor between 2006 and 2009. "There will be extraordinary levels of pressure on both sides: critics will say the Fed is forgetting about its inflation mandate and others will say they are not doing enough to support growth and job creation. We hear both of those criticisms now and that will only intensify."

There are already signs that the Fed could move to tame inflation more quickly than expected, with a top official at the central bank last week opening the door to a quicker wind-down of its bond-buying programme, a possible precursor to earlier interest rate rises.

Alan Blinder, who previously served as vice-chair of the Fed, said that, barring another serious wave of Covid-19 cases in the coming months, the central bank was likely to accelerate the "taper" and raise interest rates sooner.

With a penchant for speaking plainly, Powell has established himself as a different kind of central banker. "He is a better communicator than any Fed chair that I know of," said Claudia Sahm, a former Fed economist and senior fellow at the Jain Family Institute.

Those skills were tested before the pandemic when Trump stepped up his attacks on his own appointee. The former president, who once asked whether Powell or China's Xi Jinping was the bigger enemy to the US, jettisoned the long-held belief that the White House should stay out of monetary policy affairs. He pressed Powell to reverse a series of rate rises over which the chair had presided in 2018 to advance a tightening cycle that started under Yellen.

More recently, progressive Democrats have criticised what they say has been a rolling back of critical post-financial crisis regulations under Powell's leadership, tipping the scale towards looser capital requirements, less arduous stress tests and lighter trading restrictions for the biggest banks.

"With monetary policy, Powell has done an outstanding job in putting the focus on employment, but he has done a sub-par job on actually putting the attention that needs to be there on financial regulation," said Kathryn Judge, a professor at Columbia University with expertise in financial regulation. Elizabeth Warren, the senator from Massachusetts, went so far as to call Powell a "dangerous man".

A trading scandal that erupted in September after senior officials were found to have been active investors last year when the Fed was aggressively propping up financial markets further emboldened his detractors. Two regional bank presidents resigned in the aftermath and Powell moved decisively to tighten restrictions on personal investing, but some Fed watchers warn it will take time for its credibility to fully heal.

In his second term, Powell will advance the central bank's goals with a revamped inner circle of Fed governors. While John Williams, president of the New York Fed, and Brainard as the new vice-chair will remain constants, he loses Richard Clarida and Randal Quarles, the two current vice-chairs. The White House said it would make additional appointments to the Fed board starting next month.

Those roles will prove even more important as the bank embarks on its next phase of tighter monetary policy in what is likely to be a challenging 2022.

See FT View and Markets

Challenges: Jay Powell with Lael Brainard, who has been tapped by President Joe Biden for the vice-chair role at the Fed, below
Zach Gibson/Bloomberg

'He has shown himself to be a nimble central banker and not tied unduly to dogma or ideology'

Emerging markets

Central bank chief warns on inflation threat

BENJAMIN PARKIN — NEW DELHI

Pakistan's central bank governor has warned that emerging markets are vulnerable to a "taper tantrum" style shock if advanced economies do not act sooner to manage rising global inflation.

The comments by Reza Baqir, a former senior IMF official, signal growing unease among developing economy policymakers that central bankers in rich countries are not doing enough to rein in pandemic-era monetary stimulus and combat rising prices.

This will disproportionately hurt developing countries if foreign investors end up dumping emerging and frontier-market assets due to unexpected interest rate rises in advanced economies, Baqir said in an interview with the Financial Times.

"If there's volatility in financial markets because there is a somewhat sudden realignment of expectations of interest rate changes in advanced economies, that volatility will impact emerging markets with high debt and moderate or low levels of reserves more than otherwise," he said.

The State Bank of Pakistan last week raised its benchmark interest rate by 150 basis points, to 8.75 per cent, as the country battles rising inflation, a depreciating currency and a widening current account deficit.

"In Pakistan, we don't have much presence of foreign investors in our local currency markets," he said. "But we could have an impact on the credit, on our sovereign bonds, if fund managers pull out of emerging markets as an asset class."

Central banks are under pressure to wind back stimulus programmes introduced at the height of the coronavirus pandemic, on concerns that easy money was fuelling sustained global inflation.

Policymakers and investors fear that inaction, followed by abrupt tightening, could spark a repeat of the 2013 "taper tantrum" when the US Federal Reserve's signalling of stimulus withdrawal sparked an emerging market sell-off.

'In Pakistan, we don't have much presence of foreign investors in our local currency markets'

Gita Gopinath, IMF chief economist, has warned that low and middle-income countries already weakened by the pandemic "cannot afford" a similar shock.

On Friday, the Fed's vice-chair Richard Clarida said the bank was open to faster tapering of its bond-buying stimulus programme, introduced in the darkest days of the pandemic, due to the "upside risk" to inflation.

Baqir said "gradually central banks around the world are moving towards a realisation that there is a justifiable reason to be proactive about moderating monetary stimulus. For emerging markets with high debt, with reserve levels not where they would like them to be, they don't have the luxury of waiting as much as those central banks that issue hard currencies have."

Some emerging market central banks have been more active on inflation than in advanced economies. Brazil, for example, last month raised interest rates by the most in nearly 20 years — the sixth increase this year — due to inflation concerns. Pakistan was recently reclassified by index provider MSCI from an "emerging" to a "frontier" market, considered less developed or smaller.

Inflation rose to 9.2 per cent in October, adding to pressure on prime minister Imran Khan's government. Imports have also surged, with the current account deficit in the quarter that ended in September rising to \$3.4bn, compared with \$1.9bn in the entire previous financial year ending in July.

Investor unease about a deadlock with the IMF, which suspended a multi-year \$6bn loan agreement, contributed to the fall of the Pakistani rupee to an all-time low of around 175 to the dollar this month.

The IMF yesterday said it had reached a "staff-level" agreement with Pakistan to resume payments, with the next \$1bn tranche now pending approval from the IMF's executive board.

Additional reporting by Farhan Bokhari in Islamabad

Pandemic response

Doctors hit at China's contact tracing

Concern over monitoring of phone location data to tackle Covid-19 spread

SUN YU — SHANGHAI

Three leading Chinese health scholars have challenged government monitoring of mobile phone location data to identify close contacts of Covid-19 cases, in a rare instance of public opposition to the nation's draconian pandemic prevention strategy.

The trio is led by Chen Fujun at Huaxi No 4 Hospital in the southwestern city of Chengdu, which imposes travel restrictions and tests for mobile phone users who strayed within 800m of a confirmed case for more than 10 minutes.

In a letter dated November 8 and seen by the Financial Times, Chen and doctors Li Jiayuan and Wang Chuan wrote that the programme could lead to "an overuse of medical resources, growing public panic and the disruptions of people's normal life and work". "We should consider the sustainability of these measures," they added, suggesting the pandemic may be here to stay.

Public criticism of the government's response has been severely restricted by censorship and fears of reprisals. Some journalists have been jailed for reporting on Beijing's early mishandling of the virus while other critics have been hit by online attacks from nationalists.

The doctors' criticism highlights the growing challenges faced by the Chinese government as it sticks to its "zero Covid" containment strategy despite the highly contagious Delta variant.

Yanzhong Huang, a public health policy expert at the Council on Foreign Relations in New York, said Chengdu's measures were "excessive". The government, he added, seemed to believe that the country's only two options were "zero cases or . . . [a] worst-case scenario where the entire healthcare system is overwhelmed and social stability is undermined".

Chengdu's latest initiative was adopted after a nationwide outbreak that began in late October infected more than 1,000 people in dozens of cities.

Despite having only 33 new cases since the end of last month, Chengdu forced residents, whose phones placed them near confirmed cases, to self-quarantine for three days and pass two virus tests before they could return to normal life.

Within three days of implementing the rules, Chengdu police had identified 82,000 people who they believed had been in the vicinity of just nine people with confirmed Covid infections.

Changsha, capital of central Hunan province, said residents whose phones put them near confirmed cases must take three tests over seven days.

> Doctors fear 'an overuse of medical resources, growing public panic and the disruptions of people's normal life'

Other countries, such as Singapore and South Korea, have used phone data to tackle the virus. But none defined close contacts as broadly as China.

The three Chengdu doctors said local officials should refrain from "inappropriate use of big data" to fight the virus.

The doctors did not respond to requests for comment.

"We would rather mislabel a thousand close contacts than miss a single real case," said a Chengdu public health official, who asked not to be identified.

But people identified by Chengdu's surveillance system are sceptical. Lucy Yang, a Shanghai-based financial consultant, said: "I had a one-day trip to Chengdu on October 22 and the city's first confirmed case during the latest outbreak wasn't until October 28.

"The tracing system clearly has an accuracy problem."

Additional reporting by Tom Mitchell in Singapore

Intellectual property

Tolkien estate conquers books-themed crypto token

JANE CROFT — LONDON

The estate of JRR Tolkien, the author of the Lord of the Rings, has vanquished a cryptocurrency that styled itself as "The One Token That Rules Them All".

The JRR Token cryptocurrency was launched in August, with a website that featured rings, hobbit holes and a wizard with a resemblance to Gandalf.

But the Tolkien estate, which handles the rights to JRR Tolkien's *The Hobbit* and *The Lord of the Rings* fantasy novels, stepped in to lodge a complaint with the World Intellectual Property Organization (WIPO), the global forum for intellectual property policy.

It noted that the cryptocurrency infringed its trademarks. Tolkien's novels have been made into a trilogy of Hollywood films, directed by Peter Jackson and starring Ian McKellen.

Lawyers for Matthew Jensen, JRR Token's Florida-based developer, said that "token" was a generic term, should not be confused with the surname Tolkien, and it did not infringe any intellectual property. But the WIPO administrative panel decision concluded the developer was "aware of Tolkien's works and created a website to trade off the fame of these works".

The Tolkien estate said it had now recovered the JRRToken.com domain name and had obtained the developer's undertaking to stop all operations under the JRR Token name and delete any infringing content from all relevant websites and social media accounts.

Steven Maier at law firm Maier Blackburn, which acted for the JRR Tolkien estate, said this was a "particularly flagrant case of infringement" and added that the estate was "vigilant" about preventing unauthorised parties from taking advantage of the JRR Tolkien name.

The Tolkien estate has sued tourism and merchandise companies for making use of the author's name and literary works, but this is the first time it has taken action against a cryptocurrency.

Parade peril Arrest made after driver kills five

A sport-utility vehicle was driven into a Christmas parade in a suburb of Milwaukee on Sunday, killing at least five people and injuring more than 40 adults and children.

"The scene is still fluid, and the investigation is ongoing," city authorities in Waukesha, Wisconsin, said in a Facebook post, adding that police had apprehended "a person of interest".

At about 4.30pm local time, the suspect drove a red SUV through parade barricades and accelerated into marchers, police chief Dan Thompson had said earlier.

He added that it was not known whether the incident was related to terrorism.

A video posted online showed the SUV bursting through barricades as police appeared to open fire. A separate video showed the vehicle accelerating down the main street into a marching band, mowing down several people as spectators lining the street screamed.

"Today our community faced horror and tragedy in what should have been a community celebration," said Waukesha mayor Shawn Reilly. "I walked in the parade at the beginning. I saw all the happy children sitting on the kerb. I saw all the happy parents behind their children. I can still see the smiling faces."

Local media showed a picture on Twitter of what appeared to be the red SUV, with its bonnet crumpled, parked in a driveway.

Children's Wisconsin, a hospital in Milwaukee, said it was treating 15 patients from the Waukesha incident.

"We saw an SUV cross over, just put the pedal to the metal and just zooming full speed along the parade route," Angelito Tenorio, an alderman in nearby West Allis, told the Milwaukee Journal Sentinel newspaper.

"And then we heard a loud bang, and just deafening cries and screams from people who were struck by the vehicle."

Patrick Temple-West

Red danger: an SUV speeds past spectators moments before ploughing into marchers in the parade
City of Waukesha/Facebook/Reuters

GLOBAL INSIGHT

MEXICO

Christine Murray

López Obrador talks tough on corruption but results are scarce

The former head of Mexico's state oil company, Emilio Lozoya, was extradited from Spain more than a year ago over alleged bribes. But it was only after pictures of him eating in an upmarket Chinese restaurant triggered public outrage last month that prosecutors requested he be put into pre-trial detention.

President Andrés Manuel López Obrador called the lavish dinner "provocation". Lozoya's lawyer did not respond to a request for comment, though local media has reported he denies wrongdoing. But for the government's critics, the saga was illustrative of the Mexican authorities' approach to fighting corruption, a strategy deeply influenced by politics and with little to show for it.

Speaking at the UN this month, López Obrador said that corruption in "all its forms" was "the biggest problem on the planet". He added: "[In Mexico] we've applied the formula of banishing corruption and put the money saved into helping the people."

But analysts say there are few advances back home to shout about. Mexico has long been plagued by corruption, from pay-offs to avoid speeding tickets to multimillion-dollar theft from public works contracts. Mexicans each year pay hundreds of millions of dollars in bribes to public officials for day-to-day paperwork such as starting a company or paying car taxes, statistics body Inegi estimates. Transparency International ranks Mexico in 124th place of 180 countries.

The federal anti-corruption prosecutor had managed to secure only two sentences for offences in more than two-and-a-half years in the job, one expert said.

> 'They don't have a prosecution policy . . . they choose cases for very unclear reasons'

"They don't have a criminal prosecution policy . . . they choose cases for very unclear reasons," said Eduardo Bohórquez, head of Transparency International in Mexico. "That arbitrariness is a bad sign in a prosecutor's office." More worrying is the apparent pattern of exoneration of political allies and the pursuit of government critics and political opponents by both the administration and the nominally independent federal prosecutors.

"Before, corruption wasn't being fought so that people in power could make money illegally," said Miguel Alfonso Meza, a former civil society lawyer who now works in the municipal government of Monterrey, run by an opposition party. "Now, corruption isn't being fought to allow the group in power to consolidate itself but also to hurt democracy and pursue critics."

López Obrador insists corruption is being fought and that more than 200 criminal complaints have been made. "No one is being protected," he said. Mexico's attorney-general's office did not respond to a request for comment.

The president's image of being uninterested in amassing money himself, something even opponents believe is real, gives him credibility with voters on corruption. The problem is that institutions lack the independence or resources to sustain a real anti-corruption fight, say activists.

Thousands of accounts blocked by the Financial Intelligence Unit (UIF) have produced scant results in criminal cases. Earlier this month, Santiago Nieto resigned as its head after criticism of his lavish wedding in Guatemala.

Other oversight bodies such as the Superior Auditor of the Federation have presented far fewer criminal complaints than in previous years during this administration.

López Obrador has also undermined the National Anti-corruption System, which is meant to co-ordinate different institutions, by calling it the "last straw" in a "pretend" anti-corruption fight.

At a press conference last month, the president promised to publish details of those who have been sanctioned or accused of corruption. The subsequent release said thousands of officials had been barred from government and hundreds of criminal complaints had been made, but did not mention a single criminal conviction.

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Latin America

Chilean voters give conservatives an edge ahead of run-off

LUCINDA ELLIOTT — SANTIAGO

Chilean markets were buoyed yesterday after results from the first round of the country's presidential elections showed a slight lead for ultra-conservative José Antonio Kast over his leftist rival Gabriel Boric ahead of a decisive second round of voting next month.

Chile's stock market surged by 9.4 per cent, the biggest single gain since March 2020, as investors welcomed the strong performance by centre-right candidates in the polls. The peso rallied 3.5 per cent against the dollar in early trading, its biggest intraday gain since November 2019. The country's 5-year sovereign bonds tightened 6 basis points to 84bp.

Kast, 55, a former congressman and father of nine, secured 27.9 per cent of the votes in the first round on Sunday, ahead of Boric on 25.8 per cent.

They will be on the ballot when Chileans return to the polls on December 19 for the second round. If the results are similar, the right looks set to outperform the left by a small margin, although the latest opinion polls suggest that the run-off is too close to call.

The elections have been seen as a referendum on the Chilean economic model, which has delivered some of the best growth in Latin America in recent decades but failed to share the benefits widely among the population.

It is the first presidential ballot since the *estallido*, or explosion, of anti-government demonstrations in 2019, triggered by fare increases on the Santiago metro that escalated into anger over high living costs and income inequality.

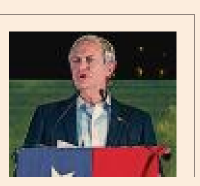
"Those who are poor, die poor. The riches of our country are badly distributed," said Carolina Cavieres, 35, a mother of two who cast her vote on Sunday in La Pintana, a working-class suburb to the south of Santiago.

Outside the polling station, José Peredo, 50, gestured at lines of cramped social housing overlooking a congested highway, saying Chileans were disillusioned because "[the elite] want all the cake for themselves . . . they promised us equality if we became a democracy, and see what we have".

The two leading candidates have offered starkly different visions for the country's future.

Kast has campaigned on a platform of cracking down on crime while defending free markets and traditional values. He has spoken out against immigration, same-sex marriage and abortion and appealed to Chilean voters alienated by the left, promising to restore order and slash taxes under his new nationalist Republican party.

Boric, 35, a congressman and radical former student leader, has pledged to scrap the private pension system and bury the country's "neoliberal" past of market-oriented policies that failed to narrow social divisions. He is running as part of a broad leftwing coalition that includes the Chilean Communist party.



Frontrunner: José Antonio Kast narrowly defeated his leftist rival for the presidency in the first round

Boric, who would become the country's youngest president in more than two centuries if elected, has described the so-called "Chilean miracle" as "just for the outside world, not for us".

After Sunday's first round, the risks of an "interventionist leftwing government have diminished", Nikhil Sanghani, Latin America economist at Capital Economics, said.

Congress is now split with no clear majority secured by either side, which could act as a moderating force.

"Markets' first reaction has certainly been positive. It's less to do with the presidential side and more to do with Congress," Mary-Therese Barton, head of Emerging Debt at Pictet Asset Management, said. She added the results would force Boric to tone down his policies in order for his coalition to capture some of the centre ground.

It is a stark turn around in voter sentiment from May, when millions of Chileans voted overwhelmingly in favour of leftwing independents during elections for the constitutional assembly. That body is tasked with rewriting the current deeply divisive constitution, adopted in 1980 in the middle of General Augusto Pinochet's regime.

The constitution currently favours private enterprise, which supporters say has driven growth and lifted millions out of poverty. But for many it represents a direct link to the dictatorship, despite numerous modifications.

EU economies

Consumer confidence drops on fears over Covid and growth

VALENTINA ROMEI — LONDON

EU consumer confidence has dropped below its pre-pandemic levels for the first time in eight months, reflecting the impact of rising Covid-19 infections, tighter restrictions and concerns over economic growth.

The EU flash consumer confidence indicator for this month fell 2.1 points to minus 8.2, the European Commission said yesterday. This marked the first time confidence has dropped below its pre-pandemic levels since March.

Eurozone confidence dropped 2 points to minus 6.8, a larger fall than the contraction to minus 5.5 forecast by economists polled by Reuters. The figures, based on data collected between November 1 and 22, reflect rising coronavirus cases, with Germany, Austria and Slovakia introducing restrictions on unvaccinated citizens. Austria went into a national lockdown yesterday.

Consumer confidence is closely watched for an indicator on spending, as households worried about jobs or the economy are more likely to save than to spend. The latest figures raise concerns over the strength of the economic rebound in the fourth quarter. Consumers contributed to growth in the second and third quarters, boosting eurozone output to near pre-pandemic levels.

Austria's lockdown, its fourth, is scheduled to last for at least three weeks. The country reported more than 14,000 daily Covid-19 cases on Sunday, up from fewer than 5,000 at the start of the month. Austria last week unveiled plans to make vaccination compulsory which, if they come into force at the earliest in February, could make it the first country in Europe to do so.

Over the weekend, protests broke out in Austria, Italy and Croatia as governments stepped up efforts to curb infections and ease pressures on hospitals.

Tens of thousands marched through the centre of Brussels on Sunday in a protest that turned violent. The demonstrations followed a second night of rioting in the Netherlands on Saturday over the introduction of tighter restrictions.

Supply chain reaction The longer the inventory crisis continues, the more companies will rethink business models ➔ MARKETS INSIGHT

EY launches legal fight over Wirecard leak to newspaper

- Big Four firm files criminal complaint
- Handelsblatt published critical report

OLAF STORBECK — GLADBECK

EY has filed a criminal complaint over a German newspaper's publication of a classified parliamentary report into its work for the disgraced payments company Wirecard.

The criminal complaint was submitted yesterday to Munich prosecutors, the Big Four firm told the Financial Times. Prosecutors confirmed that they had received the complaint.

The highly critical report was written by Martin Wambach, a partner at accounting firm Rödl & Partner, on behalf of the parliamentary inquiry committee into the Wirecard scandal. It highlighted serious shortcomings in EY's auditing work, finding that the firm failed to spot indicators of fraud, did not fully implement professional guidelines and, on key questions, relied on verbal assurances from executives. The report cited more than 150 internal EY documents that were submitted to the committee but were deemed classified under German law.

> 'Handing over of the [parliamentary] report constitutes a violation of the legal process'

A lawsuit from MPs asking the Federal High Court of Justice to allow the publication of an unredacted version of the report was dismissed in August. An appeal against that decision is pending.

On November 11, the financial daily Handelsblatt published the full 168-page document on its website. It argued that the report, which is stamped *"Deutscher Bundestag — Geheim"*, was paid for by taxpayers and its content was of high public interest. Under German law, *"Geheim"* is the second-highest level of secrecy. People who hand over classified documents and are not authorised to do so can face up to three years in jail.

"From EY's point of view, handing over of the report [to Handelsblatt] constitutes a violation of the legal process, violates the highest court's authority and creates a fait accompli," the Big Four firm said.

It argued that the rights of employees mentioned in the report, and whose names were not redacted by Handelsblatt, were violated. Moreover, the publication of the report unduly exposed EY's business secrets, it said.

After the report, which came in two parts, was finished by Wambach in May this year, several newspapers, including the FT, published stories about its content and cited specific parts. A person close to EY told the FT that Handelsblatt's publication of the full document was "a completely different order of magnitude".

EY said its criminal complaint was directed against the "unknown" people who leaked the document and did not target Handelsblatt journalists.

Kay Gottschalk, the former chair of the Wirecard inquiry committee, which dissolved after publishing its report this summer, said he was "puzzled" by EY's criminal complaint. "I cannot imagine that members of the inquiry committee leaked the documents. We often experienced that journalists had access to confidential documents even before they were handed over to the committee," the MP for the rightwing Alternative for Germany party said, stressing that the protection of journalists' sources was of the highest importance.

"Handelsblatt stands by its publication of the Wambach report," the paper's editor, Sebastian Matthes, said, adding that millions of investors who lost money over Wirecard had a "right to learn how this scandal could happen".

New ground rules Hochschild tumbles after Peru threatens to shut down mines

Inmaculada in the southern region of Ayacucho is one of the two Hochschild mines at risk of closure

NEIL HUME AND GIDEON LONG

The market value of Hochschild Mining dropped more than a quarter yesterday after Peru moved to close two of the company's mines on environmental grounds, deepening a clash between the mining industry and the left-leaning government.

Shares in the FTSE 250 company closed 27 per cent down, having initially dropped more than half, following prime minister Mirtha Vasquez's weekend announcement that four mines in the southern Ayacucho region, two of which are owned by Hochschild, would be "closed as soon as possible".

Hochschild said yesterday it would "vigorously defend its position", adding that its mines operated under the "highest environmental standards".

The intervention by the government of President Pedro Castillo will send a chill through the mining sector. The South American country is the world's second-biggest producer of copper and a significant source of gold, silver, zinc and tin.

Anglo American, Newmont, Glencore and Freeport-McMoRan also operate mines in Peru, as do Chinese companies, including MMG and Chinalco, and local producers such as Buenaventura.

"This further increases the . . . geopolitical risk for miners operating in Peru," said Patrick Jones, a JPMorgan analyst. "This presents negative read-across for Anglo American, whose flagship Quellaveco copper project is located in Peru."

Two of the targeted mines, Pallancata and Inmaculada, are owned by Hochschild, which is 38 per cent owned by Peruvian billionaire Eduardo Hochschild, and account for about 80 per cent of the group's annual production of gold and silver.

After announcing the end of "expansion [and] exploration", Vasquez asked miners to remain "calm" and said she was open to dialogue with the industry and would be calling the concerned parties.

Hochschild said it had "not received any formal communication from the government" while Ignacio Bustamante, its chief executive, told the Financial Times he was waiting for a call from Vasquez.

The order from the Peruvian government was made as some rightwing members of Congress are launching an attempt to impeach Castillo. He came to power this year pledging to squeeze more money from Peru's miners and has already proposed "a new tax on profits" for mining companies and "an end to tax breaks".

The mining industry accounts for 60 per cent of export revenue in Peru. Hochschild employs 5,000 people in the country and says its mines support a further 40,000 jobs.

Paytm shares fall 37% from IPO after two days' trading

HUDSON LOCKETT — HONG KONG
BENJAMIN PARKIN — NEW DELHI

Shares in financial services company Paytm plunged for the second day running as traders and bankers blamed one of India's worst market debuts on an overly ambitious valuation target.

The stock of Paytm, which is backed by Japan's SoftBank, China's Ant Group and Alibaba, closed 27 per cent lower following its listing last Thursday and fell another 13 per cent yesterday after a market holiday on Friday.

That brought Paytm about 37 per cent lower than its IPO pricing and wiped about $8bn from the company's market capitalisation in just two days of trading.

Paytm had raised $2.5bn from the IPO, valuing it at about $20bn and lining up a huge payday for its backers. But bankers and brokers familiar with the deal said Paytm's push for a record listing, investor insistence on a high valuation, weak domestic demand and India's strict rules for allocating shares to different classes of investor had combined to ensure a damaging fall.

"Obviously the way the stock behaved . . . was unexpected," Madhur Deora, Paytm's chief financial officer, told the Financial Times. "We're totally sensitive to the fact that some of the shareholders . . . would not have expected this performance either in the share price."

Critics said Paytm had focused too hard on notching a fundraising record, while top backers pushed it to increase its IPO size after filing its draft prospectus in June from about $2.2bn to $2.5bn. "This is a very specific reaction to how this book was allocated and who was in this book," said the head of Asia equity capital markets at a Wall Street bank.

A person close to the company said the deal size was a response to demand from investors and bankers, as well as the regulatory need to reduce stakes of investors including Ant, which sold part of its stake after being hit by Indian curbs on Chinese investment last year.

The banker said it had been a "real stretch" for bookrunners Morgan Stanley, Goldman Sachs, JPMorgan and Citigroup to cover the main institutional portion of the book and that many hedge funds "got more than they bargained for". That over-allocation to institutional investors was compounded by a 10 per cent cap on retail exposure, a near-total absence of Indian mutual funds and weak demand from wealthy individuals.

Santander aims to outpace European peers' poor US performance

INSIDE BUSINESS
FINANCE

Patrick Jenkins

Jamie Dimon was in London last week. Among other priorities, JPMorgan's chief executive was giving a shot in the arm to the US banking giant's latest expansion drive — the rollout of its retail banking brand in the UK, via an online-only initiative.

JP's swaggering global ambitions contrast starkly with the diminished outlook of many European banks. Over recent months, the roll-call of lenders from across the continent opting to give up on US operations has lengthened.

Last week, it emerged that France's BNP was seeking to sell San Francisco-based Bank of the West. A year ago Spain's BBVA sold its American unit to PNC. Over the summer, HSBC divested the bulk of its US operations to Citizens.

Citizens itself was owned by RBS (now NatWest) for almost 30 years until the UK group's collapse and bailout forced a sale six years ago.

Independence from a foreign owner, especially a weak one, has proved a liberating experience. With a stock market listing of its own, Citizens, under the leadership of Bruce Van Saun (previously RBS's finance director), has been able to attract high-quality bankers who wouldn't have considered working for a subsidiary of a British group.

It is partly about rewards. Stock-based remuneration is based on a more direct influence on the fortunes of the business. There is no risk of losing out on capital allocation from headquarters in London or Edinburgh.

At the same time Citizens has engaged in targeted expansion — into commercial banking, M&A and basic investment banking services. As a whole it has added up to a return on tangible common equity — a benchmark of profitability — of close to 14 per cent at the last count, more than double the tally when it was spun out of RBS and not far off JPMorgan's 18 per cent.

The fortunes of US operations under European ownership have been less inspiring. Many foreign banks have been drawn by the size of the US market and margins that tend to be fatter than back home, not to mention an economy that has looked in better fettle for years.

> Santander's US operation has quietly overtaken Spain, Brazil and the UK to become the top profit contributor to the group

But none has been able to claim the scale necessary to mount a credible business to compete with nationwide players such as JPMorgan or Bank of America. The advent of fintechs has added to the competitive challenge. Regulatory compliance costs — far higher post-2008 — have, meanwhile, proved disproportionately burdensome for smaller groups.

The net result? European banks have underperformed, having attracted second-tier staff, second-rate clients and what a former bank boss calls a "serious negative selection issue" on strategy.

For one European lender, that is almost part of the strategy. Santander's subprime car loans business, Scusa, has grown dramatically in recent years, picking up customers spurned by mainstream banks. An added boost has come thanks to the cash windfalls distributed as part of the US Covid-19 relief programme, which have prompted millions to splash out on items including cars.

Santander's US operation has quietly overtaken the likes of Spain, Brazil and the UK to become the top profit contributor to the group: it generated €2.8bn of pre-tax profit out of a group-wide €11.4bn in the first nine months of the year. As things stand, the Spanish group looks like a significant exception to the broader European trend of failure and withdrawal, with plans instead to expand further.

Some rivals argue that problems are brewing. At the peak of a debt cycle, there is a danger that defaults, particularly among subprime borrowers, will shoot up. The subprime mortgage crisis of 2007-8 showed the potential dangers. The group was last year forced to strike a $550m settlement with US authorities after being accused of aggressive lending practices, though current management point to reformed practices.

Another criticism made of Santander's US operation is that it comprises a hotchpotch of units: in addition to the subprime consumer lender and an investment banking arm, it owns a wealth manager in Miami and a low-profit retail banking operation in Boston. The synergies should, though, be boosted in the coming months: a plan to buy out the listed 20 per cent minority of the consumer lender will allow deposits to be recycled freely to back the car loans business. Ana Botín, Santander's hard-charging executive chair, began her career as a banker at JPMorgan. Whether long term she can really buck European banks' pattern of US ignominy, and emulate a little of Jamie Dimon's success, is an open question.

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COMPANIES & MARKETS

Oil & gas

Eni rebrands its renewables unit ahead of IPO

Italian group to retain 70% stake in Plenitude after flotation next year

TOM WILSON — LONDON

Eni plans to retain a 70 per cent stake in the retail and renewable power business it intends to list next year under the new name of Plenitude.

The planned initial public offering of the Italian group's retail, renewables and mobility units is the biggest structural move yet by an oil and gas major in response to pressure to reduce carbon emissions and pivot to greener forms of energy.

Claudio Descalzi, Eni's chief executive, said yesterday that the new business, which aims to deliver fully decarbonised energy products to all its customers by 2040, would be able to expand faster on its own.

"This will free up more cash for Plenitude, the new company, to develop renewables by itself and leave us more space, more free cash flow to invest in the transformation of the company," he told the Financial Times.

Eni plans to sell up to 30 per cent of the new company, Descalzi said, in a process to be run by Goldman Sachs, Credit Suisse and Italian investment bank Mediobanca.

Oil and gas producers, which face a higher cost of capital than pure renewables businesses, are under pressure to invest more in clean energy while still generating profits from legacy assets to pay shareholders and fund the transition.

So far most competitors, including Shell and BP, have argued that they will be better able to succeed as integrated companies.

Eni predicts that under the new structure Plenitude will have access to cheaper funding, but still benefit from the continued integration of the renewables division and the gas and power retail business. The name was chosen to represent the new company's "integrated, diverse proposition".

The three divisions, dominated by retail business Eni gas e luce, which has about 10m customers, is forecast to make combined earnings before interest, tax, depreciation and amortisation of €600m this year. Eni hopes that will rise to €1.3bn by 2025.

> 'This will free up more cash for Plenitude . . . and leave us more space, more free cash flow'

Descalzi would not speculate on a potential valuation for the new company because of the different multiples the market tended to apply to renewables companies compared with traditional retail businesses.

RBC Capital Markets has calculated a possible valuation of "close to €10bn" based on a figure roughly eight times the 2025 earnings forecast. Eni said Plenitude would have net debt of about zero at the start of 2022 and invest an average of €1.8bn a year until 2025, with 80 per cent of capital expenditure focused on renewable power generation.

Eni's renewable power arm at present has almost 2GW of installed capacity. The company expects that to grow to 6GW by 2025 and 15GW by 2030. BP, in comparison, aims to have 20GW of renewable energy capacity by 2025 and 50GW by 2030.

As part of broader efforts to transform Eni, Descalzi said he was also considering an initial public offering for Norway's Var Energi, in which Eni holds a 70 per cent stake.

Arm's reach Regulators pore over Nvidia takeover of chip designer

RICHARD WATERS

Nvidia's acquisition of the UK chip design company Arm from SoftBank has provoked serious opposition on both sides of the Atlantic.

The deal, first announced in September 2020, has been bogged down in regulatory reviews around the world and is set to miss its initial timeframe to close by March 2022.

Nvidia's financial results were overshadowed last week by the deal after the UK government ordered an in-depth investigation on competition and national security grounds, which could take several months.

Why do regulators dislike this deal?

Arm holds an unusual position in the global tech industry. It does not make chips itself, but its designs formed the basic blueprints for 25bn chips made by other companies last year.

Some competitors have complained that after a takeover, Nvidia would be able to limit their access to Arm's designs in favour of its own products.

The deal also landed at a moment when competition regulators globally had become far more concerned about the emergence of a new generation of tech monopolies.

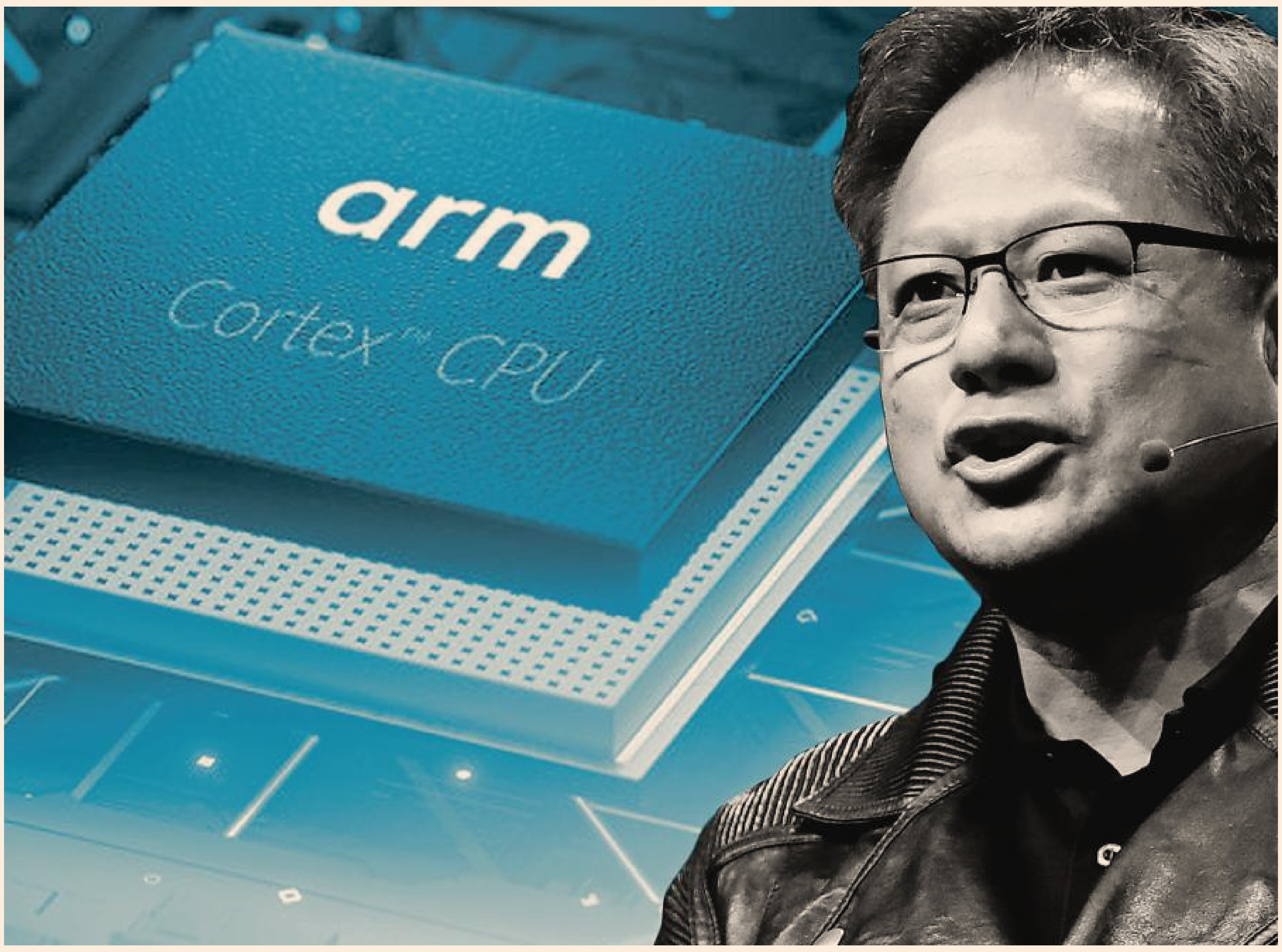
Announcing an in-depth EU investigation into the deal in late October, Margrethe Vestager, the bloc's competition commissioner, warned that it "could lead to restricted or degraded access to Arm's IP", distorting many chip markets. Arm's fortunes rest on near-total dominance in smartphone processors, but it is the risk of Nvidia using the deal to corner newer markets, such as data centre servers and automobiles, that has worried regulators.

In addition to the UK and EU investigations, Nvidia revealed that the US Federal Trade Commission had its own worries, while a formal Chinese review is yet to even begin.

Why is the UK especially against it?

While other regulators have focused exclusively on competition issues, the UK has added national security to its list of worries. Arm's headquarters and much of its research activities are in the UK, potentially making it an important part of any industrial strategy to build a stronger national technology base.

Post-Brexit politics have also come into play. SoftBank stepped in to buy Arm less than a month after the Brexit vote in 2016, taking advantage of an 11 per cent downturn in the pound against the US dollar. The deal was depicted at the time as a vote of confidence in Britain's competitiveness and SoftBank made a five-year commitment — now expired — to maintain Arm's UK presence and boost its local hiring.



The scrutiny of regulators across the world shows how far Nvidia's chief executive Jensen Huang underestimated the potential resistance to his company's deal
FT montage; EPA

The potential sale to a US company comes at a time when other significant UK companies have fallen to foreign takeovers and has added to worries about waning corporate influence — though Nvidia has made promises of its own to back Arm's UK operations and to keep investing in the country.

Can Nvidia answer these worries?

Nvidia has tried to win over the rest of the tech industry with promises to inject cash and some of its own technology into Arm. That could give Arm a stronger foothold in new markets, such as AI, and make technology developed inside Nvidia more widely available.

The US company has also offered a guarantee that it will not block other companies from licensing Arm's designs. The offer has fallen on deaf ears, with both the EU and UK ruling it inadequate. The UK's Competition and Markets Authority has said "behavioural" remedies such as this, which are designed to limit a company's future conduct, are hard to police and enforce, and it doubted that any guarantees Nvidia offered would be adequate.

This scrutiny shows how far Nvidia's chief executive, Jensen Huang, underestimated the potential resistance to the deal. He argued at the outset that Nvidia's own economic self-interest in maintaining Arm's existing licensing business should provide reassurance enough that it would not try to block rivals from using Arm's designs. He also tried to sound magnanimous about leaving plenty of room for competitors, asserting "there are so many different segments to the marketplace, there is no way one company can address it all". That has not stopped rivals worrying that Nvidia will try to grab the juiciest parts of the market for itself.

Can the deal still get done?

Yes, but the odds are lengthening. Nvidia could try to offer stronger guarantees to reduce the risk that it will hamper competition, although the CMA's aversion to behavioural remedies will be hard to overcome. The alternative — structural remedies that would involve carving out parts of Arm's IP and ringfencing it from Nvidia's control — would be hard to devise without undermining the value of buying the company in the first place.

> The cash and stock offer, worth up to $38.5bn to SoftBank at the outset, is currently worth $82bn

It is possible that the sabre-rattling from regulators will stop short of actually trying to block the deal. For the CMA, in particular, the stakes are high. A big win soon after Brexit would burnish its authority as a new power on the global antitrust stage, though a big loss would be devastating.

When might they call it a day?

Nvidia first said it could take 18 months, until March, to complete the deal and has since warned that it is likely to take even longer. As long as Nvidia and SoftBank believe they have a case that could sway regulators — which both have claimed recently — then they could stretch it out for many more months.

SoftBank has a strong incentive to push for the deal until the very last moment. It stands to make a huge profit, thanks to a leap in Nvidia's share price since the deal was announced. The cash and stock offer, worth up to $38.5bn to SoftBank at the outset, is currently worth $82bn.

One reason to throw in the towel earlier would be if Arm's business suffered from the uncertainty, particularly if it started to lose key staff. Nvidia last year earmarked $1.5bn to use as stock awards for Arm's staff once a deal is done, but mounting opposition to the deal has made that look more remote. Arm put up some of its own money to try to keep its employees from quitting, a significant factor behind the $200m loss suffered in its last fiscal year.

What if the deal is scrapped?

SoftBank revealed its interest in selling Arm when it approached Nvidia about a possible deal. That makes an alternative exit seem likely if the deal falls through.

The deal has shone a spotlight on the unique position Arm plays in the chip industry. Arm may also be about to see a take-off in its business, after a period of heavy investment under SoftBank to extend its reach into markets beyond smartphones. Revenue jumped 61 per cent in the first six months of this year.

Other chipmakers would be likely to stir up the same regulatory backlash as Nvidia if they tried to buy Arm. That makes a stock market listing the most likely alternative, with the UK a favoured venue among those who see Arm as a national tech champion. But a return to the London listing it had before the SoftBank deal might not be the preferred outcome for its current owners: after all, Wall Street puts much higher valuations on tech companies.

Reputational damage. Sanctions risk

Failure to sell Myanmar ventures leaves global groups facing investor unrest

Japanese businesses among those struggling to find buyers for military-linked assets

EDWARD WHITE — ROTORUA
JOHN REED — BANGKOK
MERCEDES RUEHL — SINGAPORE

International companies are struggling to extricate themselves from military-linked investments in Myanmar following a coup in February and face the risk of reputational damage and exposure to sanctions breaches if they fail to do so. But many are finding that exiting is proving easier pledged than done.

Japanese, South Korean and Singaporean companies are among those facing the prospect of being dumped by international fund portfolios for failing to sever business links with military-controlled business partners.

But nine months after the overthrow of Aung San Suu Kyi's government, international businesses have found few keen buyers for their local stakes and the country is suffering a deep economic slump and post-coup civil unrest.

"Exiting relationships with the Myanmar military is clearly more challenging since the attempted coup, but businesses must responsibly disengage, as this will save Myanmar people's lives while ending complicity in the military's atrocities," said Yadanar Maung, of campaign group Justice for Myanmar.

Military forces have killed more than 1,270 people and arrested more than 10,000, according to the Assistance Association for Political Prisoners, a human rights group, and the junta is using brutal means to crush an insurgency in north-western Myanmar.

The US, EU, UK and Canada have imposed sanctions against a number of military companies or individuals.

In the immediate aftermath of the coup, global funds sought to rid their portfolios of companies with business ventures linked to the military junta.

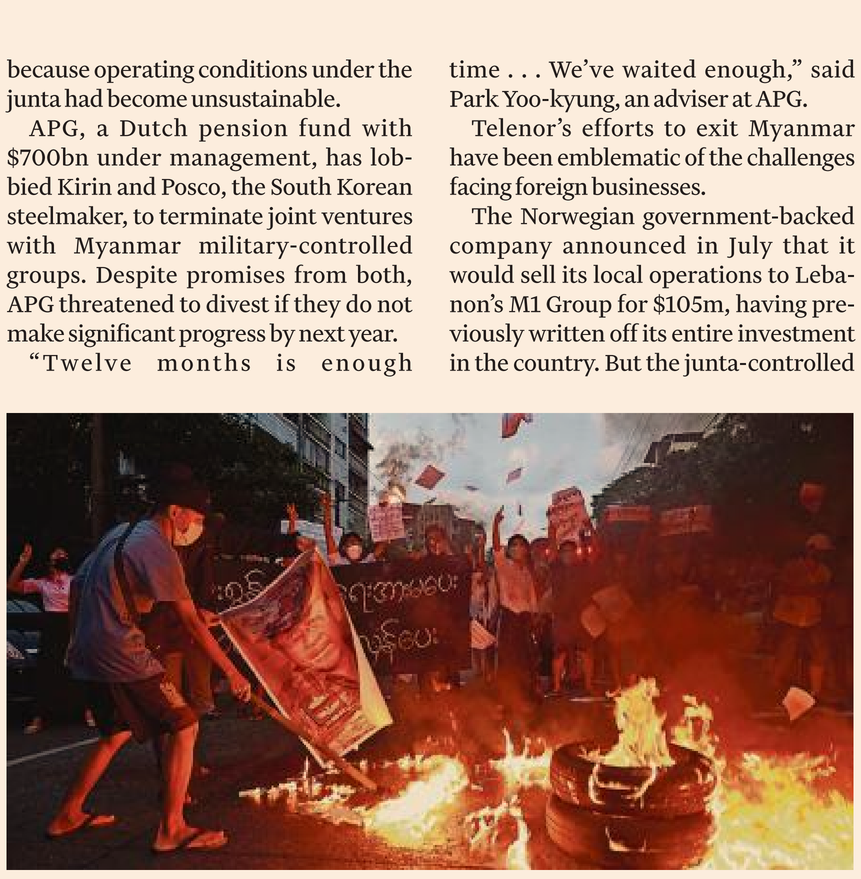
Companies that were in direct partnership with military companies and had long been under pressure from campaigners, such as Japanese brewer Kirin, said they would divest. Others, such as the Norwegian telecoms group Telenor, said they would quit Myanmar because operating conditions under the junta had become unsustainable.

APG, a Dutch pension fund with $700bn under management, has lobbied Kirin and Posco, the South Korean steelmaker, to terminate joint ventures with Myanmar military-controlled groups. Despite promises from both, APG threatened to divest if they do not make significant progress by next year.

"Twelve months is enough time . . . We've waited enough," said Park Yoo-kyung, an adviser at APG.

Telenor's efforts to exit Myanmar have been emblematic of the challenges facing foreign businesses.

The Norwegian government-backed company announced in July that it would sell its local operations to Lebanon's M1 Group for $105m, having previously written off its entire investment in the country. But the junta-controlled telecoms ministry has soured on the deal, preferring that Telenor find a new, Myanmar-controlled buyer.



Myanmar's crackdown on dissent has seen more than 1,270 deaths — AFP via Getty

The company was already facing criticism from campaigners after being accused of failing to prevent or mitigate against potentially adverse human rights consequences from a sale to M1, a group controlled by Lebanon's prime minister Najib Mikati and his brother.

Telenor countered that its decision to sell came after pressure by the military to install surveillance technology, which it said would have violated EU and Norwegian sanctions against Myanmar.

Many international companies have suspended or closed local operations but several have not, prompting campaigners and investors to question their commitments to leave the country.

Kirin and Posco, which have tie-ups with Myanmar Economic Holdings Ltd, a military-backed group, have faced some of the most intense pressure. Campaigners insist they should walk away from their investments empty-handed if they cannot divest responsibly.

"If a company cannot find a responsible buyer, they should liquidate their business and avoid making any payments to the military junta and its conglomerates," said Yadanar Maung.

Kirin has not given a timeline for such a sale, despite its commitment to do so, and its prospective buyers will be limited by the risk of sanctions.

"We are taking urgent steps to implement the termination of our joint venture partnership with MEHL," the Japanese group said.

Posco has taken a different approach. A spokesperson said the company was trying to acquire MEHL's stake in its steelmaking venture — a move designed to distance itself from military interests — while reviewing whether such a deal would breach sanctions.

But funds that own stocks such as Posco and Kirin fear such equity holdings will undermine their own responsible investing commitments.

Park said APG may soon be forced to divest as neither Kirin nor Posco had updated the fund on their progress. "I don't think there are meaningful negotiations happening," she said.

Additional reporting by Kana Inagaki and Leo Lewis in Tokyo

China's crypto machines ban fuels global mining boom

Move triggers 'frenzied liquidations' and an international scramble for exiled units

MARTHA MUIR

China's ban on cryptocurrency mining in May triggered an exodus of miners and a global race to relocate millions of the clunky, power intensive machines they use to solve complex puzzles and earn bitcoin.

Fourteen of the biggest crypto mining companies in the world have moved more than 2m machines out of China in the months following the ban, according to data gathered by the Financial Times. The lion's share of machines was hastily moved to the US, Canada, Kazakhstan and Russia.

Bit Digital, one of the largest US-listed crypto mining companies, hired an international logistics firm to extract its property from China and is still waiting for a batch of almost 1,000 machines to be released from the docks at the Port of New York.

"We started our fleet migration in March 2020, which in hindsight was a great move. When the ban was announced we had 20,000 miners in China," said Sam Tabar, chief strategy officer of Bit Digital. Still, the company said it had to abandon 372 machines in China, which had "reached the end of their useful lives".

Eight out of the 10 largest public mega farms based in North America have expanded the number of machines in their fleets since China's ban, Financial Times figures show.

When the ban hit, Toronto crypto mining company Hut8 was bombarded with offers from panicked Chinese sellers, said Sue Ennis, the company's VP of corporate development and investor relations. "We were getting calls from providers which were pretty opaque and one-sided," she said. "They would ask us to pay $20m with no recourse if it does not arrive or arrives broken." The company ended up adding 24,000 machines in June, from Chinese company MicroBT.

The "frenzied liquidations" triggered by China's ban caused the price of an Antminer S19, a popular model among industrial miners, to fall 41.7 per cent from May to July, analysis by Luxor Mining, the crypto mining group, showed.

Chinese crypto mining machine manufacturer Bitmain, the maker of the S19, had sold 30,000 machines to Marathon Digital Holdings, a mining company based in Las Vegas, in August; while Maryland based Terawulf bought another 30,000. The group announced in June that it was suspending sales of its machines to "help the industry transition smoothly" and lower the "great pressure" on the market.

Outside the US, Kazakhstan has become a leading mining centre. FT data show the bulk of the machines going to Kazakhstan came from Chinese mining company Bitfufu, which shipped 80,000 machines to farms in Kazakhstan, and BIT Mining, which shipped 7,849 machines by August.

Another beneficiary was Russia, where in the weeks after China's crypto mining ban, Moscow-based infrastructure hosting company Bit Cluster received more than 5,000 machines from China, while Russian crypto mining company BitRiver said that since the ban it was hosting 200,000 machines from exiled Chinese miners. "The focus of the market has shifted from a lack of equipment to a lack of space for its placement," said Roman Zabuga, a representative for BitRiver.

A couple of weeks before the ban, the company had to turn down a deal with a Chinese client looking to offload another 1m machines, he said.

According to Jaran Mellerud, a research analyst at Arcane Crypto, just below 700,000 Chinese machines have not been turned back on after the ban and are likely to be sitting in storage. Since many of these are older generation machines, such as the Antminer S9, it is less cost effective to ship them to locations such as the US. In July, the price of an S9 dipped to just $367.

This has led to older generation machines being scattered to less established mining locations such as Venezuela or Paraguay, where there is less regulatory stability but cheap electricity prices.

Juan Jose Pinto, co-founder of Doctor Miner, a mining company in Caracas, said the Chinese ban "is a great opportunity".

"We've been contacted by three different big Chinese miners so far to host around 7,000 machines," he added. "If we had the resources we could host a lot more."

Pinto said his company paid about $0.01 per kWh for electricity, meaning it could in effect use older, more power hungry machinery such as the Antminer S9s. Although these machines are rickety and more prone to breakdowns, Pinto and his team have found imaginative ways to keep them operating.

> 'The focus of the market has shifted from a lack of equipment to a lack of space for its placement'

"We have what we call 'the cemetery', where we put miners that aren't working, but have parts which are," said Pinto. "If I have one machine with four broken parts and another machine with six broken parts, I unite them and hopefully build one good miner."

Digital Assets, a company based in Asunción, is preparing to host 15,500 miners in the coming months but faces competition from some Paraguayan locals who have started to buy machines and mine independently.

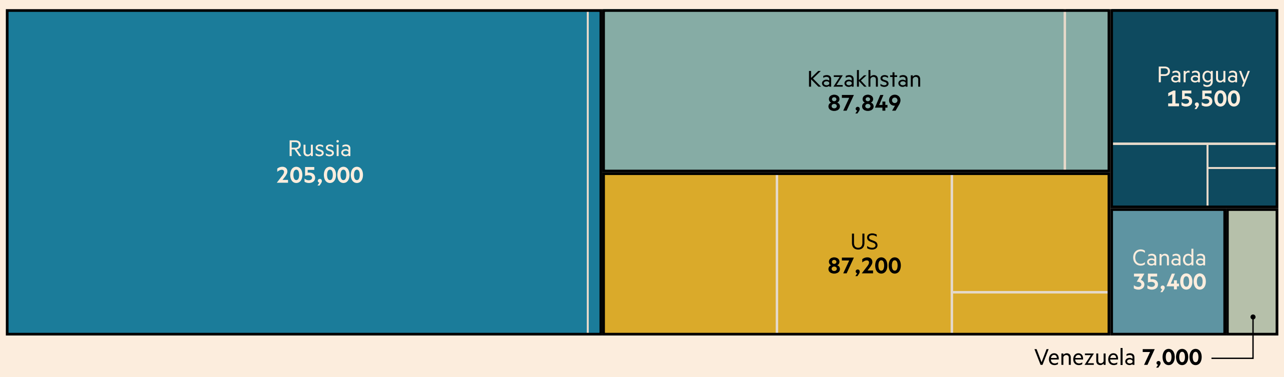
And owing to Venezuela's battered economy, mining cryptocurrency is a way for locals to top up their earnings.

"People mine in their houses with just one machine," Pinto said. "In other countries, there are a few big guys with farms, here there are thousands of people with small farms. Making $100 extra per month makes a huge difference for them."

Bitcoin change: machines are being sold in other countries after China's ban. Above, a manager checks equipment at a HaoBTC bitcoin mine in Sichuan, China — Paul Ratje/Getty Images

Where 14 crypto mining companies have sent their Chinese machines
Number of machines

Total: 432,949



Source: FT research

Telecoms

Ericsson agrees $6bn deal for Vonage

RICHARD MILNE
NORDIC AND BALTIC CORRESPONDENT
NIC FILDES — LONDON

Ericsson is paying $6.2bn in cash for cloud-based services group Vonage as the Swedish telecoms equipment maker aims to increase its offering for companies and developers.

The acquisition, Ericsson's biggest ever, marks the group's latest attempt to diversify alongside its core mobile infrastructure business after a failed attempt to move into media in the 2010s.

It also comes after years of restructuring and preparation for the new 5G networks and amid pressure over its business in China as it pays the price for Stockholm's crackdown on rival Huawei.

Vonage, a pioneer of internet telephony in the US that competes with RingCentral, had a market value of about $3.6bn in September before activist Jana Partners started agitating for the company to sell itself or break up.

Ericsson said it would pay $21 in cash per share, a premium of 28 per cent above Vonage's closing price on Friday.

Ericsson is looking to move into the enterprise business, in which developers create services on top of telecoms networks, after seeing more value being generated by companies such as Uber than by itself and other equipment makers.

Borje Ekholm, Ericsson's chief executive, said Ericsson wanted to help telecoms operators get more out of their investments in new networks after seeing other companies such as app developers take much of the rewards from previous upgrades.

> The group 'needs proper cloud communications [technology]' to compete with Cisco and Microsoft

"If you look at the network, significant investments are going into them, but there is very limited monetisation so far. We want to improve the monetisation capability. Network operators aren't going to build out 5G unless they can monetise it," he said.

Vonage's cloud-based platform has 120,000 business customers and serves 1m developers, allowing Ericsson to tap a bigger enterprise audience than it currently has.

The Swedish group is hoping to bring the faster speeds and capabilities of its 5G networks to business customers to create an open innovation platform for telecoms operators, developers, and businesses.

Dean Bubley, founder of Disruptive Analysis, said the takeover would strengthen Ericsson's exposure to the cloud and enterprise market, but the telecoms equipment maker would need to be careful not to scare its core telecoms customers as it had acquired a competitor company.

He argued that Ericsson "needs proper cloud communications [technology]" if it is going to compete with Cisco, Microsoft, Zoom and Twilio.

Ericsson, which said the deal would be financed through its existing cash pool, reaffirmed its financial targets including an operating profit margin of 12-14 per cent next year, excluding Vonage. Completion of the deal is subject to regulatory approval and is expected in the first half of next year.

See Lex

Healthcare

Private equity to buy Athenahealth for $17bn

ANTOINE GARA — NEW YORK

Private equity firms Hellman & Friedman and Bain Capital are buying US healthcare technology company Athenahealth in a $17bn deal that is one of the biggest leveraged buyouts of the year.

Its current private equity owners, Veritas Capital and Evergreen Coast Capital, are selling after they took the company private for $5.7bn in 2019, merging it with assets from GE Healthcare, and cutting costs and reviving growth under chief executive Bob Segert.

Athenahealth was founded by Jonathan Bush, nephew of former president George HW Bush, and specialises in digitising health records and in electronic claims and billing.

Its new owners are betting it can continue to increase revenues at double-digit rates and win more customers in the electronic medical records market — particularly among physicians and independent practices as its main competitor Epic Systems dominates in hospitals. Segert will remain as CEO.

Bush was ousted from Athenahealth in 2018 in the aftermath of revelations about his personal life and a brutally fought activist campaign by shareholder Elliott Management, which argued he had mismanaged the company and spent wastefully on real estate and aircraft.

As the campaign intensified, Veritas was building investments in companies that digitise medical billing, acquiring a unit of GE Healthcare that focused on billing and other medical software for about $1.1bn in 2018.

Within months of that deal closing, Veritas and Elliott's private equity arm, Evergreen Coast Capital, announced their plan to buy Athenahealth for $5.7bn in an LBO that merged the company with the former GE business, which had been renamed Virence Health.

Yesterday's deal will be financed with about $7bn of equity, according to people directly involved with the deal. Hellman & Friedman, which has a $24.4bn fund to invest, will take the largest portion of the equity, ahead of Bain Capital, though the two firms will have equal board representation.

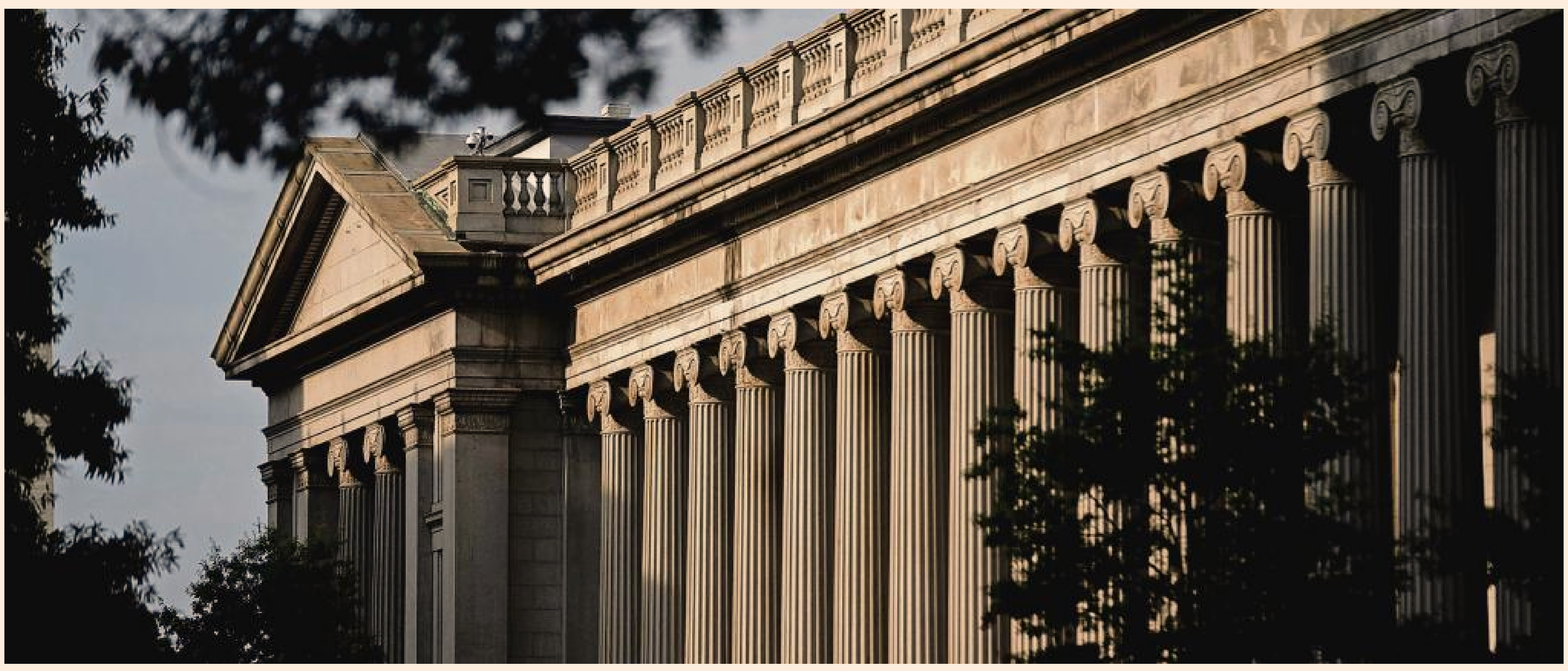
GIC, Singapore's sovereign wealth fund, and the Abu Dhabi Investment Authority will also participate in the fundraising, while current owners Veritas and Evergreen Coast Capital will retain minority stakes.

The transaction is the latest large healthcare-focused buyout, and one of several where private equity firms have worked together to buy businesses worth $10bn or more.

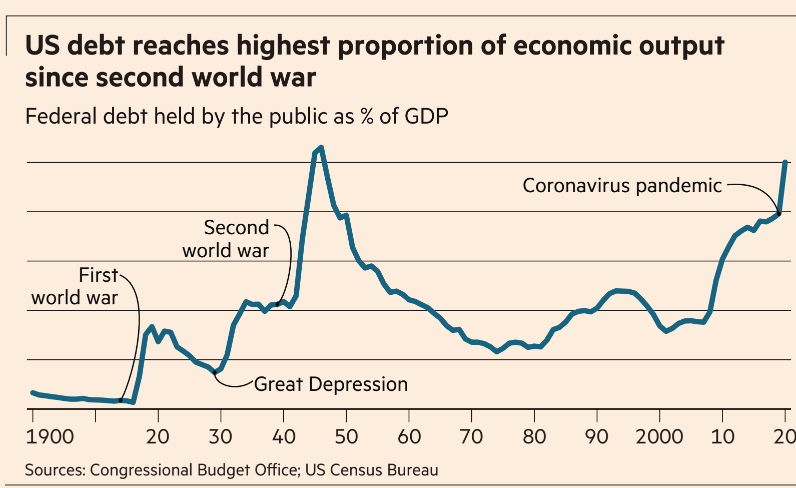
In June, Hellman & Friedman got together with its rivals Blackstone and Carlyle in a $34bn leveraged buyout of family-owned medical products supplier Medline. This month, Advent International and Permira Advisers struck a deal to take cyber security company McAfee private in an LBO valued at almost $15bn.

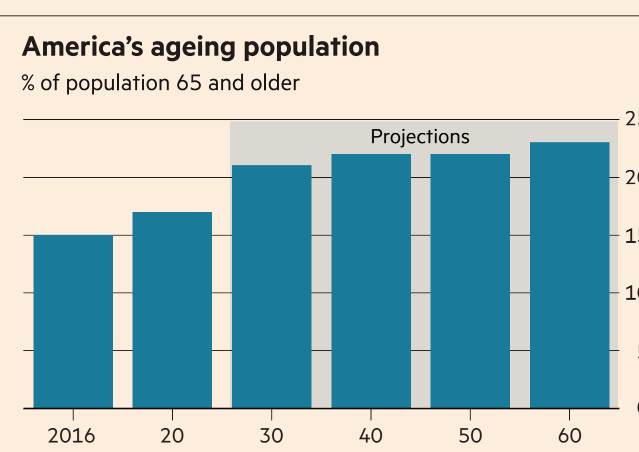
Fixed income. Rates dilemma

US bond bulls hold firm in face of red-hot inflation



The US Treasury and other big global bond issuers are set to reduce the scale of their borrowing from the levels reached at the height of the Covid-19 pandemic — Stefani Reynolds/Bloomberg





Bets maintained that ageing population and high levels of debt will keep prices high

KATE DUGUID — NEW YORK
TOMMY STUBBINGTON — LONDON

A clutch of bond bulls is betting that the world's biggest fixed income market will shrug off the surge in US inflation to a 30-year high as long-term shifts in the American economy keep yields depressed.

Data showing that consumer prices rose 6.2 per cent in the year to October briefly jolted the US Treasury market earlier this month.

However, yields on debt maturing decades in the future remain well below their 2021 peaks despite expectations for a protracted period of elevated price growth.

For some longtime bond bulls, the market's nonchalance in the face of surging prices — typically kryptonite for debt investors — is a vindication of the view that inflation will not leave a lasting dent on the market and, when the dust settles on the economic recovery, the pre-pandemic landscape of low interest rates will be largely unchanged.

"What matters are not this week's [gross domestic product] print or the next [consumer price index] print, or the next Fed meeting, the fundamentals are what drives the longer run," said Steven Major, HSBC's head of fixed income research.

Those fundamentals, he argued, include America's vast debt burden and an ageing population.

Robert Tipp, PGIM's head of global bonds, also said the prices of US government bonds — which move inversely to yields — will be supported in the long run by demographic trends and fiscal fundamentals.

The argument floated by the bulls is that Americans approaching retirement — a large and wealthy generation — will increasingly be shifting in to low-risk investments that provide consistent income streams over a long time horizon, such as Treasury bonds.

This cohort is expected to grow rapidly in coming years with the proportion of Americans 65 and older rising from about 17 per cent in 2020 to 21 per cent in 2030, according to projections by the US Census Bureau.

The debt load that the US has accumulated from fiscal spending and tax breaks in recent years could also limit the possibility of future borrowing, further depressing the growth outlook, some bond analysts said.

Federal debt held by the public in 2020 reached 100 per cent of gross domestic product for the first time since the wake of the second world war and is expected to continue rising, the Congressional Budget Office estimates.

Those long-term trends are pushing back against rising inflation and economic growth, both of which lift yields on 10-, 20- and 30-year bonds higher. Many investors wagering that inflation will continue to rise are betting against longer-dated Treasuries.

For a bond bear like Sonal Desai, the chief investment officer at Franklin Templeton, there was no evidence that inflation will ease significantly.

She noted that the US Federal Reserve will continue buying bonds next year, albeit at a slower pace than at the height of the pandemic, just as the government is deploying "another year of another massive amount of fiscal spending".

Desai added: "Overall policy remains very expansionary. So these things together make me think that inflation is likely to stay around for quite a while."

The bond bull thesis is not just about long-term trends — they are arguing that growth and inflation will not rise to levels that would change the course of those broad economic shifts.

On inflation, the bond bulls are aligned with the Fed: they believe that, although inflation is running hot, it is primarily being driven by temporary forces like supply chain disruptions.

Some investors who recognise the long-term waves that Major and Tipp are focusing on say that they think those trends are unlikely to be the primary drivers of yields in the coming year.

These long-term drivers "are going to continue to be a force for lower rates in the future", said Gregory Whiteley, portfolio manager at DoubleLine Capital. "But over the near term, I would give some greater weight to the cyclical and technical factors driving yields higher."

Those include rising inflation, above-trend growth and demand for US debt from European and Japanese pensions.

> 'More supply brings the view that yields will have to go up. Frankly, I find that view is nonsense'

The Fed's decision this month to begin slowing its $120bn per month asset purchase programme — which will rob the Treasury market of its biggest buyer — is unlikely to have a lasting impact on Treasury yields, the bond bulls said, pointing to the lack of any long-term correlation between the supply of bonds and their price.

"So the bond supply narrative is that there's a lot more bonds coming," said Major. "More supply brings the intuitive view that the yield will have to go up. I don't see any empirical evidence of that playing out. Frankly, I find that view is nonsense."

Other investors are relatively relaxed about the Fed's imminent departure because it will come at a time when the US Treasury — and other big bond issuers around the world — are reducing the scale of their borrowing from the levels reached at the height of the pandemic.

"It's not clear to me that tapering will necessarily mean a big increase in yields, not least because the net supply in a lot of places isn't actually going to be larger than it has been over the last couple of years, despite the fact that purchases are going to stop," said Isobel Lee, head of global bonds at Insight Investment.

"We're not facing some kind of cliff edge," she added.

Equities

Tesla short sellers back down amid rise in stock

GEORGE STEER, LAURENCE FLETCHER AND ROBIN WIGGLESWORTH

Weary short sellers have unwound most of their bets against Tesla as retail investors unperturbed by Twitter polls and talk of stock market bubbles continue to pump cash into the world's most valuable car company.

Short positions in Tesla, as a percentage of the company's total shares available to trade, have fallen to 3.3 per cent from 19.6 per cent at the start of last year, according to S3 Partners, a specialist data provider.

The number of Tesla shares shorted has decreased almost 80 per cent to 27m over the same period.

Short seller Carson Block, founder of Muddy Waters Capital, said he understood the reasons people choose to short Tesla, arguing that "in principle, they're not wrong".

He added: "But the other side is [Tesla chief executive] Elon Musk, who is better at playing the public company game than anybody I've ever seen."

Musk's unorthodox leadership — and until this year, Tesla's lack of profit — had made the company he founded in 2003 a favourite among short sellers.

Yet many of these investors have now exited their positions. Michael Burry, whose bet against the US housing market before the financial crisis was dramatised in Hollywood blockbuster *The Big Short*, had long wagered against Tesla, arguing in a now deleted tweet that the company benefits from "massive government and electricity subsidies".

> 'Musk is better at playing the public company game than anybody I've ever seen'

Last month, however, Burry's firm Scion Asset Management exited its short position, having held more than 800,000 put options — derivatives that allow investors to sell assets at an agreed price before a certain date — on Tesla shares as recently as May.

Data provider Breakout Point estimates that, since the second quarter of 2021, in all 33 weeks Tesla was among the 30 most popular retail stocks and has landed a spot in the top-10 most popular for 16 of those 33 weeks.

Tesla's shares have risen about 30 per cent over the past 30 days.

But Tesla's huge rally means that it remains one of the US stock market's biggest shorts. Despite the reduction in short positions, the fact that Tesla's share price has risen more than 1,200 per cent since the start of last year means short interest — equal to the number of shares shorted multiplied by the price of a share — has risen from just shy of $11bn to $28bn in the period.

Not all short sellers have thrown in the towel. UK hedge fund manager Crispin Odey has maintained his bets. "Even if you do all the numbers and are very generous and give them 10 per cent of the total market in eight years and put that all through, you end up on about 35 times 2030 earnings," Odey said.

Alternative assets

Citadel boss outbids crypto collective to pay $43m for early US constitution

ERIC PLATT AND MADISON DARBYSHIRE
NEW YORK

Ken Griffin, the billionaire founder of the hedge fund Citadel, has emerged as the buyer of a rare first printing of the US constitution, seeing off an impromptu collective of cryptocurrency traders with a $43.2m bid.

The document was the subject of a nearly eight-minute auction at Sotheby's in New York where Griffin squared off with more than 17,000 cryptocurrency traders who had banded together in an attempt to fund a crowdsourced purchase.

The winning price represented a record for a manuscript or book sold at auction, according to Sotheby's. It is one of 11 known copies of the 234-year-old document and the only one that is privately owned.

"The US constitution is a sacred document that enshrines the rights of every American and all those who aspire to be," Griffin said.

Griffin said he would loan the constitution to the Crystal Bridges Museum of American Art, which was built in 2011 by Alice Walton, an heir to the Walmart fortune. The free museum's location in Bentonville, Arkansas, is also the headquarters of the US retailer.

Griffin paid more than double the presale estimate of $15m to $20m for the constitution, beating out a group called "ConstitutionDAO", the cryptocurrency collective that organised online to bid for the document.

The campaign, launched on November 11, took in a median cryptocurrency donation of $206 from members, according to a message after the loss.

"We memed this into reality. We made history," the collective wrote on Twitter after the auction.

Citadel, based in Chicago, is one of the world's biggest hedge funds with about $34bn in assets under management.

Citadel Securities' central role in US equities markets put it into the spotlight during frenzied trading in the shares of GameStop this year. Griffin was called to testify before Congress on the upheaval.

The winning price was a record for a manuscript sold at auction — Ed Jones/AFP/Getty

Equities

Reliance shares slide as $15bn refinery deal with Saudi Aramco is abandoned

BENJAMIN PARKIN — NEW DELHI

Shares in Mukesh Ambani's Reliance Industries fell more than 4 per cent after the Indian conglomerate revealed that a $15bn deal with Saudi Aramco had been called off.

India's largest company said in August 2019 that it had signed a "non-binding letter of intent" to sell 20 per cent of its refinery business to Saudi Aramco at a valuation of about $75bn.

But talks stagnated with the onset of the pandemic, which caused turbulence in energy markets and hurt Saudi Aramco's finances, exacerbating existing reservations within the kingdom about the deal's high valuation.

Reliance, which is controlled by Ambani, India's richest man, said late on Friday that the companies had "mutually determined that it would be beneficial for both parties to re-evaluate the proposed investment".

On the first day of trading after the announcement, shares in Reliance fell 4.3 per cent to Rs2,365 in Mumbai yesterday, contributing to one of the worst days for India's stock market in months.

Ambani had continued to suggest that the deal would be finalised, most recently this year, and the two companies had held talks over a potential cash and share deal.

Reliance added that it would retract a proposal to spin off its refinery unit — one of its three business areas alongside its telecoms group Jio and its retail business, India's largest.

For Saudi Aramco, the deal had represented an opportunity to secure a long-term outlet for oil sales to India, a net importer whose energy demand is expected to grow faster than anywhere else in the coming decades.

> 'With crude at $80 and Aramco's chairman on Reliance's board, this is a disappointment'

But the pandemic, and the accompanying hit to energy prices and demand, strained the state company's finances, forcing an overhaul of its portfolio and fuelling concerns about the deal.

Saudi Aramco said on Sunday that it would "continue to evaluate new and existing business opportunities" in India, according to Bloomberg.

Reliance announced the deal at a time when it was under pressure to clean up a debt-heavy balance sheet.

But it has since cut its liabilities, securing billions of dollars of investment into Jio and Reliance Retail from Facebook, Google, private equity funds and Saudi Arabia's sovereign Public Investment Fund.

Yasir al-Rumayyan, PIF's head and chair of Saudi Aramco, joined Reliance's board this year as the group sought to build closer ties with the kingdom.

Jefferies cut its valuation of Reliance's energy business from $80bn to $70bn. It cited the missed opportunity given the recent rebound in oil prices to $80 a barrel.

"With crude at $80 and Aramco's chairman inducted into RIL's [Reliance Industries Limited] board, this comes as a disappointment," it said.

Reliance is now trying to grow its renewable energy business, pledging to invest $10bn over the next three years. It aims to build solar energy capacity and gigafactories for battery storage.

COMPANIES & MARKETS

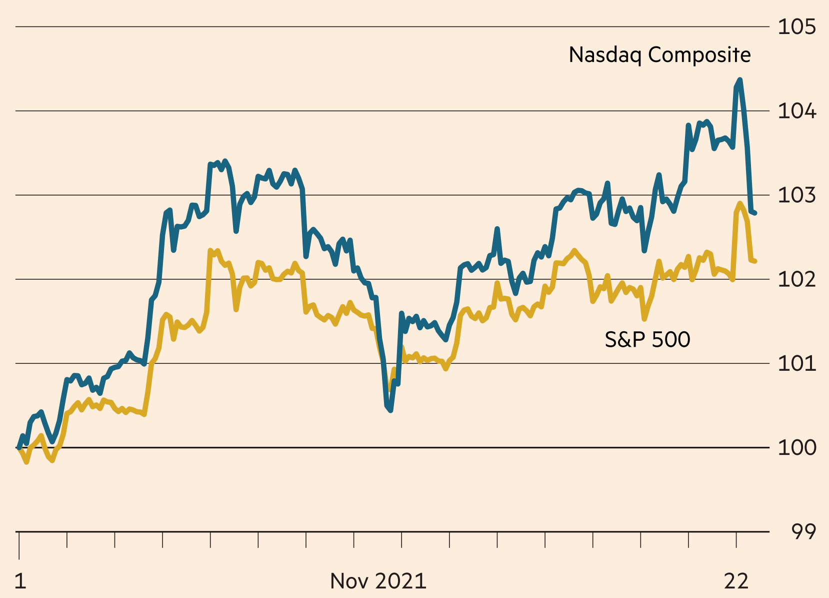
The day in the markets

What you need to know

- US government debt sells off during morning session in New York
- European shares slide as protests break out over reinstating Covid curbs
- Turkish lira remains near record lows against the dollar

Wall Street stocks jump on news of Powell's nomination

Indices rebased



Source: Refinitiv

Wall Street stocks jumped yesterday as traders reacted to news that Jay Powell had been nominated to the chair of the US Federal Reserve for a second term.

During the morning session in New York, both the blue-chip S&P 500 and tech-heavy Nasdaq Composite hit new record highs following the announcement that Joe Biden, the US president, had allowed Powell to remain in the job while Lael Brainard, who was also in the running for the top position, was tapped for the role of vice-chair.

Commerzbank analysts said "a decision against Powell would have been problematic for Biden in the eyes of market participants, as he could have been accused of taking too soft a line on inflation".

Moreover, Powell, as a Republican, was a bipartisan choice and thus would face a smoother confirmation process in the Senate, added the bank. "Given the enormous tasks facing the Fed, this is a plus that should not be underestimated," said Commerzbank.

A Fed caught in the middle of a "political crossfire" as it tried to tackle inflation "would find this task even more difficult than it already is", said analysts.

Core US government debt also sold off on news of Powell's reappointment.

The yield on the two-year Treasury, which is sensitive to interest rate expectations, rose 7 basis points to 0.58 per cent, while the yield on the benchmark 10-year Treasury note climbed 7 bps to 1.60 per cent.

Equity markets were more subdued across the Atlantic, where several countries in Europe were forced to reimpose pandemic restrictions last week.

Protests broke out in Austria, Italy and Belgium after governments stepped up virus restrictions in response to a higher numbers of infections.

The continent-wide Stoxx Europe 600 benchmark closed 0.1 per cent lower, while the index tracking Italian stocks rose 0.2 per cent and London's FTSE 100 climbed 0.4 per cent.

In Asia, markets were mixed. Hong Kong's Hang Seng index fell 0.4 per cent while China's CSI 300 rose 0.5 per cent.

Emerging market equities more broadly were down yesterday. A broad FTSE barometer of EM stocks dipped 0.9 per cent in US dollar terms, having fallen 1.4 per cent last week.

The Turkish lira hovered at about TL11 to the dollar, after hitting its weakest ever level last week following a move by the central bank to cut interest rates despite inflation surging. **George Steer**

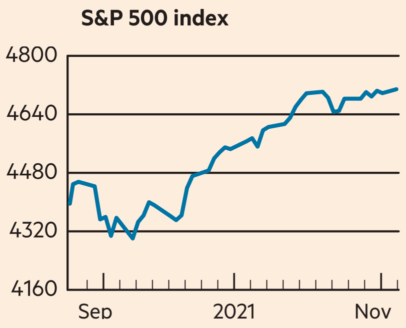
Markets update

	US	Eurozone	Japan	UK	China	Brazil
Stocks	**S&P 500**	**Eurofirst 300**	**Nikkei 225**	**FTSE100**	**Shanghai Comp**	**Bovespa**
Level	4708.71	1878.78	29774.11	7255.46	3582.08	103759.81
% change on day	0.23	-0.16	0.09	0.44	0.61	0.70
Currency	**$ index (DXY)**	**$ per €**	**Yen per $**	**$ per £**	**Rmb per $**	**Real per $**
Level	96.128	1.125	114.745	1.340	6.377	5.577
% change on day	0.101	-0.618	0.773	-0.446	-0.067	0.308
Govt. bonds	**10-year Treasury**	**10-year Bund**	**10-year JGB**	**10-year Gilt**	**10-year bond**	**10-year bond**
Yield	1.596	-0.305	0.069	0.843	2.914	11.413
Basis point change on day	6.690	4.000	-0.500	4.600	-1.200	9.900
World index, Commods	**FTSE All-World**	**Oil - Brent**	**Oil - WTI**	**Gold**	**Silver**	**Metals (LMEX)**
Level	495.49	79.53	76.63	1861.10	24.79	4398.30
% change on day	-0.23	1.38	1.19	0.04	-0.74	2.09

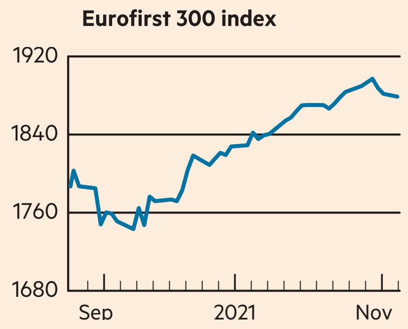
Yesterday's close apart from: Currencies = 16:00 GMT; S&P, Bovespa, All World, Oil = 17:00 GMT; Gold, Silver = London pm fix. Bond data supplied by Tullett Prebon.

Main equity markets

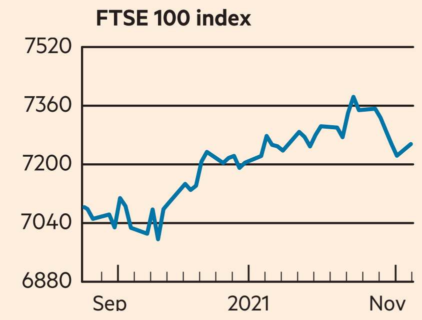
S&P 500 index



Eurofirst 300 index



FTSE 100 index



Biggest movers

%	US		Eurozone		UK	
Ups	Nucor	5.26	Telecom Italia	30.25	Antofagasta	5.01
	Las Vegas Sands	5.24	Telefonica	6.39	Vodafone	3.19
	Kroger Co (the)	4.74	Hugo Boss	3.89	Bhp	3.11
	Cisco Systems	4.16	Kpn	3.70	Royal Mail	2.87
	Corning	3.90	Thyssenkrupp	3.15	Bt	2.52
Downs	Mastercard	-5.66	Philips	-5.35	Polymetal Int	-4.38
	Under Armour	-5.06	Sap	-3.35	Darktrace	-3.51
	Paypal Holdings	-4.63	Ucb	-3.27	Itv	-1.62
	Electronic Arts	-4.58	Intesa Sanpaolo	-2.39	Informa	-1.59
	Under Armour	-4.51	Beiersdorf	-2.07	Aveva	-1.48

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

Space start-up **Astra** blasted off after announcing that it had completed its first commercial orbital launch.

Cloud-based services group **Vonage** leapt to a record high after being bought by Sweden's Ericsson for $6.2bn.

Holiday rentals group **Airbnb** slid as countries including Austria and Germany introduced stricter Covid-19 curbs.

Activision Blizzard sank following a Wall Street Journal story about Bobby Kotick, the chief executive, reportedly telling senior execs he would contemplate leaving the video game group if he could not swiftly rectify its workplace issues.

Back in October, the company behind *Call of Duty* and *Candy Crush* fired 20 employees in a bid to clean up its culture after allegations of widespread gender-based discrimination and harassment.

Rent the Runway, the ecommerce platform that allows users to rent and buy designer clothes, jumped after Credit Suisse reinstated coverage with an "outperform" recommendation.

The company's addressable market was large, said the broker, with the US spending $286bn annually on apparel.

Survey data from Credit Suisse showed "strong interest" in rental subscriptions "from women who want to add designer brands to their day-to-day wardrobe but can't afford to in a traditional owned-apparel model". *Ray Douglas*

Europe

A takeover bid for **Telecom Italia** sent the phone and broadband group soaring.

US private equity firm KKR presented a €0.505 per share offer, which represented a 45 per cent premium on Friday's closing price.

Telecom Italia said the bid was "friendly" but Bank of America cast doubt on whether it would go through and pulled its rating for the operator "as we believe TI no longer trades on the basis of fundamentals".

Mobile tower group **Infrastrutture Wireless Italiane**, in which Telecom Italia owns a 30.2 per cent stake according to Refinitiv data, also rallied after the takeover news.

Another deal, this time involving **Ericsson's** $6.2bn purchase of cloud-based services group Vonage, left the Swedish telecoms group lower.

There remained questions about the rationale behind the purchase, said JPMorgan. Ericsson would need to explain whether this deal was about expanding its footprint in the enterprise market alone or whether it was looking to create "significant synergies" with its own 4G/5G strategy, said the broker.

Julius Baer, Switzerland's third-biggest bank, sank after reporting a decline in gross margin for the first 10 months of 2021 compared with the previous year. *Ray Douglas*

London

Telecoms operator **Vodafone** jumped on news that US private equity firm KKR had made a €33bn buyout offer for Telecom Italia.

This was because Vodafone shared, alongside Telecom Italia, a significant stake in mobile tower company Infrastrutture Wireless Italiane, which could be involved in a KKR deal.

Miner **Hochschild** plummeted more than 27 per cent after reports that the Peruvian government was planning on closing two of its mines on environmental grounds.

Hochschild replied that it "categorically [rejected] any inference with regard to environmental pollution", adding that its operations were "strictly regulated and supervised by several Peruvian regulatory bodies and our activities remain in compliance with their requirements".

Marks and Spencer rallied following a Sunday Times article suggesting that US buyout firm Apollo Global Management was weighing an offer for the high street retailer.

Diploma, the technical products and services provider, hit an all-time high on releasing full-year earnings that were 3 per cent ahead of forecasts by Numis.

Its board also proposed a 51 per cent rise in its final dividend to 30.1 pence per share. *Ray Douglas*

Shock to supply chains raises volatility risk

David Bowers

Markets Insight

The world is witnessing probably the biggest shock to supply chains since British logistics consultant Keith Oliver is thought to have first coined the term in 1982.

If companies respond by raising inventory levels to ensure they have adequate stocks of materials, then we should start to prepare ourselves for more volatile business cycles.

Some argue that we are close to "peak" supply-chain stress. The US consumer's demand for goods may soon begin to revert to its pre-Covid-19 trend as spending gradually rebalances from goods towards services.

Moreover, global business survey indicators on supplier delivery times and component shortages are already at extremes. In such levels, these indicators typically revert to the mean (often rapidly). In Asia, inventories in countries such as Japan and Korea have grown faster than shipments over the past three months.

The more supply and demand move back into balance, the more pricing pressures should abate, and inflation rates fall. In which case, now is not the time for central banks to get dragged into premature rate rises.

This sanguine view is plausible, assuming that the post-Covid inventory imbroglio is just temporary.

But the current level of stress in supply chains is on a different scale to the normal, cyclical experiences of the past 20 years.

For example, recent data from the European Commission for the eurozone show the highest percentage of companies reporting shortages of equipment, raw materials and labour in 40 years.

Intriguingly — and also for the first time in almost 40 years — the percentage of companies citing "shortages" exceeded the number experiencing "insufficient demand".

This is as important as it is unusual: supply constraints at present exceed demand constraints.

Most policymakers have only known a world where demand has been limited and supply has been elastic. Whatever the demand, China has been ready and willing to meet it as the world's supplier of last resort.

The policy response to the pandemic has upset that balance. High levels of savings and government transfers during lockdowns have underwritten a rebound in global demand but failed to prepare supply, creating a bullwhip effect. Now it is supply that appears to be constrained and "inelastic".

> The scale and duration of the Covid stress test has already begun to challenge the old model

That is a different policy environment — one where restoring global equilibrium in the goods market becomes more difficult; where national output gaps take on more significance; and where ensuring sufficient local inventories of goods takes on greater importance for both countries and corporates.

The longer the crisis in supply chains continues, the more inclined companies will be to rethink their business models.

They may decide to invest more to reshore production; they may vertically integrate to take back control of their supply chains; they may start to over-order and carry higher inventory as they shift from a just-in-time to a just-in-case model.

Adapting to these challenges will place additional demands on corporates' free cash flow and balance sheets. And they could have macroeconomic consequences. Inventory build-up and depletion is a key driver of the economic cycle. The longer inventory levels stay elevated, the more volatile they could become — as could the business cycle.

This supply stress is happening at a time when hyperglobalisation is on the back foot, be it from US-China tension or from the pursuit of strategic autonomy as nations shift from social to economic distancing. There is also pressure from climate-transition policies to localise supply and labour markets remain exceptionally tight, too.

Optimists argue the just-in-time model has come through the crisis with flying colours. If nominal demand moderates, if economies rebalance from goods to services and if new supply comes on stream, then worries about inflation could disappear quickly.

However, the risks are that the scale and duration of the Covid stress test has already begun to challenge the old model. Supply chains have proved to be vulnerable — even if that has been caused by excess demand and underinvestment. Disruptions and increased inventory volatility may not be just a temporary bug.

In which case, if nominal demand continues to grow faster than supply, inflation is likely to stay elevated and spread to the labour market. The stakes for policymakers could not be greater.

David Bowers is co-founder of Absolute Strategy Research

MARKET DATA

WORLD MARKETS AT A GLANCE

FT.COM/MARKETSDATA

Change during previous day's trading (%)

S&P 500	Nasdaq Composite	Dow Jones Ind	FTSE 100	FTSE Eurofirst 300	Nikkei	Hang Seng	FTSE All World $	$ per €	$ per £	¥ per $	£ per €	Oil Brent $ Sep	Gold $
0.23%	-0.73%	0.57%	0.44%	-0.16%	0.09%	-0.39%	-0.23%	-0.618%	-0.446%	0.773%	-0.238%	-0.17%	0.04%

Stock Market movements over last 30 days, with the FTSE All-World in the same currency as a comparison

Country	Index	Latest	Previous
Argentina	Merval	85695.15	89512.44
Australia	All Ordinaries	7688.30	7729.90
	S&P/ASX 200	7353.10	7396.50
	S&P/ASX 200 Res	4813.30	4805.40
Austria	ATX	3743.79	3711.22
Belgium	BEL 20	4203.53	4231.19
	BEL Mid	10447.14	10427.13
Brazil	IBovespa	103759.81	103035.02
Canada	S&P/TSX 60	1296.55	1300.29
	S&P/TSX Comp	21473.77	21555.03
	S&P/TSX Div Met & Min	983.25	984.44
Chile	S&P/CLX IGPA Gen	23681.14	21846.47
China	FTSE A200	13134.89	13053.28
	FTSE B35	9000.71	8988.96
	Shanghai A	3754.29	3731.50
	Shanghai B	278.13	280.68
	Shanghai Comp	3582.08	3560.37
	Shenzhen A	2642.90	2605.92
	Shenzhen B	1172.65	1164.51
Colombia	COLCAP	1261.61	1260.21
Croatia	CROBEX	2013.05	2011.29

Country	Index	Latest	Previous
Cyprus	CSE M&P Gen	68.46	68.68
Czech Republic	PX	1357.91	1362.71
Denmark	OMXC Copenahgen 20	1873.41	1889.77
Egypt	EGX 30	11359.03	11273.11
Estonia	OMX Tallinn	2069.24	2054.84
Finland	OMX Helsinki General	12772.68	12741.49
France	CAC 40	7105.00	7112.29
	SBF 120	5520.22	5526.57
Germany	M-DAX	35663.28	35912.82
	TecDAX	3942.21	3986.16
	XETRA Dax	16115.69	16159.97
Greece	Athens Gen	911.00	915.02
	FTSE/ASE 20	2181.03	2206.03
Hong Kong	Hang Seng	24951.34	25049.97
	HS China Enterprise	8929.78	8970.67
	HSCC Red Chip	3841.32	3852.65
Hungary	Bux	50483.99	51472.91
India	BSE Sensex	58465.89	59636.01
	Nifty 500	14976.70	15302.55
Indonesia	Jakarta Comp	6723.39	6720.26
Ireland	ISEQ Overall	8253.79	8282.97
Israel	Tel Aviv 125	1980.70	1985.64

Country	Index	Latest	Previous
Italy	FTSE Italia All-Share	29959.78	29915.86
	FTSE Italia Mid Cap	49802.59	49842.35
	FTSE MIB	27382.87	27337.46
Japan	2nd Section	7651.31	7639.50
	Nikkei 225	29774.11	29745.87
	S&P Topix 150	1753.44	1756.43
	Topix	2042.82	2044.53
Jordan	Amman SE	2085.88	2089.42
Kenya	NSE 20	1893.65	1890.59
Kuwait	KSX Market Index	6633.44	6603.51
Latvia	OMX Riga	1267.87	1265.90
Lithuania	OMX Vilnius	954.77	954.85
Luxembourg	LuxX	1625.53	1613.02
Malaysia	FTSE Bursa KLCI	1526.87	1525.54
Mexico	IPC	50650.86	50811.30
Morocco	MASI	13340.45	13289.48
Netherlands	AEX	815.34	821.80
	AEX All Share	1129.06	1139.34
New Zealand	NZX 50	12607.64	12740.12
Nigeria	SE All Share	43199.27	43349.90
Norway	Oslo All Share	1017.37	1006.88
Pakistan	KSE 100	45745.00	46489.41

Country	Index	Latest	Previous
Philippines	Manila Comp	7282.67	7280.57
Poland	Wig	69433.26	69415.67
Portugal	PSI 20	5519.58	5501.97
	PSI General	4148.41	4155.36
Romania	BET Index	12623.61	12559.61
Russia	Micex Index	3872.77	4016.47
	RTX	1628.10	1723.74
Saudi-Arabia	TADAWUL All Share Index	11171.76	11485.94
Singapore	FTSE Straits Times	3237.08	3232.34
Slovakia	SAX	398.04	398.04
Slovenia	SBI TOP	-	-
South Africa	FTSE/JSE All Share	70865.85	70376.42
	FTSE/JSE Res 20	65585.80	64797.37
	FTSE/JSE Top 40	64384.46	63870.65
South Korea	Kospi	3013.25	2971.02
	Kospi 200	399.07	390.53
Spain	IBEX 35	8821.30	8753.20
Sri Lanka	CSE All Share	10817.24	10658.72
Sweden	OMX Stockholm 30	2368.57	2373.92
	OMX Stockholm AS	1027.95	1032.63
Switzerland	SMI Index	12510.81	12545.01

Country	Index	Latest	Previous
Taiwan	Weighted Pr	17803.54	17818.31
Thailand	Bangkok SET	1649.54	1645.06
Turkey	BIST 100	116840.94	116315.98
UAE	Abu Dhabi General Index	8344.66	8336.48
UK	FT 30	2787.40	2782.80
	FTSE 100	7255.46	7223.57
	FTSE 4Good UK	6761.33	6743.53
	FTSE All Share	4147.35	4135.12
	FTSE techMARK 100	6954.99	6997.59
USA	DJ Composite	12130.71	12017.52
	DJ Industrial	35805.93	35601.98
	DJ Transport	16783.43	16517.46
	DJ Utilities	924.80	914.39
	Nasdaq 100	16506.31	16573.34
	Nasdaq Cmp	15940.30	16057.44
	NYSE Comp	16989.22	16973.96
	S&P 500	4708.71	4697.96
	Wilshire 5000	48485.32	48593.60
Venezuela	IBC	6044.92	5999.97
Vietnam	VNI	1447.25	1452.35

Country	Index	Latest	Previous
Cross-Border	DJ Global Titans ($)	544.80	545.95
	Euro Stoxx 50 (Eur)	4346.16	4356.47
	Euronext 100 ID	1367.74	1372.65
	FTSE 4Good Global ($)	11599.38	11602.76
	FTSE All World ($)	495.49	496.65
	FTSE E300	1878.78	1881.74
	FTSE Eurotop 100	3536.35	3542.57
	FTSE Global 100 ($)	3087.42	3092.64
	FTSE Gold Min ($)	2114.64	2140.34
	FTSE Latibex Top (Eur)	4440.00	4432.20
	FTSE Multinationals ($)	3301.36	3300.60
	FTSE World ($)	892.51	894.04
	FTSEurofirst 100 (Eur)	4775.06	4776.24
	FTSEurofirst 80 (Eur)	6011.24	6030.98
	MSCI ACWI Fr ($)	754.92	756.58
	MSCI All World ($)	3219.90	3226.37
	MSCI Europe (Eur)	1927.32	1936.02
	MSCI Pacific ($)	3201.79	3182.45
	S&P Euro (Eur)	2011.16	2017.25
	S&P Europe 350 (Eur)	1932.93	1935.67
	S&P Global 1200 ($)	3520.41	3519.22
	Stoxx 50 (Eur)	3775.21	3772.78

(c) Closed. (u) Unavaliable. † 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 ft.com research data archive.

STOCK MARKET: BIGGEST MOVERS

AMERICA

ACTIVE STOCKS	stock traded m's	close price	Day's change
Tesla	195.6	1151.34	14.28
Nvidia	129.9	326.17	-3.68
Apple	110.8	163.52	2.97
Amazon.com	88.5	3590.24	-86.33
Microsoft	51.2	343.64	0.53
Advanced Micro Devices	48.6	154.82	-0.59
Meta Platforms	47.4	341.28	-4.03
Paypal Holdings	26.8	184.65	-8.96
Alphabet	22.4	2935.02	-43.51
Mastercard	18.8	320.48	-19.24

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Nucor	118.79	5.94	5.26
Las Vegas Sands	40.27	2.01	5.24
Kroger Co (the)	42.83	1.94	4.74
Cisco Systems	55.47	2.22	4.16
Corning	39.12	1.47	3.90
Downs			
Mastercard	320.48	-19.24	-5.66
Under Armour	25.60	-1.37	-5.06
Paypal Holdings	184.65	-8.96	-4.63
Electronic Arts	126.32	-6.07	-4.58
Under Armour	21.61	-1.02	-4.51

Based on the constituents of the S&P500

LONDON

ACTIVE STOCKS	stock traded m's	close price	Day's change
Astrazeneca	166.7	8443.00	-36.00
Bp	147.4	334.40	7.85
Rio Tinto	142.7	4539.50	84.50
Vodafone	137.1	117.24	3.62
Glencore	121.0	372.50	3.05
Unilever	96.8	3858.00	9.00
Bhp	95.8	1942.80	58.60
Anglo American	85.3	2876.00	32.00
Royal Dutch Shell	78.8	1616.00	5.80
Diageo	78.6	3901.50	23.50

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Diploma	3460.00	256.00	7.99
Harbour Energy	401.00	29.00	7.80
Antofagasta	1479.00	70.50	5.01
Vivo Energy	110.00	4.60	4.36
Liontrust Asset Management	2210.00	90.00	4.25
Downs			
Hochschild Mining	119.80	-44.80	-27.22
Ao World	124.00	-7.50	-5.70
Petropavlovsk	21.04	-1.22	-5.48
Cineworld	58.10	-3.10	-5.07
Centamin	97.00	-4.75	-4.67

Based on the constituents of the FTSE 350 index

EURO MARKETS

ACTIVE STOCKS	stock traded m's	close price	Day's change
Asml Holding	517.8	747.30	-12.60
Nestle N	340.2	117.03	-0.13
Totalenergies	316.8	42.40	0.50
Roche Gs	303.4	349.88	-3.20
Ing Groep N.v.	277.4	13.11	0.28
Intesa Sanpaolo	268.3	2.33	-0.06
Telefonica	257.5	4.22	0.25
Daimler Ag Na O.n.	229.5	90.97	1.18
Novartis N	219.5	72.72	0.14
Volkswagen Ag Vzo O.n.	219.1	179.26	-1.38

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Telefonica	4.22	0.25	6.39
Dt.telekom Ag Na	16.91	0.43	2.60
Ing Groep N.v.	13.11	0.28	2.15
Orange	9.86	0.20	2.03
Credit Agricole	12.72	0.24	1.96
Downs			
Adyen	2459.00	-157.50	-6.02
Ericsson, Telefonab. L M Ser. B	9.18	-0.54	-5.60
Philips Kon	34.74	-1.96	-5.35
Ericsson, Telefonab. L M Ser. A	9.26	-0.51	-5.17
Sap Se O.n.	121.66	-4.22	-3.35

Based on the constituents of the FTSEurofirst 300 Eurozone index

TOKYO

ACTIVE STOCKS	stock traded m's	close price	Day's change
Softbank .	681.4	6822.00	-34.00
Tokyo Electron	632.3	63040.00	220.00
Nippon Yusen Kabushiki Kaisha	436.3	7570.00	290.00
Toyota Motor	386.7	2105.00	-27.50
Sony	348.1	14280.00	-65.00
Mitsubishi Ufj Fin,.	338.2	629.30	-7.90
Takeda Pharmaceutical	288.4	3185.00	-42.00
Mitsui O.s.k.lines,	258.5	6490.00	200.00
Fast Retailing Co.,	247.4	74120.00	350.00
Kawasaki Kisen Kaisha,	226.8	4865.00	195.00

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Thb Japan Steel Works,	3410.00	225.00	7.06
Kawasaki Kisen Kaisha,	4865.00	195.00	4.18
Nippon Yusen Kabushiki Kaisha	7570.00	290.00	3.98
Nippon Electric Glass Co.,	3125.00	110.00	3.65
Nippon Sheet Glass ,	582.00	19.00	3.37
Downs			
Inpex	920.00	-43.00	-4.47
Nissan Motor Co.,	614.50	-21.70	-3.41
Dic	3070.00	-80.00	-2.54
Sumitomo Chemical ,	556.00	-14.00	-2.46
Nsk	756.00	-19.00	-2.45

Based on the constituents of the Nikkei 225 index

UK MARKET WINNERS AND LOSERS

FTSE 100	Nov 22 price(p)	%Chg week	%Chg ytd
Winners			
Royal Mail	512.80	15.1	51.7
Sage	789.00	5.3	34.0
Land Securities	746.00	5.0	8.3
B&m Eur Value Retail S.a.	610.80	4.4	17.2
Ocado	1895.00	4.4	-
Segro	1407.50	4.3	47.7
Vodafone	117.24	4.2	-4.3
Aveva	3388.00	3.8	5.1
Rightmove	759.40	3.3	16.2
Persimmon	2779.00	3.1	-1.7
Glencore	372.50	2.9	56.3
Pershing Square Holdings Ltd	3080.00	2.8	21.5
Losers			
Darktrace	509.00	-10.5	-
Int Consolidated Airlines S.a.	148.14	-8.9	-
London Stock Exchange	6684.00	-6.7	-
Flutter Entertainment	11375.00	-6.1	-
Polymetal Int	1408.50	-6.1	-
Astrazeneca	8443.00	-5.9	14.1
Melrose Industries	160.25	-5.8	-
Rolls-royce Holdings	135.82	-5.7	21.2
Itv	118.75	-5.4	9.4
Whitbread	2991.00	-5.3	-5.3
Dcc	5782.00	-5.1	7.9
Associated British Foods	1925.00	-4.8	-

FTSE 250	Nov 22 price(p)	%Chg week	%Chg ytd
Winners			
Restaurant	87.10	9.8	31.8
Harbour Energy	401.00	9.5	-6.7
Investec	386.80	9.0	-
Baltic Classifieds	221.00	7.8	-
Homeserve	920.00	7.4	-
Diploma	3460.00	7.4	57.6
Syncona	216.50	7.2	-
Drax	586.50	7.0	55.3
Watches Of Switzerland	1406.00	6.0	141.6
Ninety One	268.40	5.3	15.3
Morgan Advanced Materials	379.50	5.0	23.1
Auction Technology	1378.00	4.6	-
Losers			
Hochschild Mining	119.80	-29.7	-
Cineworld	58.10	-13.3	-9.2
Wizz Air Holdings	4184.00	-12.2	-
Petropavlovsk	21.04	-12.2	-
Cmc Markets	248.00	-10.0	-
Trustpilot	287.80	-9.8	-
Premier Foods	103.60	-9.3	1.6
National Express	219.60	-9.0	-9.2
Reach	302.00	-8.3	-
Centamin	97.00	-7.9	-
Wh Smith	1515.00	-7.7	-2.9
Carnival	1387.00	-7.7	-0.5

FTSE SmallCap	Nov 22 price(p)	%Chg week	%Chg ytd
Winners			
Kier	122.80	9.4	84.5
Speedy Hire	69.50	7.3	-3.5
Fuller, Smith & Turner	660.00	6.5	-4.1
Aew Uk Reit	114.00	6.1	44.1
Palace Capital	262.00	6.1	31.0
Bank Of Georgia	1658.00	6.0	31.8
Georgia Capital	660.00	5.6	20.0
Foresight Holdings	470.00	3.4	-
Dwf	112.00	3.2	29.4
Bakkavor	124.40	3.0	53.6
Schroder Real Estate Investment Trust	51.50	2.8	33.1
Value And Indexed Property ome Trust	246.50	2.7	14.0
Losers			
Henderson Eurotrust	153.50	-90.1	-
Metro Bank	102.40	-22.9	-
Enquest	19.00	-16.7	67.3
Xaar	145.00	-14.6	-
On The Beach	242.00	-13.9	-
Petrofac	117.20	-12.4	-
Lindsell Train Investment Trust	1235.00	-11.6	-
Electra Private Equity	73.00	-11.6	-73.9
Lamprell	36.00	-10.0	-
Fisher (james) & Sons	370.00	-9.3	-
Jpmorgan Russian Securities	742.00	-9.1	15.4
Menzies(john)	272.50	-8.9	6.4

Industry Sectors	Nov 22 price(p)	%Chg week	%Chg ytd
Winners			
Industrial Transportation	4834.17	38.1	27.4
Health Care Equip.& Services	8129.71	31.9	26.2
Real Estate & Investment Servic	3177.78	30.0	22.3
Beverages	30080.63	27.3	17.9
Support Services	12568.15	23.8	13.4
Electronic & Electrical Equip.	12145.03	23.1	12.1
Real Estate Investment Trusts	3390.29	22.0	14.4
Pharmaceuticals & Biotech.	18184.55	21.9	13.6
Industrial Engineering	18973.89	21.7	16.5
Gas Water & Multiutilities index	5620.64	19.5	17.1
Media	9648.03	18.5	10.6
Electricity	9688.99	18.5	11.7
Losers			
Travel & Leisure	7717.08	-18.1	-
Automobiles & Parts	3942.33	-17.2	-
Mining	21283.91	-13.0	-7.8
Food Producers	6564.31	-12.8	-
General Financial	11077.79	-6.7	-9.6
Household Goods	16782.25	-4.7	-
Mobile Telecommunications	2921.98	-3.5	-7.4
General Retailers	2583.15	-2.4	-7.0
Life Insurance	8038.25	-1.9	-1.1
Nonlife Insurance	3151.01	-0.7	-0.3
Tobacco	27941.47	0.9	-1.3
Industrial Metals	6013.33	1.5	-8.6

Based on last week's performance. †Price at suspension.

CURRENCIES

Nov 22	Currency	DOLLAR Closing Mid	DOLLAR Day's Change	EURO Closing Mid	EURO Day's Change	POUND Closing Mid	POUND Day's Change
Argentina	Argentine Peso	100.4122	-0.0504	112.9280	-0.7702	134.5521	-0.6600
Australia	Australian Dollar	1.3797	0.0011	1.5517	-0.0086	1.8488	-0.0067
Bahrain	Bahrainin Dinar	0.3771	-	0.4240	-0.0027	0.5052	-0.0022
Bolivia	Bolivian Boliviano	6.9100	-	7.7713	-0.0491	9.2594	-0.0408
Brazil	Brazilian Real	5.5775	0.0171	6.2726	-0.0203	7.4738	-0.0099
Canada	Canadian Dollar	1.2679	0.0034	1.4259	-0.0051	1.6989	-0.0028
Chile	Chilean Peso	810.3000	-18.7550	911.2993	-26.9809	1085.8001	-30.0210
China	Chinese Yuan	6.3774	-0.0043	7.1724	-0.0502	8.5458	-0.0434
Colombia	Colombian Peso	3921.0800	-0.8200	4409.8205	-28.7768	5254.2395	-24.2287
Costa Rica	Costa Rican Colon	636.6100	-1.6200	715.9598	-6.3548	853.0559	-5.9347
Czech Republic	Czech Koruna	22.6222	0.1720	25.4419	0.0340	30.3136	0.0981
Denmark	Danish Krone	6.6126	0.0420	7.4368	0.0006	8.8609	0.0176
Egypt	Egyptian Pound	15.7174	0.0201	17.6765	-0.0889	21.0613	-0.0656
Hong Kong	Hong Kong Dollar	7.7887	-0.0021	8.7596	-0.0576	10.4369	-0.0487
Hungary	Hungarian Forint	329.1335	3.7789	370.1581	1.9392	441.0381	3.1450
India	Indian Rupee	74.4051	0.1576	83.6792	-0.3501	99.7026	-0.2268
Indonesia	Indonesian Rupiah	14247.5000	10.0000	16023.3813	-89.8755	19091.6207	-70.5700
Israel	Israeli Shekel	3.0887	-0.0072	3.4736	-0.0301	4.1388	-0.0280
Japan	Japanese Yen	114.7450	0.8800	129.0473	0.1810	153.7580	0.5077
..One Month		114.7450	0.8800	129.0474	0.1811	153.7580	0.5076
..Three Month		114.7448	0.8797	129.0475	0.1813	153.7579	0.5074
..One Year		114.7442	0.8785	129.0478	0.1819	153.7580	0.5063
Kenya	Kenyan Shilling	112.3000	0.2000	126.2976	-0.5712	150.4817	-0.3931
Kuwait	Kuwaiti Dinar	0.3027	0.0004	0.3404	-0.0018	0.4056	-0.0013
Malaysia	Malaysian Ringgit	4.1855	0.0020	4.7072	-0.0275	5.6086	-0.0220
Mexico	Mexican Peso	20.9520	0.1120	23.5635	-0.0221	28.0756	0.0272
New Zealand	New Zealand Dollar	1.4339	0.0081	1.6126	-0.0010	1.9214	0.0024
Nigeria	Nigerian Naira	413.7500	-	465.3216	-2.9386	554.4240	-2.4401
Norway	Norwegian Krone	8.9063	0.0307	10.0164	-0.0285	11.9344	-0.0112
Pakistan	Pakistani Rupee	174.3000	-0.8500	196.0255	-2.1999	233.5616	-2.1719
Peru	Peruvian Nuevo Sol	4.0258	0.0004	4.5276	-0.0281	5.3946	-0.0231
Philippines	Philippine Peso	50.6600	0.2350	56.9745	-0.0938	67.8843	0.0175
Poland	Polish Zloty	4.1789	0.0306	4.6998	0.0050	5.5998	0.0166
Romania	Romanian Leu	4.4012	0.0277	4.9497	0.0001	5.8975	0.0113
Russia	Russian Ruble	74.9925	1.5900	84.3399	1.2669	100.4898	1.6977
Saudi Arabia	Saudi Riyal	3.7512	0.0001	4.2188	-0.0265	5.0266	-0.0220
Singapore	Singapore Dollar	1.3626	0.0032	1.5324	-0.0061	1.8258	-0.0037
South Africa	South African Rand	15.7600	0.0562	17.7244	-0.0483	21.1184	-0.0172
South Korea	South Korean Won	1185.1000	-0.2500	1332.8160	-8.6998	1588.0313	-7.3255
Sweden	Swedish Krona	8.9784	0.0555	10.0975	-0.0010	12.0310	0.0217
Switzerland	Swiss Franc	0.9317	0.0049	1.0478	-0.0011	1.2484	0.0011
Taiwan	New Taiwan Dollar	27.7715	-0.0085	31.2331	-0.2069	37.2137	-0.1752
Thailand	Thai Baht	32.8775	0.1150	36.9755	-0.1034	44.0558	-0.0391
Tunisia	Tunisian Dinar	2.9034	0.0234	3.2653	0.0058	3.8905	0.0143
Turkey	Turkish Lira	11.3343	0.1042	12.7470	0.0375	15.1879	0.0735
United Arab Emirates	UAE Dirham	3.6731	-	4.1309	-0.0261	4.9219	-0.0217
United Kingdom	Pound Sterling	0.7463	0.0033	0.8393	-0.0016	-	-
..One Month		0.7463	0.0033	0.8392	-0.0016	-	-
..Three Month		0.7463	0.0033	0.8391	-0.0016	-	-
..One Year		0.7460	0.0033	0.8382	-0.0016	-	-
United States	United States Dollar	-	-	1.1246	-0.0071	1.3400	-0.0059
..One Month		-	-	1.1246	-0.2213	1.3400	-0.0059
..Three Month		-	-	1.1243	-0.2213	1.3401	-0.0059
..One Year		-	-	1.1235	-0.2213	1.3397	-0.0059
Vietnam	Vietnamese Dong	22675.0000	13.0000	25501.3567	-146.3111	30384.5161	-116.2144
European Union	Euro	0.8892	0.0056	-	-	1.1915	0.0023
..One Month		0.8891	0.0056	-	-	1.1914	0.0023
..Three Month		0.8889	0.0056	-	-	1.1913	0.0023
..One Year		0.8880	0.0055	-	-	1.1904	0.0022

Rates are derived from WM Reuters Spot Rates and MorningStar (latest rates at time of production). Some values are rounded. Currency redenominated by 1000. The exchange rates printed in this table are also available at www.FT.com/marketsdata

FTSE ACTUARIES SHARE INDICES

UK SERIES
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Produced in conjunction with the Institute and Faculty of Actuaries

	£ Strlg Nov 22	Day's chge%	Euro Index	£ Strlg Nov 19	£ Strlg Nov 18	Year ago	Div yield%	Cover	P/E ratio	X/D adj	Total Return
FTSE 100 (101)	7255.46	0.44	6733.99	7223.57	7255.96	6351.45	3.40	2.09	14.05	232.71	7169.51
FTSE 250 (250)	23429.70	-0.27	21745.75	23492.49	23574.62	19506.96	1.86	3.33	16.09	397.56	18928.85
FTSE 250 ex Inv Co (183)	24226.99	-0.39	22485.73	24321.79	24420.35	20001.16	1.82	0.87	63.29	355.33	19952.84
FTSE 350 (351)	4166.21	0.31	3866.78	4153.16	4171.04	3614.69	3.13	2.22	14.38	122.27	8181.11
FTSE 350 ex Investment Trusts (282)	4052.24	0.33	3760.99	4039.05	4057.38	3525.33	3.21	1.89	16.44	92.72	4109.60
FTSE 350 Higher Yield (113)	3237.16	0.55	3004.50	3219.45	3232.04	2790.48	4.76	1.59	13.23	136.71	7077.30
FTSE 350 Lower Yield (238)	4878.76	0.07	4528.11	4875.34	4898.34	4253.46	1.43	4.42	15.80	80.85	5876.48
FTSE SmallCap (254)	7429.42	-0.24	6895.44	7447.26	7472.23	5846.11	2.45	4.44	9.18	159.60	12080.74
FTSE SmallCap ex Inv Co (134)	6184.67	-0.43	5740.16	6211.51	6249.34	4598.68	1.99	0.97	52.02	97.43	10472.82
FTSE All-Share (605)	4147.35	0.30	3849.27	4135.12	4152.80	3586.51	3.10	2.28	14.11	120.60	8224.73
FTSE All-Share ex Inv Co (416)	3992.58	0.31	3705.60	3980.14	3998.74	3463.27	3.19	1.88	16.65	90.86	4111.45
FTSE All-Share ex Multinationals (534)	1343.94	0.15	1035.46	1341.99	1348.07	1146.95	2.50	3.45	11.61	29.59	2755.30
FTSE Fledgling (84)	13425.21	-0.67	12460.30	13516.18	13534.84	9576.18	2.12	6.31	7.48	243.69	28179.49
FTSE Fledgling ex Inv Co (35)	17656.23	-1.18	16572.05	18070.12	18199.29	10207.01	1.66	-6.29	-9.59	253.67	36504.13
FTSE All-Small (338)	5172.68	-0.26	4800.91	5186.34	5203.17	4048.29	2.44	4.53	9.07	110.15	10789.28
FTSE All-Small ex Inv Co (169)	4645.50	-0.46	4311.61	4666.97	4695.57	3420.54	1.95	0.74	68.18	73.00	9963.82
FTSE AIM All-Share (746)	1220.23	-0.97	1132.53	1232.16	1236.75	1031.03	0.89	1.38	81.33	7.94	1412.22
FTSE All-Share Technology (22)	2370.22	-0.94	2199.97	2392.75	2409.56	2067.53	1.44	0.86	80.81	20.88	3364.47
FTSE All-Share Telecommunications (7)	1890.49	2.74	1746.72	1840.03	1873.29	1794.14	4.56	0.30	72.11	41.35	2666.77
FTSE All-Share Health Care (13)	12813.79	-0.30	11892.85	12852.27	12745.97	11253.76	2.52	1.19	33.41	250.42	11547.52
FTSE All-Share Financials (253)	4964.73	0.42	4587.17	4944.16	4984.66	4247.38	2.64	5.44	6.96	95.99	5323.82
FTSE All-Share Real Estate (56)	1215.65	-0.26	1175.00	1218.70	1209.08	984.25	2.45	1.65	24.73	18.34	1234.97
FTSE All-Share Consumer Discretionary (81)	5408.75	-0.27	4992.47	5428.85	5487.28	4734.88	1.47	-0.18	-388.29	64.67	5599.79
FTSE All-Share Consumer Staples (23)	17656.14	0.63	16387.03	17545.62	17532.72	16960.39	3.80	1.63	16.17	579.06	16926.44

Further rows of this table (FTSE All-Share industry and sector indices, from Industrials (88) to Oil, Gas and Coal (14)) and FTSE Sector Indices:

FTSE Sector Indices	£ Strlg Nov 22	Day's chge%	Euro Index	£ Strlg Nov 19	£ Strlg Nov 18	Year ago	Div yield%	Cover	P/E ratio	X/D adj	Total Return
Non Financials (352)	4963.69	0.26	4606.94	4950.82	4966.20		89.16	3.24	1.51	20.37	113.73	8861.87

Hourly movements	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	High/day	Low/day
FTSE 100	7246.32	7253.46	7243.01	7248.74	7229.66	7218.59	7219.89	7246.43	7270.09	7272.56	7208.16
FTSE 250	23541.42	23547.78	23513.57	23546.48	23491.24	23442.10	23414.24	23485.01	23494.41	23581.91	23401.55
FTSE SmallCap	7443.24	7456.64	7444.79	7451.71	7441.71	7431.27	7427.83	7432.18	7434.94	7459.98	7425.49
FTSE All-Share	4146.87	4150.55	4144.54	4148.27	4137.74	4131.02	4130.70	4144.99	4156.07	4156.99	4125.75

Time of FTSE 100 Day's high:16:05:15 Day's Low13:17:30 FTSE 100 2010/11 High: 7384.18(11/11/2021) Low: 6407.46(29/01/2021)
Time of FTSE All-Share Day's high:16:05:00 Day's Low13:41:00 FTSE 100 2010/11 High: 4212.39(11/11/2021) Low: 3641.93(29/01/2021)

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FT 30 INDEX

	Nov 22	Nov 19	Nov 18	Nov 17	Nov 16	Yr Ago	High	Low
FT 30	2787.40	2782.80	2805.20	2801.90	2822.40	0.00	2870.10	2450.90
FT 30 Div Yield	-	-	-	-	-	0.00	3.93	2.74
P/E Ratio net	-	-	-	-	-	0.00	19.44	14.26

FT 30 hourly changes

8	9	10	11	12	13	14	15	16	High	Low
2782.8	2796.8	2792.8	2802.5	2787.7	2783.6	2782.3	2789.2	2793.8	2803.2	2777.9

FT30 constituents and recent additions/deletions can be found at www.ft.com/ft30

FX: EFFECTIVE INDICES

	Nov 19	Nov 18	Mnth Ago		Nov 22	Nov 19	Mnth Ago
UK	82.15	82.09	82.32				

Source: Bank of England. New Sterling ERI base Jan 2005 = 100. Other indices base average 1990 = 100. Index rebased 1/2/95. for further information about ERIs see www.bankofengland.co.uk

FTSE SECTORS: LEADERS & LAGGARDS

Year to date percentage changes

Beverages	32.39	Construct & Material	17.93	Basic Materials	9.94
Support Services	31.53	Software & Comp Serv	17.75	Electricity	9.37
Oil & Gas Producers	27.55	Technology	17.68	Mining	7.85
Oil & Gas	26.49	Food & Drug Retailer	17.62	Telecommunications	4.85
Media	24.92	Tech Hardware & Eq	17.08	Consumer Goods	1.83
Industrial Eng	24.84	Industrial Transport	16.74	Financial Services	0.89
Chemicals	24.21	Utilities	15.72	Beverages	31.66
Electronic & Elec Eq	23.50	Pharmace & Biotech	15.28	Travel & Leisure	-0.38
Real Est Invest & Se	23.24	FTSE 250 Index	14.36	Mobile Telecomms	-1.30
Industrials	22.84	Health Care	13.52	Household Goods & Ho	-2.01
Real Est Invest & Tr	22.58	Financials	13.41	Tobacco	-2.92
Banks	22.10	NON FINANCIALS Index	13.27	Nonlife Insurance	-3.90
Fixed Line Telecomms	22.06	FTSE All{HY-}Share Index	12.90	Health Care Eq & Srv	-4.13
Industrial Metals &	21.24	Equity Invest Instr	12.64	Food Producers	-5.25
Aerospace & Defense	19.91	FTSE 100 Index	12.30	Personal Goods	-9.54
FTSE SmallCap Index	19.53	General Retailers	11.62	Automobiles & Parts	-14.49
Gas Water & Multi	17.98	Life Insurance	11.53	Leisure Goods	-15.40
		Consumer Services	11.30	Oil Equipment & Serv	-31.28

FTSE GLOBAL EQUITY INDEX SERIES

Nov 22 Regions & countries	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
FTSE Global All Cap	9374	848.26	-0.3	1.9	16.6	1329.46	18.5	1.7
FTSE Global All Cap	9374	848.26	-0.3	1.9	16.6	1329.46	18.5	1.7
FTSE Global Large Cap	1798	758.36	-0.2	2.3	16.4	1224.89	18.5	1.7
FTSE Global Mid Cap	2301	1075.93	-0.5	0.9	15.9	1563.18	17.5	1.6
FTSE Global Small Cap	5275	1165.48	-0.5	0.9	15.8	1646.46	17.3	1.4
FTSE All-World	4099	496.65	-0.2	2.0	16.6	824.14	18.6	1.7
FTSE World	2661	894.04	-0.2	2.4	16.2	1991.12	18.2	1.7
FTSE Global All Cap ex UNITED KINGDOM In	9081	899.12	-0.2	2.1	16.8	1382.93	18.7	1.6
FTSE Global All Cap ex USA	7545	606.18	-0.2	-0.2	7.5	1043.76	10.0	2.4
FTSE Global All Cap ex JAPAN	7982	883.54	-0.3	2.0	17.6	1397.35	19.5	1.7
FTSE Global All Cap ex Eurozone	8714	895.75	-0.2	2.0	16.9	1374.31	18.8	1.7
FTSE Developed	2209	821.83	-0.2	2.5	18.7	1298.27	20.7	1.6
FTSE Developed All Cap	5829	860.17	-0.2	2.3	18.5	1339.15	20.4	1.6
FTSE Developed Large Cap	886	770.98	-0.1	2.8	18.9	1239.90	20.9	1.6
FTSE Developed Europe Large Cap	237	444.50	-0.6	0.8	13.2	853.33	16.2	2.5
FTSE Developed Europe Mid Cap	351	771.68	-0.8	0.0	11.6	1268.57	14.2	2.3
FTSE Dev Europe Small Cap	720	1105.58	-0.5	-1.7	14.7	1774.66	16.8	1.8
FTSE North America Large Cap	256	1033.66	-0.1	3.8	24.5	1526.63	26.1	1.3
FTSE North America Mid Cap	414	1305.85	-0.6	2.0	23.2	1777.77	24.9	1.2
FTSE North America Small Cap	1338	1353.26	-0.7	1.6	18.3	1774.92	19.4	1.1
FTSE North America	670	672.60	-0.2	3.5	24.2	1016.24	25.8	1.2
FTSE Developed ex North America	1539	316.47	-0.2	0.4	8.9	587.30	10.6	2.4
FTSE Japan Large Cap	172	472.37	0.9	2.9	4.2	676.51	6.2	2.0
FTSE Japan Mid Cap	338	640.53	0.6	-0.6	6.1	870.49	7.4	2.0
FTSE Global wi JAPAN Small Cap	882	714.11	0.6	-1.6	0.1	1005.69	2.2	2.4
FTSE Japan	510	192.97	0.8	1.4	3.1	309.40	5.2	2.0
FTSE Asia Pacific Large Cap ex Japan	956	856.15	-0.2	-1.4	-3.6	1513.46	-0.1	2.4
FTSE Asia Pacific Mid Cap ex Japan	919	1142.61	0.1	-1.2	11.3	1942.07	13.7	2.5
FTSE Asia Pacific Small Cap ex Japan	2042	727.30	-0.1	1.4	16.1	1205.33	18.1	2.2
FTSE Asia Pacific Ex Japan	1875	677.57	-0.2	-1.4	-0.8	1272.62	1.2	2.3
FTSE Emerging All Cap	3545	905.16	-0.4	-1.6	1.7	1523.72	4.1	2.4
FTSE Emerging Large Cap	912	851.42	-0.4	-1.9	-0.7	1441.49	1.5	2.4
FTSE Emerging Mid Cap	978	1157.37	-0.1	-0.1	10.5	1956.31	13.0	2.9
FTSE Emerging Small Cap	1655	968.13	-0.1	1.7	13.6	1562.73	16.2	2.3
FTSE Emerging Europe	87	431.33	-2.3	-9.3	16.5	869.56	21.0	3.6
FTSE Latin America All Cap	252	695.18	0.1	-6.5	-15.3	1247.64	-11.4	5.5
FTSE Middle East and Africa All Cap	332	804.09	-0.6	0.3	23.1	1427.02	26.4	2.5
FTSE Global wi UNITED KINGDOM All Cap In	293	350.22	-0.6	-2.4	13.5	690.51	16.9	3.3
FTSE Global wi USA All Cap	1829	1160.38	-0.3	3.4	23.5	1654.44	25.0	1.2
FTSE Europe All Cap	1473	531.80	-0.7	0.1	12.9	980.48	15.8	2.5
FTSE Eurozone All Cap	660	521.89	-0.9	0.8	12.6	955.30	15.1	2.2
FTSE EDHEC-Risk Efficient All-World	4099	543.72	-0.5	0.5	13.2	840.33	15.3	1.9
FTSE EDHEC-Risk Efficient Developed Europe	588	412.77	-0.7	-0.4	10.5	704.12	13.0	2.2
Oil & Gas	136	327.07	-2.5	-6.8	27.0	687.33	36.4	4.3
Oil & Gas Producers	95	311.49	-2.9	-7.4	28.9	621.15	34.6	4.1

Nov 22 Sectors	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
Oil Equipment & Services	26	236.80	-2.0	-2.0	25.1	419.84	30.7	4.7
Basic Materials	370	657.11	0.1	0.1	7.7	1157.24	11.6	3.8
Chemicals	172	973.05	0.0	0.0	11.8	1669.16	14.0	2.1
Forestry & Paper	21	294.81	-0.4	-0.4	-6.8	575.57	-4.3	2.9
Industrial Metals & Mining	97	522.71	0.3	0.3	11.5	946.86	17.7	5.9
Mining	80	882.37	0.2	0.2	0.2	1618.11	5.9	6.0
Industrials	757	599.00	-0.2	-0.2	14.2	934.50	15.8	1.4
Construction & Materials	145	724.46	-0.3	-0.3	17.6	1192.74	19.7	1.8
Aerospace & Defense	35	799.12	-2.2	-2.2	10.6	1258.27	12.6	1.4
General Industrials	72	282.39	-0.2	-0.2	11.6	486.66	13.8	2.0
Electronic & Electrical Equipment	143	805.37	0.7	0.7	20.4	1139.17	21.8	1.1
Industrial Engineering	147	1159.62	0.0	0.0	13.1	1806.17	14.9	1.6
Industrial Transportation	126	1075.92	0.1	0.1	17.3	1693.64	19.1	1.6
Support Services	89	710.42	-0.4	-0.4	10.5	1042.38	11.5	1.0
Consumer Goods	540	690.64	0.3	0.3	13.0	1135.18	15.1	1.8
Automobiles & Parts	128	817.16	1.3	1.3	33.4	1299.69	34.9	0.9
Beverages	68	770.09	-0.3	-0.3	4.3	1278.72	6.1	2.1
Food Producers	132	758.20	-0.6	-0.6	5.6	1276.62	8.0	2.3
Household Goods & Home Construction	61	616.02	0.1	0.1	6.9	1011.53	9.4	2.3
Leisure Goods	47	325.12	0.2	0.2	-1.5	453.52	-0.4	1.1
Personal Goods	89	1182.16	0.6	0.6	12.6	1786.36	13.9	1.5
Tobacco	15	915.26	-1.0	-1.0	0.8	2432.69	5.3	6.6
Health Care	338	764.80	-0.3	-0.3	14.1	1197.45	15.6	1.6
Health Care Equipment & Services	129	1609.63	-0.6	-0.6	15.7	1954.82	16.5	0.8
Pharmaceuticals & Biotechnology	209	481.83	0.0	0.0	8.4	806.67	10.7	2.2
Consumer Services	453	734.19	-0.9	-0.9	16.6	1036.52	17.2	0.8
Food & Drug Retailers	89	335.66	-0.7	-0.7	12.3	521.56	15.0	2.4
General Retailers	157	1359.85	-1.0	-1.0	7.4	1841.38	8.0	0.6
Media	84	499.55	-0.8	-0.8	4.3	695.53	5.1	1.1
Travel & Leisure	143	514.99	-1.0	-1.0	9.0	743.03	4.1	0.8
Telecommunication	88	148.89	-0.5	-0.5	-3.3	336.84	0.4	4.3
Fixed Line Telecommuniations	35	103.93	-0.4	-0.4	-6.4	295.37	0.3	6.0
Mobile Telecommunications	53	180.63	-0.5	-0.5	-1.9	352.82	0.7	3.3
Utilities	198	325.23	0.1	0.1	1.4	736.33	4.6	3.3
Electricity	142	366.76	0.2	0.2	1.6	818.51	4.7	3.3
Gas Water & Multiutilities	56	339.37	0.0	0.0	1.0	757.41	4.3	3.4
Financials	870	297.93	-0.8	-0.8	18.1	555.03	21.1	2.6
Banks	268	228.15	-1.1	-1.1	23.7	469.68	27.7	3.1
Nonlife Insurance	72	340.31	-0.7	-0.7	13.7	550.82	17.1	2.9
Life Insurance	54	245.55	-1.0	-1.0	5.6	454.56	8.9	3.4
Financial Services	215	493.08	-0.8	-0.8	17.4	735.68	19.0	1.5
Technology	349	684.49	0.6	0.6	31.5	884.61	32.5	0.7
Software & Computer Services	188	1124.53	0.3	0.3	33.8	1352.58	34.4	0.4
Technology Hardware & Equipment	161	549.80	1.0	1.0	28.9	761.10	30.3	1.1
Alternative Energy	15	254.44	2.0	2.0	-5.3	363.59	-4.8	0.4
Real Estate Investment & Services	160	346.16	0.7	0.7	-3.5	655.22	-1.0	2.8
Real Estate Investment Trusts	101	582.61	-0.4	-0.4	23.7	1271.35	26.8	2.9
FTSE Global Large Cap	1798	758.36	-0.2	-0.2	16.4	1224.89	18.5	1.7

The FTSE Global Equity Series, launched in 2003, contains the FTSE Global Small Cap Indices and broader FTSE Global All Cap Indices (large/mid/small cap) as well as the enhanced FTSE All-World index Series (large/mid cap) - please see https://research.ftserussell.com/Products/indices/Home/indexfiltergeis?indexName=GEISAC&currency=USD&rtn=CAP&segment=global-developed–emerging. The trade names Fundamental Index® and RAFI® are registered trademarks and the patented and patent-pending proprietary intellectual property of Research Affiliates, LLC (US Patent Nos. 7,620,577; 7,747,502; 7,778,905; 7,792,719; Patent Pending Publ. Nos. US-2006-0149645-A1, US-2007-0055598-A1, US-2008-0288416-A1, US-2010- 0063942-A1, WO 2005/076812, WO 2007/078399 A2, WO 2008/118372, EPN 1733352, and HK1099110). "EDHEC™" is a trade mark of EDHEC Business School As of January 2nd 2006, FTSE is basing its sector indices on the Industrial Classification Benchmark - please see www.ftse.com/icb. For constituent changes and other information about FTSE, please see www.ftse.com. © FTSE International Limited. 2013. All Rights reserved. "FTSE®" is a trade mark of the London Stock Exchange Group companies and is used by FTSE International Limited under licence.

FTSE 100 SUMMARY

FTSE 100	Closing Price	Day's Change	FTSE 100	Closing Price	Day's Change
3I Group PLC	1433	-10.00	Johnson Matthey PLC	2235	1.00
Abrdn PLC	255.70	2.40	Kingfisher PLC	327.50	5.00
Admiral Group PLC	2985	5.00	Land Securities Group PLC	746.00	2.40
Anglo American PLC	2876	32.00	Legal & General Group PLC	294.30	2.50
Antofagasta PLC	1479	70.50	Lloyds Banking Group PLC	49.73	0.68
Ashtead Group PLC	6314	8.00	London Stock Exchange Group PLC	6684	-20.00
Associated British Foods PLC	1925	20.00	M&G PLC	195.00	1.50
Astrazeneca PLC	8443	-36.00	Meggitt PLC	740.60	0.40
Auto Trader Group PLC	735.60	0.60	Melrose Industries PLC	160.25	0.80
Avast PLC	595.80	0.40	Mondi PLC	1815.5	-9.50
Aveva Group PLC	3388	-51.00	National Grid PLC	985.00	1.50
Aviva PLC	395.50	3.70	Natwest Group PLC	223.70	3.10
B&M European Value Retail S.A.	610.80	7.80	Next PLC	8198	26.00
Bae Systems PLC	563.80	-1.20	Ocado Group PLC	1895	-2.50
Barclays PLC	194.74	3.78	Pearson PLC	625.00	-5.00
Barratt Developments PLC	685.40	15.80	Persimmon PLC	2779	29.00
Berkeley Group Holdings (The) PLC	4393	-61.00	Pershing Square Holdings LTD	3080	55.00
Bhp Group PLC	1942.8	58.60	Phoenix Group Holdings PLC	659.00	-
BP PLC	334.40	7.85	Polymetal International PLC	1408.5	-64.50
British American Tobacco PLC	2579.5	35.00	Prudential PLC	1436	-15.00
British Land Company PLC	528.60	-0.20	Reckitt Benckiser Group PLC	6213	-35.00
Bt Group PLC	164.70	4.05	Relx PLC	2365	-
Bunzl PLC	2837	-	Rentokil Initial PLC	628.80	-1.80
Burberry Group PLC	1917	-16.00	Rightmove PLC	759.40	-4.20
Coca-Cola Hbc AG	2470	3.00	Rio Tinto PLC	4539.5	84.50
Compass Group PLC	1472.5	-7.00	Rolls-Royce Holdings PLC	135.82	-0.18
Crh PLC	3657	-13.00	Royal Dutch Shell PLC	1616	5.80
Croda International PLC	9942	-93.00	Sage Group PLC	789.00	12.60
Dcc PLC	5782	-20.00	Sainsbury (J) PLC	295.70	3.10
Diageo PLC	3901.5	23.50	Schroders PLC	3640	-15.00
Entain PLC	1920.5	2.00	Scottish Mortgage Investment Trust PLC	1513	-2.50
Evraz PLC	594.40	4.40	Segro PLC	1407.5	5.50
Experian PLC	3387	-13.00	Severn Trent PLC	2797	-13.00
Ferguson PLC	12120	100.00	Smith & Nephew PLC	1272.5	-5.00
Flutter Entertainment PLC	11375	-170.00	Smith (Ds) PLC	383.60	-1.60
Fresnillo PLC	946.00	-6.80	Smiths Group PLC	1503	7.50
Glaxosmithkline PLC	1526.2	4.60	Smurfit Kappa Group PLC	3897	6.00
Glencore PLC	372.50	3.05	Spirax-Sarco Engineering PLC	16445	-120.00
Halma PLC	3135	-30.00	Sse PLC	1580.5	-16.00
Hargreaves Lansdown PLC	1487.5	-11.00	St. James's Place PLC	1549.5	-3.50
Hikma Pharmaceuticals PLC	2290	-10.00	Standard Chartered PLC	455.00	3.50
Hsbc Holdings PLC	436.95	5.25	Taylor Wimpey PLC	156.85	0.50
Imperial Brands PLC	1610.5	26.50	Tesco PLC	280.90	2.05
Informa PLC	506.00	-8.20	Unilever PLC	3858	9.00
Intercontinental Hotels Group PLC	4896	-9.00	United Utilities Group PLC	1062	5.50
Intermediate Capital Group PLC	2261	-22.00	Vodafone Group PLC	117.24	3.62
International Consolidated Airlines Group S.A.	148.14	-0.36	Whitbread PLC	2991	-22.00
Intertek Group PLC	5186	-60.00	Wpp PLC	1108.5	7.00
Itv PLC	118.75	-1.95			
Jd Sports Fashion PLC	1156.5	-10.50			

UK STOCK MARKET TRADING DATA

	Nov 22	Nov 19	Nov 18	Nov 17	Nov 16	Yr Ago
Order Book Turnover (m)	91.48	102.04	102.04	88.89	367.66	178.85
Order Book Bargains	888846.00	1004249.00	1004249.00	810526.00	884794.00	850253.00
Order Book Shares Traded (m)	1203.00	1549.00	1549.00	1111.00	1448.00	1385.00
Total Equity Turnover (£m)	4512.50	7883.47	7883.47	7087.05	5047.58	4680.15
Total Mkt Bargains	1231427.00	1265035.00	1265035.00	1050176.00	1119518.00	1071620.00
Total Shares Traded (m)	4214.00	4768.00	4768.00	4221.00	4047.00	4182.00

† Excluding intra-market and overseas turnover. *UK only total at 6pm. ‡ UK plus intra-market turnover. (u) Unavaliable. (c) Market closed.

UK RIGHTS OFFERS

Issue price	Amount paid up	Latest renun. date	High	Low	Stock	closing Price p	+or-

There are currently no rights offers by any companies listed on the LSE.

UK COMPANY RESULTS

Company		Turnover		Pre-tax		EPS(p)		Div(p)		Pay day	Total	
Augmentum Fintech	Int			30.487	3.697	19.200	3.196	0.00000	0.00000	-	0.000	0.000
CentralNic Group	3rd	282.000	168.500	0.900	5.800L	0.013L	0.034L	0.00000	0.00000	-	0.000	0.000
Cerillion	Pre	26.071	20.814	7.427	2.639	21.800	8.800	5.00000	3.75000	Feb 8	7.100	5.500
Diploma	Pre	787.400	538.400	96.600	66.700	56.100	43.500	30.10000	30.00000	Feb 4	42.600	30.000
Edinburgh Investment Trust (The)	Int			102.170	62.979	59.160	36.000	0.00000	6.00000	-	6.000	15.398
Eneraqua Technologies	A	12.633	8.266	2.751	1.967	0.000	0.000	0.00000	0.00000	-		
Grafenia	Int	6.307	5.252	0.783L	1.291L	0.550L	1.030L	0.00000	0.00000	-	0.000	0.000
Plexus Holdings	Pre	2.017	0.525	4.372L	5.050L	0.000	0.000	0.00000	0.00000	-	0.000	0.000
Polar Capital Holdings	Int	103.647	68.826	31.722	27.041	26.500	23.400	14.00000	9.00000	Jan 14	45.000	33.863
SysGroup	Int	7.580	9.007	0.250	0.125	0.300	0.200	0.00000	0.00000	-	0.000	0.000
Thruvision Group	Int	1.962	4.653	2.001L	0.502L	1.340L	0.240L	0.00000	0.00000	-	0.000	0.000

Figures in £m. Earnings shown basic. Figures in light text are for corresponding period year earlier.
For more information on dividend payments visit www.ft.com/marketsdata

UK RECENT EQUITY ISSUES

Issue date	Issue price(p)	Sector	Stock code	Stock	Close price(p)	+/-	High	Low	Mkt Cap (£m)
11/19	10.00		REDC	Red Capital PLC	28.50	2.96	28.46	21.95	285.0
11/17	2.25		TM1	Technology Minerals PLC	3.60	0.06	3.94	2.80	4364.3
11/12	13.00	AIM	FRG	Firering Strategic Minerals PLC	13.50	-0.40	15.28	12.42	1173.0
11/05	1.10	AIM	MRK	Marks Electrical Group PLC	128.00	10.50	128.00	110.00	13433.5
10/27	7.50		SFTL	Softline Holding PLC	6.55	-0.10	8.20	6.55	1203.2
10/25	6.25	AIM	AXL	Arrow Exploration Corp	7.75	0.13	7.99	6.50	1624.6
10/19	10.00	AIM	BEN	Bens Creek Group PLC	30.40	-0.50	33.00	9.50	10640.0
10/15	10.00	AIM	LST	Light Science Technologies Holdings PLC	21.50	-1.30	32.00	10.00	3744.2

§Placing price. *Intoduction. ‡When issued. Annual report/prospectus available at www.ft.com/ir
For a full explanation of all the other symbols please refer to London Share Service notes.

MARKET DATA

FT500: THE WORLD'S LARGEST COMPANIES

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Australia (A$)							
ANZ	26.76	-0.54	29.64	22.10	2.29	15.84	54677.24
BHPBilltn	36.58	0.13	54.55	35.56	5.73	12.26	78220.61
CmwBkAu	95.80	-2.01	110.19	78.79	2.60	20.26	118484.82
CSL	316.07	0.57	320.42	242.00	0.88	45.33	104388.72
NatAusBk	28.23	-0.34	30.30	22.25	2.17	18.14	67040.69
Telstra	4.06	-	4.08	2.98	2.47	25.90	34998.29
Wesfarmers♦	58.88	-0.33	67.20	49.01	2.82	27.88	48388.05
Westpc	21.68	-0.46	27.12	19.23	1.46	18.17	57647.04
Woolworths	40.48	0.26	42.66	31.24	2.51	33.01	35559.26
Belgium (€)							
AnBshInBv	52.44	0.58	65.86	46.66	1.00	21.33	102401.34
KBC Grp	75.20	0.34	86.50	55.08	0.60	12.08	35241.21
Brazil (R$)							
Ambev	17.34	-0.05	19.86	13.35	3.05	17.51	48939.4
Bradesco	17.66	0.07	24.57	16.45	3.14	10.79	15421.81
Cielo	2.18	-0.02	4.45	2.15	4.60	6.71	1061.89
ItauHldFin	20.15	-0.08	30.15	19.83	3.75	6.58	17913.11
Petrobras	27.86	0.67	32.34	20.60	3.79	3.41	37175.88
Vale	68.82	4.79	120.45	61.85	12.89	3.88	63329.25
Canada (C$)							
Bausch Hlth	33.02	0.13	43.97	23.96	-	-7.46	9334.09
BCE	64.94	0.22	67.08	54.18	5.22	21.94	46547.07
BkMontrl♦	139.00	1.11	140.95	93.33	2.95	17.48	71051.36
BkNvaS	82.76	0.20	83.65	63.20	4.26	11.83	79332.2
Brookfield	74.97	-0.43	77.51	48.34	0.82	34.44	96995.77
CanadPcR	93.88	-0.83	100.00	82.12	0.81	20.33	49387.33
CanImp	148.86	1.76	152.87	107.44	3.84	11.64	52933.08
CanNatRs	51.82	0.76	55.19	28.67	3.43	15.17	48111.59
CanNatRy	164.36	0.68	168.66	125.00	1.46	24.93	91653.42
Enbridge	50.22	-0.05	54.00	38.49	6.51	16.86	80249.1
GtWesLif	38.24	0.30	39.73	28.79	4.55	11.07	28064.64
ImpOil	43.58	0.82	45.49	22.48	2.12	-84.39	23812.5
Manulife	24.59	0.16	27.68	21.43	4.52	6.80	37674.36
Nutrien	88.02	2.14	91.15	59.45	2.54	42.35	39626.6
RylBkC♦	132.41	0.45	134.23	102.74	3.19	12.75	148841.78
SHOP	2037.94	-101.88	2228.73	1248.55	-	85.51	182612.23
Suncor En	32.27	0.60	33.45	20.29	2.59	32.49	37041.54
ThmReut	154.30	-1.71	156.46	99.11	1.25	9.01	59285.87
TntoDom	93.29	1.46	93.95	69.00	3.32	11.23	134114.76
TrnCan	60.56	0.33	68.20	51.26	5.51	29.46	46775.21
China (HK$)							
AgricBkCh	2.65	-0.03	3.30	2.54	8.45	3.46	10458.27
Bk China	2.78	-0.01	3.17	2.54	8.20	3.66	29847.3
BkofComm	4.84	-0.04	5.26	4.00	7.66	3.87	21756.72
BOE Tech	0.90	0.03	1.21	0.55	-	-76.99	22.99
Ch Coms Cons	4.12	-0.01	4.73	3.21	5.06	2.91	2337.24
Ch Evrbrght	2.76	-0.04	3.54	2.63	8.92	3.92	4492.84
Ch Rail Cons	4.86	-0.04	5.99	4.07	5.00	2.53	1295.57
Ch Rail Gp	3.72	-0.07	4.70	3.33	5.26	3.21	2009.49
ChConstBk	5.20	-0.01	6.74	5.15	7.32	3.97	160509.82
China Vanke	18.86	-0.62	35.00	16.84	6.27	4.66	4603.61
ChinaCitic	3.43	-0.03	4.29	3.15	8.88	3.05	6553.81
ChinaLife	13.72	-0.02	18.86	12.22	5.45	5.46	13107.78
ChinaMBank	63.85	-0.75	72.45	45.95	2.35	12.14	37634.92
ChinaMob	47.55	0.20	59.20	39.00	6.94	7.48	125002
ChinaPcIns	24.50	-0.10	42.75	20.85	5.68	7.33	8729.87
ChMinsheng	3.13	-0.06	5.01	2.56	8.05	4.06	3343.59
ChMrchSecs	17.35	0.05	28.18	16.01	4.36	15.52	20191.71
Chna Utd Coms	3.96	-0.01	5.03	3.93	1.66	19.32	19097.41
ChShenEgy	16.28	-0.08	19.36	13.64	13.22	5.82	7059.58
ChShpbldng	4.19	-	5.08	3.78	-	-273.91	14509.06
ChStConEng	4.68	-0.07	5.61	4.38	4.50	3.82	29826.62
ChUncHK	4.01	0.01	5.50	3.90	4.29	8.04	15753.44
CNNC Intl	6.62	0.11	8.31	4.59	1.76	16.83	17718.15
CSR	3.70	-0.02	4.22	2.53	5.73	8.11	2076.43
Daqin	6.18	-0.04	7.11	5.80	7.62	9.00	14406.62
GuosenSec	11.24	-0.03	14.57	10.32	1.96	13.98	15557.44
HaitongSecs	6.74	-0.02	7.93	6.36	9.45	5.21	2950.47
Hngzh HikVDT	50.53	0.04	70.48	43.38	1.55	30.08	64518.22
Hunng Pwr	3.24	-0.09	4.91	2.44	6.47	-39.60	1955.27
IM Baotou Stl	2.60	0.08	4.14	1.12	-	40.14	12914.48
In&CmBkCh	4.27	0.01	5.75	4.15	7.11	4.30	47583.1
IndstrlBk	18.20	-0.30	28.07	17.08	4.32	5.07	55978.2
Kweichow	1854.27	25.86	2627.88	1525.5	1.02	47.37	365244.77
Midea	0.52	-0.01	0.85	0.50	-	48.37	20.10
New Ch Life Ins	21.90	0.05	35.35	20.55	7.46	3.51	2907.65
PetroChina	3.48	-0.06	4.20	2.32	5.87	5.37	9426.99
PingAnIns	57.50	0.15	103.60	48.80	4.73	7.02	54981.29
PngAnBnk	18.12	-0.03	25.31	17.01	0.97	10.93	55136.8
Pwr Cons Corp	6.75	0.07	9.96	3.57	1.31	14.09	11795.46
SaicMtr	20.88	0.20	27.46	18.03	-	9.99	38252.12
ShenwanHong	0.08	0.00	0.11	0.05	-	-13.57	84.35
ShgPdgBk	8.60	-0.05	11.24	8.44	6.68	5.10	39581.4
Sinopec Corp	3.62	-0.11	4.69	3.32	6.10	5.39	11857.88
Sinopec Oil	2.11	-0.02	2.90	1.79	-	316.55	4489.43
Denmark (kr)							
DanskeBk	115.30	3.15	125.60	95.52	1.77	10.09	15033.4
MollerMrsk	19580	-250.00	21360	11880	1.70	6.83	26376.12
NovoB	742.30	-9.00	760.90	411.30	1.25	37.91	198979.86

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Finland (€)							
Nokia	5.17	-0.04	5.38	3.07	-	-15.05	33018.64
SampoA	43.95	0.24	47.33	33.07	3.96	40.54	27390.68
France (€)							
Airbus Grpe	108.78	-0.62	121.00	81.84	-	27.70	96168.54
AirLiquide	153.42	-0.08	154.36	124.25	1.83	27.42	81759.81
AXA	25.40	0.23	26.35	18.21	5.76	10.70	69107.1
BNP Parib	58.64	0.92	62.55	39.71	1.94	9.28	82423.14
ChristianDior	715.00	-9.00	731.50	420.60	0.86	32.42	145149.83
Cred Agr	12.72	0.24	13.49	8.83	6.43	9.12	44239.78
Danone	56.33	0.14	65.30	50.82	7.34	17.94	43565.52
EDF	12.50	-0.10	13.58	9.63	1.72	7.68	44375.21
Engie SA	13.04	-0.07	13.87	10.98	4.16	63.74	35714.33
EssilorLuxottica	192.86	-0.50	195.00	113.30	1.18	61.62	95924.8
Hermes Intl	1643.5	-32.00	1675.5	815.80	0.28	75.79	195129.54
LOreal	417.85	-7.65	430.45	290.10	0.98	55.96	262068.44
LVMH	728.30	-5.20	741.60	482.90	0.84	37.94	413435.87
Orange	9.86	0.20	10.87	9.17	7.26	29.20	29485.37
PernodRic♦	211.00	0.60	214.50	150.90	1.93	41.34	62143.29
Renault	33.20	0.27	41.42	27.48	-	-24.77	11040.07
Safran	111.60	-1.36	127.74	101.64	0.39	34.86	53622.98
Sanofi	89.36	0.46	91.14	74.92	3.66	18.98	126981.83
Sant Gbn	60.53	-0.39	64.93	36.22	2.25	14.47	36253.89
Schneider	162.10	0.68	163.44	112.25	1.64	30.46	103737.56
SocGen	29.25	0.41	30.84	15.18	1.92	8.12	28072.38
Total	42.40	0.50	45.16	24.51	6.40	20.31	125893.82
UnibailR	63.10	0.77	85.65	53.86	-	-2.08	9835.36
Vinci	89.53	0.88	96.95	75.38	2.33	22.33	60248.75
Vivendi	11.27	0.22	11.75	5.04	5.45	10.49	14044.49
Germany (€)							
Allianz	203.05	0.30	223.50	182.52	4.84	9.54	94150.86
BASF	61.93	0.32	72.88	57.28	5.45	28.56	63971.32
Bayer	48.20	0.07	57.73	44.47	4.24	-6.12	53255.11
BMW	94.78	1.58	96.39	68.21	2.05	5.54	64168.95
Continental	107.44	1.60	132.68	89.73	2.86	420.17	24167.08
Daimler	90.97	1.18	91.63	54.76	2.53	7.09	109453.88
Deut Bank	10.86	0.04	12.56	8.37	-	16.99	25252.12
Deut Tlkm	16.91	0.43	18.92	14.53	3.63	14.76	94831.17
DeutsPost	57.62	0.48	61.38	38.64	4.44	15.39	80293.54
E.ON	11.10	0.07	11.43	8.27	4.33	8.35	32973.04
Fresenius Med	55.68	-0.10	72.28	54.78	4.67	15.96	18339.99
Fresenius SE	35.70	0.01	47.60	32.94	4.93	11.19	18157.83
HenkelKgaA	69.45	-1.05	86.50	69.45	2.70	18.76	20291.76
Linde	295.70	2.65	297.20	199.35	1.18	55.03	170453.83
MuenchRkv	247.25	0.05	269.30	215.25	4.05	16.06	38957.07
SAP	121.66	-4.22	129.74	97.35	1.56	23.98	168089.15
Siemens	155.92	0.72	156.98	109.42	2.30	24.47	149051.36
Volkswgn	277.60	0.20	357.40	152.60	1.77	7.71	92127.42
Hong Kong (HK$)							
AIA	85.60	1.00	109.30	81.20	1.54	19.88	132945.31
BOC Hold	24.55	0.10	29.55	22.20	4.92	11.18	33325.19
Ch OSLnd&Inv	18.60	0.08	21.95	14.92	6.31	3.96	26136.87
ChngKng	45.90	0.10	56.05	38.25	3.82	9.53	21472.08
Citic Ltd	7.26	-0.07	10.24	5.20	6.54	2.94	27115.33
Citic Secs	18.76	-0.18	22.00	15.22	2.55	10.24	5487.58
CK Hutchison	52.45	0.35	65.80	50.30	4.29	6.03	25834.84
CNOOC	7.96	-0.14	10.60	6.50	5.62	6.30	45629.25
HangSeng	142.80	-0.40	166.70	130.30	3.75	17.99	35051.99
HK Exc&Clr	463.20	-1.20	587.00	375.40	1.72	46.86	75398.76
MTR	41.95	0.20	49.00	41.10	2.85	-143.76	33357.81
SandsCh	20.35	0.87	40.55	14.64	-	-18.35	21145.4
SHK Props	100.50	-	126.00	94.00	4.79	11.22	37390.72
Tencent	494.40	-1.60	775.50	412.20	0.31	21.82	609062.48
India (Rs)							
Bhartiartl	742.10	27.75	755.95	450.20	0.26	-44.25	58688.92
HDFC Bk	1515.35	-24.05	1725	1342	0.42	25.70	112837.5
Hind Unilevr	2388.55	-10.85	2859.3	2095	1.29	67.09	75426.56
HsngDevFin	2894.85	-30.55	3021.1	2179.3	1.48	26.72	70399.73
ICICI Bk	752.00	-10.90	867.00	465.80	-	26.90	70131.24
Infosys	1759.4	-20.00	1848	1091	1.51	37.50	99444.53
ITC	230.90	-6.60	265.30	188.65	4.64	19.98	38237.38
L&T	1864.5	-32.50	1981.75	1092	0.96	30.34	35201.04
OilNatGas	146.55	-7.75	172.75	71.80	1.16	8.58	24778.37
RelianceIn	2363.75	-109.55	2751.35	1830	0.30	29.88	214950.47
SBI NewA	486.40	-17.40	542.30	238.10	0.80	17.87	58341.88
SunPhrmInds	770.75	-19.90	851.00	501.00	0.82	31.75	24854.33
Tata Cons	3458.4	-17.30	3989.9	2624.45	1.15	35.25	171934.57
Israel (ILS)							
TevaPha	27.79	0.06	43.90	27.38	-	-2.58	9901.02
Italy (€)							
Enel	6.95	0.00	9.05	6.55	5.05	28.32	79488.49
ENI	12.33	0.16	12.83	8.06	4.76	-4.78	49990.2
Generali	18.40	0.12	19.35	13.74	5.61	11.46	32717.79
IntSPaolo♦	2.33	-0.06	2.59	1.78	1.57	11.87	50850.49
Unicred	11.05	0.08	12.16	7.30	1.11	18.93	27808.2
Japan (¥)							
AstellasPh	1953.5	30.50	2025	1470	2.16	35.86	31696.39
Bridgestne	4930	23.00	5467	3307	2.95	26.56	30663.93
Canon	2589	-23.50	2938	1851.5	3.29	15.38	30093.8

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
CntJpRwy	16660	-95.00	18455	13290	0.78	-20.77	29909.45
Denso	8822	-209.00	9053	4929	1.59	22.39	60579.98
EastJpRwy	7033	15.00	8626	6440	1.43	-5.30	23164.4
Fanuc♦	23350	-5.00	29700	21720	1.26	35.67	41087.49
FastRetail	74120	350.00	110500	69230	0.64	50.76	68518.71
Fuji Hvy Ind	2292	-16.00	2413	1943	2.45	17.06	15364.08
Hitachi♦	7329	40.00	7403	3897	1.44	17.64	61843.16
HondaMtr	3292	-32.00	3677	2743	3.62	5.90	51969.34
JapanTob	2309	11.00	2387.5	1898	6.17	11.26	40245.76
KDDI	3420	10.00	3899	2919.5	3.52	11.81	68676.58
Keyence	74280	-360.00	76210	47150	0.27	78.67	157440.12
MitsbCp	3544	52.00	3758	2422	3.79	16.17	45887.87
MitsubEst	1657.5	3.00	2047.5	1595.5	1.51	15.68	20100.01
MitsubishiEle♦	1497	-26.00	1817	1424	2.41	13.51	28013.08
MitsuiFud	2543	2.50	2816.5	2014.5	1.74	16.27	21397.19
MitUFJFin	629.30	-7.90	688.90	441.10	4.01	10.36	74488.14
Mizuho Fin	1460	1.50	1732.5	1287	2.85	6.31	32309.09
Murata Mfg	8910	-41.00	10835	7994	1.29	20.70	52475.45
Nippon T&T	3209	25.00	3313	2453	3.12	11.92	101294.51
NipponTT	3209	25.00	3313	2453	3.12	11.92	101294.51
Nissan Mt	614.50	-21.70	664.50	491.00	-	-49.38	22603.41
Nomura	493.20	3.60	721.00	485.70	7.12	26.49	13898.6
Nppn Stl	1862	19.50	2381	1185	0.54	9.95	15421.14
Panasonic♦	1380.5	-3.00	1541	1094	1.45	12.78	29522.54
Seven & I	4777	-44.00	5340	3299	2.11	19.45	36903.86
ShnEtsuCh	20070	-165.00	21480	15350	1.25	26.00	72878.31
Softbank	6822	-34.00	10695	5888	0.65	3.09	102435.75
Sony♦	14280	-65.00	14625	9388	0.39	14.98	156941.46
SumitomoF	3825	-62.00	4354	3014	4.98	8.30	45814.07
Takeda Ph	3185	-42.00	4365	3156	5.67	11.60	43918.9
TokioMarine	6087	177.00	6210	4907	3.29	18.96	37001.02
Toyota	2105	-27.50	2188	1396	2.24	9.91	299298.93
Mexico (Mex$)							
AmerMvl	18.26	0.03	19.90	13.25	2.12	11.71	39318.37
FEMSA UBD	156.36	1.06	180.66	136.21	3.36	56.11	16128.37
WalMrtMex	72.15	-0.31	76.95	52.23	0.85	29.64	60129.91
Netherlands (€)							
ASML Hld	747.30	-12.60	777.50	352.75	0.38	55.28	347381.16
Heineken	92.46	-0.40	103.80	80.84	0.77	46.12	59895.41
ING	13.11	0.28	13.74	7.15	0.94	10.02	57544.32
Unilever	45.92	0.13	51.94	43.00	2.37	25.97	158156.79
Norway (Kr)							
DNB	211.00	2.40	217.90	126.05	4.03	15.69	36729.85
Equinor♦	223.60	3.15	238.75	116.30	1.58	-107.84	81786.92
Telenor	141.45	2.10	159.95	131.80	6.60	11.11	22226.22
Qatar (QR)							
QatarNtBk	20.65	-0.15	21.05	16.35	2.17	16.36	52384.59
Russia (RUB)							
Gzprm neft	319.76	-15.97	3649	74.00	-	-	100940.78
Lukoil	6621.25	-18.22	7554.91	7.45	-	-	61174.61
MmcNrlskNckl	21233.96	-417.19	28011.97	343.80	-	-	44806.86
Novatek	1708	63.80	13307.81	1160.85	-	-	69153.72
Rosneft	573.50	-25.22	39143.78	116.00	-	-	81048.82
Sberbank	309.24	-13.70	568.52	213.80	-	-	89015.51
Surgutneftegas	41.50	-0.50	49.50	29.80	-	-	19770.41
Saudi Arabia (SR)							
AlRajhiBnk	135.20	-6.40	151.00	71.40	1.72	27.38	90104.5
NatnIcombnk	65.00	-2.50	70.00	42.00	2.22	19.64	51983.37
SaudiBasic	120.00	-2.20	136.60	95.70	2.43	23.43	95969.28
SaudiTelec	113.80	0.20	139.80	104.80	3.49	20.26	60673.92
Singapore (S$)							
DBS	32.53	0.05	32.70	24.71	2.18	14.31	61316.84
JardnMt US$	60.88	0.76	68.88	49.13	2.74	93.68	43806.45
OCBC	11.81	0.02	12.77	9.88	2.65	11.23	38984.92
SingTel	2.50	0.01	2.63	2.21	4.16	75.11	30295.56
UOB	27.71	0.08	28.17	22.24	2.77	14.48	34042.62
South Africa (R)							
Firstrand	58.89	0.87	65.24	44.71	2.00	11.53	20960.86
MTN Grp	157.50	1.62	174.99	58.69	-	35.79	18830.73
Naspers N	2652.96	-63.04	3888	1262.66	0.22	14.40	73311.77
South Korea (KRW)							
HyundMobis	248000	10000	405000	236500	2.06	10.17	19836.88
KoreaElePwr	22300	-	30050	21300	5.55	6.85	12079.83
SK Hynix	119500	8000	150500	90500	1.00	13.76	73408.39
SmsungEl	74900	3700	96800	64700	4.10	15.45	377298.73
Spain (€)							
BBVA	5.42	0.02	6.29	3.57	1.11	10.61	40674.57
BcoSantdr	3.10	0.04	3.51	2.31	-	-6.53	60495.43
CaixaBnk	2.40	0.02	2.90	1.93	1.14	3.05	21720.62
Iberdrola	10.03	-0.07	12.57	8.59	4.08	19.60	71774.84
Inditex	31.04	0.57	32.85	24.34	1.87	37.02	108799.08
Repsol	10.54	0.16	11.78	7.50	5.71	39.62	18098.5
Telefonica	4.22	0.25	4.32	3.12	9.50	2.53	26764.52
Sweden (SKr)							
AtlasCpcoB	498.60	3.60	518.00	364.40	1.46	34.21	21670.14
Ericsson	92.71	-5.50	121.80	91.00	1.92	15.35	31725.22
H & M	162.46	1.04	229.50	159.32	-	29.95	26430.19
Investor	215.05	-0.45	221.95	143.45	1.19	2.65	43638.9

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Nordea Bk	109.80	0.80	114.64	65.76	7.44	12.20	49528.28
SEB	137.80	1.90	141.85	81.80	3.03	12.10	33305.35
SvnskaHn	100.70	1.08	108.15	80.06	4.15	11.66	21812.25
Swedbank	193.46	1.96	196.70	140.70	3.82	10.38	24391.63
Telia Co	35.69	0.66	39.97	33.45	5.42	-11.02	16256.69
Volvo	210.70	1.15	240.80	182.00	2.90	12.36	37277.17
Switzerland (SFr)							
ABB	33.52	0.27	34.79	23.66	2.35	35.84	73870.59
CredSuisse	9.07	-0.08	13.50	8.71	2.58	115.34	24821.63
Nestle	122.62	-0.14	124.16	95.00	2.19	28.77	370498.9
Novartis	76.19	0.15	86.92	74.81	3.93	21.34	199086.07
Richemont	139.25	1.35	143.55	73.22	0.71	57.03	78021.25
Roche	366.60	-3.35	378.95	293.05	2.43	23.08	276455.2
Swiss Re	88.04	0.54	94.96	77.26	6.66	22.40	30003.18
Swisscom	522.00	5.00	562.40	456.30	4.12	15.06	29024.43
UBS	16.38	0.14	17.04	11.96	4.06	8.84	65094.93
Zurich Fin	393.00	0.50	415.10	352.80	5.06	13.47	63468.95
Taiwan (NT$)							
Chunghwa Telecom	112.50	-0.50	118.50	108.00	-	26.33	31424.8
Formosa PetChem	97.00	-1.30	117.50	88.40	-	16.59	33272.18
HonHaiPrc	106.50	-0.50	134.50	81.50	3.81	11.44	53162.77
MediaTek	1080	-20.00	1185	689.00	3.31	21.86	62174.19
TaiwanSem	615.00	-2.00	679.00	480.50	1.57	30.15	574228.28
Thailand (THB)							
PTT Explor	37.25	-0.50	45.00	34.00	2.67	12.65	32361.59
United Arab Emirates (Dhs)							
Emirtestele	29.16	0.38	29.16	16.88	1.83	28.36	69042.75
United Kingdom (p)							
AscBrFd	1925	25.00	2528	1719	-	38.04	20421.2
AstraZen	8443	-36.00	9523	6499.8	2.44	40.64	143280.95
Aviva	395.50	3.70	429.60	247.40	6.83	13.18	21268.93
Barclays	194.74	3.78	217.63	111.83	0.51	6.29	44528.06
BP	334.40	7.85	366.40	3.20	4.52	10.80	89308.27
BrAmTob	2579.5	35.00	2961.5	207.50	8.21	9.56	64445.17
BT	164.70	4.05	206.70	116.65	-	11.28	21897.44
Compass	1472.5	-7.00	1721.63	18.06	-	-63.74	32450.16
Diageo	3901.5	23.50	4364.1	2805.28	1.81	34.40	131612.07
GlaxoSmh♦	1526.2	4.60	1604.4	1190.8	5.24	17.60	100575.26
Glencore	372.50	3.05	420.03	3.40	1.17	32.16	72000.95
HSBC	436.95	5.25	462.55	329.55	2.46	13.41	117395.93
Imperial Brands	1610.5	26.50	1686	1142	8.55	5.49	20582.27
LlydsBkg	49.73	0.68	51.58	0.59	1.15	7.65	48026.14
Natl Grid	985.00	1.50	992.76	805.40	4.97	21.27	44303.28
Natwest Group	223.70	3.10	235.07	145.40	1.34	14.81	35868.89
Prudential	1436	-15.00	1598.5	1158	0.81	19.96	49785.47
ReckittB	6213	-35.00	7410	4905.16	2.81	-26.88	58627.91
RELX	2367	-	2634.82	1484.9	1.99	34.21	61361.84
RioTinto	4539.5	84.50	6876.26	4354	7.41	5.44	81585.16
RollsRoyce	135.82	-0.18	150.48	86.69	-	2.97	3384.87
RylDShlA	1615.4	6.00	1795.2	16.51	2.99	31.43	99511.08
StandCh	455.00	3.50	533.20	406.88	1.43	16.24	20100.45
Tesco♦	280.90	2.05	317.55	2.74	3.56	21.44	30818.98
Vodafone	117.24	3.62	157.52	1.56	6.54	361.85	41904.81
WPP	1108.5	7.00	1121	11.00	2.17	28.16	18806.65
United States of America ($)							
21stC Fox A	38.94	-0.05	44.80	27.12	1.15	11.12	12474.3
3M	181.67	2.44	208.95	163.38	3.23	18.08	105118.32
AbbottLb	125.57	-1.27	131.61	105.32	1.25	36.47	222043.79
Abbvie	117.06	0.82	121.53	98.62	4.11	32.62	206865.57
Accenture	364.75	-5.04	374.92	241.73	0.94	40.90	239545.73
Adobe	678.48	-9.89	699.54	420.78	-	57.69	323227.87
AEP♦	84.97	1.59	91.49	74.80	3.33	18.68	42795.28
Aetna	-	-	-	-	-	-	-
Aflac	56.30	0.86	57.95	42.73	2.10	7.02	37244.04
AirProd	298.19	0.45	316.39	245.75	1.85	34.93	66008.73
Alexion	182.50	3.05	187.45	99.91	-	59.43	40336.01
Allstate	113.15	1.21	140.00	99.92	2.31	4.89	32437.39
Alphabet	2935.02	-43.51	3019.33	1694	-	32.84	882882.42
Altria	44.55	1.15	52.59	39.60	7.49	18.74	81828.67
Amazon	3590.24	-86.33	3773.08	2881	-	64.45	1820781.67
AmerAir	19.16	-0.12	26.09	12.46	-	-1.94	12406.38
AmerExpr	171.21	-2.34	189.03	111.90	1.25	17.98	136010.91
AmerIntGrp	56.80	1.85	62.54	36.77	2.19	12.30	47160.9
AmerTower	258.86	-2.12	303.72	197.50	1.82	53.80	117888.39
Amgen♦	205.47	-0.61	276.69	200.47	3.17	21.53	115734.24
Anthem	424.55	9.34	439.90	286.04	1.02	19.14	103044.52
Aon Cp	298.17	1.38	326.25	197.86	0.61	33.74	65696.51
Apple	163.52	2.97	165.70	112.59	0.50	32.93	2682775.68
Aptiv	174.32	-1.74	180.81	113.92	-	50.34	47157.22
ArcherDan	66.68	1.34	69.30	48.28	2.12	16.77	37303.54
AT&T	24.77	0.64	33.88	23.96	8.15	-82.36	176822.1
AutomData	239.98	2.07	241.18	159.31	1.50	40.76	101123.74
Avago Tech	562.97	-5.75	577.21	382.70	2.41	43.27	231727.62
BakerHu	22.50	-0.06	27.66	17.98	3.18	35.37	19569.93
BankAm	46.43	1.03	48.69	26.63	1.50	15.95	379946.1
Baxter	79.76	0.50	88.32	73.12	1.23	37.72	39935.31
BectonDick	247.00	-1.61	267.37	226.15	1.29	40.23	70935.97
BerkshHat	427823.58	4449.58	445000	333150	-	6.56	265224.09
Biogen	257.95	0.76	468.55	238.40	-	20.66	37890.98
BkNYMeln	58.42	1.35	60.52	37.52	2.06	15.56	48244.47

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
BlackRock	920.89	5.94	973.16	669.00	1.63	26.71	139898.25
Boeing	209.71	-4.42	278.57	191.85	-	-13.97	123244.64
Booking Holdings	2328.01	-11.99	2687.29	1860.73	-	237.86	95596
BrisMySq	58.16	0.33	69.75	56.11	3.35	-24.59	129098.32
CapOne	152.97	1.65	177.95	83.03	0.63	6.27	65107.41
CardinalHlth	48.69	0.25	62.96	47.15	3.88	24.13	13720.26
Carnival	20.27	-0.22	31.52	17.33	-	-2.51	19739.42
Caterpillar	202.50	2.06	246.69	171.31	1.97	26.23	109540.67
CharlesSch♦	82.35	2.18	84.49	46.42	0.85	35.82	149161.07
Charter Comms	684.12	1.78	825.62	585.45	-	36.56	122656.61
Chevron Corp♦	114.25	2.34	118.08	83.53	4.42	62.99	220238.12
Chubb	190.48	2.23	197.92	144.00	1.60	10.86	82047.6
Cigna	213.74	3.23	272.81	190.88	0.91	9.74	70839.37
Cisco	55.47	2.22	60.27	40.92	2.54	23.02	233930.69
Citigroup♦	67.50	1.16	80.29	51.19	2.93	7.14	136797.87
CME Grp	223.77	0.46	230.89	164.98	1.52	43.12	80422.08
Coca-Cola	55.93	0.80	57.56	48.11	2.88	30.84	241602.88
Cognizant	82.01	0.02	82.84	66.19	1.09	26.84	43073.27
ColgtPlm	78.04	0.84	86.41	74.01	2.20	25.14	65771.7
Comcast	52.36	0.45	61.80	48.15	1.78	20.14	238734.3
ConocPhil♦	71.32	1.71	77.98	38.77	2.33	65.21	94067.29
Corning♦	39.12	1.47	46.82	34.81	2.28	37.00	33385.34
Costco	540.50	6.71	544.00	307.00	0.54	49.26	238805.77
CrownCstl	182.89	-0.85	204.62	146.15	2.75	72.52	79045.65
CSX	36.35	0.27	36.52	27.70	1.00	23.00	80612.61
CVS	93.75	0.59	96.57	65.82	2.07	17.70	123755.5
Danaher	314.38	0.25	333.96	211.22	0.26	40.71	224645.82
Deere	352.17	6.02	400.34	250.54	0.91	21.18	109194.47
Delta	39.38	-0.31	52.28	36.97	-	-330.20	25203.74
Devon Energy	41.42	0.82	44.79	13.04	1.03	203.35	28041.34
DiscFinServ	115.65	1.27	135.69	74.78	1.48	7.62	33893.57
Disney	152.95	-1.05	203.02	140.86	-	254.32	277929.51
DominRes	74.31	0.12	81.11	67.85	3.69	26.51	60078.69
DukeEner♦	100.31	1.89	108.38	85.56	3.73	27.14	77172.25
DuPont	80.24	0.22	87.27	61.73	1.45	41.78	41970.07
Eaton♦	173.83	1.53	175.72	113.79	1.66	38.21	69288.64
eBay	74.05	-0.58	81.19	48.67	0.89	23.27	48136.63
Ecolab	237.90	3.04	238.93	201.15	0.78	67.01	68174.36
Emerson	95.17	1.83	105.99	74.50	2.05	25.09	56616.63
EOG Res	86.60	0.92	98.20	44.57	1.72	27.64	50668.79
EquityResTP	86.00	-0.04	88.09	56.08	2.72	48.54	32251.4
Exelon	54.48	0.87	54.86	38.36	2.72	56.73	53272.32
ExxonMb♦	62.00	1.33	66.38	36.78	5.44	-20.55	262481.14
Facebook	341.28	-4.03	384.33	244.61	-	26.10	807551.47
Fedex	246.55	3.86	319.90	216.34	1.11	13.45	65494.69
FordMtr	19.94	0.55	20.47	8.43	-	24.18	78272.27
Franklin	34.63	-0.06	38.27	20.32	3.87	14.75	17411.33
GenDyn	199.84	3.53	210.21	144.50	2.87	17.28	55799.89
GenElectric	100.62	0.66	116.17	76.74	0.32	76.70	110497.63
GenMills	63.24	1.20	64.65	53.96	3.14	17.23	38303.99
GenMotors	63.24	1.44	65.18	40.04	-	8.51	91815.64
GileadSci	70.09	1.40	73.34	56.56	3.85	17.62	87919.74
GoldmSchs	395.23	7.84	426.16	222.63	1.23	7.45	132320.87
Halliburton	22.39	0.35	26.75	15.57	0.80	50.05	19933.83
HCA Hold	241.40	2.34	263.92	147.01	0.39	17.06	75080.28
Hew-Pack	32.20	0.75	36.00	20.33	2.27	10.38	37111.1
HiltonWwde	142.00	-2.37	154.40	98.57	-	1099.16	39578.48
HomeDep	412.36	3.67	416.56	246.59	1.47	30.11	435187.71
Honywell♦	219.93	1.44	236.86	194.55	1.68	28.48	151404.86
HumanaInc	436.31	1.44	475.44	370.22	0.59	23.75	56080.8
IBM♦	118.50	2.45	152.84	115.19	5.35	20.99	106213.93
IllinoisTool	243.35	1.41	244.13	192.89	1.82	29.83	76382.87
Illumina	378.34	-1.00	555.77	297.21	-	74.72	59134.54
Intcntl Exch	133.37	0.07	139.79	100.89	0.92	27.50	75141.24
Intel♦	50.52	1.00	68.49	45.24	2.70	9.87	205465.25
Intuit	669.07	-23.27	716.86	337.72	0.34	91.83	189459.49
John&John♦	162.32	0.49	179.92	142.86	2.44	25.16	427309.98
JohnsonCn	80.45	-0.40	81.15	44.91	1.28	35.90	56663.54
JPMrgnCh	164.98	4.06	172.96	114.09	2.12	11.35	487559.79
Kimb-Clark	136.44	2.00	143.37	125.27	3.14	23.96	45939.95
KinderM	16.27	0.11	19.29	13.47	6.51	21.25	36879.68
Kraft Heinz	35.51	0.17	44.95	31.60	4.37	20.80	43465.75
Kroger♦	42.83	1.94	47.99	30.35	1.62	29.43	31850.04
L Brands	79.92	-0.15	-	-	-	-	-
LasVegasSd	40.27	2.01	66.77	35.59	-	-22.26	30762.05
LibertyGbl	28.70	0.79	30.58	22.15	-	1.62	5076.47
Lilly (E)♦	263.18	2.48	275.87	141.16	1.24	40.43	251755.99
Linde	331.89	-0.30	340.16	240.80	1.18	54.92	170111.84
Lockheed	346.54	5.10	396.99	319.81	2.98	16.07	95571.03
Lowes	253.58	4.06	256.39	148.89	0.99	27.10	175587.08
Lyondell	92.49	3.09	118.02	80.82	4.49	7.81	30779.19
Marathon Ptl♦	61.47	1.19	68.78	38.20	3.66	-28.04	37840.17
Marsh&M	169.51	0.19	171.13	106.95	1.06	36.03	85582.29
MasterCard	320.48	-19.24	401.50	312.38	0.51	45.89	312374.77
McDonald's	254.23	2.28	257.53	202.73	1.95	28.52	189972.2
McKesson	223.40	2.50	227.87	168.88	0.73	-8.26	34109.2
Medtronic	118.02	0.80	135.89	109.57	1.94	42.81	158600.85
Merck	81.62	0.92	91.40	68.38	3.04	34.34	206157.44
Metlife♦	62.69	1.54	67.68	44.62	2.88	13.00	52732.33
Microsoft♦	343.64	0.53	349.67	208.16	0.62	44.01	2580042.4
Mnstr Bvrg	90.35	1.05	99.89	82.96	-	32.34	47807.72

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
MondelezInt	61.12	0.60	65.60	52.91	2.00	20.86	85260.7
Monsanto	9.75	-0.01	10.00	9.51	-	-	243.75
MorganStly	99.74	2.83	105.95	57.51	1.36	13.63	178974.65
Netflix	659.73	-19.07	700.99	475.84	-	70.48	292228.85
NextEraE	88.13	-0.18	88.83	68.33	1.62	56.78	172923.14
Nike	174.74	-0.14	179.10	125.44	0.61	47.60	223283.9
NorfolkS	278.37	4.65	296.06	226.09	1.35	26.62	67739.81
Northrop	363.77	10.64	408.03	282.88	1.58	13.51	57671.06
NXP	219.99	-1.27	228.72	150.55	0.83	61.46	58502.68
Occid Pet	29.83	0.71	35.75	13.30	0.13	-5.56	27860.65
Oracle	94.86	0.89	98.95	55.68	1.15	20.77	259743.66
Pepsico	166.62	2.81	166.80	128.32	2.50	28.56	230377.63
Perrigo	40.01	-1.13	50.90	38.20	2.25	-16.37	5352.29
Pfizer♦	51.10	0.30	52.84	33.36	2.92	24.17	286817.48
Phillips66♦	72.01	2.37	94.34	60.30	4.85	-19.08	31545.41
PhilMorris	91.05	0.65	106.51	75.42	5.29	15.96	141749.16
PNCFin	203.70	4.34	217.60	127.75	2.19	15.93	86091.93
PPG Inds♦	162.01	1.17	182.97	132.10	1.29	26.18	38461.31
ProctGmbl	148.63	1.81	148.86	121.54	2.22	27.29	359679.26
Prudntl	107.70	2.32	115.52	74.58	4.05	6.10	40710.6
PublStor	330.69	-1.05	340.95	212.22	2.35	46.89	57988
Qualcomm	184.00	-1.00	188.77	122.17	1.39	23.71	206080
Raytheon♦	86.93	1.50	92.32	65.02	2.25	37.70	130114.89
Regen Pharm	657.53	4.85	686.62	441.00	-	12.20	69513.9
S&P Global	460.39	-0.92	476.17	303.50	0.64	39.94	110953.99
Salesforce	298.84	-2.33	311.75	201.51	-	125.03	292564.36
Schlmbrg	30.59	0.54	36.87	19.98	1.62	26.31	42906.53
Sempra Energy	125.24	2.48	144.93	114.66	3.32	18.69	39992.68
Shrwin-Will♦	333.40	1.15	340.45	218.06	0.58	43.07	87416.21
SimonProp	168.33	1.59	171.12	79.26	3.80	37.97	55315.12
SouthCpr♦	57.57	-2.11	83.29	54.92	3.71	16.44	44506.29
Starbucks♦	111.97	1.19	126.32	95.92	1.52	48.10	132023.83
StateSt	97.19	2.44	100.69	67.80	2.18	14.40	33385.07
Stryker	261.95	-1.74	281.16	220.90	0.91	49.46	98780.37
Sychrony Fin	48.35	0.47	52.49	29.32	1.81	6.88	26459.98
T-MobileUS	115.52	-0.10	150.20	114.36	-	37.33	144290.66
Target♦	242.43	-8.27	268.98	166.83	1.08	20.04	118315.31
TE Connect	164.79	-0.46	166.44	110.56	1.14	33.51	53773.18
Tesla Mtrs	1151.34	14.28	1243.49	489.06	-	376.14	1156250.29
TexasInstr	194.84	-0.32	202.26	155.14	1.97	28.01	179939.81
TheTrvelers	155.11	2.58	163.29	129.57	2.15	10.76	38157.18
ThrmoFshr	636.09	0.04	651.57	433.52	0.15	30.37	250650.05
TJX Cos♦	69.50	-1.52	76.94	60.52	0.72	34.84	83576.47
Truist Financial Corp♦	62.30	1.66	65.42	45.44	2.80	16.77	83163.74
UnionPac	245.88	4.57	246.63	193.14	1.65	26.49	158067.06
UPS B	210.70	2.23	220.24	154.76	1.87	31.43	153629.98
USBancorp	59.15	1.56	63.01	42.42	2.76	13.09	87707.48
UtdHlthcre	441.74	1.74	466.00	320.35	1.14	30.06	416053.37
ValeroEngy♦	70.49	1.42	84.95	50.37	5.53	-65.68	28818.82
Verizon	51.92	1.06	61.95	50.65	4.83	9.82	214957.72
VertexPharm	183.34	0.46	242.99	176.36	-	24.94	46614.55
VF Cp	75.63	-0.37	90.79	65.34	2.50	38.79	29704.16
ViacomCBS	33.16	-0.50	101.97	33.03	2.81	6.69	20118.38
Visa Inc	195.18	-5.68	252.67	192.81	0.63	40.65	330206.72
Walgreen♦	47.76	0.78	57.05	37.14	3.83	21.33	41341.65
WalMartSto	143.83	1.44	153.66	126.28	1.46	41.92	401071.04
WellsFargo♦	50.19	1.37	52.57	25.46	0.77	13.80	206080.21
Williams Cos	27.71	0.29	29.89	19.85	5.67	30.07	33668.48
Yum!Brnds	128.07	1.11	135.77	101.18	1.47	30.35	37541.56
Venezuela (VEF)							
Bco de Vnzla	0.46	0.00	594.00	0.02	217.06	-	369.71
Bco Provncl	2.00	-	798000	2.00	-	-4.41	47.52
Mrcntl Srvcs	6.75	-	601.00	0.85	0.03	2.70	90.56

Closing prices and highs & lows are in traded currency (with variations for that country indicated by stock), market capitalisation is in USD. Highs & lows are based on intraday trading over a rolling 52 week period.
♦ ex-dividend
■ ex-capital redistribution
price at time of suspension

FT 500: TOP 20

	Close price	Prev price	Day change	Day change %	Week change	Week change %	Month change %
Tesla Mtrs	1151.34	1137.06	14.28	1.26	137.95	13.6	24.95
SK Hynix	119500.00	111500.00	8000.00	7.17	13000.00	12.2	24.09
SandsCh	20.35	19.48	0.87	4.47	2.21	12.2	15.89
HomeDep	412.36	408.69	3.67	0.90	41.28	11.1	12.68
MediaTek	1080.00	1100.00	-20.00	-1.82	97.00	9.9	18.29
Hermes Intl	1643.50	1675.50	-32.00	-1.91	143.50	9.6	23.76
Qualcomm	184.00	185.00	-1.00	-0.54	15.49	9.2	39.55
Apple	163.52	160.55	2.97	1.85	13.52	9.0	9.89
Telefonica	4.22	3.97	0.25	6.39	0.31	8.0	11.36
Lowes	253.58	249.52	4.06	1.63	18.66	7.9	10.77
Intuit	669.07	692.34	-23.27	-3.36	42.93	6.9	13.25
Fuji Hvy Ind	2292.00	2308.00	-16.00	-0.69	133.50	6.2	0.26
SmsungEl	74900.00	71200.00	3700.00	5.20	4300.00	6.1	6.70
Danaher	314.38	314.13	0.25	0.08	14.70	4.9	0.30
Nokia	5.17	5.22	-0.04	-0.84	0.23	4.7	0.60
Keyence	74280.00	74640.00	-360.00	-0.48	3310.00	4.7	10.54
EssilorLuxottica	192.86	193.36	-0.50	-0.26	8.38	4.5	13.65
Kweichow	1854.27	1828.41	25.86	1.41	80.49	4.5	0.56
GileadSci	70.09	68.69	1.40	2.04	2.89	4.3	4.07
Vodafone	117.24	113.62	3.62	3.19	4.74	4.2	5.74

Based on the FT Global 500 companies in local currency

FT 500: BOTTOM 20

	Close price	Prev price	Day change	Day change %	Week change	Week change %	Month change %
Sberbank	309.24	322.94	-13.70	-4.24	-40.82	-11.7	-15.09
CmwBkAu	95.80	97.81	-2.01	-2.06	-12.32	-11.4	-8.72
MasterCard	320.48	339.72	-19.24	-5.66	-40.88	-11.3	-10.68
Boeing	209.71	214.13	-4.42	-2.07	-23.38	-10.0	-1.80
Carnival	20.27	20.49	-0.22	-1.07	-2.03	-9.1	-9.42
BakerHu	22.50	22.55	-0.06	-0.24	-2.24	-9.0	-8.73
ValeroEngy	70.49	69.07	1.42	2.06	-6.86	-8.9	-13.13
Phillips66	72.01	69.64	2.37	3.40	-6.91	-8.8	-13.23
Cielo	2.18	2.20	-0.02	-0.91	-0.20	-8.4	-7.63
Target	242.43	250.70	-8.27	-3.30	-21.90	-8.3	-5.45
Visa Inc	195.18	200.86	-5.68	-2.83	-17.12	-8.1	-15.61
Surgutneftegas	41.50	42.00	-0.50	-1.19	-3.50	-7.8	11.13
BBVA	5.42	5.40	0.02	0.39	-0.44	-7.5	-4.19
Safran	111.60	112.96	-1.36	-1.20	-9.06	-7.5	0.90
RelianceIn	2363.75	2473.30	-109.55	-4.43	-190.80	-7.5	-9.87
ViacomCBS	33.16	33.66	-0.50	-1.49	-2.62	-7.3	-11.75
EOG Res	86.60	85.68	0.92	1.07	-6.60	-7.1	-6.05
Delta	39.38	39.69	-0.31	-0.78	-3.00	-7.1	-1.25
Marathon Ptl	61.47	60.28	1.19	1.97	-4.65	-7.0	-9.11
Rosneft	573.50	598.72	-25.22	-4.21	-42.57	-6.9	-9.32

Based on the FT Global 500 companies in local currency

BONDS: HIGH YIELD & EMERGING MARKET

Nov 22	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
High Yield US$										
HCA Inc.	04/24	8.36	BB-	Ba2	BB	113.75	4.24	0.00	0.12	-
High Yield Euro										
Aldesa Financial Services S.A.	04/21	7.25	-	-	B	71.10	28.23	0.00	0.64	25.98
Emerging US$										
Peru	03/19	7.13	BBB+	A3	BBB+	104.40	2.60	-	-	0.34
Colombia	01/26	4.50	-	Baa2	BBB-	109.50	2.33	0.16	0.52	1.28
Brazil	04/26	6.00	-	Ba2	BB-	115.15	2.78	-0.01	0.65	1.73
Poland	04/26	3.25	-	A2	A-	111.22	0.98	0.03	0.16	-0.07
Mexico	05/26	11.50	-	Baa1	BBB-	149.00	1.61	0.00	-0.12	0.56
Turkey	03/27	6.00	-	Ba2	BB+	101.26	5.82	0.00	0.17	3.07
Turkey	03/27	6.00	-	B2	BB-	102.88	5.43	0.14	0.83	4.38
Peru	08/27	4.13	BBB+	A3	BBB+	103.50	3.66	0.01	-0.02	0.80
Russia	06/28	12.75	-	Baa3	BBB	168.12	2.48	0.07	0.05	-
Brazil	02/47	5.63	-	Ba2	BB-	101.48	5.52	0.08	0.80	-
Emerging Euro										
Brazil	04/21	2.88	BB-	Ba2	BB-	103.09	0.05	0.01	-0.09	-1.19
Mexico	04/23	2.75	BBB+	A3	BBB+	107.76	0.76	0.00	-0.07	-1.56
Mexico	04/23	2.75	-	Baa1	BBB-	106.48	-0.26	-	-	-0.36
Bulgaria	03/28	3.00	BBB-	Baa2	BBB	117.04	1.00	0.02	-0.15	-1.42

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company. US $ denominated bonds NY close; all other London close. *S - Standard & Poor's, M - Moody's, F - Fitch.

BONDS: GLOBAL INVESTMENT GRADE

Nov 22	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
US$										
FleetBoston Financial Corp.	01/28	6.88	BBB+	Baa1	A-	129.00	2.54	-0.01	-0.05	-
The Goldman Sachs Group, Inc.	02/28	5.00	BBB+	A3	A	117.21	2.47	0.00	0.32	-
NationsBank Corp.	03/28	6.80	BBB+	Baa1	A-	127.69	2.72	-0.01	0.06	-
GTE LLC	04/28	6.94	BBB+	Baa2	A-	128.27	2.80	0.00	-0.11	-
United Utilities PLC	08/28	6.88	BBB	Baa1	A-	130.43	2.62	-0.07	-0.22	-
Barclays Bank plc	01/29	4.50	A	A1	A+	96.46	5.02	0.00	0.02	-
Euro										
Electricite de France (EDF)	04/30	4.63	A-	A3	A-	137.45	0.82	-0.01	0.10	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	121.70	0.93	0.00	0.02	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	124.42	0.68	0.00	-0.11	-
Finland	04/31	0.75	AA+	Aa1	AA+	111.08	-0.27	0.00	-0.05	-0.87
Yen										
Mexico	06/26	1.09	-	Baa1	BBB-	98.73	1.34	-0.02	-0.14	0.27
£ Sterling										
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	137.45	2.19	-0.03	0.02	-
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	128.68	3.20	0.00	-0.01	0.40

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company. US $ denominated bonds NY close; all other London close. *S - Standard & Poor's, M - Moody's, F - Fitch.

INTEREST RATES: OFFICIAL

Nov 22	Rate	Current	Since	Last	Mnth Ago	Year Ago
US	Fed Funds	0.00-0.25	15-03-2020	1.00-1.25	1.50-1.75	1.25-1.50
US	Prime	4.75	30-10-2019	5.25	5.25	4.25
US	Discount	2.65	30-09-2019	2.75	2.75	1.75
Euro	Repo	0.00	16-03-2016	0.00	0.00	0.00
UK	Repo	0.10	19-03-2020	0.25	0.75	0.25
Japan	O'night Call	0.00-0.10	01-02-2016	0.00	0.00--0.10	0.00--0.10
Switzerland	Libor Target	-1.25-0.25	15-01-2015	-0.75--0.25	-1.25--0.25	-1.25--0.25

INTEREST RATES: MARKET

Nov 22 (Libor: Nov 19)	Over night	Change Day	Change Week	Change Month	One month	Three month	Six month	One year
US$ Libor	0.07600	0.002	-0.850	0.002	0.09338	0.16400	0.22938	0.39175
Euro Libor	-0.58700	-0.003	-0.162	-0.003	-0.57686	-0.56514	-0.54457	-0.49129
£ Libor	0.03963	0.000	-0.184	-0.004	0.06013	0.11525	0.29988	0.66175
Swiss Fr Libor				0.000	-0.78880	-0.77900	-0.72420	-0.57560
Yen Libor				-0.001	-0.07767	-0.09500	-0.05450	0.05267
Euro Euribor				0.005	-0.55800	-0.55900	-0.52800	-0.49000
Sterling CDs				0.000	0.50000	0.63000	0.78500	
US$ CDs				0.000	0.17000	0.22000	0.29000	
Euro CDs				0.000	-0.54000	-0.60000	-0.52000	

Nov 22	Short term		7 Days notice		One month		Three month		Six month		One year	
Euro	-0.74	-0.44	-0.73	-0.43	-0.69	-0.39	-0.75	-0.45	-0.67	-0.37	-0.64	-0.34
Sterling					0.45	0.55	0.58	0.68	0.71	0.86	0.90	1.05
US Dollar	0.11	0.31	0.04	0.24	0.07	0.27	0.12	0.32	0.19	0.39	0.23	0.43
Japanese Yen	-0.10	0.00	-0.10	0.00	-0.10	0.10	-0.10	0.10	-0.15	0.15	-0.15	0.15

Libor rates come from ICE (see www.theice.com) and are fixed at 11am UK time. Other data sources: US $, Euro & CDs: Tullett Prebon; SDR, US Discount: IMF; EONIA: ECB; Swiss Libor: SNB; EURONIA, RONIA & SONIA: WMBA.

BOND INDICES

	Index	Day's change	Month's change	Year change	Return 1 month	Return 1 year
Markit IBoxx						
ABF Pan-Asia unhedged	218.03	0.45	0.05	-4.11	-1.54	0.07
Corporates(£)	393.84	0.27	-0.15	-3.67	-2.48	-0.38
Corporates($)	337.72	0.30	-0.12	-1.12	-0.12	-1.12
Corporates(€)	242.53	0.22	-0.27	-0.67	-0.79	0.52
Eurozone Sov(€)	256.19	0.37	0.17	-2.77	-0.98	-2.45
Gilts(£)	353.31	0.25	0.75	-6.83	-3.27	-6.36
Global Inflation-Lkd	321.80	0.95	1.88	2.32	-2.02	6.61
Markit iBoxx £ Non-Gilts	381.09	0.24	-0.08	-3.50	-2.29	-0.88
Overall ($)	278.94	0.26	-0.08	-2.01	-0.08	-2.01
Overall(£)	357.04	0.25	0.52	-5.93	-3.01	-4.89
Overall(€)	248.14	0.33	0.02	-2.29	-0.94	-1.81
Treasuries ($)	255.43	0.24	-0.01	-2.64	-0.01	-2.64
FTSE						
Sterling Corporate (£)	-	-	-	-	-	-
Euro Corporate (€)	104.47	-0.05	-	-	0.54	-1.73
Euro Emerging Mkts (€)	842.21	6.92	-	-	4.61	31.13
Eurozone Govt Bond	110.04	-0.19	-	-	-0.34	-0.64

CREDIT INDICES	Index	Day's change	Week's change	Month's change	Series high	Series low
Markit iTraxx						
Crossover 5Y	247.28	-1.36	2.37	-8.61	274.80	239.25
Europe 5Y	48.90	-0.06	0.40	-1.47	54.10	47.48
Japan 5Y	46.63	-0.25	0.00	-3.45	52.84	46.47
Senior Financials 5Y	57.18	-0.13	1.49	0.02	61.49	54.31
Markit CDX						
Emerging Markets 5Y	176.09	1.35	-10.24	-13.38	189.47	168.20
Nth Amer High Yld 5Y	290.19	2.61	-11.10	-24.64	314.83	287.43
Nth Amer Inv Grade 5Y	50.15	0.71	-1.79	-4.80	54.95	49.43

Websites: markit.com, ftse.com. All indices shown are unhedged. Currencies are shown in brackets after the index names.

VOLATILITY INDICES

	Nov 22	Day Chng	Prev	52 wk high	52 wk low
VIX	18.65	0.74	17.91	37.51	14.10
VXD	17.13	-0.32	17.45	45.68	2.67
VXN	23.38	1.63	21.75	40.53	18.01
VDAX	17.49	-0.11	17.60	93.30	-

† CBOE. VIX: S&P 500 index Options Volatility, VXD: DJIA Index Options Volatility, VXN: NASDAQ Index Options Volatility. ‡ Deutsche Borse. VDAX: DAX Index Options Volatility.

BONDS: BENCHMARK GOVERNMENT

	Red Date	Coupon	Bid Price	Bid Yield	Day chg yield	Wk chg yield	Month chg yld	Year chg yld
Australia	11/22	2.25	102.01	0.23	0.01	0.00	0.10	0.13
	05/32	1.25	94.31	1.85	0.02	0.02	0.08	0.85
Austria	05/34	2.40	128.64	0.09	-0.04	-0.03	-0.11	0.33
	02/47	1.50	126.38	0.40	-0.04	-0.01	-0.12	0.36
Belgium	10/23	0.20	101.89	-0.78	0.01	-0.01	-0.13	-0.08
Canada		-	-	-	-	-	-	-
	03/24	2.25	102.60	1.09	-0.03	0.02	0.30	0.78
Denmark	11/22	0.25	100.89	-0.65	-0.01	-0.02	-0.07	-0.04
	11/30	0.10	120.46	-1.96	0.00	0.00	-0.23	-0.63
Finland	04/23	1.50	103.31	-0.85	0.00	-0.03	-0.18	-0.14
	04/31	0.75	108.43	-0.14	-0.06	-0.08	-0.19	0.25
France	05/23	1.75	103.81	-0.76	0.00	-0.03	-0.13	-0.06
	05/27	1.00	107.57	-0.36	0.00	-0.01	-0.05	0.21
Germany		-	-	-	-	-	-	-
	08/23	2.00	104.94	-0.83	-0.01	-0.01	-0.13	-0.05
	08/27	0.50	106.44	-0.60	-0.06	-0.07	-0.20	0.12
	08/50	0.00	99.55	0.02	-0.05	-0.03	-0.20	0.17
Greece	02/27	4.30	118.45	0.71	-0.02	-0.08	0.13	-0.01
Ireland		-	-	-	-	-	-	-
		-	-	-	-	-	-	-
	03/24	3.40	109.54	-0.65	0.00	0.00	-0.02	-0.07
Italy	05/24	1.85	105.24	-0.25	0.00	0.02	0.01	-0.03
	11/25	2.50	110.03	-0.02	-0.04	-0.04	-0.05	-0.02
	05/31	6.00	147.47	0.78	-0.05	-0.03	-0.02	0.12
	03/48	3.45	137.83	1.67	-0.05	-0.04	-0.09	0.23
Japan	04/23	0.05	99.98	0.07	-0.01	-0.02	-0.02	0.01
	09/27	0.10	101.00	-0.07	0.00	0.01	-0.01	0.03
	09/34	1.40	115.07	0.21	-0.01	0.00	0.00	0.02
	12/49	0.40	93.14	0.67	0.01	0.01	0.01	0.03
Netherlands	07/23	1.75	104.32	-0.84	-0.02	-0.05	-0.16	-0.12
	07/27	0.75	107.02	-0.47	-0.02	-0.05	-0.13	0.14
New Zealand	04/27	4.50	110.62	2.39	0.01	0.08	0.57	1.87
	05/31	1.50	90.59	2.63	0.01	0.10	0.45	1.71
	05/31	1.50	90.59	2.63	0.01	0.10	0.45	1.71
Norway		-	-	-	-	-	-	-
		-	-	-	-	-	-	-
Portugal	10/23	4.95	111.11	-0.77	-0.02	-0.04	-0.10	-0.21
	04/27	4.13	124.21	-0.32	-0.05	-0.12	-0.13	-0.02
Spain	10/23	4.40	109.90	-0.66	-0.01	-0.02	-0.15	-0.13
	11/30	1.00	124.35	-1.50	0.01	-0.02	-0.04	-0.70
Sweden	11/23	1.50	103.23	-0.13	0.00	0.06	0.15	0.24
	06/26	0.13	120.59	-1.90	0.00	-0.05	0.03	-0.61
	06/30	0.13	121.38	-1.84	-0.04	-0.08	-0.11	-0.39
Switzerland		-	-	-	-	-	-	-
	02/23	4.00	105.89	-0.75	0.01	0.02	0.01	0.03
United Kingdom								
	07/23	0.75	100.43	0.49	-0.01	-0.01	0.03	0.53
	07/27	1.25	103.09	0.69	-0.01	0.01	-0.06	0.57
	07/47	1.50	108.10	1.14	-0.05	0.04	-0.25	0.21
United States	03/23	0.50	100.26	0.30	-0.02	-0.01	0.04	0.11
	03/27	0.63	96.58	1.29	-0.03	0.03	0.09	0.73
	04/32	3.38	149.19	-	-	-	-	-
	02/50	0.25	119.82	-	-	-	-	-

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company.

GILTS: UK CASH MARKET

Nov 22	Price £	Red Yield	Change in Yield Day	Change in Yield Week	Change in Yield Month	Change in Yield Year	52 Week High	52 Week Low	Amnt £m
	-	-	-	-	-	-	-	-	-
Tr 1.75pc '22	101.21	0.22	0.00	-12.00	-56.00	-650.00	105.17	101.06	29.68
Tr 0.75pc '23	100.54	0.43	10.26	-6.52	-30.65	-4400.00	101.08	99.96	33.73
Tr 0.125pc '24	99.14	0.52	8.33	-3.70	-26.76	2500.00	100.38	98.67	34.12
Tr 2pc '25	105.47	0.54	8.00	-3.57	-27.03	-1450.00	121.56	99.56	38.33
Tr 0.125pc '26	98.13	0.58	9.43	-3.33	-26.58	1060.00	100.39	97.21	33.89
Tr 1.25pc '27	103.39	0.64	8.47	-4.48	-26.44	540.00	107.70	102.14	39.34
Tr 0.875pc '29	100.64	0.79	6.76	-2.47	-24.76	216.00	105.64	98.61	41.87
Tr 4.25pc '32	132.96	0.95	5.56	-2.06	-22.76	126.19	143.44	130.03	38.71
Tr 4.25pc '36	142.01	1.07	4.90	-0.93	-20.15	72.58	153.53	137.65	30.41
Tr 4.5pc '42	163.09	1.12	4.67	-1.75	-22.22	36.59	175.43	154.49	27.21
Tr 3.75pc '52	170.04	1.07	4.90	-1.83	-25.17	24.42	182.28	155.15	24.10
Tr 4pc '60	196.31	0.97	5.43	-4.90	-27.61	16.87	209.30	175.55	24.12

Gilts benchmarks & non-rump undated stocks. Closing mid-price in pounds per £100 nominal of stock.

GILTS: UK FTSE ACTUARIES INDICES

Price Indices Fixed Coupon	Nov 19	Day's chg %	Total Return	Return 1 month	Return 1 year	Yield
1 Up to 5 Years	86.84	0.12	2461.68	0.66	-1.00	0.49
2 5 - 10 Years	178.49	0.34	3696.55	1.96	-2.79	0.74
3 10 - 15 Years	211.00	0.56	4693.62	2.83	-3.65	0.99
4 5 - 15 Years	185.80	0.41	3944.86	2.27	-2.91	0.85
5 Over 15 Years	375.33	1.31	6273.83	6.97	-1.68	1.00
7 All stocks	183.84	0.72	4006.31	3.80	-1.93	0.94

Index Linked	Nov 19	Day's chg %	Month chg %	Year's chg %	Total Return	Return 1 month	Return 1 year
1 Up to 5 Years	315.27	-0.01	0.84	3.74	2635.52	1.08	4.98
2 Over 5 years	917.76	0.72	5.31	12.94	6963.88	5.40	13.34
3 5-15 years	543.63	-0.05	3.37	6.26	4363.51	3.51	7.07
4 Over 15 years	1228.28	0.98	5.97	15.28	9061.37	6.03	15.52
5 All stocks	809.72	0.65	4.85	11.87	6262.50	4.95	12.36

Yield Indices	Nov 19	Nov 18	Yr ago		Nov 19	Nov 18	Yr ago
5 Yrs	0.56	0.61	0.00	20 Yrs	1.11	1.17	0.88
10 Yrs	0.89	0.94	0.38	45 Yrs	0.83	0.90	0.84
15 Yrs	1.07	1.12	0.71				

Real yield	inflation 0% Nov 19	inflation 0% Dur yrs	inflation 0% Previous	inflation 0% Yr ago	inflation 5% Nov 19	inflation 5% Dur yrs	inflation 5% Previous	inflation 5% Yr ago
Up to 5 yrs	-3.47	2.44	-3.46	-2.72	-3.93	2.45	-3.94	-3.17
Over 5 yrs	-2.53	23.95	-2.50	-2.17	-2.56	24.01	-2.53	-2.20
5-15 yrs	-3.05	9.09	-3.05	-2.67	-3.17	9.09	-3.18	-2.79
Over 15 yrs	-2.48	28.51	-2.45	-2.11	-2.50	28.53	-2.47	-2.13
All stocks	-2.54	21.85	-2.51	-2.18	-2.58	21.93	-2.55	-2.21

See FTSE website for more details www.ftse.com/products/indices/gilts
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COMMODITIES

www.ft.com/commodities

Energy		Price*	Change
Crude Oil†	Dec	75.58	-0.13
Brent Crude Oil‡		79.53	1.08
RBOB Gasoline†	Nov	2.22	0.01
Heating Oil†		-	-
Natural Gas†	Nov	4.77	-0.29
Ethanol♦		-	-
Uranium†		-	-
Carbon Emissions‡		-	-
Diesel†		-	-
Base Metals (♠ LME 3 Months)			
Aluminium		2687.00	4.00
Aluminium Alloy		2500.00	80.00
Copper		9694.00	43.00
Lead		2244.50	24.00
Nickel		20295.00	280.00
Tin		38665.00	165.00
Zinc		3352.00	124.00
Precious Metals (PM London Fix)			
Gold		1861.10	0.80
Silver (US cents)		2478.50	-18.50
Platinum		1036.00	-30.00
Palladium		2079.00	-92.00
Bulk Commodities			
Iron Ore		128.50	-8.45
GlobalCOAL RB Index		232.50	6.00
Baltic Dry Index		2645.00	93.00

Agricultural & Cattle Futures		Price*	Change
Corn♦	Dec	575.75	5.25
Wheat♦	Dec	837.75	14.50
Soybeans♦	Jan	1266.75	1.75
Soybeans Meal♦	Dec	371.70	-0.70
Cocoa (ICE Liffe)✠	Dec	1703.00	18.00
Cocoa (ICE US)♥	Dec	2493.00	0.00
Coffee(Robusta)✠	Jan	2248.00	4.00
Coffee (Arabica)♥	Dec	234.10	0.70
White Sugar✠		508.10	-6.60
Sugar 11♥		19.69	-0.48
Cotton♥	Dec	118.68	-0.44
Orange Juice♥	Jan	129.45	2.50
Palm Oil♣		-	-
Live Cattle♣	Dec	133.53	0.00
Feeder Cattle♣	May	134.88	-
Lean Hogs♣	Dec	73.68	0.00

	Nov 19	% Chg Month	% Chg Year
S&P GSCI Spt	569.31	-3.50	52.30
DJ UBS Spot	101.88	-1.77	37.47
TR/CC CRB TR	249.82	-1.35	52.17
LEBA EUA Carbon	58.91	-1.98	129.94
LEBA UK Power	1048.00	-37.43	-39.60

Sources: † NYMEX, ‡ ECX/ICE, ♦ CBOT, ✠ ICE Liffe, ♥ ICE Futures, ♣ CME, ♠ LME/London Metal Exchange.* Latest prices, $ unless otherwise stated.

BONDS: INDEX-LINKED

	Price Nov 16	Yield Nov 16	Yield Prev	Month return	Value stock	Market	No of stocks
Can 4.25%' 26	126.56	-0.896	-0.841	1.15	5.25	-	-
Fr 2.10%' 23	107.44	-2.181	-2.082	0.34	18.05	-	-
Swe 1.00%' 25	121.78	-1.952	-1.942	0.76	35.63	-	-
UK 1.875%' 22	107.52	-5.291	-5.369	0.06	15.74	-	-
UK 2.50%' 24	366.15	-3.718	-3.882	0.56	6.82	-	-
UK 2.00%' 35	312.87	-2.869	-2.961	1.74	9.08	-	-
US 0.625%' 23	105.94	-3.451	-2.873	0.92	47.03	-	-
US 3.625%' 28	135.22	-1.576	-1.508	1.25	16.78	-	-

Representative stocks from each major market Source: Merill Lynch Global Bond Indices † Local currencies. ‡ Total market value. In line with market convention, for UK Gilts inflation factor is applied to price, for other markets it is applied to par amount.

BONDS: TEN YEAR GOVT SPREADS

	Bid Yield	Spread vs Bund	Spread vs T-Bonds		Bid Yield	Spread vs Bund	Spread vs T-Bonds
Australia	1.85	-	-	Netherlands	-0.47	-	-
Austria	0.09	-	-	New Zealand	2.63	-	-
Canada	-	-	-	Norway	-	-	-
Denmark	-1.96	-	-	Portugal	-0.32	-	-
Finland	-0.14	-	-	Spain	-1.50	-	-
Germany	-	-	-	Sweden	-1.84	-	-
Ireland	-	-	-	Switzerland	-	-	-
Italy	0.78	-	-	United Kingdom	-	-	-
Japan	0.21	-	-	United States	-	-	-

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company.

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POWERED BY MORNINGSTAR

Saxophonist's grand new spectacle

JAZZ

EFG London Jazz Festival
Various venues

Mike Hobart

Soweto Kinch performs his new work, 'White Juju', at the Barbican — Mark Allan

The Barbican opened its final EFG London Jazz Festival weekend with a grand spectacle. Soweto Kinch's new work *White Juju* blended Kinch's own articulate rap and small-group jazz with the subtle textures of the London Symphony Orchestra and probed present and past with a mixture of soundbites and archive film. These ranged from clips of George Floyd's funeral and footage of the Ku Klux Klan to talking heads and newsreels of riots and peaceful parades.

Kinch's fine-tuned orchestral score repurposes familiar orchestral practices. Violins sweep, brass and double bass combine on angular modernist lines, while flutes, clarinets and trumpets blend to magical effect. Jittery violin riffs and short flutters of flute conform to the demands of hip-hop or add counterpoint to the rhythm section's lines.

The 10-part work began with the recorded birdsong of "Dawn" and continued with "The Old Normal", dissecting the recent past; disturbingly, a clip of Boris Johnson introducing lockdown seemed from a bygone age. Floaty free jazz scattered into abstraction and chirrups from the orchestra's flutes soothed the nerves.

Later, images of the sugar trade's infrastructure came with a baroque orchestral pastiche, and Stravinsky-like strings bounced behind newsreels. Thus inspired, jazz emerged from within the orchestra, sometimes pulsing with contemporary beats, at others brittle and free. Segues were seamless, contrasts clear and dead stops were delivered precisely on cue.

But the focus was Kinch, standing on a plinth near conductor Lee Reynolds, alternating sharp-toothed and rhythmically nuanced rap with pensive tenor and alto sax. His solos ranged from oblique modernism and rough-and-tumble lines to wistful free jazz. They were, however, mixed too deeply into the sonics of the orchestra to take full effect. A minor detail in an engaging, well-argued event that left you thinking, "Whatever next?" ★★★★☆

On Saturday, two American bands delivered a contrast of styles. Vibraphonist/pianist Joel Ross delivered two sets of hip-hop inflections and modernist lines at Ronnie Scott's, while Pizza Express Jazz Club presented a brace of sets for the established Trio M's left-field blend of expressionism and the blues.

Ross's seasoned Good Vibes band switch tempo and mood at will. Solos are long, investigative and full of bite, and Ross's metallic vibraphone resonance has found a perfect foil in the sonics of Immanuel Wilkins's alto sax. Here, bassist Kenoa Mendenhall anchored moves on double bass, and drummer Jeremy Dutton complemented the soloists' rococo lines with compressed rolls and cannily spaced rimshots; his two drum solos were masterpieces of melodic flow and close control.

Ross started his first-set performance at the piano, delivering sombre chords in a minor key. John Coltrane's "Equinox" was the theme, played by Wilkins with a dry, focused tone and a hint of breath. The tempo was achingly slow, but as it changed and doubled, soloists probed the outer edge of harmony.

As the groove subsided, Dutton segued into hip-hop and Ross switched to vibes for "More?" from last year's album *Who Are You?*; the up-tempo "Marsheland", from the same release, ended the set with a thrilling chase between sax and vibes. In between, the band reconstructed Monk's "Evidence" and concentrated on newer work in a performance that rarely paused. Ballads floated, gained speed and swung, and hip-hop grooves melted into urgent modal swing. The densely detailed performance ended with a sudden dead stop, but there was no time for more. A second set was already in line. ★★★★☆

Trio M, together for 15 years, also draw on jazz tradition and change tempo at will. But pianist Myra Melford twins tradition with abstraction and double bassist Mark Dresser and drummer Matt Wilson's aesthetics are equally wide.

Here, the trio probed time and space and pushed orthodox technique to the edge. Melford, fully in command of spidery modernism, was equally convincing exploding into discordance or getting to the essence of a barnstorming blues. Dresser combined two-handed strums with slurs and slaps and strode reliably in a steady walk. Drummer Wilson swung, shuffled and let beats resonate in acres of space.

Their second set started with a dramatic crash of cymbals, a bounced bowed-bass motif and Melford authentically preaching the blues in "Naive Art". Its centrepiece was a drum solo that made each forceful whack count and took minimalism to extremes.

The evening continued as a kaleidoscope of moods and references. Melford's "Be Melting Snow" toyed with space and delivered clusters of sound, "Dried Print on Cardboard" combined rhythmic angles with melodic leaps and "FUNterfaht" galloped along with a Latin twist. Wilson's "Getting Friendly" was the ballad, playfully romantic and delivered mid-set, and the township tinge of "Ekonomi" brought an uplifting evening to a high. ★★★★☆

fglondonjazzfestival.org.uk

Singers rise above a shaky Valkyrie

OPERA

The Valkyrie
Coliseum, London
★★★☆☆

Richard Fairman

Embarking on Wagner's *Ring* cycle at such a difficult time is a bold statement of intent. It is half a century since English National Opera first scaled this loftiest of operatic summits and now the company is setting out again with a new production of *The Valkyrie*.

A lot is riding on the success of the project. A few days before the opening performance, the news broke that the Metropolitan Opera is planning to present this *Ring* as well, with a view to completing cycles in the 2026/7 season.

On paper, the ENO line-up looked strong. In practice, this first of the four operas proved a mixed bag, the pleasure of seeing the company nurture a new generation of Wagnerian singers undone by nagging doubts about the production.

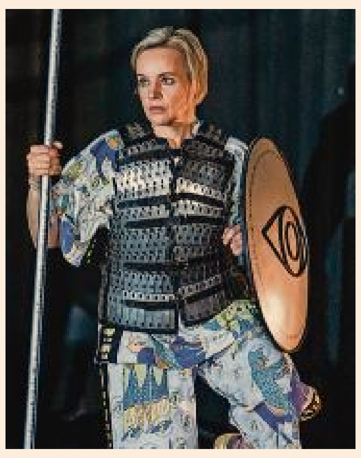
This is potentially third time lucky for its director, Richard Jones. His first *Ring* for Scottish Opera, started in 1989, was abandoned partway through. His second, for the Royal Opera in the 1990s, though completed, was much vilified.

For Jones, the *Ring* has never been about propounding an all-encompassing philosophy, a socialist tract, a utopian worldview. He simply wants to tell a story. That comes across clearly enough, as Wagner's narrative is presented without slant or interference, and the characters are boldly drawn (though does Hunding really need to beat his wife every time she walks past?).

A less welcome constant is Jones's scattergun jokiness. It niggles here with a stream of irritating details — pantomime horses pawing the ground, a pixie dancing an Irish jig, a Brünnhilde who plays darts. Even allowing that Health and Safety banned Loge's magic fire just before the opening night, the sets are cheap-looking and skimpy. It is hard to imagine this *Valkyrie* going down a storm with New York audiences.

At best, the cast rises above these hindrances. In Matthew Rose, ENO has a Wotan who promises to be the highlight of its *Ring*. He may not yet create an imposing stage presence (the red anorak does not help), but his deep-toned, lyric bass sings with such nobility and beauty that he is surely a world-class Wagnerian in the making.

Brindley Sherratt is up there too, a complete Hunding, and Nicky Spence's incisive Siegmund, suffering from a cold here, has the role well within his grasp. Emma Bell sings Sieglinde with romantic warmth, but cloudy, muffled words. Rachel Nicholls,



conversely, is clear and confident as Brünnhilde, but the voice lacks Wagnerian depth. Fricka was acted by the indisposed Susan Bickley while Claire Barnett-Jones sang strongly from a box, and the Valkyries field a well-cast posse of voices.

Like the performance as a whole, Martyn Brabbins's conducting comes and goes. The first act hung fire, with not much passion or danger, but by the last half-hour the music was hurtling along, as if making up for lost time. A *Ring* cycle is a long journey. On balance, the way ahead lies uphill.

To December 10, eno.org

Top: Rachel Nicholls as Brünnhilde in 'The Valkyrie'. Above: Matthew Rose as Wotan — Tristram Kenton

Heartland rock from North Shields

POP

Sam Fender
Alexandra Palace, London
★★★★☆

Ludovic Hunter-Tilney

Sam Fender flies the flag for British rock's working-class roots. Literally so: his homecoming gig in Newcastle upon Tyne took place before an audience of Geordies waving Newcastle United football club flags. Fender is one of their own, a local lad from the coastal town of North Shields. His two albums, both number one hits in the UK, have attracted the kind of boisterous football-terrace support that Oasis and Arctic Monkeys once generated. The catch is that he has done so by channelling US blue-collar rock.

Springsteen looms large in his imagination. Fender dislikes the comparison, much as Springsteen disliked being tagged as "the new Dylan" when starting out. But the 27-year-old also can't help encouraging it. "Born to Run" played before he came on stage at Alexandra Palace and there were two Springsteen covers during his set — one an impromptu, ramshackle version of "I'm on Fire" with the singer of support act Gang of Youths, the other a powerful solo rendition of "Dancing in the Dark". A lowing chorus of "Brooooce" came from the audience in response. The reluctant "British Springsteen" joined in at the microphone.

His own songs are small-town epics in which big feelings rub up against claustrophobic settings. They make strong use of tension-and-release dynamics, with jangling riffs and surging passages of acceleration. Opening number "Will We Talk?", from his 2019 debut *Hypersonic Missiles*, soundtracked the tale of a one-night stand with pell-mell drums and pounding guitars, a loud but curtailed act of escapism.

"Getting Started", from his latest album *Seventeen Going Under*, had a similar feeling of pulling on a leash, with Fender in the role of a teenager from a hard background determined not to give up. Guitars were to the fore: there were three players, including Fender, alongside the bassist, drummer and a horn section of trumpeter and saxophonist.

"Mantra" showcased a calmer side to his musical character with a tender guitar solo, a muscularly crying sax part and lyrics about anxiety. In contrast to Oasis's belligerence or Arctic Monkeys' dry wit, Fender has a sincere, heart-on-sleeve manner, characteristics shared with US blue-collar rockers. He sang with feeling, theatricalised by vibrato. Pyrotechnics, confetti and a punchy light show added arena effects to his exhilarating coming-of-age stories.

It was the second of two nights at the 10,000-capacity venue. Fender is at a sweet spot in his rising career, enacting on big stages his songs' push-me-pull-me between pride in where he's from and the desire to move beyond it. Keeping that balance going is the tricky part as success mounts and the small-town milieu recedes. It's easier in the US, whose national culture romanticises class mobility, than the UK, which pays lip service to it. The imaginative catalyst of US heartland rock may prove sustaining to Fender in the long term too.

samfender.com

Sam Fender on stage at Alexandra Palace
Redferns

FT BIG READ. GLOBAL ECONOMY

FT Series: With millions of people deciding to leave the workforce, labour shortages are spreading in many countries. Is this the result of reduced migration? Or early retirement? And can it be reversed?

By Delphine Strauss

Where did all the workers go?

Millions of people have decided to quit their jobs since the onset of the Covid crisis. In New York City, below left, the number of commuters arriving at Grand Central Station during rush hour is still far below pre-pandemic levels

FT montage/PA/Jeenah Moon/Bloomberg

Mike, a gregarious ex-rugby player who now burns excess energy by putting in miles on a road bike, is not ready to retire. Yet his job in fintech — which he began in April 2020, a week into the UK's first Covid lockdown — has proved radically different from the one he signed up for.

Working at senior level in business development, he used to enjoy spending days on the road meeting clients. Long stints of wall-to-wall Zoom calls left him stultified yet still buzzing and unable to sleep in the small hours.

"If my children sat at a screen for 10 to 11 hours a day, I'd lock it in a cupboard," says Mike, who asked that his surname not be used. "All the fun has been sucked out of the job".

At the same time, a friend's death with Covid symptoms and his wife's progressing MS condition made him more conscious of mortality. "On your grave, 'Mike worked hard' — it's not one you see," he says. "I want to get some time in my life where I stop and think."

So at the age of 56, he has handed in his notice and is weighing up options ranging from part-time consulting to training as a gardener — one of countless people across the developed world for whom Covid has been a catalyst to reassess their working lives.

Two years of unprecedented upheaval in labour markets has caused millions of people on both sides of the Atlantic to step out of the workforce, whether to avoid infection, recover from illness, cope with school closures, or simply to retire earlier than they might otherwise have chosen. The drop in participation has added to demographic pressures that were building long before the pandemic hit — and have since been exacerbated by the fall in international migration.

This shock to labour supply represents a threat to the global recovery, with many companies forced to turn away business for lack of workers. While companies hoped these problems would be transitory and would ease over the summer after economies reopened, many now worry that the issues may be more deep-seated.

It also creates a dilemma for central banks just as inflationary pressures are rising and financial markets are getting rattled. For the US Federal Reserve in particular, dropouts from the labour market cast doubt on its ability to hit its goal of "maximum employment" while still containing inflation.

Aneta Markowska, chief economist at Jefferies, argues that a "structural decline in labour supply, coupled with unprecedented labour demand . . . will create the tightest labour market conditions in decades". That would keep wage growth high and inflation above the Fed's target, even when supply chains have recovered, forcing it to reframe its maximum employment goal.

Now, with demand surging and labour shortages spreading, many of those who have worked through the pandemic are gaining the confidence to quit their jobs and bargain for higher pay or better conditions elsewhere. But as Nick Bunker, North American research director for the job site Indeed, points out, the so-called Big Quit is mostly about churn within a shrunken pool of existing employees in low-wage sectors where employers used to hire readily from the pool of unemployed.

Scarce labour

The crucial question is whether those workers now standing on the sidelines will rejoin the labour force — or whether employers, consumers and policymakers will need to adapt to a world in which labour is scarce. As Jason Furman, a senior fellow at the Peterson Institute for International Economics, puts it: "The biggest wild card is not the strength of demand or desire of employers to hire, but the desire of workers to find jobs."

The question is most urgent in the US, where more than 4m workers have left the labour force since the start of the pandemic and the participation rate is still stubbornly 1.7 percentage points below its level in early 2020 — which is the equivalent to more than four million people. Similar pressures are visible in the UK, where the Institute for Employment Studies estimates that, due to a combination of population change and higher economic inactivity, there are now almost a million fewer people in the workforce than there would have been if pre-pandemic trends had continued.

"Labour supply just cannot keep up with labour demand, and the problem appears to be getting worse," said Tony Wilson, director of the IES, adding that inactivity in the UK seemed to be increasingly driven by ill health and early retirement.

'The biggest wild card is not the strength of demand or desire of employers to hire but the desire of workers to find jobs'

In the eurozone, in stark contrast, employment has almost regained its pre-pandemic level and labour force participation has rebounded rapidly — so that in France and Spain it is already higher than it was before the crisis.

Although rising demand is starting to create pressures, there is still a large pool of untapped labour in the bloc, with participation lagging behind in Italy, and many countries suffering from structurally high youth unemployment — the legacy of the 2008 crisis. The EU has seen no wave of early retirements during the pandemic because in many countries this is already the norm.

But Claus Vistesen, at the consultancy Pantheon Macroeconomics, says investors are now "hoping that this deficit can be turned into potential", especially in Italy, where Mario Draghi is pressing for pension reforms.

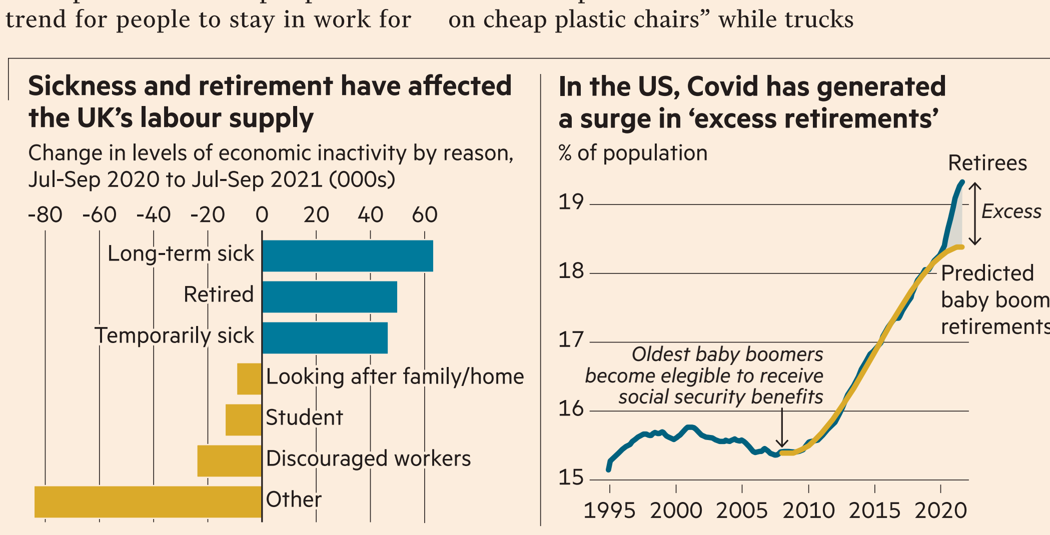
Meanwhile Philip Lowe, governor of the Reserve Bank of Australia, argued last week that inflation could be less problematic there than in the US because labour participation was returning towards record highs, in common with Japan and other countries in the region, with little pressure on wages.

He argued that the difference was due to the high incidence of infection in the US, to school closures and to its policy of channelling income support directly to workers, rather than through schemes that preserved links between businesses and employees. "The result has been a significant shock to labour supply in the US. This has not been the case in Australia," he said.

Yet while the situation differs from one country to another, there are some common themes. One is the role played by migration.

In the UK, while labour shortages predate Brexit, they have undoubtedly been exacerbated by the sudden stop in inflows of EU workers. In the eurozone, labour shortages are most visible in Germany, which previously relied on a steady inflow of migrants to replace an ageing population. Diane Swonk, chief economist at the audit firm Grant Thornton, says the US is now "two million people short of where we should be" due to restrictive immigration policies in place since 2016, even before the pandemic closed borders. "It's very hard to make up the gap in ageing demographics without a major catch-up in immigration," she says.

Another big factor in the US and UK has been a swath of early retirements — a sharp reversal of the pre-pandemic trend for people to stay in work for longer. The Federal Reserve Bank of St Louis estimates that excess retirements — those that would not have happened through natural population ageing — totalled some 2.4m from the start of the pandemic up to August, accounting for more than half of those who left the labour force. Some older workers will choose to return as health worries subside and financial strains start to build, but many will not.



Sources: ONS Labour Force Survey; Miguel Faria e Castro, Federal Reserve Bank of St. Louis

"The idea was: let's do things while we still can," says Monique Hanis, who retired in July from her role as a communications executive with a clean energy policy firm in Washington, DC. Her husband was already retired, but Hanis, aged 60, was still passionate about her job — until the Covid crisis isolated her from colleagues and an unrelated health scare made her long for freedom. Since retiring, she has already received one job offer but has no plans to rejoin the workforce. "There seems to be some demand for experienced people, but I would not go back full time," she says.

In contrast with previous recessions, there are fewer people who feel they have been forced into retirement by a lack of job options, and more who have seen rising asset prices open up choices.

The surge in house prices has made gains in wealth more broad-based, Swonk says, adding: "You can sell, borrow against [property] or trade down into a condo — the ability to do that was absent before. In 2008/09, you would have been under water."

In the UK, too, some people have found themselves newly able to afford retirement and less able to tolerate working conditions that had worsened due to Covid.

Ken Scott, a 64-year-old HGV driver in Nottinghamshire, says Covid really "sunk it home" how badly drivers were treated, with public toilets and roadside burger vans closed so that "you couldn't even get a hot drink". Supermarkets that once kept drivers "in a little room on cheap plastic chairs" while trucks were loaded suddenly demanded that they stayed in their cabs.

He had already scaled back before the pandemic, he says, after a military pension earned from 25 years in the marines kicked in. But he now sees other drivers in what is a former mining area doing the same: many of them had trained and joined the sector at the same time in the late 90s, when the last mines closed, and were now eligible for pensions from their previous careers.

In the US, greater financial freedom is one factor behind the drop in the prime age workforce too. This does not seem to be about the generosity of pandemic-era jobless benefits, which expired in September without any noticeable change in labour force participation. But a survey of unemployed workers by Indeed found that most were not looking for a job with any urgency — partly because they had a cushion of savings, or a partner in work who was earning.

There has also been a drop in the number of Americans holding more than one job — a problem for employers, but a trend that suggests rising wages are making it easier to make ends meet.

However, surveys also show that many workers are still deterred by fears over Covid and continuing difficulties with childcare. Although schools have reopened, they are still disrupted by quarantines and the workers who staff after school clubs can now find better pay with Amazon or Walmart.

Janet Yellen, the US Treasury secretary, argues this means workers will trickle back as concerns over exposure to Covid subside. "When we really get control of the pandemic, I think labour supply will go back to normal," she said in an interview for CBS's *Face the Nation* programme last week.

Patrick Harker, president of Philadelphia's Federal Reserve Bank, made a similar argument to the Economic Club of New York this month, adding that financial pressures could soon prompt people to return. The end of extra benefits had not yet "nudged" people back into the workforce, but "I do expect that will change eventually, and especially as other forbearance programmes run out," he said.

Joseph Briggs, an economist at Goldman Sachs, says he expects most prime-age missing workers to reappear gradually, but that participation could still be below its pre-pandemic trend at the end of 2022, with higher wealth prompting more early retirements. The surge in popularity of Reddit's Antiwork message board suggests a longer-lasting shift in preferences and lifestyles among some, he adds.

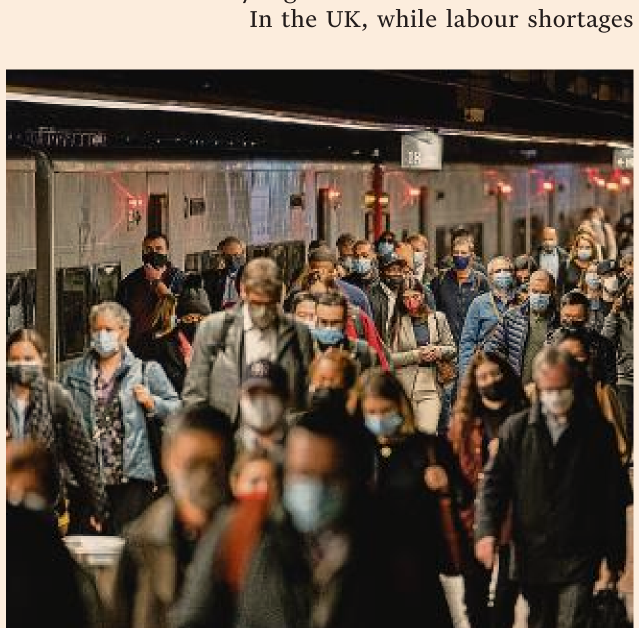
In the UK, while the Bank of England's central forecast is for a recovery in the labour force, it has flagged the risk of a more persistent fall in participation due to health concerns and long Covid, and to rising numbers retiring early.

Searching in rural areas

The bigger long-term issue, though, is demographics — and recruiters are gearing up for a future in which they will need to do far more to help people on the margins of the labour market into work. "Will it get better? Probably not . . . In the long term it's the same for every country," says Jacques van den Broek, chief executive of Randstad, a staffing provider with operations across North America and Europe. He argues companies need to be more open to recruiting people who only partly match their criteria, and to tap rural areas where workers are still available.

Neil Carberry, chief executive of the UK's Recruitment & Employment Confederation, thinks the upheaval will soon ease, but that the UK will see both a steady outflow of EU nationals and a much bigger, lasting hit to labour supply as the baby boomer generation reaches retirement. He adds: "The immediate crisis will pass, but we are looking at a decade of a tighter labour market."

Additional reporting by Taylor Nicole Rogers



The Big Quit
An FT series on upheaval in the post-pandemic labour market
ft.com/workers-aftercovid

FINANCIAL TIMES
'Without fear and without favour'
TUESDAY 23 NOVEMBER 2021

Biden plays it safe with continuity at the Fed

Powell's reappointment lessens uncertainty at key turn in the cycle

The policy differences between Jay Powell and Lael Brainard — the only names on Joe Biden's shortlist for Federal Reserve chair — are narrow. The president was nevertheless sensible to prioritise continuity over change by renewing Powell for a second term. It is doubtful that picking Brainard would have had much impact on the speed with which the Fed plans to tighten in the near future, though the markets see her as mildly more dovish than Powell.

Either way, the Fed will start to withdraw its $120bn-a-month quantitative support for the US economy from next month, while futures markets have priced in two interest rate rises in 2022. Facing a potentially hazardous turning point for markets and the economy, Biden chose wisely. Together with Powell's reappointment, Brainard's elevation to vice-chair gives the impression of continuity in monetary policy with a more robust approach to regulation.

The Democratic left is unhappy with Biden's decision, nonetheless. The gap between Powell and Brainard is far wider on bank regulation than on monetary policy. Elizabeth Warren, the Massachusetts senator, has called Powell "a dangerous man" for loosening capital and liquidity restrictions on US banks — moves that Brainard usually opposed. But political reality suggests the left's disaffection will only improve the chances of a timely Powell confirmation in a 50:50 Senate.

Powell was elevated to the role by Donald Trump in 2018. Though he is a Republican, he resisted bullying by Trump before the pandemic to keep interest rates low in a heating economy. This implies Powell will have the necessary grit to withdraw the Fed's extraordinary accommodation as Covid-19 recedes. Biden is likely to appease the left by picking Democrats to fill the three Fed vacancies, including the vice-chair for supervision.

In addition to his confirmation, Powell will face two big challenges. The first is to control US inflation which, at 6.2 per cent last month, is at its highest in more than three decades. The Fed has consistently argued that this is a "transitory" problem caused by temporary disruption to the global supply chain. That may be so — and there are signs some of the bottlenecks may be coming unstuck. But the Fed has been late to recognise the breadth of goods shortages and the ensuing inflation risk.

It may need to shift more quickly than planned. The tapering of asset purchases, which are scheduled to end by next June, may have to happen more rapidly. The risk that higher inflation expectations might become anchored in the real economy is non-trivial. Modest tightening now could save the need for more severe contraction later.

The second challenge will be over the Fed's widening remit, particularly on climate change. Powell has said global warming should be tackled by other government agencies. Brainard has been more receptive to Fed regulation of carbon financing. Biden's statement stressed both Powell and Brainard "share my deep belief that urgent [Fed] action is needed". This implies Powell has shifted his stance closer to what the European Central Bank and the Bank of England are doing. Indeed, the ECB yesterday warned European banks could "eventually" face higher capital charges if they failed to take climate risk seriously.

Such central bank thinking ought to be welcomed. But the political reaction, especially in the US, could be fissile. The Republican right will see Powell's shift as a reason to vote against his nomination. Yet the majority of Democrats, and some Republicans, are likely to carry him over the line. A bipartisan confirmation would be good news for the Fed, and for the US economy.

Apple's concession on the right to repair

Planned product obsolescence is wasteful and anti-competitive

Apple has finally seen the light on repairs. After years of consumer and legal pressure, the smartphone maker last week launched a self-service repair programme that will allow customers to buy replacement parts. While few people have the skills to fix their own iPhones, this could drive up demand for independent technicians.

This is long overdue from a company that has fiercely guarded its control over the repair process and used means fair and foul to induce smartphone owners to upgrade regularly. Last year, Apple agreed to pay $500m to settle claims that it deliberately slowed down some iPhones as they got older.

The company has long contended that its experts are best positioned to repair its devices, but the prices it charges are extremely high. Replacing the back glass on an out-of-warranty iPhone 13 Pro Max can cost $599, half the price of a new model.

Apple has plenty of company. Hard-to-repair machines are everywhere, from farm tractors to washing machines to smartphones. This planned obsolescence is anti-competitive, allowing companies to drive up revenue at the expense of their customers. It is also unconscionably wasteful.

Users discarded 53.6m metric tonnes of electric and electronic products in 2019, up 21 per cent in five years, and the figure is projected to rise by another 50 per cent by the end of this decade. Less than 20 per cent of this e-waste was recycled.

Consumer groups and environmentalists have been trying for years to address the waste of money and materials through "right-to-repair" laws. They have had some success with US cars and UK and EU white goods.

Manufacturers have fought them every step of the way. At least 27 US state legislatures considered right-to-repair bills this year, but most failed to pass in the face of opposition from manufacturers, particularly Big Tech. Apple and Microsoft lobbied hard against some of the proposals, as did Amazon and Google.

Both the UK and EU's right to repair laws have drawn sharp criticism from consumer groups as inadequate. First they apply only to certain appliances and televisions, while currently excluding laptops, smartphones and tablets. Second there is nothing to prevent manufacturers from making repairs prohibitively expensive by charging high prices for parts or bundling parts together so that large sections have to be replaced together.

But the pressure is mounting. US President Joe Biden has ordered the Federal Trade Commission to look at anti-competitive restrictions on repair markets. The EU is also looking to strengthen its rules as part of the bloc's plan for a circular economy.

Suddenly Big Tech has started to change its position on repairs. Microsoft promised in October to find ways to reduce its environmental impact by making its products easier to repair. Both it and Apple were facing specific shareholder proposals on the issue.

These small concessions must not be allowed to derail government efforts to set higher standards. The UK and EU should enact stronger right-to-repair laws and the US needs requirements of its own.

None of this will have the desired impact unless consumers change their buying habits. But governments can nudge them along. France now requires manufacturers to include a "repairability rating" on product listings. Rules on corporate carbon-footprint disclosures should force companies to reveal how long products last and whether they are recycled in the end. It is long past time to throw away the throwaway economy.

Letters

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Reporting accidents at laboratories must be universal practice

Your article "Why the next pandemic could be lab-made" (Big Read, November 18) rightly warns about the dangers of so-called gain-of-function research. What it failed to mention is that we don't even appreciate the full scope of those dangers because of the pervasive opaqueness around laboratory biosafety.

Currently, laboratories doing such bioengineering research are not required to tell the public what they are doing — even when there is an accident. Our survey of biosafety officers from early 2020 highlights how little we know. In the survey, 63 per cent of respondents admitted that they don't report accidents to anyone outside of their organisation, and almost none do so publicly or immediately.

Given that, it is unsurprising that the FT had to rely on the Freedom of Information Act to obtain evidence of lax safety practices at the Influenza Research Institute at the University of Wisconsin-Madison.

Laboratories pursuing high-risk research have long maintained that their safety is impeccable, without much data backing their claims. And keeping a lab accident a secret can be dangerous. If someone is possibly infected and labs fail to report this publicly, it becomes impossible to monitor possible spread or act to prevent future mishaps.

Not all labs have a problem with public reporting. The Galveston National Laboratory is an outstanding example, listing every lab accident in the past 15 years publicly on its website. Similarly, the National Bio and Agro-Defense Facility — the latest high-containment laboratory in the US — is exemplary in championing the need for transparency. Recently, leading biosafety figures argued that this degree of openness should be a universal practice.

By reporting accidents and near-misses transparently, we can reduce the risk of repeating them.

David Manheim
Visiting Researcher, Technion, Israel
Institute of Technology, Rehovot, Israel
Joshua Teperowski Monrad
Researcher, Biosecurity Research Group
Future of Humanity Institute
University of Oxford, Oxford, UK

Technology is what tips the scales for challenger banks

Helen Thomas lands some good arguments in her column "Lack of challenger bank consolidation is a problem" (Opinion, November 19) although I disagree with some of her conclusions. Most notably she states: "The need to invest in digital arguably adds to the benefits of scale, in a sector where everything from data to compliance costs already favour being big."

The very best businesses have scale through technology but the high street banks of today have simply achieved scale through antiquated branches and outdated computer systems — just the opposite of the new digital players, such as Starling, that are smart scaling with the very latest technology.

The big banks are fully aware that their scale no longer differentiates them and that updating their technology and culture to meet the demands of digital consumers is a critical project, yet it's one they seem unwilling to start.

Anne Boden
Founder and Chief Executive
Starling Bank, London EC2, UK

Luxury brands must heed Xi's Maoist tendencies

Brooke Masters cites evidence that China's Xi Jinping's "common prosperity for all" policy is likely to benefit the upper middle class at the expense of the super-rich, and is therefore attracting the attention of western luxury brands, in the great mythological allure of the China market (Opinion, November 18).

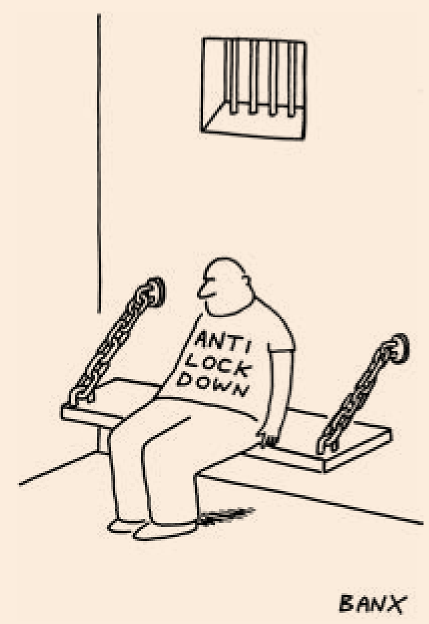
Yet Xi's redistributionist policy has been frequently depicted as an aspect of the leader's reversion to Maoist orthodoxy.

If that is so, then an active policy of wealth redistribution is more likely to benefit the labouring classes, at the expense of both the super-rich and the upper middle class.

It seems to me that the policy has not yet taken full effect, so that the rush to the China market by luxury brands and the financial services industry especially may be premature.

They may find themselves at the end of the day holding the short end of the stick, as Xi's ostensible drive for greater equality veers into communist radicalism, with the economy teetering on the verge of a return to a full-fledged command structure shorn of current capitalist tinsel.

Albion M Urdank
Emeritus Professor, British and European History, University of California
Los Angeles, CA, US



EU confected Irish border concerns to punish Britain

In "UK's game of Brexit chicken will end badly" (Opinion, November 10) Martin Wolf characterises the British government as disingenuous and unreliable over the Northern Ireland protocol and warns of dire consequences. However, he omits to mention that the EU has serially ignored multiple experts who made clear that digital online controls eliminate any need for a hard Irish land border. Instead, the EU confected concerns about this unneeded land border to insist on an equally unneeded border in the Irish Sea.

Then, in January this year, in a panic about vaccine supply, the EU itself threatened to trigger Article 16 of the protocol and impose the very hard border in Ireland it had previously so vigorously opposed. This exposed the shameful dishonesty of its position. The UK government should make clear that, no matter what, it will never construct an Irish border, nor sustain the one in the Irish Sea that conflicts with the consent principles embodied in the very Good Friday Agreement the EU claims to support.

One fears bad faith from the outset on the EU's part. Martin Selmayr, chief of staff for former commission president Jean-Claude Juncker, indicated Northern Ireland was to be Britain's price to pay for Brexit.

However EU member states and other nations understand Britain cannot accept current EU interference with its sovereignty. There will be no "breakdown of trust among leading democracies", as Wolf fears, although he is right to suggest we should move on. The ball is in the EU court.

Gregory Shenkman
London W8, UK

Spare Australia's miners the Thatcher treatment

Your illustration "It's capitalism ya eejits" (FT Weekend, November 6) has relevance to the domestic political situation surrounding the Australian coal industry (Report, October 27). And I imagine we are not alone in this.

Here, politicians, right and left, shy away from the process of terminating the industry which they must do if we are to make a serious contribution to the elimination of coal production. At the same time our mining communities have every right to expect a viable future.

It seems that carefully planned and guaranteed capital investment in alternative industries by government (tax increases!) is the rational way forward if we are to recognise the human dimension by safeguarding the future of the coal mining communities.

The alternative is to do nothing or to turn our backs on the miners and their families as Margaret Thatcher did in the 1980s. Unfortunately the buffoonery of Scott Morrison, our prime minister, on the world stage leaves one with a pessimistic view of this country's ability to deal with the problem.

Peter Thomas
Sydney, Australia

Make digital cash for the vulnerable a CBDC model

Fabio Panetta's article ("Central banks must evolve for the era of digital currencies", Markets Insight, November 19) makes the case for central bank digital currencies (CBDC).

At a community level we need to deploy digital cash in the financial care of vulnerable people in the UK. With all the accounting involved, it takes too long to get money from the Department for Work and Pensions into the vulnerable person's account.

In this context we should think of the DWP as the digital cash banker with the vulnerable person having a digital cash account. Care services and approved suppliers such as care homes would have digital cash accounts which would allow them to be paid for the services supplied to the vulnerable person.

Accounting to and scrutiny by the Office of the Public Guardian would be faster and easier.

The concept is less grand than providing the whole population with digital cash but it's more urgent, simpler to deploy and would provide a model for the CBDC ecosystem that Panetta envisages.

Paul Ormrod
Founder, Cashfac, London EC3, UK

Tectonic shift in work, or a middle-class scam?

The letter from Heather Thomas ("Command and control is an outdated office mindset", November 19) reflects how the "work from home" movement has quickly become politicised. It is being pushed aggressively by a loose alliance of academics, journalists, technology providers and self-interested employees, who use emotive language to demonise any manager exercising their legitimate right to question this new mantra.

The political left and trade unions are also firmly behind it, which is not surprising given it is so clearly in the interests of employees.

What is less clear is whether it serves the interests of organisations and the economy as a whole. While the supposed benefits in terms of talent attraction and employee wellbeing are trumpeted, we have yet to see the impact on costs, productivity, customer service and organisational cohesion.

Given the significant concerns over online GP consultations for the health service and strong student reactions to increased online learning, there is clearly another side to this argument that the press and academics are choosing to ignore.

While some staff may be more productive working from home, anyone who cares to look around them on any week day can see that many others are using their new found flexibility to do things other than work. Why would they want to give this up?

Whether work from home represents a tectonic shift in working patterns that will help to improve the UK's woeful productivity performance, or whether it is an opportunistic middle-class scam designed to secure five days' pay for three or four days' work, remains to be seen.

Roy Massey
London NW1, UK

Not paying tax on crypto winnings would be a bonus

I agree with Peter D Hahn ("Regulate crypto like gambling, not investing", Letters, November 22). I particularly look forward to not paying tax on any crypto "winnings" I may be lucky enough to make.

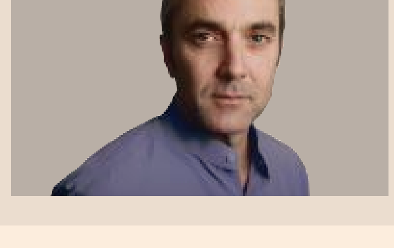
Frank McCallum
Glasgow, UK

Correction

● Redefine Meat's products are not available in UK restaurant chain Brigadiers, as wrongly stated in an article on November 17.

Tennis star's plight poses an Olympics headache for China

Notebook
by Tom Mitchell



When the world's best skiers, skaters and other winter athletes convene in Beijing for the Olympics on February 4, there is a good chance that the world's attention will instead be focused on a Chinese tennis player.

The international furore that erupted last week over the plight of Peng Shuai, one of China's most accomplished tennis professionals, is rightly focused on her whereabouts and safety after she accused Zhang Gaoli, a former Chinese vice-premier, of sexual assault.

The Chinese Communist party, however, is more concerned about how to quash — and quash quickly — the rapidly developing scandal. For both Peng's allegations and the party's cruel and inept response to them have revealed much about the nature of power and repression in President Xi Jinping's China.

The party's response to Peng's allegation, made in a social media post on November 2, was depressingly predictable and effective, at least initially. The post was quickly taken down by censors. All references to the 35-year-old Peng, a former top 20 singles player and twice Grand Slam doubles champion, were erased from China's walled-off internet. After a day or two of online chatter, abetted by slang and code-words to evade the censors, Peng's case went cold.

Where human rights and other abuses are concerned, what happens in China too often stays in China. But in this instance, the party failed to anticipate that the Women's Tennis Association and Peng's peers might not stand idly by as one of their own was disappeared.

On November 14, Steve Simon, WTA chair and chief executive, demanded assurances about Peng's safety and wellbeing, as well as a full, fair, transparent and uncensored investigation into her allegations. "#WhereIsPengShuai," tennis star Naomi Osaka added on Twitter.

Chinese state television's international arm responded by publishing a message, purportedly written by Peng, assuring Simon that she was fine and describing the assault allegations as "not true". "I've just been resting at home," the message added. Simon dismissed the message as not credible, said it added to his concerns for Peng's safety and even threatened to sever the WTA's lucrative commercial ties with China. He and Peng were supported by tennis greats past and present, such as Billie Jean King, Chris Evert, Novak Djokovic and Serena Williams.

Over the weekend the Chinese party state made another attempt to contain the crisis, releasing videos of Peng at a dinner on Saturday and a tennis event on Sunday. It also arranged a half-hour video call between Peng and Thomas Bach, president of the International Olympic Committee, who said she was safe and had requested that her privacy be "respected at this time".

The party still has a big problem on its hands. Unlike the WTA in recent days, the IOC has never demonstrated a willingness to speak truth to Chinese power. It is hard to see how anything short of letting Peng leave China — for example, to train in the US and rejoin the women's tour — will satisfy her global supporters.

Any reassurances Peng gives while in China cannot be taken at face value. But if she is allowed to travel overseas, what more might she have to say? Her detailed allegations against a man of Zhang's standing are unprecedented. He served on the party's most powerful body, the politburo standing committee, for five years.

How many other party cadres have used their power to harass and abuse women in a country where victims cannot speak freely and the media cannot report freely? How many more of China's 700m women might be inspired by Peng's example to speak openly of similar experiences?

So the party will try to keep Peng in a controlled limbo indefinitely, while hoping the rest of the world eventually loses interest in her story.

There is just one problem with that strategy. The Australian Open women's final will be held on January 29, six days before the Olympics opening ceremony.

If at that time the world's best tennis players are still asking "Where is Peng Shuai?", China risks seeing the Olympics turn into an event that, far from reflecting glory on the country and its leaders, becomes instead an international embarrassment.

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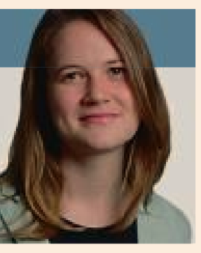
Opinion

The unfairness of corporate America's parallel justice system

EMPLOYMENT
Sarah O'Connor



American society is famed for its litigiousness. Yet a phenomenon spreading through the economy in recent decades has resulted in millions of people signing away the right to have their day in court.

US companies have been inserting mandatory arbitration clauses into the small print of contracts for everything from jobs to credit cards and nursing homes. These state that any dispute with the company will be resolved by arbitration rather than the courts: a simpler and more informal system where an arbitrator hears both sides and makes a decision. Typically the company selects the arbitration provider, the proceedings are behind closed doors and there is little chance to appeal.

This parallel justice system is now vast. In consumer finance, a 2015 study by the Consumer Financial Protection Bureau found that 16 per cent of credit card issuers used arbitration clauses (covering 53 per cent of credit card loans outstanding) along with 84 per cent of payday lenders (covering 99 per cent of storefronts).

In the labour market, mandatory arbitration clauses now cover about 55 per cent of non-union private sector workers, double the share in the early 2000s, according to a 2018 study by Alexander Colvin, an academic at Cornell University. Colvin says this means about 60m workers can no longer go to court to challenge violations of rights such as the minimum wage or protection against discrimination or harassment. The clauses are more common in low-wage workplaces, and they often come with class action waivers too.

Arbitration can have benefits for individuals. It is often quicker and cheaper than going to court. The American Arbitration Association, one of the biggest arbitration providers, charges an employee a $300 filing fee for a single-arbitrator dispute, for example, while the employer must pay $1,900 and a $750 case management fee. The big providers have rules which they say ensure the process is fair. Supporters argue the alternative would be lengthy legal proceedings which would benefit lawyers far more than ordinary Americans.

But there are reasons to worry nonetheless. Not every arbitration process is fair to the individual. In a case involving a US company elsewhere in North America, David Heller, an Uber driver in Toronto, wanted to take the company to court over worker rights. He was told his contract contained a clause which meant he had to resolve the dispute through arbitration in the Netherlands, which required upfront administrative and filing fees of $14,500. Canada's courts eventually found the clause to be "unconscionable", based on the inequality of bargaining power between the parties and the cost of arbitration.

> Mandatory arbitration clauses mean workers sign away the right to have their day in court

Some studies suggest individuals are less likely to win in arbitration than in court, and the awards they receive are smaller. Keeping disputes out of court can also keep a lid on systemic issues which need to change in a particular company.

Resistance to mandatory arbitration in the US is growing. A bill introduced to Congress would ban the clauses in employment, consumer, and civil rights cases, while some companies such as Google have already dropped them after employee protests.

Plaintiffs' lawyers have also found a way to turn the tables. They are filing hundreds or even thousands of individual arbitration claims to a single employer at the same time, which lands companies with a hefty bill in upfront fees. Gig company DoorDash ended up in court trying to get out of its own arbitration agreement last year after more than 5,000 couriers filed claims. It got short shrift from a judge.

And after Amazon faced more than 75,000 individual arbitration demands on behalf of Echo users, the company changed its terms of service to allow customers to file lawsuits, the Wall Street Journal reported this year.

It is possible to have a system which avoids unnecessary litigation without taking it off the table. In the UK, for example, people who want to take their employers to a tribunal are offered free conciliation by a government body called the Advisory, Conciliation and Arbitration Service. If the parties can't agree, they can still go to tribunal. It works well: only about a quarter of the disputes handled by Acas lead on to a tribunal claim. Meanwhile, 82 per cent of claimant-side and 80 per cent of employer-side participants report being satisfied with the service.

A country where "I'll see you in court" is the first response to any dispute isn't healthy. But one where someone says "I can't see you in court because I had to sign away my rights to do so" is surely worse.

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EU's war over sovereignty is just beginning

GLOBAL AFFAIRS
Gideon Rachman

Whatever happened to Michel Barnier? As the head of the EU negotiating team on Brexit, the patrician Frenchman became famous for his insistence that the EU must never deviate from its core principles — including the supremacy of European law and the free movement of people.

Now Brexit is done and Barnier has moved on. He is running for the presidency of France and has adopted many of the ideas he once rejected. Supremacy of EU law? Barnier now has his doubts. Immigration? Barnier is calling for a moratorium of up to five years. The European ideal? Barnier warns that Germany has become too powerful within the EU.

One possible explanation for this curious volte face is that the former EU commissioner has reflected deeply on the Brexit negotiations and has decided that the Brexiters had a point. An alternative theory is that Barnier has reflected deeply on his own ambition to be president of France — and has decided that the shortest route to power involves a sharp right turn, followed by a swift reversal over his own principles.

It is possible that a really good lawyer could make the statements of the two Barniers sound consistent. His current demand for a moratorium on immigration, for example, applies only to arrivals from outside the EU. But one of his former close colleagues in Brussels tells me: "What he is saying now, for example on the European Convention on Human Rights, is clearly different from what he was saying during the Brexit negotiations."

The Barnier story is about more than the cynicism of one man. It says something important about politics in Europe. The backlash against Brussels is not confined to France. In different forms, it is cropping up all over the EU — from Warsaw to Budapest to the German constitutional court in Karlsruhe. The supremacy of EU law, a principle established in the 1960s that is fundamental to the European project, is increasingly under challenge.

One key reason for these challenges is that the EU has expanded its powers into policy areas that used to be at the heart of the nation state: borders, budgets, currency and civil rights. As a result, many politicians chafe at having to accept European legal supremacy on subjects, such as immigration, that are deeply controversial at home. This problem is compounded by the fact that the EU club now has 27 members — making it harder to agree on a common rule book that suits everyone.

Over the past 20 years, the EU has been engaged in a rolling argument over where sovereignty and power is best located: Brussels or the nation-states? This was an issue when French and Dutch voters rejected a proposed EU constitution (championed by Barnier) in 2005 because it was too integrationist. The power of the EU to demand change in a nation state was also controversial throughout the Greek debt crisis.

Sovereignty was the central issue in the Brexit campaign in Britain in 2016 — highlighted by the Leave campaign's winning slogan: "Take back control". Control of borders, a crucial issue for the Brexiters, has also been central to the arguments of Eurosceptics in Hungary, Poland and France.

The fact that Brexit is widely perceived as a failing project means that no other countries are currently considering leaving the EU. But the question of the powers of Brussels and the supremacy of EU law are popping up in other guises. In 2020, the German constitutional court ruled that the European Central Bank's policy of buying the bonds of EU nations was illegal, suggesting that German judges could over-rule their European counterparts. Although Karlsruhe eventually backed off, its ruling encouraged the Eurosceptic governments in Poland and Hungary.

> The backlash against Brussels is not confined to France. It is cropping up all over Europe

The Polish constitutional court — at the prompting of the government in Warsaw — recently ruled that Poland's constitution outranks EU law. Unlike the Germans, the Poles were willing to escalate the conflict into an outright confrontation with Brussels.

The case is complicated by the fact that the Polish government is, in many respects, acting in bad faith. The ultraconservative Law and Justice party has packed the court with its own loyalists — something that Brussels regards as a threat to the rule-of-law in Poland. The issues of the primacy of EU law and of the independence of the Polish judiciary have become intermingled — although, logically, they are distinct questions. With Brussels currently threatening to cut off the flow of funds to Warsaw, there is a strong chance that the European Commission and the Polish government will eventually compromise. But, as the French election illustrates, the broader question of whether too much power now resides in Brussels will come up in other guises.

Previously it has always been assumed that power struggles between Brussels and member states would generally be resolved in favour of Brussels. "Ever closer union" seemed inevitable.

The strategic and economic arguments for deeper European integration remain powerful. But the politics look less and less favourable. Eurosceptic revolts in Britain and Poland are one thing. But when Barnier, the epitome of the "good European", turns into a nationalist the political ground is clearly shifting. The next constitutional settlement in the EU may favour nations, not Brussels.

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To catch up with China, the Pentagon needs a new AI strategy

Nicolas Chaillan

When I resigned from the Pentagon in September, I warned that without urgent action we would lose the artificial intelligence war against China within a year. Due to our complacency, we have watched the Chinese Communist party not only catch up with the US in many warfighting capabilities but, worse, lead in some of the most crucial ones like AI and cyber security.

Pentagon leaders like to call China a "near peer adversary", but this demonstrates how badly they have underestimated Beijing.

I don't, and you shouldn't. Whoever wins the AI race will control the planet. When the US has conducted virtual exercises pitting AI-powered jets against top pilots, the AI systems have prevailed. China's hypersonic missiles will only be stopped using AI-enabled defences.

The solutions to this threat are clear. The Pentagon must embrace agility and understand that innovation involves failure. It should set up a joint IT office, centralising all functions such as IT procurement, cloud services, data warehousing, AI, cyber security and training into a dedicated Technology and Information Merged Enterprise, which reports directly to the Department of Defense's deputy secretary. The department also needs to boost public-private partnerships, be more accountable to the taxpayer and devote at least 10 per cent of its budget to developing lean and autonomous methods of warfare.

However, as I have observed, defence leaders often fail to understand the technology itself, and refuse to empower those who do. If you are a leader and you don't know the subject matter, then educate yourself and be prepared to take advice, or step out of the way. We must mandate at least one hour per day of continuous learning for employees. The other common mistake is to create more siloed AI and data teams or even worse, a "cyber force". We do not need specialist units rushing in to save the day. Software, cyber and AI must be baked-in to every DoD team. Concepts such as the Pentagon's Defense Digital Service, set up ostensibly to deliver new technology across the DoD, have failed in part because they exist in a vacuum. We must also create respected career paths for software, cyber security, data science, AI and machine learning, with progression of pay and titles so they are not seen as dead ends.

> We must allow defence department workers to spend time at innovative companies such as SpaceX

To update its workforce, the Pentagon should collaborate more with industry. The US has incredible companies innovating across all sectors, from self-driving cars to space exploration and quantum computing. Unfortunately, the DoD continues to over-classify information. This prevents it from informing industry partners about the extent of China's aggressions — which range from embedding spies in our companies to stealing intellectual property and conducting cyber attacks. As a result, many US companies still refuse to work with the Pentagon. I believe that if it was able to share more about the nature of the threat, more would want to partner with the military to win this fight.

Bringing in expertise from outside defence means fixing the clearance processes, so people can move in and out of government to gain skills and experience. We must allow DoD folks to spend time working at start-ups and innovative companies such as Tesla and SpaceX, and return to implement their knowledge for the military. Without sufficient talent, US defence cannot succeed.

Finally, we must stop preparing for the wrong battles. The next war will be software-defined, it won't be won with a $1.7tn programme of fifth generation F35 fighter jets or $12bn aircraft carriers. China can take down our power grid without firing a single shot, because of kindergarten-level cyber security in our critical national infrastructure. This shows we are investing in the wrong defence capabilities. As we have seen recently with the Colonial Pipeline hack, the risk is tangible. We must act now to trade off some F35 jets for scalable autonomous systems such as drone swarming, self-flying jets and ships, hypersonic and cyber capabilities, and military advances in space.

Reports claiming the US has as much as 10 years to take meaningful action in AI are just wrong. Analysts forget that AI innovation progresses exponentially, based on the speed of deployment and the volume of data available to train its models. Since China has more experts engaged in this field, and more data, the US is already at a disadvantage. By this time next year, it will be too late to catch up.

The writer was formerly the first chief software officer at the US Air Force and Space Force. He is now chief technology officer at cyber security firm Prevent Breach

Nudging an asteroid off course could save the world

SCIENCE
Anjana Ahuja

There is always a touch of Hollywood about a rocket launch, but the Nasa mission due to leave Earth this week is more dramatic than most. The mission, to slam a spacecraft into an asteroid to knock it off course, is a dummy run for a strategy that might one day save the planet.

The Double Asteroid Redirection Test (Dart), to be launched from Vandenberg Space Force Base in California on Wednesday, is scheduled to cross paths next October with a binary asteroid composed of a rock called Didymos and its orbiting moonlet, Dimorphos. If all goes to plan, Dart will smash into the smaller moonlet, destroying the spacecraft but measurably changing the moonlet's 12-hour orbit around its heftier companion.

The mission should reveal whether the "kinetic impactor" technique can, in principle, deflect space rocks hurtling towards Earth. It will also be the first time that humankind has set out to deliberately move an object in the solar system. Alan Fitzsimmons, an astrophysicist at Queen's University Belfast who is involved in the mission, said he was "incredibly excited. I've been waiting for the launch of a kinetic impactor test for almost 20 years."

Asteroids, rocky objects that orbit the Sun but are too small to be counted as planets, mostly circle in the asteroid belt between Mars and Jupiter. Some, nudged by gravitational perturbations, are pulled into tighter loops that skim closer to Earth. Those that come within about 45m km are called near-Earth asteroids, or NEAs. The European Space Agency has clocked more than 27,000 NEAs, of which more than 1,200 are calculated to have a non-zero probability of hitting Earth.

> This week, humanity will for the first time set out to deliberately move an object in the solar system

Whether astronomers lose sleep over them depends partly on their size. Large asteroids, like the one that killed off the dinosaurs 65m years ago, measure a kilometre or more across; they are easy to spot and thankfully rare. None currently threatens Earth. Small ones, measuring under 10m across, are common but harmless, either burning up in the atmosphere or making a negligible impact.

But medium-sized rocks, ranging from tens to hundreds of metres across, lie in a hazardous sweet spot: numerous, hard to detect and capable of obliterating a town or city. One medium-sized asteroid, called 2021KT, passed close to Earth in June this year but was spotted only the month before. Nasa's Jet Propulsion Laboratory lists asteroids making particularly close shaves.

Dimorphos was plucked for target practice not because it threatens Earth but because it falls in that Goldilocks size range: at about 160m across, it has been compared to the Great Pyramid of Giza. Didymos, the primary body, is about five times bigger.

Scientists say the mission, intended only to shift the moonlet's orbit, will not accidentally shunt the rocks our way. An ESA mission called Hera, to be launched in 2024, will pay a follow-up visit to the asteroid to assess the aftermath.

Other ideas for planetary defence include "gravity tractors", in which a spacecraft races alongside an asteroid for years or decades to gravitationally drag it off course; and blast deflection, which targets incoming rocks for explosion. The former might be too weak to nudge larger asteroids; the latter risks producing dangerous debris.

Dart is, literally, humanity's best shot at preventing Earth from becoming a bullseye on a celestial dartboard. "It's the most ready technology we have at the moment for deflecting an asteroid," Fitzsimmons says. "It's best to do that in a test, rather than waiting for a real threat before finding out your technology doesn't work. If we're lucky, we won't need it for over a century — unlucky and we'll need it in the next few years."

The writer is a science commentator

Lex.

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Telecom Italia/KKR: to have and have knot

Competing interests have created a knotty puzzle at Telecom Italia. KKR, having launched a bid to buy Italy's incumbent operator, will be tempted to take a sword to it. The private equity group has announced a cash offer of €0.505 per share, giving an enterprise value of €33.2bn ($37.5bn).

That would put a 43 per cent premium on Friday's closing price.

The Italian government's golden share means the deal will go nowhere without state approval — as past bidders have discovered.

Yesterday's 28 per cent rise in the share price — well below KKR's offer — reflects those doubts. But KKR is unlikely to want to take on all of Telecom Italia; rather, its interest is in FiberCop, its last-mile fibre broadband network. It acquired a 37.5 per cent stake for €1.8bn in August last year.

FiberCop generates about 15 per cent of Telecom Italia's €5.8bn of ebitda, thinks James Ratzer at New Street. It should be growing fast. Yet while the EU boasts an average of 60 per cent coverage of households with high speed broadband, only about a quarter of Italians have the same access.

KKR may feel Telecom Italia chief executive Luigi Gubitosi, in charge since 2018, has not done enough to encourage FiberCop's expansion. The company's board and the stock market may take a similar view. Even after yesterday's sharp jump, the shares have dropped nearly a fifth since he took charge. Talk of spinning out the fibre business has come and gone.

KKR might have in mind some sort of public private partnership running a separate broadband network. That might work, as it has with the country's electricity grid Terna. But even if Gubitosi and the government allowed this, there are other minorities within Telecom Italia that have their own plans. These include the operator's largest shareholder Vivendi of France, with a 24 per cent holding.

Already Vivendi has nixed the current offer as too low. Meanwhile, another government-backed minority in Telecom Italia, Cassa Depositi e Prestiti, also has a majority stake in FiberCop's much smaller rival Open Fiber. CDP presumably likes the idea of merging the broadband operators but it appears to have a conflict of interest as well. Fibre optics work much better if laid out straight. KKR's move hints at frustration that it cannot untangle its broadband assets from the jumble that is Telecom Italia.

US proxy contests: mix and match

US shareholder democracy is getting livelier. The Securities and Exchange Commission last week approved the "universal proxy", ostensibly simplifying the byzantine rules that govern elections of corporate directors.

Until now, dissident shareholders seeking to win board seats had to go to the expense of preparing and sending out rival ballots. That process was cumbersome and could confuse investors. The universal proxy will ensure all board candidates appear on all ballots for annual general meeting (AGM) votes. Rather than force shareholders to pick one slate or another, universal proxies will allow them to pick and choose candidates.

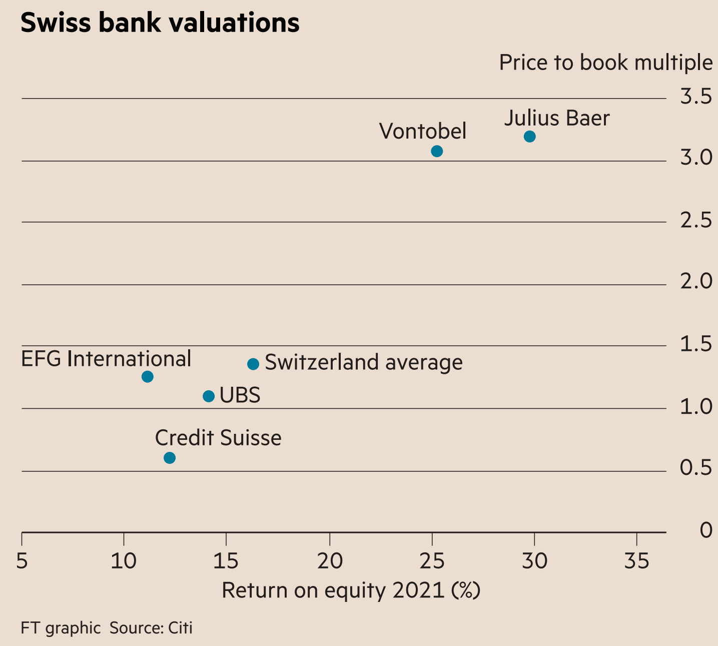
One possible consequence is that fringe forces will find it easier to barge their way into the boardroom. The experts already warn their corporate clients to prepare for more barbarians trying to breach the gates. In some areas of shareholder activism, the SEC makes it hard to hassle companies. To put forth a shareholder proposal at an AGM, for example, an investor has to have held a minimum percentage of shares for a period of time.

There will be no such requirements to propose any director candidates. To ensure challengers are serious, the SEC requires them to actively solicit at least 67 per cent of the voting power of shares entitled to vote. But even that requirement can be satisfied merely by putting the proxy materials on a website. SEC calculations suggest a proxy contest could cost as little as $10,000 whereas before it could run into millions, one law firm has said.

The SEC has taken the heavy cost burden out of challenging management. But that comes at the risk of forcing companies to entertain the whims of gadflies. Whether it ultimately proves a nuisance or a healthy check on incumbents, there are certain to be some beneficiaries. Expect those operating the machinery of AGMs — lawyers, vote counters, PR firms — to be the biggest winners.

Julius Baer: note worthy

The Swiss bank has reported lower gross margins in recent months. Like peers, Julius Baer has increased its reliance on alternative products. Services such as collateral-backed Lombard lending have made up for low interest rates but also increase the volatility of earnings.



FT graphic Source: Citi

Source: UBS

Notes of caution rang out of an update from Swiss bank Julius Baer yesterday. Disappointing client asset growth caused typically optimistic chief executive Philipp Rickenbacher to miss a beat, sending its share price 5 per cent lower in response.

The likely culprit was weakness in emerging markets, home to about half the bank's assets under management. Those worries add to any top-of-the-cycle fears. Then again, lower valuations might help to usher in the bank's next act. A business built on transformational deals is ready for the next one.

Private banking profits remain subject to the same pressures as the rest of the banking sector, namely persistently low interest rates and fee erosion caused by competition from passive funds. Signs of a reversal in the former bode well but the latter will continue to weigh on profit margins. Together with lower trading volumes, gross margins fell to 82 basis points in the 10 months to October, down from 87 in the first half of this year.

Cutting costs helps counteract this. Rickenbacher has driven the bank's cost-to-income ratio of 63 per cent below the 67 per cent target for 2022.

Another way to shore up profitability is to sell more high-margin, alternative products. Swiss banks including Julius Baer have been forced to squeeze more from their own balance sheets using structured products and Lombard (pledged collateral backed) lending.

The bank's transition to a new payment model for private bankers that will incentivise profitability is going smoothly.

Net new money was up 4.4 per cent. Even if lower than expected, assets under management in the year to October were still 12 per cent up on last year at SFr484bn ($520bn).

Faster asset growth than peers has put shares close to record highs. That puts the bank on a rich valuation of 3.5 times tangible book value.

Capital remains strong with a 16.7 per cent common equity tier one ratio. Post distributions, that leaves about SFr1bn in reserve, enough firepower for Rickenbacher to finance his next big deal. Should no candidates emerge, more buybacks will offer music to shareholders' ears.

Diploma plc: adoring the boring

What supply chain bottlenecks? Diploma plc, a British company that quietly goes about getting medical instruments to surgeons and cable to industry, is on a roll. The FTSE 250 group yesterday reported £787.4m of revenues for the year to September, up 44 per cent on pre-pandemic 2019. Adjusted operating profit rose 53 per cent over the same period.

Robust as the numbers were — sufficient to send analysts scurrying to revise forecasts — those should not surprise shareholders. Diploma boasts a five-year compound annual revenue growth rate record of 10 per cent and adjusted operating margins of 17.2 per cent. That give it a top-three ranking among the motley basket of equipment rentals, wholesalers and bit-part engineers that provide the closest thing to a peer group.

Shares, up more than half this year, have stormed ahead of the FTSE 250. It has no secret sauce: it makes some parts, sources others and delivers them to global clients across a range of industries. But it has a canny model.

The products it supplies are boring but necessary: seals, gaskets and the like come out of customers' operating expenditure, not their more cyclical capital investment budgets. Laser-focused, mostly small acquisitions, tack on new product lines. It executes well, as evidenced by the average 200 to 300 basis point uplift to operating profit following acquisitions.

Newcomers may wonder whether a buying opportunity exists. Return on adjusted trading capital, Diploma's preferred metric that adjusts for the full-year effect of acquisitions and disposals, rose in the second half. At 17.4 per cent for the full year, it does remain short of 2020 and 2019. Yet any wavering looks like an aberration.

With little leverage — net debt to ebitda of 1.1 times — after five second-half deals, Diploma has ample room for more acquisitions. It may lack a snazzy metaverse or demigod founder to grab headlines, but sometimes boring deserves a punt.

Ericsson/ Vonage: phone tag

Vonage's entry into the public markets 15 years ago was a fiasco. Its exit will prove much more pleasant.

Yesterday, the telecoms equipment titan Ericsson said it would acquire Vonage at an enterprise value of $6.2bn. The takeover price is more than five times where Vonage traded at the start of 2015.

The company arrived just after the dotcom boom. It became known as the force behind VoIP — voice over internet protocol, moving hard-wired phone calls to the internet. But a messy listing and a money-burning business model that did not anticipate the iPhone cellular revolution nearly sent the company into bankruptcy.

In 2006, it sold shares to the public at $17 per share. On the first day, its stock price fell more than a tenth, presaging its coming difficulties. In 2009, Vonage shares traded at under 50 cents.

The hype over VoIP had faded as Vonage was bleeding customers and faced patent infringement lawsuits from the likes of Verizon.

But a few years ago, Vonage pivoted from consumers to businesses, offering a way to modernise communications for a digital world. The timing proved perfect given the explosion in IT outsourcing. The pandemic was another boon forcing companies to adapt to remote workforces.

Vonage's legacy business, however, very much exists today. Like AOL's dying dial-up internet service, VoIP remains highly profitable. Even as revenue is falling each year by 15 per cent, its ebitda margin is a lofty 65 per cent. In 2021, essentially all the company's forecast ebitda of $200m will come from its consumer business.

The enterprise business has reached break-even profitability and is growing annually at around 20 per cent. Even assuming Ericsson is ascribing no value to the consumer business, that implies the 2021 revenue multiple paid on the enterprise unit is less than six times.

Zoom trades at 25 times revenue and RingCentral at about 15. Sometimes it is worth staying on the line.

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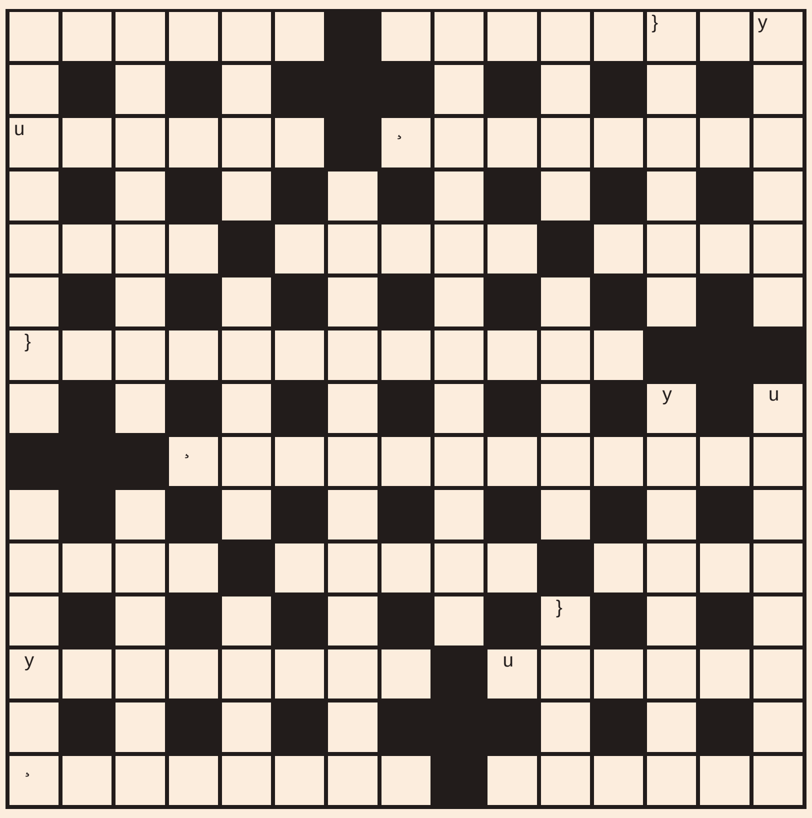
CROSSWORD

No 16,950 Set by BOBCAT



ACROSS
1 American from Missouri associated with warmonger (6)
4 Ludicrous to replace gas with another substance (8)
9 Mackenzie's treated skin with this (6)
10 Animal rescue service shelter to be opened by Queen, God willing (8)
12 Insignificant 50s character is given prominence (4)
13 *Wacky Races* over . . . . wheels stopping . . . . . Dastardly gutted (5)
14 Friend of criminal philosopher receives nothing for paper (4)
17 Atherton uses bats from Kent (5-7)
20 Transport lager and wine to hotel bar (8,4)
23 One's precious, but seemingly ostracised (4)
24 Countered urge to introduce gold standard (5)
25 Turn traitor to implicate second man in command (4)
28 Put £25 on dog in Barnet (8)
29 Old film is making a comeback fast (6)
30 Sierra with greyish brown silicate at far end is feature of landscape (4,4)
31 Fine line crossed by hero (6)

DOWN
1 I'm afraid Newton's in trouble for submission (8)
2 Something obscuring vision given to student teachers? It's fruit! (8)
3 Coward wrote incisively mordant plays at first (4)
5 Affections misdirected could lead to night arrests (12)
6 Fashion's sort of average (4)
7 Pencil in third of craftsmen over there (6)
8 Royal portraitist to capture current king? Probably (6)
11 *Oldie* confused Noriega with Annan (12)
15 Bundle of papers originally assembled inside novel folio (5)
16 Trash Democrat orders (5)
18 Unexplained element of wordplay for "den"? (5,3)
19 Spies eventually see round most of island incognito (8)
21 Add Manx cat to my collection (6)
22 Excessively hearty clergyman's playful stroke? (6)
26 One from stable environment's finishing in South of France (4)
27 Alcohol distilled from paraffin oil (4)

JOTTER PAD

Solution 16,949