FINANCIAL TIMES
WEDNESDAY 21 DECEMBER 2022
INTERNATIONAL NEWSPAPER OF THE YEAR
ASIA

Will green rules spawn zombie office blocks?
BIG READ, PAGE 13

There were glints of light in a year to forget
MARTIN WOLF, PAGE 15

‘Superhuman’ Zelenskyy hails troops

Ukraine presidency/AFP

Volodymyr Zelenskyy, left, hands out the State Award to a soldier yesterday during a ceremony for Ukrainian servicemen in the eastern city of Bakhmut.

Ukraine’s president hailed the “superhuman” troops during a surprise visit to the frontline city. He urged them to maintain morale as the boom of artillery sounded in the distance. “Motivate those who are near you, those who might be weaker,” Zelenskyy said.

At the same time, Russia’s president Vladimir Putin made a rare admission of his country’s challenges in the near 10-month war.

In a video message to his security services, he said the situation in four Russian-occupied regions of Ukraine was “extremely complicated”, and urged them to intensify efforts to identify “traitors, spies and diversionists”.

‘Extremely complicated’ page 2
Constanze Stelzenmüller page 15

Bank of Japan policy rethink sends shockwaves across global markets

- Surprise yield curve shift
- Big jump in yen
- Traders see ‘pivot’ point
- Kuroda plays down move

KANA INAGAKI AND LEO LEWIS — TOKYO

The Bank of Japan surprised investors with a change to a core tenet of its monetary policy, sending shockwaves across the currency, bond and equity markets.

Traders described an adjustment to its longstanding yield curve control measures as potentially marking a “pivot” by the BoJ, the last of the leading central banks to stick to an ultra-loose monetary regime.

“We view this decision as a major surprise, as we had expected any widening of the tolerable band to be made under the new BoJ leadership from spring next year, similar to the market,” said Naohiko Baba, chief Japan economist at Goldman Sachs.

The yen jumped more than 4 per cent to about ¥131.2 against the US dollar in New York trading, while Japan’s Topix equity index fell 1.5 per cent. The 10-year Japanese government bond yield surged by its most in almost two decades, reaching a high of 0.47 per cent.

The BoJ move ricocheted across other big markets. The US 10-year Treasury yield rose 0.11 percentage points to 3.69 per cent, while the equivalent UK gilt yield increased by a similar margin to 3.6 per cent. Yields rise when prices fall.

Lex. The move is the boldest step Kuroda has taken after years of criticism, and only when he has one foot out the door
Page 16

BoJ governor Haruhiko Kuroda denied that the adjustment amounted to a tightening of monetary policy, stressing that the central bank would not scrap its yield target.

Japan’s increasingly extreme outlier status has contributed to a big fall in the yen this year as markets have priced in the differential with the rate-tightening US Federal Reserve.

The BoJ said it would let 10-year yields fluctuate by plus or minus 0.5 percentage points of its target of zero, instead of the previous band of plus or minus 0.25 percentage points.

It kept overnight interest rates at minus 0.1 per cent.

Kuroda had earlier said any tweak to the yield curve control policy would in effect amount to an interest rate rise.

But he said yesterday the adjustment was meant to address increased volatility in global markets and improve bond market functioning to “enhance the sustainability of monetary easing”. He added: “This measure is not a rate hike. Adjusting the YCC does not signal the end of YCC or an exit strategy.”

Japan’s core inflation, which excludes volatile food prices, has exceeded the BoJ’s 2 per cent target for the seventh consecutive month, hitting a 40-year high of 3.6 per cent in October.

Kuroda had long argued that any tightening would be premature without robust wage growth, which is why most economists had expected the BoJ to stay the course until he steps down in April. The BoJ yesterday maintained its outlook that inflation would slow down next year and warned of “extremely high uncertainties” for the economy.

“Maybe it’s an act of generosity by Kuroda to reduce the burden for the next BoJ governor, but it’s a dangerous move and market players feel duped,” said Masamichi Adachi, chief Japan economist at UBS. “US yields are falling now but if they start to rise again, the BoJ would once again face the risk of being pressured into raising rates.”

The BoJ effort to defend its YCC targets have contributed to a cut in market liquidity and what some analysts describe as “dysfunction” in the Japanese government bond market. The bank owns more than half of outstanding bonds, compared with 11.5 per cent when Kuroda took charge in 2013.

Bond bears win page 8

Briefing

▸ Wells Fargo told to pay $3.7bn over illegal activity
Consumer watchdogs have ordered the fourth-biggest US bank to pay out over conduct between 2011 and this year, the latest in a string of fines.— PAGE 5

▸ China normal ‘in months’
State media have promised a quick return to normality and sought to portray an “exit wave” of coronavirus cases as part of a pre-planned strategy.— PAGE 4

▸ Scandal claims new scalp
Luca Visentini, head of a global trade union body, has quit after admitting taking cash from the MEP at the heart of a European parliament scandal.— PAGE 4

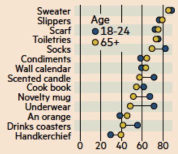
▸ Car chip shortage alert
Manufacturers and chipmakers have warned that the automotive sector will suffer semiconductor shortages in 2023 as the electric switch accelerates.— PAGE 6

▸ Gates takes aim at Musk
Microsoft co-founder Bill Gates has said that “seat-of-the-pants” decisions at Twitter since Elon Musk’s takeover are worsening digital turmoil.— PAGE 5; LEX, PAGE 16

▸ Amazon seals EU deal
The US tech giant has finalised a deal with antitrust regulators and announced new measures to level the playing field for sellers in its marketplace.— PAGE 4

Datawatch

Underwear overrated
% of Britons happy to receive:



Source: YouGov, Nov 29-30

Younger Britons are far more likely than pensioners to welcome underwear as a gift — the biggest generational divide among traditional Christmas presents. A handkerchief is a little more likely to be appreciated by an older recipient

Outspoken oligarch’s $1bn hotel grabbed by court

Analysis ▸ PAGE 2

Media groups shed $500bn in value as shares head for historic declines

ALISTAIR GRAY — LONDON

More than $500bn has been wiped off the market value of the world’s biggest media companies this year as investors sour on the streaming revolution, triggering historic share price declines for broadcasting and entertainment groups.

Intensifying competition and rising costs have combined with consumer belt-tightening and an advertising slowdown to spark an industry-wide decline.

Media, which for investors spans a range of activities from film production to advertising to cable television, has been among the hardest-hit sectors in what is set to be the worst year for global equities since the financial crisis.

“It’s been a perfect storm of bad news,” said Michael Nathanson, media analyst at MoffettNathanson. “I’ve been covering this sector a long time and I’ve never seen such a bad collection of data points before.”

Walt Disney shares, down about 45 per cent this year, are heading for their biggest annual fall in half a century. The shares have come under more pressure in recent days as takings from Disney’s eagerly anticipated *Avatar* sequel fell short of estimates in its debut weekend.

Paramount Global has dropped 42 per cent this year and Netflix 52 per cent, while Warner Brothers Discovery has tumbled 63 per cent since its creation this year by the combination of Discovery and AT&T’s WarnerMedia.

The conglomerate’s executives are trying to integrate two of the largest operations in media at a time of industry turmoil, and last week warned that it faced as much as $5.3bn in restructuring and other charges related to the merger.

Streaming companies coped well with the onset of the pandemic as lockdown restrictions boosted audiences. But while executives spent tens of billions of dollars on streaming content, viewing options have proliferated while living costs have soared — encouraging financially squeezed households to “churn”, or switch subscriptions.

The Dow Jones Media Titans index, which tracks 30 of the the world’s biggest media companies, has shed 40 per cent this year, with its total market value shrinking from $1.35tn to $808bn.

Rising interest rates have dented valuations, particularly of the sector’s “growth stocks”. Music provider Spotify has slumped 69 per cent and video specialist Roku 81 per cent.

Advertisers have also become more reluctant to promote brands as the global economy slows.

World Markets

STOCK MARKETS

	Dec 20	Prev	%chg
S&P 500	3822.56	3817.66	0.13
Nasdaq Composite	10548.02	10546.03	0.02
Dow Jones Ind	32839.14	32757.54	0.25
FTSEurofirst 300	1677.27	1682.87	-0.33
Euro Stoxx 50	3798.78	3811.24	-0.33
FTSE 100	7370.62	7361.31	0.13
FTSE All-Share	4026.91	4025.87	0.03
CAC 40	6450.43	6473.29	-0.35
Xetra Dax	13884.66	13942.87	-0.42
Nikkei	26568.03	27237.64	-2.46

CURRENCIES

Pair	Dec 20	Prev	Pair	Dec 20	Prev
$/€	1.064	1.058	€/$	0.940	0.945
$/£	1.214	1.213	£/$	0.824	0.824
£/€	0.877	0.872	€/£	1.141	1.147
¥/$	131.415	136.995	¥/€	139.820	144.935
¥/£	159.525	166.181	£ index	78.813	78.816
SFr/€	0.985	0.988	SFr/£	1.124	1.132

CRYPTO

	Dec 20	Prev	%chg
Bitcoin ($)	16810.46	16440.45	2.25
Ethereum	1207.77	1167.63	3.44

GOVERNMENT BONDS

Yield (%)	Dec 20	Prev	Chg
US 2 yr	4.27	4.25	0.02
US 10 yr	3.68	3.59	0.09
US 30 yr	3.74	3.65	0.09
UK 2 yr	3.74	3.69	0.05
UK 10 yr	3.59	3.50	0.10
UK 30 yr	3.89	3.82	0.07
JPN 2 yr	0.01	-0.01	0.02
JPN 10 yr	0.41	0.25	0.16
JPN 30 yr	1.57	1.52	0.05
GER 2 yr	2.50	2.44	0.06

Australia	A$7.00(inc GST)
China	RMB30
Hong Kong	HK$33
India	Rup220
Indonesia	Rp45,000
Japan	¥650(inc JCT)
Korea	W4,500
Malaysia	RM11.50
Pakistan	Rupee 350
Philippines	Peso 140
Singapore	S$5.80(inc GST)
Taiwan	NT$140
Thailand	Bht140
Vietnam	US$4.50

Subscribe In print and online
www.ft.com/AsiaSubs
Tel: (852) 5803 3388
Fax: (852) 2905 5590
email: subseasia@ft.com

No: 41,203 ★

Printed in London, Liverpool, Glasgow, Dublin, Frankfurt, Milan, Madrid, New York, Chicago, San Francisco, Tokyo, Hong Kong, Singapore, Seoul, Dubai

Rising tension

US warns of Russia-China anti-Nato 'toolkit'

Powers are working together to undermine west, says alliance envoy

HENRY FOY — BRUSSELS

Russia and China are "sharing a toolkit" of strategies to undermine Nato members, a top US diplomat has warned, urging western capitals to step up efforts to defend themselves against both Moscow and Beijing.

Washington is pushing members of the transatlantic alliance to toughen their stance towards China, citing Beijing's military developments, threats to critical western infrastructure such as transport and power networks, its "no limits" partnership with Moscow and support for its war against Ukraine.

"Those two are increasingly sharing a toolkit that should concern the Nato alliance," said Julianne Smith, the US ambassador to Nato, pointing to the threats to energy supplies and cyber security, among other factors.

"There's just no question that the [People's Republic of China] and Russia are both working to divide . . . the transatlantic partners. And we are now very aware, we all have a deeper appreciation of those efforts and are intent on addressing them," she said.

Beijing is not providing arms for use in Russia's war against Ukraine but has given political support to President Vladimir Putin since he launched the full-scale invasion in February, and repeated the Kremlin's accusations that blame Kyiv and the west for the war.

Nato for the first time in June agreed to address the "challenges" China poses to the alliance. After a step-up in US lobbying, member states' foreign ministers discussed concrete measures to address China at a meeting in Bucharest, Romania, last month.

"We've seen them share hybrid tactics," Smith said. "I think China watches very closely how Russia relies on disinformation and things like coercion or energy security, malign or malicious cyber operations."

Other allies did not reject proposals made by US secretary of state Antony Blinken at Nato's Bucharest meeting aimed at better protecting critical infrastructure, supply chains of key materials and cyber assets from undue Chinese influence or control.

But many European countries are far less hawkish towards China than the US and are reluctant to endanger their trade and economic ties with Beijing by taking too tough a posture. Other European members are wary of any distraction from efforts to help Ukraine.

Smith said the alliance was "focused like a laser . . . to get the Ukrainians all the support that they require" in the form of air defence systems to defend against "horrible and absolutely inexcusable" Russian attacks on civilian infrastructure, and equipment to help them rebuild damaged energy systems.

In September, Nato held its first dedicated discussion on Taiwan, which faces rising threats from China. But the US intention was not to push European allies to divert the alliance's focus towards the Asia-Pacific, Smith said, but to ensure allies had strong defence policies.

Work to move governments from acknowledging the challenges posed by China to addressing them was "well under way", Smith said, and Nato would seek to achieve "milestones" at ministerial meetings and leaders' summits.

Tycoon. Court order

Deripaska complex seized after war criticism

Sochi legal dispute underscores pressure facing oligarchs since Moscow's invasion of Ukraine

MAX SEDDON — MOSCOW
POLINA IVANOVA — BERLIN

A Russian court has ordered the seizure of a luxury hotel complex owned by billionaire Oleg Deripaska, one of the few oligarchs to have criticised President Vladimir Putin's war in Ukraine, in a sign of the pressure facing the country's tycoons since the invasion.

The dispute, following an initial claim brought by a science and educational hub under Putin's patronage, predates the invasion and is not ostensibly linked to Deripaska's guarded criticism of the war, which he has called "madness".

But the court order to seize the $1bn Imeretinskiy hotel complex and marina in Sochi came after the Kremlin asked Deripaska to stop criticising the war, two people familiar with the issue said.

"The Kremlin asked him to calm down," said a person close to Deripaska.

Deripaska has been under US sanctions since 2018 over his Kremlin links. But the metals tycoon is the most prominent of the small number of Russian business leaders who have spoken out since Moscow invaded Ukraine in February. "We need peace as soon as possible, as we have already passed the point of no return," he tweeted in March.

The Kremlin asked him to tone down his criticisms that same month, according to another close to the oligarch, and has repeated that request at least once.

Many oligarchs privately oppose the war, yet few have made public comments. Several have said they are afraid to disagree publicly with the Kremlin, citing fears of repercussions. In June, Deripaska warned that "destroying Ukraine would be a colossal mistake", even as he shied from criticising Putin personally. Two weeks later, the Sirius Federal Territory, a science, educational and tourism cluster set up under Putin, filed three land dispute lawsuits against RogSibAl, Deripaska's company that owns the Imeretinskiy complex.

Putin's decision in 2020 to grant Sirius the status of federal territory, giving it its own government and budget, had meant it became in effect RogSibAl's landlord. The science cluster and hotel complex are adjacent to each other on the Black Sea coast.

> 'The Kremlin asked him to calm down'
>
> Person close to Deripaska

Publicly available court documents seen by the Financial Times show the judge ruled in favour of Sirius in September, evicting RogSibAl, with a separate judgment the same month ruling to seize all his company's real estate.

Sirius's parent foundation, Talent and Success, is co-owned by Sergei Roldugin, a cellist friend of Putin who is godfather to his daughter, Maria. Putin chairs Talent and Success's supervisory board. The US described Roldugin as a "custodian" of Putin's "offshore wealth" when it placed him under sanctions in June.

Elena Shmeleva, Sirius's director, was a candidate for Putin's party in last year's elections but did not become an MP. Television presenter Vladimir Pozner last year introduced her in an interview by saying that her "influence boggles the mind. Ministers and heads of major companies fly to Sochi for meetings with her."

Referring to Putin, Dmitry Peskov, the president's spokesman, said "Sirius is indeed his baby, he's the one who came up with the idea . . . but this has nothing to do with the court cases." It was "absolutely incorrect" to suggest the cases were linked to Deripaska's war statements. "He never spoke out against the operation" in Ukraine, he said. "Like many, he's pushing for everything to be done better and more efficiently . . . he's stating his point of view."

Deripaska's office did not comment, nor did Sirius or Russia's prosecutor-general's office.

Sochi became an investment hub after it was awarded the 2014 Winter Olympics, with more than $50bn poured into the city and surrounds. Nearly half the tab was picked up by tycoons such as Deripaska, who spent about $1bn on an Olympic village and cargo port he later sought to turn into accommodation with a marina. What is now the Imeretinskiy complex stretches 1.5km along the coast, with hotels and apartment blocks with swimming pools.

Sochi: the Black Sea resort is home to the Imeretinskiy complex, owned by Oleg Deripaska, below left, as he inspects the city's Olympic Village in 2013 with then prime minister Dmitry Medvedev
Andrey Khrobostov/Alamy Stock Photo; Ekaterina Shtukina/Ria Novosti/EPA

Putin set up Sirius as a centre to train Russia's brightest children on an adjacent site after the Olympics. Deripaska is among the dozens of oligarchs and state companies to have donated to Sirius's parent foundation, giving it a total of Rbs360mn ($5mn).

But that did not stop Sirius from enlisting the local authorities' help in June to decide whether RogSibAl had violated its rental accords, on grounds it had not redeveloped the port into a marina and had built "unauthorised structures". The judge in Krasnodar sided with Sirius, despite publicly available images showing yachts moored there.

Days after that ruling in September, Russia's deputy prosecutor-general filed a separate suit against RogSibAl in Moscow city court. That case briefly reopened last month, allowing papers to become public for the first time. They showed prosecutors sought to seize the Imeretinskiy complex and "transfer the property to the Russian Federation".

Constanze Stelzenmüller see Opinion

Invasion

Putin admits conflict in Ukraine 'extremely complicated'

MAX SEDDON — MOSCOW
ANASTASIA STOGNEI — RIGA
FELICIA SCHWARTZ — WASHINGTON

Vladimir Putin has called the situation in Ukraine "extremely complicated" in an apparent attempt to prepare Russia's population for a long-lasting war as his stalling invasion of the country nears the 10-month mark.

In an address to security officers yesterday, the Russian president admitted they faced difficulties in four regions of Ukraine partly occupied by Russian forces, saying working there was "hard".

Putin annexed four regions of eastern Ukraine in September to try to secure Russia's gains and deter western support for Kyiv.

But the gambit has backfired as Ukraine's counter-offensive, backed by supplies of western weapons, has retaken territory Putin claimed as Russian. Among the Ukrainian gains are Kherson, the only regional capital Russia had captured during the invasion, which began in February.

"The people living there, the Russian citizens, rely on your protection. And it is your duty to ensure their security, rights and freedoms," Putin said.

Putin's comments marked the second time this month he has admitted the war in Ukraine, which he originally thought would be over in less than a week, is set to go on for a long time.

Earlier this month, he told his human rights council the invasion could be a "long process". However, the earlier declaration celebrated the territorial gains from the annexation.

Putin appears to have little intention of climbing down from his goals, which essentially amount to destroying Ukraine in its current form, even as Russia struggles to gain ground, according to former senior Kremlin officials.

Russia has repeatedly said it is open to peace talks with Kyiv, but only on the condition that all its demands are met.

The US and its European allies are continuing to back Ukraine, which has made the recovery of its lost territory a compulsory precondition for any talks.

"I would venture to say that things could be a heck of a lot less complicated for the Russians in Ukraine if they would just get the hell out, and just take their troops out of the country," US National Security Council spokesman John Kirby said yesterday.

"Short of that, which obviously doesn't seem to be something Mr Putin is willing to engage as an idea of simplifying issues in Ukraine, we're going to continue to make sure we can support Ukraine's effort to defend itself."

Putin also indicated Russia's domestic crackdown on dissent and heightened preparations for possible threats would continue. Russia has made "discrediting the armed forces" illegal, while Putin declared martial law in the four annexed regions and raised alert levels in eight other provinces.

"Places where citizens congregate, strategic sites, and transport and energy infrastructure should be under constant control," Putin said yesterday. "Counter-intelligence agencies, including military counter-intelligence, must be as prepared . . . as possible," he added.

"The actions of western secret services must be clamped down on harshly."

FINANCIAL TIMES
6th Floor, Nan Fung Tower
Central, Hong Kong

Subscriptions and Customer Service
Tel: (852) 5803 3388, subseasia@ft.com

Advertising
Tel: (852) 2868 2863 asiaads@ft.com,
www.ftasia.net

Letters to the editor
letters.editor@ft.com

Published by
The Financial Times (HK) Limited,
6th Floor, Nan Fung Tower, 88 Connaught Road
Central, Hong Kong

Japan: Nikkei Tokyo Newspaper Printing Center, Inc.,
1-10-5, Shinonome, Koto-Ku, Tokyo 135-0062
Representative; Hiroko Hoshino; ISSN 0915-9460
South Korea: Maeil Business Newspaper, 30-1, 1-Ga,
Pil-Dong, Jung-Ku, Seoul, 100-728
Singapore: SPH Media Limited, 2 Jurong Port Road,
619088
Representative, Anjali Mahindroo

European Central Bank

Pandemic hastens eurozone consumers' switch from cash

MARTIN ARNOLD — FRANKFURT

The pandemic sparked a sharp decline in the use of cash across the eurozone, as the amount consumers spent in person using cards overtook purchases with notes and coins for the first time.

The European Central Bank said card payments rose to 46 per cent of face-to-face transactions by value from 43 per cent three years ago, while the use of cash slipped from 47 to 42 per cent.

The study also found payments made using mobile phones tripled to 10 per cent of person-to-person payments over the past three years, while online payments for buying food or daily supplies from supermarkets and restaurants also rose at a similar rate to 17 per cent.

grew in popularity, with 37 per cent of consumers stashing banknotes at home, up from 34 per cent three years ago. The ECB, which has imposed negative rates on eurozone banks since 2014, said the trend may reflect uncertainty caused by the pandemic.

Cash was still the dominant payment method by number of transactions, but fell from 72 per cent in 2019 to 59 per cent this year. Cash usage for in-person payments ranges from 77 per cent of transactions in Malta to 19 per cent in Finland.

Just over half asked said they had not changed how often they used cash since the pandemic hit, but 31 per cent said they were using cash less often, while 14 per cent said they were using it more.

Regulation

Energy watchdog casts doubt on 'untested' EU gas price cap

ALICE HANCOCK — BRUSSELS

The EU's energy regulator has warned that the bloc's new gas price cap was unlikely to lower costs for consumers or businesses if countries kept on rushing to fill their depleted reserves, calling the mechanism agreed by ministers this week "unprecedented, untested".

Christian Zinglersen, director of the EU's joint Agency for the Cooperation of Energy Regulators, said he would be "reluctant to rely on this gas price cap" to stop the types of price rises that roiled Europe's energy markets in the summer following Russia's invasion of Ukraine.

The emergency cap, which set a limit of €180 a megawatt hour on the cost of gas traded in the bloc, was sealed on

The mechanism will be triggered when prices reach €180 and sit €35 per MWh or more above global liquefied natural gas prices. Prices on the EU's benchmark Dutch Title Transfer Facility were about €107 a megawatt hour yesterday, equivalent to roughly $180 a barrel in oil terms. At the height of the charge to refill gas storage in August, prices hit a record high of more than €300 a MWh.

EU energy commissioner Kadri Simson insisted after energy ministers approved the cap that "with such a mechanism in place, Europe will be better prepared for the next winter season".

However, Zinglersen said discussions over the price cap, which came after months of pressure from mostly south-

Young Iranians turn ire on clerics and religious establishment

Clergy's turbans are being knocked off in public as part of nationwide protests

NAJMEH BOZORGMEHR — TEHRAN

Young men and women run towards clerics in the streets, including old men, knocking off their turbans and running away, giggling as if it is a game.

For more than four decades, Iran's ruling Shia clerics have taken an uncompromising approach to social freedoms, setting a compulsory Islamic dress code for women, and restricting dancing and drinking alcohol in public.

But public opinion has turned against the conservative establishment after nationwide protests following the death of 22 year-old Mahsa Amini in September in police custody. She was detained for failing to properly observe the Islamic dress code.

Videos of anti-regime protesters knocking turbans off clerics' heads in cities and towns have surfaced on social media. While not widespread, the attacks have deterred some clerics from wearing the headgear in public.

"This aggressive act is not extensive but has symbolic importance by creating fears among the clergy who wonder how far protesters are ready to go," said a reform-minded analyst. "The pressure on religious segments of the society is very heavy now. There are concerns this might happen to women who wear [the] *chador*, too," the person said, referring to the top-to-toe black covering.

While Iran has witnessed protests before, these are the first to call for the toppling of the Islamic establishment. "Canons, tanks, firecrackers; the clergy must get lost," has been one of the protest's most popular slogans, the first part borrowed from a football chant critical of referees.

Hundreds of thousands of male and female clerical students live in Iran, which has the biggest seminaries for Shia clergy in the Islamic world. The clerics targeted by young people do not necessarily have any links to the political establishment, nor are they well off, but for protesters, they are fair game.

"When people have no access to clerical rulers, they avenge those clerics who live a normal life without any positions in the political establishment and have no bodyguards," said Mohammad Ali Abtahi, a cleric and former reformist vice-president.

"This act of knocking turbans off clerics' heads is a big insult in the clerical world," he added.

Clerics have been targeted in this way before, usually by other clerics or their followers. Abtahi recalls radical hardline clerics knocking his turban off on a visit to the holy city of Qom in 2014.

The clergy became the centre of Iran's political establishment after the 1979 revolution when Ayatollah Ruhollah Khomeini founded the Islamic republic based on his theory of *Velayat-e Faqih*, or the rule of the highest-ranking cleric, as he brought Islam and politics under one umbrella. His senior religious ranking and political charisma meant he saw few challenges from other clerics.

However, since 1989 when Ayatollah Ali Khamenei replaced him, clerics have interfered increasingly in the country's affairs. Even if politicians in Tehran wanted to address demands for more social freedom, they faced opposition from clerics. The clergy, whom people accuse of having lost touch with an increasingly modern society, are reluctant to allow full participation of women in public life. Women's attendance at football matches has been only recently slightly relaxed, but they are still forbidden to ride motorcycles and there are hardly any female ministers in governments. Rules on divorce, custody and inheritance reflect Islamic decrees. When Abtahi went to Qom in 2001 to lobby religious leaders for the appointment of female ministers, he said the then Grand Ayatollah Lotfollah Safi Golpaygani told him he would tell his followers to stop paying tax if a woman was picked as a minister.

Whether this year's protests will encourage the clergy to make concessions is unclear. So far, many have kept silent about the unrest, barely commenting on the fact that many women refuse to cover their hair in public, the biggest social change since the revolution.

"What is happening in cities shows the danger to the clergy the path they have taken [under the Islamic republic] has been the wrong one," said Abbas Abdi, a reformist analyst, in local media. He added that the clergy had historically been independent of political power but their closer ties to the regime could cost them their position as a leading voice on morality.

For now, authorities have promised to prosecute anybody who dares to harass clerics. "Those who assault the clergy's turbans should know that these turbans are the clergy's shrouds . . . and [clerics] will sacrifice their lives for Islam and the Islamic republic," warned Alireza Arafi, director of the country's seminaries.

Public reaction to those knocking off turbans has been mixed. "The clergy should realise what they have done to people for 43 years. Is it good to be harassed for clothing?" said Amir, an artist.

But 49-year-old Elaheh believes "we should not treat the clergy the way they have treated us. Our acts of civil disobedience should be civilised".

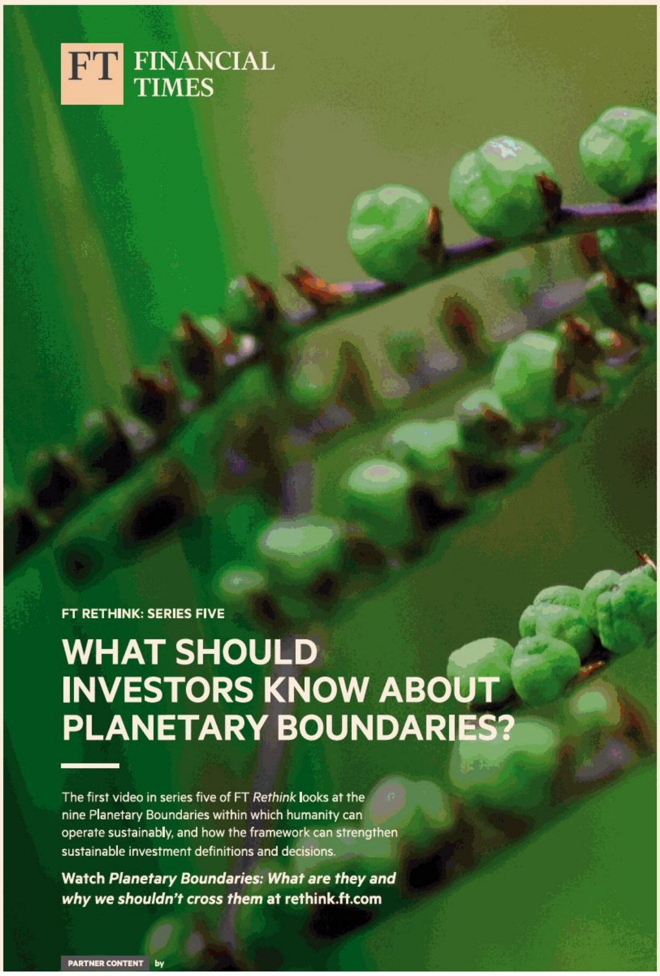
Analysts have warned that it would be difficult to get rid of clerical institutions without provoking a backlash, particularly from religious families. Clerics in Qom have hardly been targeted.

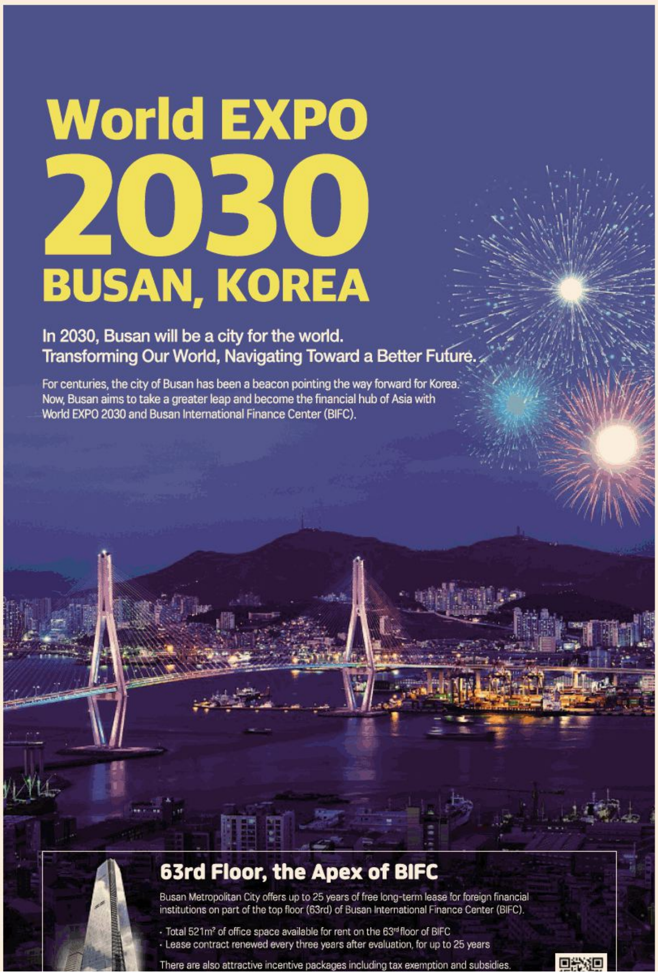
Mohammad Javad Fazel Lankarani, a senior cleric in Qom, said "it is time for us to be more present in public with this dress" and if "we are slapped for Islam, we should not leave the scene".

'Those who assault the clergy's turbans should know that these turbans are the clergy's shrouds'

Line of fire: Shia clerics have become targets for protesters. Below, busy road junctions have also been disrupted

Morteza Nikoubazl/NurPhoto/Getty Images/AP





Pandemic

Beijing media hail ditching of zero-Covid

Official outlets proclaim return to 'normalcy' by spring despite cases surge

WILLIAM LANGLEY — HONG KONG
RYAN MCMORRO — BEIJING

China's state media have promised a return to normality within a few months and rejected western criticism, as censors seek to portray an "exit wave" of coronavirus cases sweeping the country as part of a pre-planned strategy.

"Virus experts expect normalcy by spring," read a headline in the China Daily, the country's premier English language outlet, alongside other articles with headlines such as "Experts: Omicron has lower risk of causing severe illness".

After years of warning of the dangers of Covid-19, Chinese authorities this month slashed testing requirements, allowed most Covid patients to quarantine at home and lifted lockdowns.

The U-turn, which followed an economic slowdown and growing resistance to the policies, has been accompanied by a reversal in the official rhetoric on the virus compared with just weeks ago when state media maintained that containing it was the only suitable approach. Propaganda organs had lauded Beijing's zero-Covid policy as evidence of its concern for its people in contrast to relaxed restrictions in western countries, which it depicted as morally compromised and economically crippled by the virus's spread.

"At the central level, [the U-turn was] very stark," said Ryan Manuel, managing director of Bilby, a consultancy that analyses Chinese government documents, though he added that local authorities had sent "mixed signals" on zero-Covid for several months.

Following the central government's easing of its zero-Covid approach this month, official media have painted a picture of the policy change as planned, economically advantageous and timed in such a way as to avoid any excess deaths. "Where China stands in Covid deaths globally," read the headline of another China Daily report, which said the official national death toll was the lowest of any "major" country and 1/232 of the global average, citing respiratory disease expert Zhong Nanshan.

The report is accompanied by a graphic tracking total death tolls in China, the US and globally, with the line for China remaining flat throughout.

Experts dispute China's methodology for counting deaths. The mainland's death toll since early December, when it started relaxing its zero-Covid policy, is just seven, for instance. This compares with Hong Kong, a city of more than 7mn people, that as of Monday had reported 39 deaths over the previous two weeks. Several models, including one part-funded by the Chinese Center for Disease Control and Prevention, have predicted China could have up to 1mn Covid deaths in the reopening phase as strict controls are dismantled.

While zero-Covid served the country well earlier in the pandemic, when millions of lives were lost elsewhere, analysts said it did not use the time to fully vaccinate its elderly or adequately prepare its healthcare system.

"The best Covid fighting strategy in the world in 2020 became literally the worst in 2022," said Ian Bremmer, head of Eurasia Group. He described China's Covid exit as "a sudden, shocking about-face without strategy or preparation".

Assault on Capitol. Prosecution call

January 6 panel deepens Trump's legal woes

Justice department handed unprecedented criminal referrals against ex-president

JAMES POLITI — WASHINGTON
JOE MILLER — NEW YORK

Congress had never before formally urged the Department of Justice to bring criminal charges against a former president. But that changed when the congressional panel investigating last year's attack on the US Capitol recommended Donald Trump face federal prosecution for his attempts to overthrow the results of the 2020 election and incite the mob that stormed the halls of Congress.

All nine members of the bipartisan committee backed the criminal referrals and the group's overall findings during its final public proceedings on Monday.

Although the step had long been expected after a succession of explosive revelations about Trump's conduct on January 6 2021 emerged from the probe during the past few months, it stands to deepen the former president's legal woes just as he is struggling to launch a bid for the White House in 2024.

"It's the powerful underlying evidence rather than the referrals themselves that may move the needle," said Ryan Goodman, a law professor at New York University. "The committee has presented a devastating body of incriminating information that, if generally understood by the American public, can't help but shape the justice department's decision-making."

The decision to prosecute or not will be as legally complex as it is political. Last month, Merrick Garland, the US attorney-general, appointed Jack Smith to the position of special counsel, tasked with independently handling potential charges involving Trump for his role in the assault as well as his mishandling of classified information at his Mar-a-Lago estate. The committee's conclusions are not binding on Smith but legal experts say they could be hard for him and his team of prosecutors and investigators to ignore.

"It's certainly a baseline from a public perspective and legitimacy and accountability are important for the justice department," said Daniel Richman, a law professor at Columbia University. "They will now have a platform on which to develop further evidence and on the other a source of pressure to do more."

The committee voted to recommend four distinct charges against Trump. The first, obstruction of an official proceeding, related to his attempts to press vice-president Mike Pence to stop the certification by Congress of Joe Biden's victory, may be the simplest.

"I do think the evidence there is strong because it is all in broad daylight," said Barbara McQuade, a former federal prosecutor now at the University of Michigan's law school. "You'd have to show that Trump took some effort to obstruct that proceeding, and his public pressure on Mike Pence was clearly an effort to stop that proceeding, to halt the vote. He said it repeatedly publicly and privately to Mike Pence, he tweeted about it, he spoke about it at [his January 6 rally at the] Ellipse."

The second charge involves a "conspiracy to defraud the United States", and in its recommended third charge, the panel accused Trump of giving false statements to the government by working through associates to submit "fake electors" to Congress who would back him instead of Biden for the presidency.

But the fourth accusation is potentially the most damaging: claims that Trump fuelled an insurrection and a rebellion against the US on January 6 2021.

"The president need only have incited, assisted or aided and comforted those engaged in violence or other lawless activity in an effort to prevent the peaceful transition of the presidency under our constitution," the committee said in a summary of its main findings released on Monday.

Goodman said the latter may be the hardest case to prove. "It would be such a novel prosecution under a law that's hardly been used. The other offences listed in the committee's referral provide a much cleaner and simpler case, the type that prosecutors much prefer," he said.

One piece of evidence mentioned in the committee's report that prosecutors could use to establish that charge is on Trump's tweet at 2:24pm that day, in which he said "Mike Pence didn't have the courage to do what should have been done to protect our Country and our Constitution, giving States a chance to certify a corrected set of facts", according to McQuade.

"Now Trump has seen for hours on television that the Capitol is under attack, and then he sends that tweet. That one might pass that bar of inciting imminent lawless action," she said.

Some have doubts the panel's referrals will embolden Smith to be more aggressive against Trump. Robert Kelner, chair of the election and political law practice at Covington & Burling, the law firm, said the referrals were "more likely to discourage an indictment than it is to encourage one because it puts a bit of a political spin on the charging decision".

"They could have simply opened the books and let the DoJ review all the gathered evidence and make its own determinations . . . I think that would have been the more prudent course," said Kelner, a former Republican speechwriter.

The criminal referrals are nonetheless a new blow to Trump after a series of setbacks, including defeats of his preferred candidates in a number of high-profile congressional races in the midterm elections.

Smith and the justice department have more power and authority than the congressional committee to press ahead with the Trump investigation, but they will also need to make their case ironclad given the fraught nature of any action against a former president.

The DoJ will be asking, "even if there is enough evidence, is it in the best interest of justice to file these charges?" McQuade said.


High-profile: the House panel investigating the attack on the Capitol holds its final meeting to vote on criminal referrals against Donald Trump on Monday
Jim Lo Scalzo/Reuters

> 'It's the powerful underlying evidence rather than the referrals themselves that may move the needle'

Corruption probe

Union chief resigns after cash payment in EU-Qatar bribe scandal

SILVIA SCIORILLI BORRELLI — MILAN
VALENTINA POP — BRUSSELS
SIMEON KERR — GULF CORRESPONDENT

The secretary-general of the International Trade Union Confederation has resigned less than one month after taking office as he admitted taking thousands of euros in cash from the MEP at the centre of a corruption scandal in the European parliament.

Luca Visentini said yesterday that he had accepted cash donations from former MEP Pier Antonio Panzeri.

Panzeri is at the heart of an international investigation into allegations that Qatar and Morocco sought to influence EU lawmakers through bribes. He has been charged with corruption and being part of a criminal organisation. Visentini, who was released after 48 hours in police custody in Belgium last week, rejects any allegation of wrongdoing.

The Italian union chief said: "I have accepted a donation from Fight Impunity [Panzeri's NGO] for a sum lower than €50,000, which was aimed at reimbursing some of the costs incurred to finance my campaign for the ITUC congress and I have transferred the sum to the ITUC solidarity fund in order to pay for the union's travel costs [to Melbourne]. "I accepted the donation in cash [because of Panzeri's good reputation] and its no-profit nature . . . it was in no way connected to a corruption attempt or aimed at influencing my position on Qatar," he added.

Visentini is banned from contacting other suspects and will have to ask the Belgian prosecutor's permission to travel outside the EU for the next three months, the statement said.

Italian investigators are analysing transfers to and from Visentini's bank accounts as well as six other accounts linked to Panzeri and other suspects. No sign of wrongdoing by Visentini has been found so far, according to people close to the investigation. Panzeri's lawyer in Belgium declined to comment.

Prior to the arrest, activists had scrutinised the ITUC's position on workers' rights violations in Qatar. Ahead of the World Cup in November, human rights group FairSquare wrote to outgoing ITUC general secretary Sharan Burrow to express concerns about its "failure to speak out against serious abuses by the Qatari authorities".

FairSquare said the ITUC was exaggerating the effectiveness of legal reforms. In a video produced by Qatar's labour ministry in June, the ITUC general secretary had stated that the employment system known as *kafala*, which essentially binds workers to their employer, was "dead".

FairSquare said many independent human rights monitors had documented continuing serious problems.

"This is a deeply alarming development, and requires immediate and transparent investigation by the ITUC," said James Lynch, co-director of FairSquare, after Visentini's statement.

The ITUC said last week that its work on Qatar had, since the beginning, been "entirely based on objective analysis and assessment of the facts". Doha has rejected any allegations of misconduct.

Biodiversity

Scientists welcome UN nature deal but urge bolder action

AIME WILLIAMS — WASHINGTON

Scientists and conservationists welcomed a UN agreement this week to protect about a third of the planet's lands and seas by 2030, but warned much remained to be done to thwart the catastrophic demise of the natural world.

The agreement by almost 200 countries, reached in the early hours of the morning on Monday in the Canadian city of Montreal, comes as scientists raise the alarm over the widespread decline of biodiversity, with many describing it as a crisis that threatens food chains and water supplies and exacerbates climate change.

Dubbed a "Paris Agreement for nature", in reference to the 2015 global climate accord, the pact's more than 20 goals include a commitment that by 2030, at least 30 per cent of the planet's lands and oceans should be "effectively conserved", while at least 30 per cent of "degraded" land and ocean ecosystems should be under "effective restoration" programmes.

"It is a big deal," said Lina Barrera of Conservation International.

But despite cautious optimism in the scientific community, many of those following the talks admitted the final result was not perfect.

Unlike the Paris accord, the new Global Biodiversity Framework does not set country-specific targets and has been criticised for not including stronger language on halting extinction. It also is not legally binding.

EJ Milner-Gulland, professor of biodiversity and head of the department of zoology at Oxford university, said some of the targets lacked concrete language.

"You look at the detail for the targets,

evidence that the only way to actually halt and reverse biodiversity loss is to tackle the underlying drivers of biodiversity loss . . . and those are unsustainable consumption, damaging supply chains and overconsumption by wealthy countries."

Others raised concerns around vague targets on committing countries to halting extinctions of species before 2050.

"Basically, the agreement is a watered-down version of business as usual when it comes to fighting wildlife extinction," said Tanya Sanerib, international legal director at the Center for Biological Diversity.

The UN scientific body on nature, the Intergovernmental Platform on Biodiversity and Ecosystem Services, found in its 2019 assessment that 1mn animal and plant species were in danger. It also estimated that about three-quarters of food crops that depend on animal pollination were at risk.

Scientists have warned it is important to specify which area is safeguarded under the 30 per cent agreement.

"There are places that we know are more important for sustaining other systems outside of that area," said Jennifer Sunday, a marine biologist at McGill University in Montreal. "Places where animals come to breed, or where we know there are important migratory nodes in a network. Not all land and ocean freshwater is equal."

Christopher Dunn, executive director of Cornell Botanic Gardens in New York state, said: "There are going to be working groups from now until the end of time on this issue."

But Dunn said international agreements would always contain some element of compromise, and that while the lack of "strict targets" was "a bit of a con-

Antitrust action

Amazon agrees measures to end European data probes

CRISTINA CRIDDLE — LONDON
JAVIER ESPINOZA — BRUSSELS

Amazon has finalised a deal with EU antitrust regulators to settle concerns that its use of non-public data undermines rivals, announcing new measures to level the playing field for sellers in its marketplace.

Through the agreement, announced yesterday, the US tech giant will treat all sellers equally and make rival products more visible on Amazon's "buy box", which generates the majority of purchases on the site.

Amazon will also create a second buy box that displays alternative offers for consumers who decide that speed of delivery is less important to them.

The deal ends two long-running probes into the $866bn company and represents a victory for the EU as it will

"Competing independent retailers and carriers, as well as consumers, will benefit from these changes opening up new opportunities and choice."

The agreement will change many of Amazon's practices. Sellers using the Amazon Prime membership scheme will also be able to choose any logistics company and negotiate their contracts directly, instead of being locked into using Amazon's logistics services.

These commitments are legally binding, will remain in force for between five and seven years, and have been agreed with EU officials after nearly three years of investigation. By introducing these measures, Amazon avoids charges of breaking EU law and a potential fine of up to 10 per cent of global revenues.

If Amazon breaches the commitments, the commission could enforce this fine without having to find an

Higher for longer Ultra-low inflation rates are a thing of the past and investors should get used to it ➔ MARKETS INSIGHT, PAGE 9

Companies & Markets

Wells Fargo to pay $3.7bn for 'rinse-repeat' lawbreaking

- Thousands of homes and cars seized
- Illegality continued until this year

JOSHUA FRANKLIN AND STEFF CHÁVEZ
NEW YORK

Wells Fargo has been ordered to pay $3.7bn over illegal activity spanning from 2011 until this year, the latest in a series of regulatory penalties incurred by the lender.

The Consumer Financial Protection Bureau fined Wells Fargo $1.7bn — the largest civil penalty the consumer watchdog has ever imposed — and ordered it to pay $2bn in redress to customers for the mismanagement of mortgages, car loans and bank accounts that occurred under its current leadership.

Wells Fargo, the fourth-largest bank in the US by assets, has been attempting to rebuild its reputation since the emergence in 2016 of its so-called fake accounts scandal. The bank agreed to pay $3bn in criminal and civil penalties in 2020 after it was discovered it had fraudulently opened millions of customer accounts.

Explaining the latest round of penalties, the CFPB said yesterday that the bank had illegally assessed fees and interest charges on automotive and mortgage loans, had cars "wrongly repossessed" and misapplied customers' payments to vehicle and mortgage loans.

"Wells Fargo's rinse-repeat cycle of violating the law has harmed millions of American families," said CFPB director Rohit Chopra.

The regulator said that the bank's actions caused billions of dollars in harm to its customers, including the loss of vehicles and homes for thousands of people.

Wells refused customers mortgage modifications that should have been allowed, leading some borrowers to lose their homes. The bank "was aware of the problem for years before it ultimately addressed the issue", the CFPB said.

The bank also sprung illegal overdraft fees and other incorrect charges on current and savings account customers and incorrectly froze accounts.

Wells chief executive Charlie Scharf said the CFPB agreement was "an important milestone" in its work to improve operating practices.

Wells's stock trimmed early gains to be down nearly 1 per cent at lunchtime in New York. "We see the formal completion as a positive in its finality," Jefferies analysts said.

Wells is operating under a cap on the size of its balance sheet imposed by the Federal Reserve in 2018, which was introduced in the wake of its fake accounts scandal.

Scharf took over at Wells in 2019 with a mandate to overhaul the bank after it became mired in the fake account scandal. In October of this year, he said the bank was working to "put these issues behind us".

The CFPB order highlights that some of the illegal activity — including incorrectly applying or processing many borrowers' car loan payments — continued as recently as this year.

Wells said that the bank's "new leadership team has been working to address issues and, as part of that work, we identify items or areas of potential concern".

The bank's third-quarter earnings took a nearly $3bn hit from accruals to cover potential bad loans and other regulatory fallouts resulting from the 2016 scandal.

> The legal violations 'harmed millions of American families'
>
> Rohit Chopra, CFPB director

Fresh foundation Lenders to take ownership of indebted Revlon in bankruptcy settlement

Revlon filed for bankruptcy in June as it battled $3.3bn in debt, a capital crunch and supply chain woes — Alamy

SUJEET INDAP — NEW YORK

Revlon has struck an agreement with creditors to give lenders and bondholders ownership of the bankrupt cosmetics maker and wipe out the interests of Ron Perelman, who has controlled it for decades.

Under a proposed restructuring support agreement, the company would raise $650mn in equity and exit the Chapter 11 bankruptcy process by April in private hands. The majority of its new ownership would be held by senior lenders.

Revlon filed for bankruptcy in June as it struggled with $3.3bn in debt, a capital crunch and supply chain problems. The company's shares subsequently enjoyed a fleeting rally as retail investors embraced it as a so-called meme stock. However, difficult financing conditions and a weakening economy soured hopes.

The new Revlon is set to have total debt of $1.4bn, though its proposed enterprise value has not been finalised, said a person familiar with the negotiations.

The proposed settlement allows Revlon and its creditors to avoid a messy fight over its assets. The disputes stem from 2020, in the early days of the pandemic, when the company struck a deal to raise $880mn of capital from hedge funds that claimed intellectual property, such as the Elizabeth Arden and Almay brands, as collateral.

A group of investors that had not participated in the financing later sued Revlon, alleging that the brand assets had been pledged to them in connection with a previous loan.

Later in 2020, Citigroup, an administrator of Revlon loans, mistakenly repaid $900mn of the earlier loan. A group holding $500mn of the loan declined to return the mis-wired funds to the US bank.

Revlon told the New York bankruptcy court that uncertainty over the identities of its creditors made it more difficult to raise capital and avoid a bankruptcy filing. A New York federal appeals court this year ordered the hedge funds to return the mis-wired funds to Citi, a ruling that hastened negotiations of a restructuring deal.

Perelman's daughter, Debra, is the chief executive of Revlon. The restructuring agreement calls for her employment agreement to be honoured as well as a newly agreed severance plan.

Perelman acquired Revlon in 1987. While it thrived for years with supermodel endorsers, it eventually became vulnerable to upstart beauty brands and was weighed down by the debt from its 2016 acquisition of Elizabeth Arden.

The restructuring plan will be voted on by creditors and requires approval by the bankruptcy court.

Gates warns Musk's rule of Twitter stirs polarisation

ANDREW EDGECLIFFE-JOHNSON
NEW YORK

A "seat-of-the-pants" decision-making style at Twitter since Elon Musk's takeover is worsening digital polarisation, Bill Gates, the co-founder of Microsoft has warned.

"I wish I had the grand answer for this one because it seems more unclear now than even a year ago," Gates told the Financial Times when asked whether combating online extremes was an engineering challenge or a matter of human judgment.

"I think, certainly, the Twitter situation is stirring things up. That, instead of an objective set of measures done by a broad group of people, you're . . . seeing seat-of-the-pants type activity," he said.

Twitter has been in turmoil since Musk bought it for $44bn in October. Advertisers have left the social media platform over concerns about his content moderation strategy, and Musk polled users this week over whether he should step down as chief executive.

Gates said social media platforms "need to focus on the things that incite riots or lead to huge misconceptions about the safety of vaccines or masks" in their effort to tackle misinformation. He said it was, for example, "daunting [for] even a fair-minded person with the world's best technology and infinite staffing budget" to distinguish between sensibly sceptical vaccine research and conspiracy theories that suggest "the people who make these vaccines are just trying to get rich".

The billionaire's donations to the Bill & Melinda Gates Foundation, the world's largest private philanthropic organisation, have taken his net worth below that of Musk.

In an annual letter released yesterday, Gates lists polarised US politics as one of the factors reversing progress on global health challenges from polio to malaria, alongside Covid-19, Russia's war in Ukraine, inflation and climate change.

"The degree to which global health is off the agenda is a big concern to me," he said in the interview. Foreign aid was likely to go through a sustained dip as donor countries absorbed the "extraordinary expenses" of the Ukraine war, he said, while many African countries would find it harder to obtain the debt financing on which some depend.

The US, the world's biggest aid donor, "absolutely could do more", he said.

See Lex

Indian states court manufacturers seeking to shift from China

INSIDE BUSINESS
ASIA

Chloe Cornish

Do you make semiconductors? Harshadeep Kamble, 25-year veteran of India's civil service, wants to make you an offer you can't refuse.

The principal secretary for industry in India's wealthiest state, Maharashtra, Kamble says he is pursuing three to four foreign semiconductor companies, not all Taiwanese, with juicy incentives packages. "We are telling these companies, this is what we already have on the platter for them. What is it further they would like to have?"

Semiconductors is the most ambitious industry Maharashtra seeks to attract, as India's states aim to position themselves as a viable "plus one" for companies diversifying supply chains away from China.

Kamble is planning a roadshow in Taiwan to build the industry's confidence. He wants to show his state has stripped back bureaucracy, expedited clearances and is offering sweeteners from capital subsidies to tax-based

$34bn to production-linked incentive schemes to encourage companies to take risks building factories. And Indian states are competing hard against each other to attract investment.

The southern state of Tamil Nadu has long been a pioneer. It already boasts manufacturing by the likes of computer maker Dell, Korea's technology group Samsung and carmaker Hyundai. Foxconn, Pegatron and Wistron are manufacturing Apple's iPhone 14 in the state and Karnataka. Maharashtra this year lost to Gujarat to be the site of a $19.4bn chipmaking complex for Foxconn and Indian industrial group Vedanta.

Despite the urgency to reorient supply chains, experts say foreign investment is not exactly pouring into Indian manufacturing just yet. Foreign direct investment equity inflow from April, the start of the financial year, to September was down 14 per cent on the previous year, at $27bn.

"In terms of the inflows, we don't see a stepping up," says Biswajit Dhar, a trade expert and professor at New Delhi's Jawaharlal Nehru University. Dhar said industrialists continued to complain about skill shortages and lack of infrastructure.

Sachit Jain, managing director of Punjab-based Vardhman Special Steels, understands why foreign investors are wary. "India is not an easy country to

> 'We have actively gone out and pursued customers in the countries where we know that there's a strong anti-China sentiment'

giant Toyota. The tie-up was designed to ensure Toyota had supply options outside Japan, Jain said. But Aichi's credibility has also helped Vardhman gain traction in south-east Asian markets.

Some analysts argue that India is quietly benefiting from supply chain shifts. "We don't have to think that we will become China," says Samir Arora, founder and fund manager of Helios Capital, which invests in Indian stocks. "But can we get a bit more growth? That is happening".

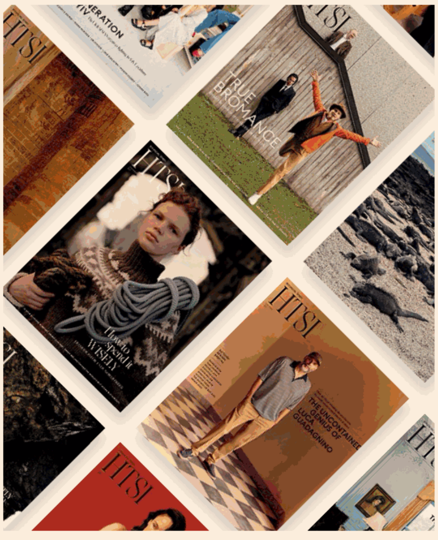
Producers of goods from specialised chemicals to towels say that they are finding new markets for export as Chinese rivals fall from favour.

Take India's largest transmission towers manufacturer, Skipper, a listed company based in Kolkata. Executive director Sharan Bansal expects export sales to double from just under Rs4bn in the last financial year, ending in March, to Rs8bn this year. Along with developing countries increasingly eschewing Chinese financing, some US companies now stipulate Chinese products should not be used in projects, Bansal says — all of which helped him sell more towers.

"We have actively gone out and pursued customers in the countries where we know that there's a strong anti-China sentiment," Bansal says.

Ashok Kajaria, chair and managing director of India's largest tilemaker, Kajaria Ceramics, says a collapse in Chinese imports has let him sell more tiles domestically.

Back in Maharashtra, Kamble is not



Automobiles

Carmakers face parts drought until end of 2023

Semiconductor makers warn of shortages amid switch to electric vehicles

LAULY LI — LONDON

The global car industry will suffer semiconductor shortages next year as the switch to electric vehicles accelerates, leading manufacturers and chipmakers have warned.

Hassane El-Khoury, chief executive of leading US-based chipmaker Onsemi, said it had already sold out of silicon carbide chips, advanced power semiconductors largely used in electric cars, at least to the end of 2023 because of strong demand.

"There's nothing you can do now to change 2023," he said. "We will be adding capacity every quarter, every month in 2023 to meet our customer demand."

Jochen Hanebeck, chief executive of the auto chip producer Infineon, issued a similar warning in Munich recently. "I do expect quite a longtime shortage," he said. Carmakers are bracing themselves for problems. Carlos Tavares, chief executive of Stellantis, the world's fourth-largest automaker by sales, has said chip constraints will continue to haunt the auto industry next year.

Demand for auto chips has boosted manufacturers such as Onsemi and Infineon as well as STMicroelectronics, NXP Semiconductors and Nexperia.

Infineon last month raised its forecast for revenue growth from 9 per cent to more than 10 per cent in the coming years. The German chipmaker also announced its biggest single investment of €5bn to build a factory in Dresden to produce analogue, mixed-signal and power semiconductors, used in cars and other industries.

El-Khoury said Onsemi was expanding production at plants in Rožnov in the Czech Republic, Busan in South Korea and New Hampshire in the US, which will increase capacity by 30 per cent next year. "We have a lot of customers under long-term supply agreements and we are building the capacity to support those first," he added.

The demand for auto chips has been driven mainly by the more connected functions of vehicles and the switch to electric cars, which is likely to accelerate further as combustion engines are phased out.

Gregg Lowe, chief executive of Wolfspeed, a leading substrate materials supplier for silicon carbide chips, said the switch from combustion engines towards electric vehicles was "unstoppable". "What we're anticipating is through the end of this decade, power semiconductors — specifically silicon carbide power semiconductors — could see a 14 per cent compounded annual growth rate, which means all of us will be running as fast as we can, trying to catch up with the demand."

The upbeat outlook for auto chips contrasts with other parts of the sector, which supplies semiconductors for smartphones and personal computers.

These groups, which include Taiwan Semiconductor Manufacturing Company, Intel and Samsung, have suffered a drop in demand. TSMC has cut planned capital expenditure by about 10 per cent this year.

Technology. Supply chains

US extends blacklist to target China's potential chip stars

Shenzhen-based PXW among start-ups denied access to key equipment by export controls

QIANER LIU — HONG KONG
KATHRIN HILLE — TAIPEI

One chipmaker has halted its expansion plans after being put on the blacklist
Wei Dongsheng/VCG/Getty Images

In China's southern tech hub of Shenzhen, employees at the chipmaking start-up PXW Semiconductor Manufactory began to panic after the US put it on a trade blacklist last week.

"Most team leaders and executives are in emergency meetings but the rest of us are not allowed to discuss such a 'sensitive' matter," an employee said, adding that their boss's office door remained closed on Friday, a day after the US added PXW to the "entity list" along with 35 other Chinese companies.

US suppliers are barred from exporting to companies on the list without approval, which in most cases would be denied. Analysts said the latest blacklisting was "housekeeping" to close loopholes in far-reaching measures imposed in October that allow Washington to block Chinese access to high-end chips and the talent and tools to make them.

"It is a game of whack-a-mole," said Douglas Fuller, an expert on the Chinese chip industry at Copenhagen Business School. "Whenever Washington comes up with sanctions, there are new projects popping up which they then try to block."

> 'It is a game of whack-a-mole . . . there are new projects popping up which they then try to block'

The US started using export controls to rein in China's technological rise by putting Huawei on the entity list in May 2019. Washington has since added many more, including surveillance companies, chipmakers, drone developers, smartphone makers and others suspected of supplying the People's Liberation Army.

Some of the companies targeted last week, including PXW, are only just starting to develop their semiconductor businesses and are thus more vulnerable than established groups such as Huawei. "The US government has mastered the Chinese semiconductor supply chain and knows who the priorities are and who are with future potential," said Brady Wang, a Taiwan-based analyst at the research firm Counterpoint.

PXW has strong support, including funding from the Shenzhen government and the leadership of a former Huawei executive. The company ordered equipment from various US companies to arrive next year but might now never receive it, according to two employees.

Another addition to the list is Hefei Core Storage Electronic, a company founded by former staff of Taiwanese chip design company VIA Technologies to develop a homegrown alternative to Intel-based PC processors. "It is a bad surprise," said a Hefei Core Storage engineer. "Nobody expected that we would be on their radar."

A western trade official said the US might have discovered that Hefei was working on processors suitable for supercomputers or supporting China's development of advanced memory chips — areas targeted by the controls.

"The US is developing an increasingly detailed understanding of the industry in China, including players you would have considered as obscure," the official said.

But the list also contains prominent companies.

Yangtze Memory Technologies, China's largest memory chipmaker, was already hit hard. The company had halted its expansion and asked US equipment manufacturers to return downpayments for previously ordered tools, said a senior engineer at YMTC.

"At that time, we could still consider retreating to [making less advanced] chips, but now our fate is all but sealed," he said, referring to the near-impossibility of getting licences approved for equipment to expand production after being put on the entity list.

YMTC had already suspended talks with Apple on supplying memory chips for iPhones in China. The research company TrendForce predicts it could be forced to exit the market for advanced 3D Nand flash products by 2024 as it has lost critical support from toolmakers to compete with rivals on this particular memory technology.

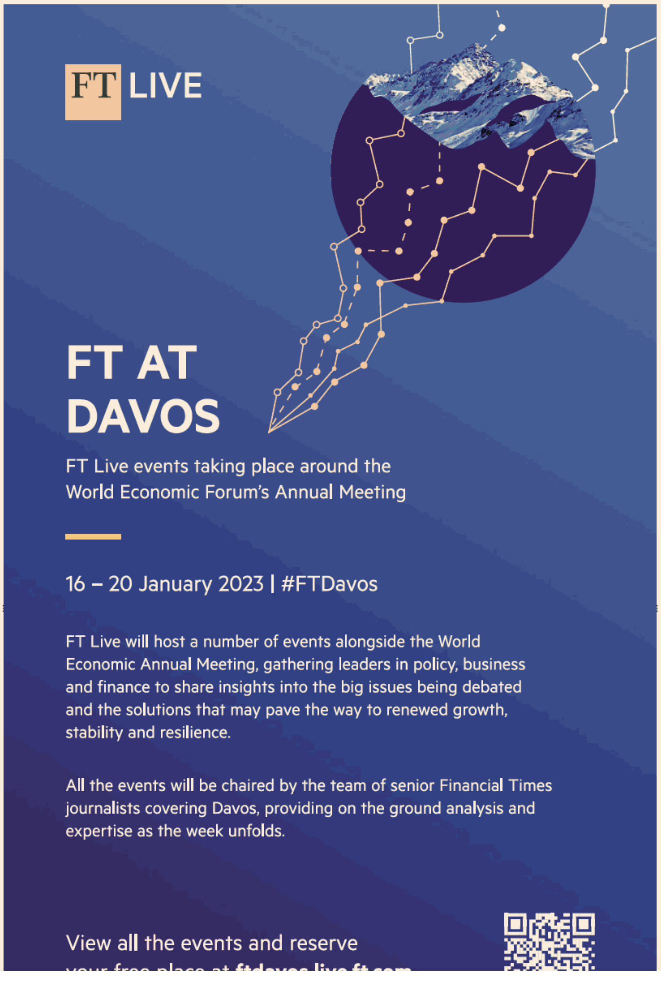
Washington also included a prominent developer of chipmaking equipment: Shanghai Micro Electronics Equipment, which represents China's only hope of developing homegrown lithography machines, the critical advanced chipmaking tool dominated by Dutch company ASML.

The company's machines rely on imported components and have never run in mass production. "There is still a long way to go," said a Shanghai official who handled its development project. But the official pointed out that the company had formed teams of staff to replace ASML field workers withdrawn due to US export controls.

Another key addition is Shanghai Integrated Circuit Research and Development Center, a company believed to be connected to Huawei's efforts to increase domestic chip manufacturing. Huawei denies its involvement.

Blacklisting could await other Chinese groups. "There is a lot more out there on the chip design side," Fuller said.

None of the companies responded to requests for comment.



Utilities

Engie takes €1bn hit from nuclear bill and tax

SARAH WHITE — PARIS

Engie suffered a double blow yesterday as it revealed a hit of up to €1bn on its net profits this year from windfall taxes and a hefty potential bill linked to the cost of dismantling its nuclear reactors in Belgium.

France's biggest supplier of gas to households has branched heavily into renewable energy in recent years, and also operates some nuclear plants.

It estimated yesterday that levies in France, Belgium and Italy on revenues generated by non-gas electricity producers, designed to capture "excess profits" from soaring power prices, would

although countries have interpreted the caps in different ways.

They come as Europe seeks to shield consumers from the market chaos sparked by Russia's invasion of Ukraine. Funds from the levy are intended to bolster resources to help households and small businesses hit by the energy crisis.

The bill from the various legislative moves could rise to between €1.1bn and €1.4bn in 2023, based on forward prices, Engie pointed out. The group said that despite the hit from the windfall measures, it would maintain its recurring net profit forecast for 2022 of between €4.9bn and €5.5bn.

The company added it faced an extra potential bill of €3.3bn to dismantle its nuclear plants in Belgium. The revised additional estimated cost was calculated by nuclear authorities in Belgium to cover the cost of taking apart the reactors and dealing with spent fuel. Engie said its estimates of the additional cost were closer to €900mn, adding that it was considering an appeal.

Engie said it would reflect on the potential costs by setting aside an extra €2.3bn in its 2022 accounts.

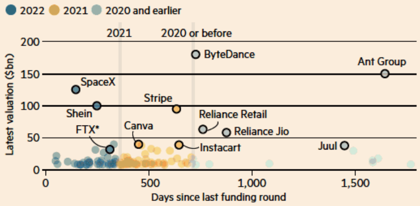
Tech start-ups race to find creative debt deals

Retreat of venture capital sees businesses turn to bridge loans and structured equity in push to protect their valuations

TABBY KINDER — SAN FRANCISCO

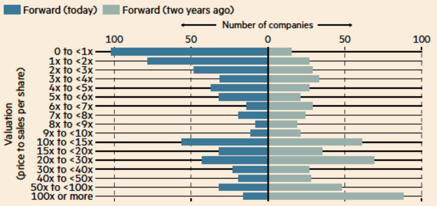
SoftBank-backed delivery app Gopuff raised a $1bn convertible note in March and has explored plans to borrow more since then
Richard B. Levine

Three-fifths of the largest privately valued companies were priced before 2022



* Prior to filing for bankruptcy protection
Sources: Crunchbase; FactSet

Valuations fall as investors hunt for tangible growth
Distribution of companies by their price to sales ratio (count)



Tech start-ups that have relied on deep-pocketed Silicon Valley investors to fund ambitious growth plans are being forced into alternative financing deals to sustain their businesses and avoid drastic cuts in valuation.

A sharp decline in venture capital dealmaking, alongside a closed market for initial public offerings, has resulted in a funding crunch for many private tech companies over the past year.

Leading start-ups have been aggressively cutting costs, creating a wave of lay-offs across the tech sector. Still, a growing number of companies are running out of cash and are seeking more creative funding arrangements, according to interviews with VCs, entrepreneurs, pension funds and bankers.

Company founders have entered into debt-focused deals such as bridge loans, structured equity, convertible notes, participating bonds and generous liquidation preferences. These moves are designed to avoid a dreaded "down round" — accepting funding at a far lower valuation than a company had previously secured.

"Everyone is taking corrective action" said one investor based on Sand Hill Road, the Californian thoroughfare that is home to many of Silicon Valley's top venture capital groups from Sequoia Capital to Andreessen Horowitz.

As the market rout looks set to continue into next year, this person said that even founders of well-capitalised tech groups have had to ask: "What are the adjustments [we need] so we can live longer, how can we punt financing from next year into 2024?"

Among the largest debt deals this year is Arctic Wolf, a cyber security company valued at $4.3bn and backed by Owl Rock Capital, which raised a $400mn convertible note in October — twice as much as its largest equity financing.

SoftBank-backed delivery app Gopuff raised a $1bn convertible note in March and has explored plans to borrow more since then, despite raising more than $2bn last year, which had boosted its valuation to $15bn by mid-2021.

These deals come with a conversion premium, which allows their backers to convert shares at a higher price than an eventual IPO. Such deals represent a bet that the company will trade higher after going public.

Convertibles "kick the can down the road", said Chris Evdaimon, a private companies investor at Baillie Gifford. "They are mostly being led by existing investors who are saying we also don't want to get into this unpleasant valuation discussion right now."

Coatue Management and Viking Global Investors, which were both traditionally focused on public equity, started raising funds to invest specifically in structured equity deals with start-ups earlier this year.

Coatue is targeting $2bn for its fund. "For a private company to suddenly mark things down by 75 or 80 per cent . . . it's a huge risk," the firm's founder Philippe Laffont told the Financial Times. "We can give you an alternative . . . Capital that gives you more time to build your business."

Such large debt deals have been relatively uncommon for tech start-ups, the best of which have been able to tap the huge amounts of funding from venture capitalists, which have been willing to fund young companies even at frothy valuations over the past decade.

However, new VC deals fell 42 per cent in the first 11 months of this year to $286bn, compared with the same period last year, according to investment data company Preqin. Silicon Valley law firm Cooley said the total value of late-stage VC deals it advised on had slumped almost 80 per cent this year.

That trend has been driven by a rout in tech stocks, an uncertain macroeconomic environment and rising interest rates. Meanwhile, initial public offerings have dropped to their lowest level since 2009, cutting off a key source of fundraising for mature private companies and their backers.

"Next year is when it all comes home to roost," said Ravi Viswanathan, founder of California-based New View Capital. "There will come a point where even companies with 18 to 24 months' capital have to raise. There is going to be a lot of pain."

Up and down Sand Hill Road, VC funds have reviewed their portfolios and warned founders to assume that capital markets may be shut for another year and to shift their strategies from growth to survival.

The companies that are most struggling to raise new funding are unprofitable groups in capital-intensive sectors like battery making or robotics.

"We have just come off a borderline insanity environment," said one institutional tech investor. "If you had raised an outstanding amount at an undeserving valuation you felt you had done very well as a founder or a management team. Now it is coming back to bite you."

Hunting for creative financing options to protect a company's valuation is an "old playbook", said an investment manager at a large pension fund that backs tech. "But it's been a long time since the sums have been this big and it's affecting everyone."

Some companies are persuading existing investors to put up more capital at the same valuation as their previous fundraising — known as a "sideways round" — but with underlying economic terms that are far less favourable to the company.

Where companies are getting desperate, "dirty" termsheets — deals that on their face accept a company's existing valuation, but have conditions that could prove more beneficial to new investors — are circulating, said one investment banker.

> 'For a private company to suddenly mark things down by 75 or 80% . . . it's a huge risk. We can give you an alternative'

"Investors are saying we will buy at the same price but we want seniority and to be at the top of the stack in case of liquidity," said Kroll's Silicon Valley leader Glen Kernick, adding that he had seen a number of deals signed that provide for investors to make two times their investment before other shareholders in the event of a sale or bankruptcy.

Tonal Systems, which develops smart fitness devices, reached such a funding deal earlier this year, according to corporate filings that were first reported by the Wall Street Journal.

This structure can prove brutal for shareholders further down the seniority ladder — such as employees holding stock options — if a company's value were to fall. It is a trade-off between accepting a hit to valuation or accepting punishing terms that risk creating conflicts in a company's shareholder base, or even wiping out employee value.

Some companies are repricing their own equity to improve upside potential for employees' shares. Delivery app Instacart cut its internal valuation for a third time to $13bn in October, down from $39bn in 2021. Similarly, Checkout.com, Europe's most valuable tech start-up, slashed its internal valuation to about $11bn, after it raised a $40bn valuation in January.

Slashing internal valuation — which is separate from the investor-determined price of a group's preferred equity — benefits staff by reducing the cost of their company shares. This gives employees scope for further gains in the case of future deals such as an IPO.

"We are telling our portfolio companies you shouldn't get overly anchored on a valuation you had a couple of years ago when the market was abnormally inflated," said the investment manager on Sand Hill Road. "It is best to take your medicine now."

Industrials

3M vows to stop making 'forever chemicals'

JAMIE SMYTH — NEW YORK

3M has said it will stop making "forever chemicals" by the end of 2025, citing pressure from regulators and investors over the accumulation of the substances in the environment.

The US company said yesterday it would exit the manufacture of PFAS — per- and polyfluoroalkyl substances — and work to discontinue their use across

polluters more accountable for cleaning contaminated sites.

Environmental campaigners said 3M's decision represented one of the first examples of a big company in the US chemicals industry phasing out the manufacture and use of PFAS.

PFAS are known as "forever chemicals" because they do not break down easily, accumulate in the environment and can remain in people's bodies.

rivers and caused health problems, including cancer. It has also been targeted by an investor-led campaign aimed at forcing the chemicals industry to phase out use of PFAS.

Mike Roman, 3M chief executive, said it was a moment that demanded innovation. "While PFAS can be safely made and used, we also see an opportunity to lead in a rapidly evolving external regulatory and business landscape to make

Banks. Historic reorientation

India overtakes China in M&A fees for first time

M&A cycle: a big chunk of this year's dealmaking activity in India came from the $40bn merger of HDFC Bank and parent Housing Development Finance Corporation
Divyakant Solanki/EPA-EFE

Beijing's Covid restrictions and decoupling of economy bring pivot by US dealmakers

MERCEDES RUEHL AND LEO LEWIS
SINGAPORE
HUDSON LOCKETT — HONG KONG

The world's largest investment banks will earn more dealmaking fees in India this year than in China, a first that financiers describe as a historic reorientation as they diversify away from a decoupling Chinese economy.

Foreign banks have pulled in $231mn in mergers and acquisitions fees from India so far this year, according to Dealogic, beating the $204mn earned in China over the same period.

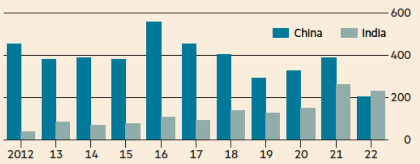
JPMorgan is among those that will earn more from M&A in India than in China this year for the first time, according to two people with knowledge of the bank's position. JPMorgan declined to comment.

Revenue from Chinese equity and bond markets, long one of the biggest sources of fees for US and European finance houses in Asia, has fallen in 2022 as mainland China sealed itself off during the pandemic and increasingly favoured local banks.

Although deal activity is expected to expand as China now reopens, Wall Street bankers have warned that the long period of closure had made more Chinese companies turn to domestic banks for advisory work in the future.

Foreign investment banks' core revenue — including equity and debt capital markets as well as M&A — has dropped 70 per cent to $602mn over the year to date compared with 2021, according to data from Dealogic. That follows a drop of 15 per cent the previous year.

Indian M&A fees have overtaken Chinese ones for foreign banks
Net revenue ($mn)



2022 figures are year to date
Source: Dealogic

The trend reinforces how the decoupling in trade, investment and technology between the US and China is affecting capital markets.

While India remains a fraction of the revenue China historically brings in for global investment banks, the numbers are indicative of a broader shift by western finance to find opportunities and growth in other markets.

Jan Metzger, head of banking, capital markets and advisory for Citi in Asia, said "the evolution of the banking wallet there with the growth in tech, alongside the established Indian corporate titans being more active" had made India a "leading investment banking market for Citi in 2022".

He added: "We expect that to continue in the years ahead with the pipeline [in India], one of the largest we have."

The Singapore-based Asian investment banking head of one US bank described it as a "fundamental and I think permanent repositioning by Wall Street. If you believe [China's President] Xi Jinping is intent on building his own sphere of economic influence, while the US shows no sign of stopping its crackdown on China, where else do you go in the region?"

India has been a global outlier for M&A activity this year, even as inflation and recession fears forced some of the biggest declines in dealmaking in other regions since the financial crisis.

M&A activity in India surged 58 per cent year on year to an all-time high of $148bn in the first nine months of 2022, according to a report by data provider Refinitiv.

> 'You can no longer have all your eggs in one basket like China, especially as supply chains and economies decouple'

A significant chunk of that came from the $40bn merger between HDFC Bank, India's third-biggest listed company by market capitalisation, and parent Housing Development Finance Corporation, the leading mortgage provider.

Bankers also said a shift in the type of Indian companies engaging them for initial public offering and equity issuance work had been pivotal.

When many of India's largest listings were privatisations of state-owned assets, the fees were relatively low. Now that the balance has shifted to private companies, the work is significantly more profitable.

The banking industry's shift follows a similar dynamic at play in India's tech sector last year when many investment dollars were diverted from China to India.

For every dollar invested in Chinese tech, $1.50 went into India in 2021, according to Asian Venture Capital Journal, though slower growth and rising interest rates this year helped reduce inflated valuations and some of the market frenzy.

"India can be unpredictable and certainly foreign businesses have been burnt [there] before," said one asset manager growing their India office, who did not want to be named because they still had clients and business in mainland China. "But you can no longer have all your eggs in one basket like China, especially as supply chains and economies decouple."

Additional reporting by Chloe Cornish in Mumbai

Fixed Income

BoJ's yield cap shift hands lucrative win to bond bears

ORTENCA ALIAJ, KATIE MARTIN AND LAURENCE FLETCHER

A trade known as the "widow maker" for its ability to inflict enormous losses on traders has finally paid off after the Bank of Japan shocked investors with a change to the way it controls its government bond market.

Traders at firms such as BlueBay Asset Management, Neuberger Berman and hedge fund Caygan Capital have been betting that the BoJ would relax its cap on bond yields after aggressive rate rises this year by the US Federal Reserve and other major central banks left Tokyo as an outlier with its ultra-loose monetary policy.

As a result, many investment houses put on a wager that Japanese bonds would fall, nudging yields higher.

"We had reached the point where that policy was no longer warranted," said Mark Dowding, chief investment officer at BlueBay, who has been shorting Japanese government bonds since the summer. "It was a question of when, not if."

JPMorgan Asset Management also had positioned itself for a change in the central bank's policy, said a source familiar with the bank, and is continuing to bet against longer-term Japanese debt, which is especially sensitive to changes in yield curve control policy.

The Japanese central bank yesterday said it would allow long-term yields to fluctuate from around minus 0.5 per cent to 0.5 per cent, from minus 0.25 per cent to 0.25 per cent previously.

> 'We had reached the point where that policy was no longer warranted. It was a question of when, not if'

Japan has been keeping long-term yields pinned at low levels since 2016 and the previous range had been in place since 2021.

The move yesterday ignited a powerful sell-off in Japanese government bonds with the benchmark 10-year yield soaring by the most in almost two decades, according to Refinitiv data. The 10-year yield is now 0.42 per cent, its highest since 2015.

Fredrik Repton, portfolio manager at Neuberger Berman, said the group had expected the shift in policy and as such had bet on falling Japanese bond prices and a rising yen.

He added that the increase in the yield curve control cap could signal a pivot to more sweeping changes when governor Haruhiko Kuroda ends his decade-long run at the bank.

Naruhisa Nakagawa, founder of hedge fund Caygan Capital, started shorting Japanese government bonds when the yield stood at 0.25 per cent and is now betting that the 10-year yield will rise to 1 per cent as the BoJ gradually loosens its yield curve control.

Investors began ramping up wagers against Japanese government bonds over the summer, effectively taking a view that the debt's price would drop.

See Lex

Equities

Hong Kong and Beijing agree to expand scope of Stock Connect trading scheme

CHENG LENG — HONG KONG

More than 1,000 Chinese and multinational stocks will be included in an expanded scheme that allows investors greater access to mainland shares while boosting trading liquidity in Hong Kong.

The securities watchdogs in mainland China and Hong Kong have announced an agreement to expand the scope of eligible stocks under the Stock Connect scheme, linking the Hong Kong bourse with those of Shanghai and Shenzhen.

The northbound trading will include stocks with a market capitalisation of Rmb5bn ($717mn) or more that meet liquidity criteria.

Southbound trading expansion will include stocks of primary-listed foreign companies that are part of Hang Seng composite indices.

brokerage added. Shares of fashion outlet Prada and beauty brand L'Occitane could be eligible for the list, based on the latest criteria an information from data provider Wind.

"The further expansion of the scope of Stock Connect will give international investors more choice in A-shares [which are listed on either the Shanghai or Shenzhen exchanges] and consolidate Hong Kong's position as a gateway to mainland China," said Julia Leung, acting chief executive of Hong Kong's Securities and Futures Commission.

"In particular, the inclusion of foreign companies primary-listed in Hong Kong is of strategic importance to Hong Kong as a leading fundraising platform for international companies," she added.

The performance of Hong Kong stocks has been tepid this year with trading dragged down by weak initial public offerings, geopolitical tensions and China's harsh zero-Covid policies.

The benchmark Hang Seng index has recovered since late October, posting a 27 per cent rally last month on hopes of a reopening of the economy.

However, the gauge is still down about 18 per cent in the year to date.

"Southbound inflows will continue to rise after the scheme expansion," said Zhang Qi, analyst at Chinese brokerage Haitong Securities, adding that companies which are more familiar to mainland investors and yet inaccessible

---

Crypto

FTX seeks to recoup Bankman-Fried's political donations to pay creditors

JOSHUA OLIVER

FTX will try to recoup millions of dollars in donations to US politicians made by Sam Bankman-Fried and his close associates to help pay back creditors amid accusations that the contributions were funded with customers' money.

The company's new management said it had been "approached by a number of recipients of contributions or other payments" seeking to return money received from Bankman-Fried, his companies or senior executives.

FTX said it would set up a process to accept repayments and take legal action to reclaim cash that is not returned.

"To the extent such payments are not returned voluntarily, the FTX debtors intend to commence actions before the bankruptcy court to require the

a Financial Times analysis of public records.

He was the second-largest supporter of Democratic-leaning groups in the recent midterm elections as he lobbied Congress and US regulators over crypto regulation.

Ryan Salame, chief executive of FTX's entity in the Bahamas, gave about $24mn, mostly to Republican groups.

Bankman-Fried stepped down as FTX chief executive in November as the company collapsed into Chapter 11 bankruptcy in Delaware.

> 'FTX debtors intend to commence actions before the bankruptcy court to require return of payments'

Among the allegations, the justice department alleges that Bankman-Fried broke campaign finance laws such as the prohibition on using third parties to funnel money to candidates beyond the limit for donations. Bankman-Fried has denied wrongdoing.

In a separate lawsuit, the US Securities and Exchange Commission levelled civil fraud charges, including the misuse of customer money to fund donations.

"From the start, Bankman-Fried improperly diverted customer assets to his privately held crypto hedge fund, Alameda Research and then used those customer funds to make undisclosed venture investments, lavish real estate purchases and large political donations," the Wall Street regulator said in court filings last week.

Several US politicians have said they will donate money received from FTX

COMPANIES & MARKETS

The day in the markets

What you need to know

- **Global bonds and equities take hit after BoJ's shock policy move**
- **Japan's change to yield curve control triggers sell-off in sovereign debt**
- **Yen soars against dollar while Tokyo stocks retreat**

Global government debt markets dropped yesterday after the Bank of Japan surprised markets by unexpectedly adjusting its policy of pinning long-term bond yields at ultra low levels.

The move sparked a sell-off in government debt with the yield on Japan's 10-year bonds surging by as much as 20 basis points to 0.47 per cent, its highest level since 2015, before easing to 0.41 per cent.

Other sovereign debt yields climbed higher, pointing to a fall in price.

The yield on 10-year US Treasuries climbed to a three-week high of 3.70 per cent while UK 10-year gilt yields rose by 10bp to 3.6 per cent and Germany's 10-year Bund yield rose by a similar level to 2.27 per cent.

Japan's yen jumped 4.2 per cent to trade at ¥131.20 against the US dollar. The pound fell 0.1 per cent against the dollar to $1.21.

BoJ governor Haruhiko Kuroda denied that the yield curve control change marked a pivot away from Japan's ultra-loose monetary policy, saying that adjusting the yield target "does not signal the end of YCC or an exit strategy".

The BoJ kept overnight interest rates at minus 0.1 per cent, setting it apart from other key central banks that this year have raised rates rapidly in an effort to tackle high inflation.

US bond yields rise on BoJ policy shift

10-year Treasury yield (%)

Source: Refinitiv

Tohru Sasaki, head of Japan market research at JPMorgan, said the BoJ's move was borne out of concern about the effect that volatility in global markets was having on Japanese markets.

"If a market malfunction is also an important reason for today's move, a further move may follow because just a 25 [basis point] move cannot end or improve the malfunctioning," he added.

Jim Reid, head of global fundamental credit strategy at Deutsche Bank, said: "It's important not to underestimate the impact this could have, because tighter BoJ policy would remove one of the last global anchors that's helped to keep borrowing costs at low levels more broadly."

The BoJ's shock move also sent equity markets lower. The benchmark S&P 500 and tech-heavy Nasdaq Composite recouped morning losses to trade flat by midday trading on Wall Street.

Across the Atlantic, the Stoxx Europe 600 index closed down 0.4 per cent while London's FTSE 100 pared back losses from earlier in the session to close up 0.1 per cent.

In Asia, Tokyo's Topix index dropped 1.5 per cent. **Nikou Asgari**

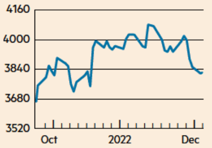
Markets update

	US	Eurozone	Japan	UK	China	Brazil
Stocks	**S&P 500**	**Eurofirst 300**	**Nikkei 225**	**FTSE100**	**Shanghai Comp**	**Bovespa**
Level	3822.56	1677.27	26568.03	7370.62	3073.77	107088.88
% change on day	0.13	-0.33	-2.46	0.13	-1.07	2.24
Currency	**$ Index (DXY)**	**$ per €**	**Yen per $**	**$ per £**	**Rmb per $**	**Real per $**
Level	104.309	1.064	131.415	1.214	6.971	5.187
% change on day	-0.393	0.567	-4.073	0.082	-0.061	-2.193
Govt. bonds	**10-year Treasury**	**10-year Bund**	**10-year JGB**	**10-year Gilt**	**10-year bond**	**10-year bond**
Yield	3.684	2.299	0.413	3.592	2.887	12.764
Basis point change on day	9.050	10.100	16.190	9.600	-0.200	-23.200
World index, Commods	**FTSE All-World**	**Oil - Brent**	**Oil - WTI**	**Gold**	**Silver**	**Metals (LMEX)**
Level	398.42	79.30	75.26	1790.80	23.24	3906.10
% change on day	0.19	-0.63	-0.16	-0.10	1.80	-0.23

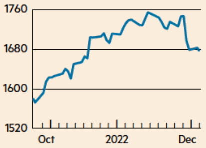
Yesterday's close apart from: Currencies = 16:00 GMT; S&P, Bovespa, All World, Oil = 17:00 GMT; Gold, Silver = London pm fix. Bond data supplied by Tullett Prebon.

Main equity markets

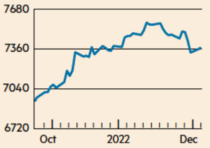
S&P 500 index



Eurofirst 300 index



FTSE 100 index



Biggest movers

%	US		Eurozone		UK	
Ups	Newmont	4.89	Commerzbank	8.44	Antofagasta	3.23
	Moderna	4.75	Deutsche Bank	5.13	Centrica	2.61
	Schlumberger	3.19	Unicredit	4.02	Glencore	2.09
	Adobe	3.16	Santander	3.51	Endeavour Mining	1.82
	General Electric	2.72	Bbva	2.83	Hsbc Holdings	1.42
Downs	Tesla	-5.29	Kering	-3.94	Sage	-2.80
	General Mills	-4.39	Casino Guichard	-3.40	Hargreaves Lansdown	-2.23
	Factset Research Systems	-3.73	Renault	-3.08	Airtel Africa	-2.21
	Warner Bros Discovery	-2.74	Adidas	-2.64	Jd Sports Fashion	-2.08
	Vf	-2.73	Klepierre	-2.48	Schroders	-2.05

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

A successful capital raise lifted **Lucid**, the luxury electric vehicle group, which achieved its $1.5bn target.

Around $600mn was generated through an "at the market" offering in which the Californian group sold more than 56.2mn shares. The remaining $915mn was expected to come from a private placement of 85.7mn shares to an affiliate of Saudi Arabia's Public Investment Fund, Lucid's majority shareholder, according to data from Refinitiv.

Some promising clinical results sent biopharma group **Athenex** soaring. A phase 2 trial revealed that giving its experimental breast cancer treatment paclitaxel orally rather than intravenously was linked with less nerve damage.

Some benchmark rejigging sent **Steel Dynamics** higher, with the group scheduled to replace Abiomed in the S&P 500 index as of tomorrow. Inclusion in the benchmark meant the domestic steel producer would now be tracked by a large number of passive investment

Europe

Finland's **Uponor** slid after reinstating its full-year guidance. The plumbing and heating supplier expected net sales to stay at the same level as 2021 against a previous forecast of a rise.

Behind the downgrade was a cyber attack that occurred last month. Operating levels were now back at normal levels since the beginning of this month, but "the ability to compensate for lost sales and margin coverage" for the remainder of 2022 was limited, it said.

Utility **Engie** fell after flagging a hit to earnings from EU-approved windfall levies and larger than expected costs for dismantling its nuclear reactors in Belgium. Levies in Italy, France and Belgium would potentially "impact" group operating profit by as much as €1bn in 2022 and €1.1bn to €1.4bn next year, said the French group.

A downgrade weighed on **Aroundtown**, with Berenberg lowering its recommendation for the Luxembourg-based real estate group from "buy" to "hold". The broker said discussions about

London

New business sent **Velocity Composites** soaring as it announced the signing of an agreement with GKN Aerospace that would give it access to the large US market.

The Burnley group, which supplies composite material kits for the aerospace sector, said the deal was expected to generate more than $100mn of revenue over five years.

Another contract win sent **WANdisco** up sharply. The data activation platform signed a deal worth $31mn with a "global telecommunications supplier".

Chief executive David Richards said the contract represented "a record initial agreement for our business, with the potential for this value to grow further as we have seen with other customers".

A larger loss than expected left **Petrofac** touching an all-time low. The oilfield services group forecast an annual operating loss of about $100mn, dragged down by its engineering and construction division.

Derren Nathan, head of equity research

Investors must adapt to the new normal of higher inflation

Karen Ward

Markets Insight

The inflation panic is now subsiding. Energy prices have stabilised and the pandemic-related supply disruptions are easing. These factors alone should mean that inflation in the west recedes from the eye-watering, double-digit rates that we have experienced of late.

Central banks appear increasingly confident that they have regained control. Bond and stock markets are breathing a collective sigh of relief.

As inflation falls from double digits, investors are turning to the question of where it might eventually settle.

Are we headed back to the stubbornly low inflation that prevailed for much of the last two decades? Or will it stick at a higher level? In my view, 3 per cent will be the new 2 per cent. This has major implications for investors.

A higher and more volatile rate of goods price inflation is part of the story. One striking feature of the low inflation era was that the basket of non-energy goods that the UK consumer bought in 1990 was outright cheaper 30 years later. I can't see history repeating itself.

Goods prices are, in future, likely to be subject to bouts of commodity price inflation, in much the same way as we have seen this year. After Russia's invasion of Ukraine, the west lost its major supplier of numerous commodities.

A multiyear period of adjustment will have cost implications as we transition to alternatives. A reliance on smaller producers in volatile regions of the world or on renewables that are prone to the vagaries of the weather will lead to periods of shortage and higher prices.

In addition, procurement of goods is no longer ruled by lowest cost. Having control over the supply of key inputs and the broader production chain is now of paramount importance for companies and governments alike. This might involve onshoring or reshoring to countries in which labour is more costly.

Central banks might argue that, if goods inflation is persistently higher, they will simply have to force service sector inflation lower. While correct in theory, the political reality is less clear.

In a total reversal of the experience of the last 30 years, service sector workers in the west would have to accept pay growth below the rate at which global goods prices were rising. Instead, I expect the central banks to accept a new modestly higher rate of inflation.

> They will need assets that protect them from bouts of higher prices. Neither bonds nor stocks do the job

Ultimately, I believe this upward shift will be not only accepted but welcomed. This is because a 3 per cent inflation target would, other things being equal, lift the average nominal interest rate by 1 percentage point.

That would reduce the likelihood of hitting the zero bound — the level at which interest rates can no longer be cut to stimulate activity — and central banks having to resort to unconventional policy tools such as quantitative easing. In my opinion, it is now abundantly clear that QE is not a substitute for conventional monetary policy.

It entangles a central bank with the government in a way that potentially risks their independence or perceptions of their ability to act independently.

Central banks are likely to reject the idea that the inflation target should be raised until the most recent episode of high inflation is behind us. But investors do need to consider the implications of a modestly higher inflation world.

Bond investors would do well to drop the notion that 3 per cent will be the long-term neutral nominal interest rate. They should demand a higher yield than they have for the past two decades on average and a risk premium to acknowledge there will also be more volatility.

The implications for stock investors are less clear as earnings will grow at a modestly higher rate but profits will also be discounted at higher interest rates.

Companies that have operated in regions where their earnings have struggled in the face of emerging market competitors may be the biggest beneficiaries — European companies spring to mind. A higher, steeper yield curve should benefit global financials but serve as a headwind to tech companies, for example. In turn, this would favour global value over growth stocks.

Finally, investors will need assets that protect them from occasional bouts of high inflation. Unfortunately — as this year demonstrates only too well — neither bonds nor stocks do the job.

The best options here are private infrastructure, real estate and timber, which have income streams that are more directly linked to inflation.

Investors be warned. Inflation has awakened like a bad-tempered teenager — suddenly bigger, capable of clearing out the cupboards and prone to bouts of volatility.

Karen Ward is chief market strategist for Europe, Middle East and Africa at JPMorgan Asset Management

MARKET DATA

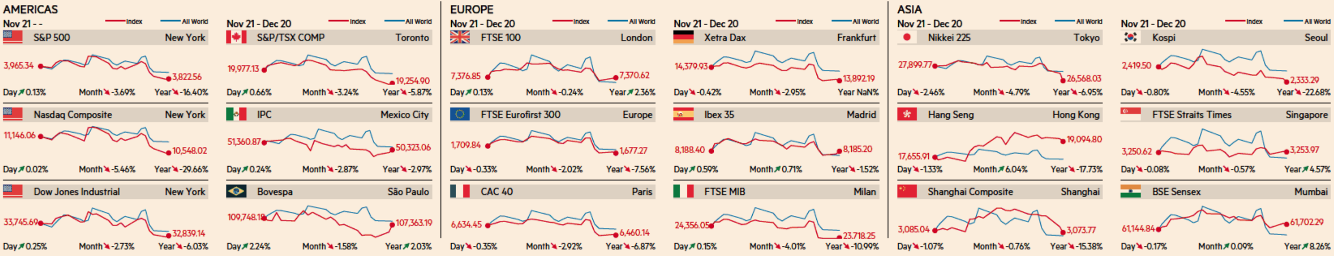
WORLD MARKETS AT A GLANCE

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 $
0.13%	0.02%	0.25%	0.13%	-0.33%	-2.46%	-1.33%	0.19%	0.567%	0.082%	-4.073%	0.573%	1.07%	-0.10%

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	172335.85	169085.78
Australia	All Ordinaries	7199.60	7321.00
	S&P/ASX 200	7024.30	7133.90
	S&P/ASX 200 Res	5895.50	6001.30
Austria	ATX	3061.22	3066.84
Belgium	BEL 20	3671.37	3671.30
	BEL Mid	9461.85	9545.00
Brazil	IBovespa	107088.88	104739.75
Canada	S&P/TSX 60	1168.53	1160.43
	S&P/TSX Comp	19327.96	19200.76
	S&P/TSX Div Met & Min	1515.44	1553.13
Chile	S&P/CLX IGPA Gen	28106.00	27696.65
China	FTSE A200	10162.41	10337.60
	FTSE B35	9000.71	8988.96
	Shanghai A	3221.71	3256.76
	Shanghai B	286.23	287.63
	Shanghai Comp	3073.77	3107.12
	Shenzhen A	2070.36	2095.63
	Shenzhen B	1143.40	1144.93
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	1176.06	1172.08
Denmark	OMXC Copenahgen 20	1806.72	1804.78
Egypt	EGX 30	14523.26	14738.60
Estonia	OMX Tallinn	1750.70	1774.80
Finland	OMX Helsinki General	10868.72	10809.36
France	CAC 40	6450.43	6473.29
	SBF 120	4951.69	4970.84
Germany	M-DAX	24962.50	25023.99
	TecDAX	2901.74	2932.74
	XETRA Dax	13884.66	13942.87
Greece	Athens Gen	915.00	916.48
	FTSE/ASE 20	2220.36	2226.07
Hong Kong	Hang Seng	19094.80	19352.81
	HS China Enterprise	6472.29	6604.62
	HSCC Red Chip	3568.47	3644.52
Hungary	Bux	45481.08	45270.04
India	BSE Sensex	61702.29	61806.19
	Nifty 500	15726.20	15755.20
Indonesia	Jakarta Comp	6768.32	6779.70
Ireland	ISEQ Overall	7106.83	7135.39
Israel	Tel Aviv 125	1826.09	1821.86

Country	Index	Latest	Previous
Italy	FTSE Italia All-Share	25671.18	25684.88
	FTSE Italia Mid Cap	38930.11	39174.32
	FTSE MIB	23718.25	23683.54
Japan	2nd Section	7228.27	7239.06
	Nikkei 225	26568.03	27237.64
	S&P Topix 150	1634.56	1660.68
	Topix	1905.59	1935.41
Jordan	Amman SE	2474.47	2485.73
Kenya	NSE 20	1655.86	1652.86
Kuwait	KSX Market Index	6633.44	6603.51
Latvia	OMX Riga	1152.95	1154.69
Lithuania	OMX Vilnius	948.47	950.44
Luxembourg	LuxX	1426.51	1426.91
Malaysia	FTSE Bursa KLCI	1467.32	1477.09
Mexico	IPC	50063.71	49946.10
Morocco	MASI	11065.16	11049.64
Netherlands	AEX	697.25	700.71
	AEX All Share	952.64	956.80
New Zealand	NZX 50	11404.83	11518.14
Nigeria	SE All Share	49414.96	49316.29
Norway	Oslo All Share	1017.37	1006.88
Pakistan	KSE 100	39832.45	40970.82

Country	Index	Latest	Previous
Philippines	Manila Comp	6458.12	6414.27
Poland	Wig	56563.36	56118.16
Portugal	PSI 20	5737.94	5705.30
	PSI General	4432.19	4430.71
Romania	BET Index	12199.83	12100.72
Russia	Micex Index	2436.57	2445.30
	RTX	1245.71	1212.57
Saudi-Arabia	TADAWUL All Share Index	10280.15	10186.18
Singapore	FTSE Straits Times	3253.97	3256.61
Slovakia	SAX	341.88	340.45
Slovenia	SBI TOP	-	-
South Africa	FTSE/JSE All Share	73040.51	73359.60
	FTSE/JSE Res 20	70718.61	70724.86
	FTSE/JSE Top 40	66921.51	67261.97
South Korea	Kospi	2333.29	2352.17
	Kospi 200	304.05	306.77
Spain	IBEX 35	8185.20	8136.80
Sri Lanka	CSE All Share	8508.53	8626.21
Sweden	OMX Stockholm 30	2036.42	2047.98
	OMX Stockholm AS	775.69	780.92
Switzerland	SMI Index	10659.19	10773.23

Country	Index	Latest	Previous
Taiwan	Weighted Pr	14170.03	14433.32
Thailand	Bangkok SET	1604.44	1618.20
Turkey	BIST 100	5419.02	5419.02
UAE	Abu Dhabi General Index	9222.93	9251.11
UK	FT 30	2706.40	2740.00
	FTSE 100	7370.62	7361.31
	FTSE 4Good UK	6631.49	6628.41
	FTSE All Share	4026.91	4025.87
	FTSE techMARK 100	6170.72	6226.97
USA	DJ Composite	10883.67	10910.34
	DJ Industrial	32839.14	32757.54
	DJ Transport	13392.68	13566.23
	DJ Utilities	956.11	959.70
	Nasdaq 100	11072.31	11084.59
	Nasdaq Cmp	10548.02	10546.03
	NYSE Comp	15004.72	14938.03
	S&P 500	3822.56	3817.66
	Wilshire 5000	37904.62	37834.23
Venezuela	IBC	16635.30	16531.39
Vietnam	VNI	1023.13	1038.40

Country	Index	Latest	Previous
Cross-Border	DJ Global Titans ($)	405.77	406.02
	Euro Stoxx 50 (Eur)	3798.78	3811.24
	Euronext 100 ID	1233.11	1238.09
	FTSE 4Good Global ($)	9406.57	9393.75
	FTSE All World ($)	398.42	397.66
	FTSE E300	1677.27	1682.87
	FTSE Eurotop 100	3311.59	3322.27
	FTSE Global 100 ($)	2425.87	2423.60
	FTSE Gold Min ($)	1689.47	1704.19
	FTSE Latibex Top (Eur)	4440.00	4432.20
	FTSE Multinationals ($)	2579.71	2601.49
	FTSE World ($)	721.70	719.68
	FTSEurofirst 100 (Eur)	4470.39	4478.33
	FTSEurofirst 80 (Eur)	5168.50	5178.91
	MSCI ACWI Fr ($)	602.00	606.13
	MSCI All World ($)	2585.89	2606.01
	MSCI Europe (Eur)	1719.50	1716.30
	MSCI Pacific ($)	2601.22	2621.54
	S&P Euro (Eur)	1706.34	1710.13
	S&P Europe 350 (Eur)	1718.65	1724.46
	S&P Global 1200 ($)	2870.29	2864.70
	Stoxx 50 (Eur)	3658.54	3669.55

(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	111.4	141.95	-7.93
Apple	51.7	132.10	-0.27
Nvidia	34.4	161.31	-1.23
Amazon.com	32.5	85.32	0.40
Microsoft	26.2	241.22	0.77
Advanced Micro Devices	17.9	65.34	0.75
Meta Platforms	15.3	115.62	1.14
Netflix	10.7	287.21	-1.09
Alphabet	9.8	88.42	-0.02
Moderna	8.8	198.92	9.03

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Newmont	47.83	2.23	4.89
Moderna	198.92	9.03	4.75
Schlumberger	51.42	1.59	3.19
Adobe	339.15	10.39	3.16
General Electric	80.18	2.12	2.72
Downs			
Tesla	141.95	-7.93	-5.29
General Mills	83.30	-3.83	-4.39
Factset Research Systems	404.24	-15.66	-3.73
Warner Bros Discovery	9.00	-0.25	-2.74
Vf	25.34	-0.71	-2.73

Based on the constituents of the S&P500

LONDON

ACTIVE STOCKS	stock traded m's	close price	Day's change
Glencore	254.6	548.00	11.20
Shell	190.3	2307.50	20.50
Diageo	161.1	3629.50	-6.50
Bp	141.4	467.45	0.85
Gsk	131.9	1427.00	6.20
Flutter Entertainment	114.7	11430.00	-10.00
Homeserve	98.6	1195.00	0.00
Unilever	94.5	4156.50	-17.00
Astrazeneca	82.4	11126.00	18.00
British American Tobacco	78.6	3314.50	-17.50

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Drax	661.00	39.00	6.27
Hilton Food	538.00	17.00	3.26
Antofagasta	1518.50	47.50	3.23
Bank Of Georgia	2550.00	75.00	3.03
Lancashire Holdings	618.50	16.50	2.74
Downs			
Aston Martin Lagonda Global Holdings	168.00	-9.00	-5.08
Helios Towers	102.50	-4.10	-3.85
Marshalls	267.80	-10.00	-3.60
Warehouse Reit	103.00	-3.80	-3.56
Shaftesbury	350.60	-12.80	-3.52

Based on the constituents of the FTSE 350 index

EURO MARKETS

ACTIVE STOCKS	stock traded m's	close price	Day's change
Iberdrola	586.2	10.81	0.03
Roche Gs	396.3	300.61	-4.21
Nestle N	380.3	108.55	-0.99
Novartis N	330.7	84.84	-0.57
Unicredit	217.0	13.20	0.51
Asml Holding	197.6	532.20	-5.10
Totalenergies	185.4	57.33	0.68
Intesa Sanpaolo	165.6	2.08	0.04
Santander	149.1	2.81	0.10
Novo Nordisk B A/s	139.9	124.34	1.21

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Unicredit	13.20	0.51	4.02
Santander	2.81	0.10	3.51
Bbva	5.56	0.15	2.83
Neste	46.49	1.10	2.42
Intesa Sanpaolo	2.08	0.04	2.02
Downs			
Siemens Health.ag Na O.n.	45.15	-2.21	-4.67
Kering	466.70	-19.15	-3.94
Vestas Wind Systems A/s	25.68	-0.79	-2.97
Engie	13.58	-0.37	-2.65
Adidas Ag Na O.n.	117.98	-3.20	-2.64

Based on the constituents of the FTSEurofirst 300 Eurozone index

TOKYO

ACTIVE STOCKS	stock traded m's	close price	Day's change
Mitsubishi Ufj Fin,.	1630.3	818.40	46.20
Sumitomo Mitsui Fin,.	1091.2	4974.00	253.00
Toyota Motor	999.8	1845.00	-65.00
Softbank .	923.2	5726.00	-292.00
Tokyo Electron	837.7	41590.00	-1520.00
Fast Retailing Co.,	777.5	79200.00	-1500.00
Kawasaki Kisen Kaisha,	588.5	2725.00	40.00
Nippon Yusen Kabushiki Kaisha	584.2	3143.00	1.00
Nintendo Co.,	500.1	5541.00	-51.00
Mizuho Fin,.	499.5	1767.00	68.50

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Dai-ichi Life Holdings	2885.50	248.50	9.42
T&d Holdings, .	1789.00	152.00	9.29
Concordia Fin Ltd	526.00	38.00	7.79
Resona Holdings, .	692.50	41.60	6.39
Mitsubishi Ufj Fin,.	818.40	46.20	5.98
Downs			
Mitsubishi Motors	530.00	-52.00	-8.93
M3,.	3614.00	-215.00	-5.62
Sumitomo Realty & Development Co,	3187.00	-185.00	-5.49
Fujikura	1063.00	-61.00	-5.43
Hino Motors,	540.00	-30.00	-5.26

Based on the constituents of the Nikkei 225 index

UK MARKET WINNERS AND LOSERS

FTSE 100	Dec 20 price(p)	%Chg week	%Chg ytd
Winners			
Beazley	658.00	4.4	41.7
Centrica	94.38	4.3	32.5
Bae Systems	851.20	3.7	53.5
Antofagasta	1518.50	2.4	12.5
Imperial Brands	2066.00	2.3	27.3
Standard Chartered	621.20	2.2	38.9
British American Tobacco	3314.50	1.9	21.5
Fresnillo	866.20	1.3	-1.2
Unilever	4156.50	1.2	4.7
Pearson	923.60	1.1	52.6
Endeavour Mining	1732.00	0.8	6.9
Hsbc Holdings	502.80	0.5	11.9
Losers			
Ocado	621.60	-11.2	-62.9
Auto Trader	520.00	-8.7	-
Scottish Mortgage Investment Trust	714.00	-8.5	-
Segro	751.80	-8.1	-
Rightmove	515.00	-8.0	-
Entain	1305.50	-7.7	-
Jd Sports Fashion	113.25	-7.6	-
St. James's Place	1073.00	-7.2	-
Schroders	430.20	-7.1	-
Bunzl	2820.00	-6.7	-4.0
London Stock Exchange	7104.00	-6.6	1.8
Ashtead	4726.00	-6.5	-

FTSE 250	Dec 20 price(p)	%Chg week	%Chg ytd
Winners			
Games Workshop	8425.00	11.9	-
Drax	661.00	7.6	7.9
Ferrexpo	162.00	5.1	-
Octopus Renewables Infrastructure Trust	100.40	4.9	-8.3
Investec	497.80	4.3	22.0
Qinetiq	361.00	3.7	35.6
Aston Martin Lagonda Global Holdings	168.00	3.5	-
Firstgroup	100.50	3.4	-1.3
Digital 9 Infrastructure	86.10	3.1	-
Gcp Infrastructure Investments	101.40	2.9	-6.5
Paragon Banking	542.50	2.7	-4.6
Johnson Matthey	2140.00	2.3	3.3
Losers			
Currys	55.70	-16.7	-
Watches Of Switzerland	802.50	-16.3	-
Molten Ventures	339.00	-15.0	-
Wizz Air Holdings	2052.00	-14.9	-
National Express	131.60	-14.3	-
Trainline	263.30	-13.8	-5.0
888 Holdings	82.05	-12.6	-
Helios Towers	102.50	-12.0	-
Darktrace	267.80	-12.0	-
Asos	507.00	-10.7	-
Intermediate Capital	1104.00	-10.6	-
Moonpig	106.80	-10.6	-71.6

FTSE SmallCap	Dec 20 price(p)	%Chg week	%Chg ytd
Winners			
Hunting	315.00	23.3	95.8
Zotefoams	330.00	10.0	-
Topps Tiles	52.40	9.2	-
Dignity	403.00	8.9	-
Hostelworld	118.00	8.9	70.5
Nanoco	40.40	7.7	-
Hollywood Bowl	232.50	7.4	-0.2
Fisher (james) & Sons	356.00	7.2	-2.1
Funding Circle Holdings	54.00	6.5	-
Dwf	82.00	5.8	-
Aberforth Split Level ome Trust	71.00	5.3	-
Foresight Holdings	468.00	5.2	10.9
Losers			
Petrofac	70.00	-15.4	-37.9
Abrdn Eur Logistics ome	67.80	-12.9	-
Int Personal Finance	66.00	-12.0	-
Home Reit	35.00	-10.6	-
Triple Point Social Housing Reit	60.60	-10.5	-
Xp Power	1912.00	-9.8	-
Rank	75.00	-9.7	-52.4
Reach	95.70	-9.4	-65.2
Pollen Street	518.00	-9.1	-
Provident Fin	173.40	-8.6	-
Picton Property ome Ld	75.70	-8.6	-
Pod Point Holdings	59.00	-8.0	-

Industry Sectors	Dec 20 price(p)	%Chg week	%Chg ytd
Winners			
Aerospace & Defense	5060.76	2.0	20.8
Tobacco	35910.90	2.0	22.6
Nonlife Insurance	3259.60	1.4	-0.9
Electricity	10534.51	0.9	4.7
Mining	10905.43	0.6	-44.6
Automobiles & Parts	1510.40	0.3	-
General Retailers	3335.73	0.1	15.1
Food & Drug Retailers	4093.38	-0.2	-6.4
Health Care Equip.& Services	10758.43	-0.3	30.7
Banks	3233.16	-0.4	6.0
Oil & Gas Producers	8034.53	-0.6	40.4
Industrial Metals	7676.43	-1.0	20.5
Losers			
Personal Goods	30072.51	-8.0	-16.1
General Financial	11475.88	-6.1	-0.9
Travel & Leisure	6260.63	-6.0	-
Industrial Transportation	3453.12	-5.9	-
Real Estate & Investment Servic	2104.81	-5.7	-
Software & Computer Services	1767.28	-5.1	-
Real Estate Investment Trusts	2178.32	-4.8	-
Industrial Engineering	13795.19	-4.5	-25.8
Support Services	9864.50	-4.5	-
Electronic & Electrical Equip.	8765.39	-4.5	-
General Industrials	6008.81	-3.9	-
Food Producers	5570.77	-3.6	-

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

CURRENCIES

		DOLLAR		EURO		POUND	
Dec 20	Currency	Closing Mid	Day's Change	Closing Mid	Day's Change	Closing Mid	Day's Change
Argentina	Argentine Peso	173.9209	0.2764	185.0439	1.3359	211.1229	0.4838
Australia	Australian Dollar	1.5003	0.0072	1.5962	0.0166	1.8212	0.0100
Bahrain	Bahrainin Dinar	0.3770	-	0.4011	0.0023	0.4576	0.0003
Bolivia	Bolivian Boliviano	6.9100	-	7.3519	0.0415	8.3881	0.0059
Brazil	Brazilian Real	5.1873	-0.1163	5.5191	-0.0919	6.2969	-0.1366
Canada	Canadian Dollar	1.3612	-0.0078	1.4482	-0.0001	1.6523	-0.0083
Chile	Chilean Peso	886.0450	-4.7550	942.7114	0.2853	1075.5715	-5.0114
China	Chinese Yuan	6.9706	-0.0042	7.4164	0.0373	8.4616	0.0008
Colombia	Colombian Peso	4766.9400	-18.6200	5071.8066	8.9000	5786.5984	-18.5158
Costa Rica	Costa Rican Colon	586.8650	-1.9450	624.3976	1.4632	712.3964	-1.8582
Czech Republic	Czech Koruna	22.7295	-0.1752	24.1831	-0.0490	27.5913	-0.1931
Denmark	Danish Krone	6.9920	-0.0396	7.4391	0.0001	8.4875	-0.0421
Egypt	Egyptian Pound	24.6995	0.0029	26.2791	0.1513	29.9828	0.0246
Hong Kong	Hong Kong Dollar	7.7869	0.0103	8.2849	0.0576	9.4525	0.0191
Hungary	Hungarian Forint	378.3543	-2.0040	402.5517	0.1498	459.2849	-2.1078
India	Indian Rupee	82.7563	0.0500	88.0489	0.5494	100.4579	0.1313

		DOLLAR		EURO		POUND	
Dec 20	Currency	Closing Mid	Day's Change	Closing Mid	Day's Change	Closing Mid	Day's Change
Indonesia	Indonesian Rupiah	15602.5000	5.0000	16600.3483	98.8887	18939.9320	19.4227
Israel	Israeli Shekel	3.4660	0.0086	3.6877	0.0299	4.2074	0.0134
Japan	Japanese Yen	131.4150	-5.5800	139.8196	-5.1150	159.5249	-6.6566
..One Month		131.4144	-5.5812	139.8193	-5.1155	159.5243	-6.6577
..Three Month		131.4134	-5.5833	139.8188	-5.1166	159.5233	-6.6598
..One Year		131.4085	-5.5933	139.8155	-5.1233	159.5243	-6.6646
Kenya	Kenyan Shilling	123.2000	0.1000	131.0792	0.8449	149.5527	0.2265
Kuwait	Kuwaiti Dinar	0.3061	-0.0005	0.3256	0.0014	0.3715	-0.0003
Malaysia	Malaysian Ringgit	4.4335	0.0080	4.7170	0.0351	5.3818	0.0135
Mexico	Mexican Peso	19.7590	-0.0430	21.0227	0.0731	23.9855	-0.0353
New Zealand	New Zealand Dollar	1.5799	0.0037	1.6809	0.0134	1.9178	0.0059
Nigeria	Nigerian Naira	445.5000	-	473.9917	2.6728	540.7932	0.3805
Norway	Norwegian Krone	9.8891	-0.0561	10.5216	0.0000	12.0044	-0.0596
Pakistan	Pakistani Rupee	225.1750	-0.0250	239.5759	1.3245	273.3403	0.1620
Peru	Peruvian Nuevo Sol	3.8361	0.0011	4.0814	0.0242	4.6566	0.0046
Philippines	Philippine Peso	55.2425	-0.1875	58.7755	0.1331	67.0590	-0.1803

		DOLLAR		EURO		POUND	
Dec 20	Currency	Closing Mid	Day's Change	Closing Mid	Day's Change	Closing Mid	Day's Change
Poland	Polish Zloty	4.3978	-0.0344	4.6790	-0.0100	5.3384	-0.0380
Romania	Romanian Leu	4.6126	-0.0272	4.9076	-0.0010	5.5993	-0.0290
Russia	Russian Ruble	70.5000	1.8750	75.0088	2.4066	85.5801	2.3347
Saudi Arabia	Saudi Riyal	3.7610	-0.0005	4.0015	0.0220	4.5655	0.0026
Singapore	Singapore Dollar	1.3504	-0.0076	1.4367	0.0000	1.6392	-0.0081
South Africa	South African Rand	17.3138	-0.0263	18.4210	0.0761	21.0172	-0.0171
South Korea	South Korean Won	1289.6500	-13.3000	1372.1287	-6.3334	1565.5082	-15.0322
Sweden	Swedish Krona	10.4112	-0.0101	11.0770	0.0518	12.6382	-0.0034
Switzerland	Swiss Franc	0.9260	-0.0075	0.9852	-0.0024	1.1240	-0.0083
Taiwan	New Taiwan Dollar	30.7590	0.0260	32.7262	0.2120	37.3384	0.0578
Thailand	Thai Baht	34.7650	-0.0750	36.9884	0.1292	42.2013	-0.0613
Tunisia	Tunisian Dinar	3.1192	-0.0181	3.3186	-0.0005	3.7863	-0.0194
Turkey	Turkish Lira	18.6615	0.0120	19.8550	0.1247	22.6532	0.0305
United Arab Emirates	UAE Dirham	3.6729	0.0000	3.9079	0.0221	4.4586	0.0032
United Kingdom	Pound Sterling	0.8238	-0.0006	0.8765	0.0043	-	-
..One Month		0.8239	-0.0006	0.8763	0.0043	-	-

		DOLLAR		EURO		POUND	
Dec 20	Currency	Closing Mid	Day's Change	Closing Mid	Day's Change	Closing Mid	Day's Change
..Three Month		0.8241	-0.0006	0.8761	0.0043	-	-
..One Year		0.8244	-0.0006	0.8751	0.0044	-	-
United States	United States Dollar	-	-	1.0640	0.0060	1.2139	0.0009
..One Month		-	-	1.0637	-0.1491	1.2140	0.0008
..Three Month		-	-	1.0632	-0.1491	1.2142	0.0008
..One Year		-	-	1.0617	-0.1491	1.2145	0.0009
Vietnam	Vietnamese Dong	23755.0000	110.0000	25274.2892	258.9048	28836.3107	153.7577
European Union	Euro	0.9399	-0.0053	-	-	1.1409	-0.0057
..One Month		0.9396	-0.0053	-	-	1.1408	-0.0057
..Three Month		0.9392	-0.0053	-	-	1.1406	-0.0057
..One Year		0.9377	-0.0053	-	-	1.1396	-0.0056

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
www.ft.com/equities

Produced in conjunction with the Institute and Faculty of Actuaries

	£ Strlg Dec 20	Day's chge%	Euro Index	£ Strlg Dec 19	£ Strlg Dec 16	Year ago	Div yield%	Cover	P/E ratio	X/D adj	Total Return
FTSE 100 (100)	7370.62	0.13	6559.34	7361.31	7332.12	7198.03	3.69	1.61	16.81	267.19	7568.19
FTSE 250 (250)	18544.76	-0.56	16503.54	18648.96	18588.48	22549.88	3.27	0.78	39.13	551.07	15439.22
FTSE 250 ex Inv Co (171)	18963.12	-0.60	16875.86	19078.44	19031.61	23263.52	3.38	1.62	18.24	583.67	16109.28
FTSE 350 (350)	4065.75	0.03	3618.23	4064.64	4048.95	4111.24	3.63	1.50	18.31	143.48	8284.97
FTSE 350 ex Investment Trusts (268)	4007.94	0.06	3566.79	4005.61	3989.94	4006.77	3.69	1.70	15.96	143.61	4220.84
FTSE 350 Higher Yield (132)	3511.10	0.24	3124.63	3502.56	3475.25	3267.68	5.09	1.74	11.31	164.93	8072.98
FTSE 350 Lower Yield (218)	4203.09	-0.20	3740.46	4211.41	4212.38	4699.50	2.11	0.92	51.73	92.61	5176.03
FTSE SmallCap (235)	6128.92	-0.03	5454.31	6130.49	6116.55	7180.00	3.56	-0.20	-139.83	207.87	10315.22
FTSE SmallCap ex Inv Co (126)	4891.77	-0.16	4353.33	4899.37	4884.08	5944.58	3.80	2.33	11.30	161.59	8560.88
FTSE All-Share (585)	4026.91	0.03	3583.67	4025.87	4010.49	4089.84	3.63	1.46	18.85	141.93	8286.41
FTSE All-Share ex Inv Co (394)	3935.00	0.06	3501.88	3932.83	3917.49	3945.82	3.69	1.71	15.87	140.84	4207.51
FTSE All-Share ex Multinationals (522)	1046.20	-0.29	771.86	1049.25	1047.52	1298.74	4.06	0.82	30.01	40.66	2229.70
FTSE Fledgling (81)	11491.86	-0.28	10226.95	11524.59	11542.87	12886.18	3.79	3.11	8.47	371.53	24931.86
FTSE Fledgling ex Inv Co (31)	14888.66	-0.57	13249.87	14974.53	15046.13	16844.88	3.62	7.87	3.52	461.21	31328.63
FTSE All-Small (316)	4275.70	-0.04	3805.07	4277.40	4268.60	4997.13	3.57	-0.01	-4614.30	144.68	9230.17
FTSE All-Small ex Inv Co (157)	3681.41	-0.17	3276.20	3687.69	3677.21	4462.00	3.79	2.52	10.48	121.35	8159.23
FTSE AIM All-Share (737)	821.74	-0.22	731.29	823.54	822.47	1158.85	1.72	1.69	34.33	13.27	966.02
FTSE All-Share Technology (20)	1890.90	-0.94	1579.71	1908.85	1919.78	2308.82	2.02	0.89	55.70	39.97	2739.39
FTSE All-Share Telecommunications (6)	1386.66	-0.78	1158.46	1397.54	1390.91	1832.67	7.64	1.04	12.62	99.22	2120.30
FTSE All-Share Health Care (14)	14485.23	0.14	12101.38	14464.53	14522.61	12926.75	2.59	1.05	36.90	374.42	13416.13
FTSE All-Share Financials (255)	4473.31	0.22	3737.13	4463.39	4454.34	4757.24	3.79	0.90	29.22	166.74	4979.29
FTSE All-Share Real Estate (55)	798.26	-1.42	697.64	809.76	808.27	1202.04	4.44	3.63	6.19	34.08	842.35
FTSE All-Share Consumer Discretionary (83)	4451.22	-0.42	3718.68	4469.96	4483.63	5236.61	2.47	1.27	32.00	108.43	4722.41
FTSE All-Share Consumer Staples (24)	19349.06	-0.45	16164.77	19436.13	19309.33	19667.40	3.95	1.13	22.38	698.72	17747.67
FTSE All-Share Industrials (84)	6140.16	-0.41	5129.67	6165.62	6144.69	7149.60	2.33	1.36	31.60	138.27	7111.35
FTSE All-Share Basic Materials (22)	9145.20	1.16	7640.17	9040.56	8997.42	7984.47	5.95	2.01	8.37	539.20	12467.63
FTSE All-Share Energy (13)	8308.47	0.64	6941.14	8255.71	8087.76	5769.55	3.63	2.82	9.77	303.49	10110.30
FTSE All-Share Utilities (9)	8478.20	0.27	7082.94	8455.67	8455.97	8705.81	4.53	0.57	38.50	373.12	12927.14
FTSE All-Share Software and Computer Services (18)	2038.63	-0.96	1703.13	2058.39	2070.91	2483.74	2.02	0.89	55.65	43.17	3124.57
FTSE All-Share Technology Hardware and Equipment (2)	5016.23	0.42	4190.70	4995.01	4901.63	6367.78	2.40	0.69	59.97	92.89	6501.75
FTSE All-Share Telecommunications Equipment (1)	585.67	-1.36	489.29	593.72	589.69	627.34	2.10	2.31	20.64	11.51	837.16
FTSE All-Share Telecommunications Service Providers (5)	2122.49	-0.75	1773.19	2138.51	2128.59	2828.66	7.91	1.02	12.38	157.08	2958.00
FTSE All-Share Health Care Providers (3)	10840.33	-0.63	9056.32	10909.43	10898.31	8109.26	0.54	4.88	38.09	58.27	10061.57
FTSE All-Share Medical Equipment and Services (2)	5392.32	-0.70	4504.90	5430.25	5439.72	5629.53	2.65	0.97	39.13	142.76	5208.78
FTSE All-Share Pharmaceuticals and Biotechnology (9)	20745.86	0.20	17331.69	20705.24	20792.02	18381.47	2.61	1.04	36.77	539.80	17301.84
FTSE All-Share Banks (12)	3190.59	1.14	2665.51	3154.77	3141.23	2915.43	4.09	2.63	9.30	129.94	2824.84
FTSE All-Share Finance and Credit Services (8)	9854.24	-0.38	8232.52	9892.01	10115.14	9649.47	2.15	2.28	20.42	210.32	13242.41
FTSE All-Share Investment Banking and Brokerage Services (31)	8183.10	-1.05	6836.40	8269.97	8233.20	10217.58	5.42	1.55	11.94	437.54	11559.81
FTSE All-Share Closed End Investments (191)	11428.52	-0.41	9547.72	11475.48	11445.49	13926.04	2.79	-3.42	-10.47	305.55	7164.32
FTSE All-Share Life Insurance (6)	6910.10	0.08	5772.90	6904.72	6897.47	7448.42	4.43	1.08	20.86	294.59	8456.22
FTSE All-Share Nonlife Insurance (7)	3667.46	0.91	3063.91	3634.27	3601.24	3586.45	3.90	1.24	20.67	130.27	7810.37
FTSE All-Share Real Estate Investment and Services (10)	2018.97	-0.19	1686.71	2022.86	2050.57	3064.95	2.52	3.66	10.87	43.02	6025.79
FTSE All-Share Real Estate Investment Trusts (45)	1983.69	-1.64	1657.23	2016.76	2007.45	2973.38	4.79	3.63	5.75	93.16	3018.47
FTSE All-Share Automobiles and Parts (2)	1518.14	-3.15	1268.30	1567.49	1552.16	3319.79	0.75	-34.22	-3.91	14.02	1579.39
FTSE All-Share Consumer Services (2)	3131.88	-0.11	2616.46	3135.49	3130.59	2536.97	1.23	2.76	29.56	38.43	3972.78
FTSE All-Share Household Goods and Home Construction (11)	8163.89	-0.02	6820.35	8165.57	8248.06	14155.86	9.10	1.60	6.85	710.24	7346.26
FTSE All-Share Leisure Goods (2)	22695.98	-1.33	18960.88	23001.62	22839.70	24724.82	2.98	1.59	21.08	831.45	25364.57
FTSE All-Share Personal Goods (4)	25857.54	-1.80	21602.14	26332.06	26516.79	29417.31	2.17	2.80	16.42	558.37	20338.13
FTSE All-Share Media (11)	9218.14	-0.38	7701.11	9253.68	9268.04	9711.78	2.40	1.47	28.36	221.42	6485.91
FTSE All-Share Retailers (22)	1799.50	-0.43	1503.35	1807.22	1815.92	2708.15	3.06	3.08	10.62	54.64	2348.82
FTSE All-Share Travel and Leisure (29)	6121.94	-0.44	5114.45	6148.69	6173.15	7062.20	0.66	-7.30	-20.70	40.99	6332.07
FTSE All-Share Beverages (5)	27798.45	-0.23	23223.63	27862.04	27764.64	30761.70	2.15	2.01	23.15	584.47	22278.16
FTSE All-Share Food Producers (10)	5770.91	-1.12	4821.19	5836.17	5793.67	6681.10	2.68	2.27	16.46	152.70	5621.37
FTSE All-Share Tobacco (2)	35910.96	-0.38	30001.06	36046.57	35672.89	29494.93	6.60	0.87	17.43	1906.82	33728.24
FTSE All-Share Construction and Materials (15)	7150.82	0.03	5974.00	7148.50	7038.96	8593.87	3.23	0.66	47.13	230.56	8725.43
FTSE All-Share Aerospace and Defense (7)	5312.78	0.59	4438.45	5281.88	5248.27	4191.17	2.21	0.10	454.45	104.10	6479.96
FTSE All-Share Electronic and Electrical Equipment (11)	10318.64	-1.02	8620.49	10425.18	10393.16	13776.58	1.71	2.09	28.12	161.86	10206.01
FTSE All-Share General Industrials (8)	4835.21	-0.62	4039.48	4865.29	4833.29	5463.67	3.00	1.22	27.30	151.23	6398.31
FTSE All-Share Industrial Engineering (5)	15237.11	-0.60	12729.53	15328.46	15319.97	19320.42	1.72	2.01	29.02	261.52	20467.56
FTSE All-Share Industrial Support Services (30)	9487.35	-0.71	7926.00	9555.60	9584.58	12031.77	2.03	1.67	29.50	196.21	10926.82
FTSE All-Share Industrial Transportation (8)	5213.94	-0.63	4355.88	5247.05	5246.92	6823.57	2.13	3.34	14.02	102.86	5467.56
FTSE All-Share Industrial Materials (1)	16503.08	0.61	523.77	16403.06	16002.99	20803.88	1.99	1.81	27.74	329.06	20845.85
FTSE All-Share Industrial Metals and Mining (9)	8265.81	1.31	6905.50	8158.53	8115.88	6640.82	6.34	2.02	7.81	517.75	12688.51
FTSE All-Share Precious Metals and Mining (5)	10297.96	1.27	8603.21	10168.59	10109.88	18328.46	3.50	1.83	15.63	358.99	7260.42
FTSE All-Share Chemicals (7)	12841.23	-0.55	10727.94	12912.45	12920.61	17948.69	2.72	1.82	20.14	355.95	12901.36
FTSE All-Share Oil. Gas and Coal (12)	8065.70	0.64	6738.32	8014.43	7851.38	5599.29	3.63	2.82	9.76	294.63	10178.88
FTSE Sector Indices											
Non Financials (330)	**4926.37**	**-0.03**	**4384.12**	**4927.85**	**4906.50**	**4936.30**	**3.59**	**1.63**	**17.12**	**170.86**	**8919.19**

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	0.00	7345.14	7357.53	7354.81	7356.53	7360.14	7364.06	7365.22	7384.54	7389.70	0.00
FTSE 250	0.00	18533.31	18540.66	18546.76	18518.94	18531.38	18541.58	18548.92	18621.59	18630.60	0.00
FTSE SmallCap	0.00	6110.81	6108.27	6103.22	6102.46	6104.70	6108.26	6110.06	6122.26	6128.92	0.00
FTSE All-Share	0.00	4014.65	4020.47	4019.34	4019.26	4021.32	4023.48	4024.26	4035.49	4037.65	0.00

Time of FTSE 100 Day's high:15:38:45 Day's Low- FTSE 100 2010/11 High: 7672.40(10/02/2022) Low: 6826.15(12/10/2022)
Time of FTSE All-Share Day's high:15:39:00 Day's Low- FTSE 100 2010/11 High: 4296.96(10/02/2022) Low: 3712.50(12/10/2022)

Further information is available on http://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. † Sector P/E ratios greater than 80 are not shown. For changes to FTSE Fledgling Index constituents please refer to www.ftse.com/indexchanges. ‡ Values are negative.

FT 30 INDEX

	Dec 20	Dec 17	Dec 16	Dec 15	Dec 14	Yr Ago	High	Low
FT 30	2706.40	2740.00	2718.90	2688.00	2721.20	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
2740	2685.1	2688.7	2701.9	2702.7	2696.6	2699.8	2702.9	2703.4	2740	2671.2

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

FT WILSHIRE 5000 INDEX SERIES

	Dec 19		Dec 19
FT Wilshire 5000	38644.54	FT Wilshire Mid Cap	5262.83
FT Wilshire 2500	4949.64	FT Wilshire Small Cap	4693.59
FT Wilshire Mega Cap	4927.20	FT Wilshire Micro Cap	4526.94
FT Wilshire Large Cap	4983.07		

Source: Wilshire. Wilshire Advisors LLC (Wilshire) is an investment advisor registered with the SEC. Further information is available at https://www.wilshire.com/solutions/indexes . Wilshire® is a registered service mark. Copyright ©2022 Wilshire. All rights reserved.

FTSE SECTORS: LEADERS & LAGGARDS

Year to date percentage changes

Oil & Gas Producers	40.81	Gas Water & Multi	-5.08	Construct & Material	-20.79
Oil & Gas	40.08	Health Care Eq & Srv	-5.24	FTSE 250 Index	-21.02
Tobacco	22.61	Nonlife Insurance	-6.72	Support Services	-21.60
Aerospace & Defense	20.27	Travel & Leisure	-9.61	Oil Equipment & Serv	-23.16
Mining	20.08	Leisure Goods	-10.61	Industrial Eng	-23.97
Basic Materials	11.39	Media	-10.86	Mobile Telecomms	-25.58
Pharmace & Biotech	10.90	Beverages	-10.94	Telecommunications	-26.14
Health Care	9.80	Life Insurance	-11.18	Fixed Line Telecomms	-27.85
Banks	6.01	Financials	-12.88	Household Goods & Ho	-28.03
Electricity	4.43	Software & Comp Serv	-13.53	Chemicals	-30.24
Personal Goods	2.83	Technology	-13.80	Electronic & Elec Eq	-30.79
Beverages	31.66	Tech Hardware & Eq	-16.18	Food & Drug Retailer	-31.91
FTSE 100 Index	-0.19	Food Producers	-16.53	General Retailers	-34.57
Utilities	-2.69	Industrials	-17.02	Real Est Invest & Tr	-35.76
NON FINANCIALS Index	-2.87	Financial Services	-17.55	Real Est Invest & Se	-36.48
FTSE All{HY-}Share Index	-4.30	FTSE SmallCap Index	-17.84	Industrial Transport	-44.72
Consumer Goods	-4.38	Consumer Services	-17.94	Automobiles & Parts	-58.37
		Equity Invest Instr	-19.83	Industrial Metals &	-79.36

FTSE GLOBAL EQUITY INDEX SERIES

Dec 20 Regions & countries	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
FTSE Global All Cap	9443	675.92	-0.7	-2.2	-20.2	1084.31	-18.5	2.4
FTSE Global All Cap	9443	675.92	-0.7	-2.2	-20.2	1084.31	-18.5	2.4
FTSE Global Large Cap	1898	605.20	-0.6	-2.1	-20.3	1000.68	-18.5	2.4
FTSE Global Mid Cap	2258	874.56	-0.8	-2.0	-18.5	1320.20	-16.7	2.3
FTSE Global Small Cap	5287	890.58	-1.0	-3.2	-22.2	1284.97	-20.7	2.2
FTSE All-World	4156	397.66	-0.7	-2.1	-20.0	675.57	-18.2	2.4
FTSE World	2665	719.68	-0.7	-2.5	-19.9	1640.77	-18.1	2.4
FTSE Global All Cap ex UNITED KINGDOM In	9154	713.04	-0.7	-2.4	-20.5	1121.88	-18.8	2.3
FTSE Global All Cap ex USA	7636	486.02	-0.3	0.3	-19.0	864.92	-16.4	3.3
FTSE Global All Cap ex JAPAN	8039	704.68	-0.7	-2.4	-20.3	1140.51	-18.6	2.4
FTSE Global All Cap ex Eurozone	8783	714.51	-0.7	-2.4	-20.2	1121.31	-18.5	2.3
FTSE Developed	2175	660.38	-0.7	-2.6	-20.0	1066.41	-18.3	2.2
FTSE Developed All Cap	5817	687.41	-0.8	-2.7	-20.2	1093.67	-18.6	2.2
FTSE Developed Large Cap	833	618.80	-0.7	-2.6	-20.2	1016.99	-18.5	2.2
FTSE Developed Europe Large Cap	218	376.36	-0.1	0.5	-16.3	746.13	-13.6	3.3
FTSE Developed Europe Mid Cap	354	561.17	-0.1	-0.2	-27.2	965.96	-25.1	3.1
FTSE Dev Europe Small Cap	743	788.41	-0.3	-0.2	-28.6	1303.43	-26.6	3.3
FTSE North America Large Cap	235	817.23	-0.9	-4.0	-21.6	1229.23	-20.4	1.8
FTSE North America Mid Cap	422	1081.41	-1.1	-3.3	-17.3	1504.90	-15.8	1.9
FTSE North America Small Cap	1331	1046.55	-1.4	-5.1	-20.7	1395.60	-19.5	1.7
FTSE North America	657	536.41	-0.9	-3.9	-20.8	824.97	-19.5	1.8
FTSE Developed ex North America	1518	258.60	-0.3	0.5	-18.0	495.41	-15.5	3.2
FTSE Japan Large Cap	169	367.44	-1.1	0.2	-19.4	540.18	-17.4	2.6
FTSE Japan Mid Cap	339	517.88	-1.0	0.8	-15.6	723.14	-13.5	2.6
FTSE Global wi JAPAN Small Cap	896	577.70	-0.6	1.3	-17.0	837.73	-14.7	2.8
FTSE Japan	508	151.29	-1.1	0.4	-18.7	249.05	-16.6	2.6
FTSE Asia Pacific Large Cap ex Japan	1081	673.63	-0.2	2.7	-19.2	1229.04	-16.8	3.2
FTSE Asia Pacific Mid Cap ex Japan	859	965.95	-0.4	3.5	-14.8	1699.09	-12.1	3.5
FTSE Asia Pacific Small Cap ex Japan	2053	539.13	-0.3	2.1	-25.9	920.78	-23.9	3.1
FTSE Asia Pacific Ex Japan	1940	536.95	-0.2	2.7	-18.8	1041.17	-16.3	3.2
FTSE Emerging All Cap	3626	703.26	0.0	1.9	-20.1	1228.41	-17.3	3.6
FTSE Emerging Large Cap	1065	648.71	0.0	1.9	-21.2	1139.83	-18.4	3.6
FTSE Emerging Mid Cap	916	1019.99	0.2	1.7	-11.3	1791.28	-8.1	3.8
FTSE Emerging Small Cap	1645	757.73	-0.2	1.9	-21.8	1265.32	-19.2	3.4
FTSE Emerging Europe	116	126.30	2.0	11.5	-69.5	264.86	-68.2	2.8
FTSE Latin America All Cap	261	676.35	1.1	-4.6	-4.6	1346.29	4.2	10.5
FTSE Middle East and Africa All Cap	331	720.60	0.5	-4.8	-9.5	1321.56	-6.7	3.3
FTSE Global wi UNITED KINGDOM All Cap In	289	312.94	0.2	1.1	-13.0	640.68	-9.9	3.7
FTSE Global wi USA All Cap	1807	920.54	-1.0	-3.9	-21.0	1334.77	-19.8	1.7
FTSE Europe All Cap	1466	425.86	-0.1	0.4	-20.5	810.58	-18.0	3.2
FTSE Eurozone All Cap	660	411.04	-0.2	-0.4	-20.7	776.36	-18.3	3.2
FTSE EDHEC-Risk Efficient All-World	4156	457.98	-0.6	-1.5	-16.1	722.33	-14.0	2.7
FTSE EDHEC-Risk Efficient Developed Europe	572	310.48	-0.1	0.3	-24.8	546.58	-22.6	3.3
Oil & Gas	130	395.32	0.3	-6.0	20.6	812.95	26.7	4.8
Oil & Gas Producers	86	392.80	0.6	-6.3	23.6	829.95	30.4	5.1

Dec 20 Sectors	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
Oil Equipment & Services	24	268.39	-0.9	-6.1	14.7	498.62	19.5	4.3
Basic Materials	392	594.18	-0.5	0.1	-11.7	1096.18	-7.7	4.5
Chemicals	195	780.85	-0.8	-2.5	-19.4	1383.84	-17.0	3.2
Forestry & Paper	20	252.18	-1.1	-1.4	-17.4	511.48	-14.3	4.1
Industrial Metals & Mining	99	487.83	-0.6	0.8	-11.8	935.83	-7.0	5.2
Mining	78	964.25	0.2	3.8	3.6	1882.80	10.1	6.0
Industrials	802	485.02	-0.7	-1.8	-19.3	774.73	-17.6	2.1
Construction & Materials	156	556.18	-0.6	-1.5	-24.7	936.93	-23.1	2.3
Aerospace & Defense	35	886.58	-0.4	1.5	10.4	1385.42	12.1	1.5
General Industrials	76	234.12	-0.3	-2.5	-15.6	414.30	-13.4	2.6
Electronic & Electrical Equipment	157	605.51	-0.8	-2.9	-24.7	870.76	-23.5	1.6
Industrial Engineering	158	981.11	-0.2	-0.4	-15.2	1561.40	-13.4	2.0
Industrial Transportation	131	906.15	-1.1	-0.7	-18.4	1477.71	-15.7	3.6
Support Services	89	499.52	-1.3	-4.4	-29.7	744.15	-28.7	1.6
Consumer Goods	566	542.20	-0.4	-0.7	-21.3	912.43	-19.7	2.5
Automobiles & Parts	132	465.65	-0.8	-7.2	-39.8	752.53	-38.9	2.2
Beverages	72	772.30	0.2	1.7	-4.2	1315.00	-2.1	2.2
Food Producers	134	717.77	-0.1	0.4	-8.6	1238.54	-6.5	2.5
Household Goods & Home Construction	64	534.84	-0.5	3.9	-18.3	902.21	-16.1	2.7
Leisure Goods	53	229.17	-0.9	-1.9	-28.0	324.32	-27.1	1.5
Personal Goods	97	900.98	-0.7	1.2	-21.9	1389.57	-20.5	1.9
Tobacco	14	1007.25	0.3	3.6	4.8	2852.03	9.7	6.1
Health Care	339	720.97	-0.5	0.9	-8.7	1150.25	-7.1	1.7
Health Care Equipment & Services	132	1354.58	-0.4	-0.1	-18.6	1662.93	-17.8	1.0
Pharmaceuticals & Biotechnology	207	492.32	-0.6	1.5	-0.9	844.70	1.4	2.2
Consumer Services	428	512.61	-1.1	-2.8	-27.2	732.47	-26.4	1.3
Food & Drug Retailers	69	316.51	0.0	-0.6	-8.1	503.76	-5.9	2.4
General Retailers	141	892.39	-1.1	-3.8	-30.2	1220.44	-29.6	1.0
Media	75	283.85	-1.9	-3.5	-39.5	408.11	-38.8	1.4
Travel & Leisure	143	442.05	-1.2	-0.5	-13.8	645.96	-12.8	1.2
Telecommunication	89	126.44	-0.4	-3.4	-14.7	298.68	-11.2	4.4
Fixed Line Telecommuniations	31	98.28	-1.3	-3.6	-12.8	267.22	-8.3	5.3
Mobile Telecommunications	58	149.86	0.2	-3.2	-15.7	304.63	-12.7	3.9
Utilities	199	318.28	-0.3	1.6	-7.3	745.82	-4.3	3.3
Electricity	141	360.51	-0.2	1.6	-6.5	831.71	-3.7	3.2
Gas Water & Multiutilities	58	313.53	-0.5	1.5	-9.1	760.93	-5.9	3.6
Financials	852	254.46	-0.3	-2.1	-15.2	489.82	-12.6	3.3
Banks	269	192.89	0.1	-2.9	-14.8	414.02	-11.4	4.3
Nonlife Insurance	72	357.36	-0.1	0.5	2.0	597.19	5.0	2.9
Life Insurance	52	220.82	-0.4	2.3	-8.6	426.24	-5.0	3.9
Financial Services	209	417.58	-0.6	-3.6	-16.3	634.76	-14.9	1.8
Technology	359	446.87	-1.4	-4.4	-34.1	583.65	-33.5	1.2
Software & Computer Services	184	674.50	-1.5	-2.3	-36.9	816.22	-36.6	0.7
Technology Hardware & Equipment	175	396.29	-1.3	-6.5	-30.8	557.22	-29.8	1.7
Alternative Energy	20	190.46	-0.6	1.3	-8.6	273.35	-8.2	0.4
Real Estate Investment & Services	142	253.28	-0.5	2.4	-23.0	493.82	-20.8	3.1
Real Estate Investment Trusts	108	433.56	-1.0	-2.1	-27.3	1016.79	-25.0	4.0
FTSE Global Large Cap	1898	605.20	-0.6	-2.1	-20.3	1000.68	-18.5	2.4

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	1288.5	1.00	Intertek Group PLC	3889	-48.00
Abrdn PLC	185.00	-1.60	Jd Sports Fashion PLC	113.25	-2.40
Admiral Group PLC	2057	18.00	Kingfisher PLC	227.30	0.10
Airtel Africa PLC	110.50	-2.50	Land Securities Group PLC	607.00	-8.60
Anglo American PLC	3124	11.00	Legal & General Group PLC	246.20	-0.90
Antofagasta PLC	1518.5	47.50	Lloyds Banking Group PLC	45.52	0.52
Ashtead Group PLC	4726	-29.00	London Stock Exchange Group PLC	7104	-30.00
Associated British Foods PLC	1543	-19.00	M&G PLC	182.30	-0.40
Astrazeneca PLC	11126	18.00	Melrose Industries PLC	127.95	-0.05
Auto Trader Group PLC	520.00	-1.80	Mondi PLC	1391	-18.50
Aveva Group PLC	3208	-1.00	National Grid PLC	994.00	-2.40
Aviva PLC	440.80	2.40	Natwest Group PLC	262.20	2.90
B&M European Value Retail S.A.	407.10	-2.20	Next PLC	5508	-22.00
Bae Systems PLC	851.20	7.40	Ocado Group PLC	621.60	-12.40
Barclays PLC	155.74	0.36	Pearson PLC	923.60	-0.60
Barratt Developments PLC	394.90	1.20	Pershing Square Holdings LTD	2850	10.00
Beazley PLC	658.00	9.00	Persimmon PLC	1196.5	-12.50
Berkeley Group Holdings (The) PLC	3740	2.00	Phoenix Group Holdings PLC	594.00	-4.40
BP PLC	467.45	0.85	Prudential PLC	1058	3.00
British American Tobacco PLC	3314.5	-17.50	Reckitt Benckiser Group PLC	5682	-66.00
British Land Company PLC	383.40	-5.10	Relx PLC	2284	-13.00
Bt Group PLC	112.00	-0.60	Rentokil Initial PLC	513.00	-1.80
Bunzl PLC	2820	-12.00	Rightmove PLC	515.00	-1.60
Burberry Group PLC	2002	-31.00	Rio Tinto PLC	5663	54.00
Centrica PLC	94.38	2.40	Rolls-Royce Holdings PLC	88.43	-0.41
Coca-Cola Hbc AG	1936	-25.00	Rs Group PLC	901.00	-13.00
Compass Group PLC	1901.5	-2.00	Sage Group PLC	749.60	-21.60
Convatec Group PLC	225.00	-1.60	Sainsbury (J) PLC	220.50	0.40
Crh PLC	3234	0.50	Schroders PLC	430.20	-9.00
Croda International PLC	6582	-64.00	Scottish Mortgage Investment Trust PLC	714.00	-14.80
Dcc PLC	4030	-15.00	Segro PLC	751.80	-13.00
Diageo PLC	3629.5	-6.50	Severn Trent PLC	2666	-19.00
Endeavour Mining PLC	1732	31.00	Shell PLC	2307.5	20.50
Entain PLC	1305.5	-4.00	Smith & Nephew PLC	1071	-7.50
Experian PLC	2802	-31.00	Smith (Ds) PLC	315.20	-2.10
F&C Investment Trust PLC	894.00	2.00	Smiths Group PLC	1583.5	2.50
Flutter Entertainment PLC	11430	-10.00	Smurfit Kappa Group PLC	3030	-38.00
Frasers Group PLC	721.50	-9.50	Spirax-Sarco Engineering PLC	10685	-50.00
Fresnillo PLC	866.20	2.00	Sse PLC	1702.5	13.50
Glaxosmithkline PLC	1427	6.20	St. James's Place PLC	1073	-18.50
Glencore PLC	548.00	11.20	Standard Chartered PLC	621.20	4.00
Haleon PLC	314.55	0.75	Taylor Wimpey PLC	99.62	-0.14
Halma PLC	2056	-6.00	Tesco PLC	224.40	0.70
Hargreaves Lansdown PLC	831.80	-19.00	Unilever PLC	4156.5	-17.00
Homeserve PLC	1195	-	Unite Group PLC	886.00	-12.00
HSBC Holdings PLC	502.80	7.05	United Utilities Group PLC	1010	-11.50
Imperial Brands PLC	2066	4.00	Vodafone Group PLC	83.80	-0.49
Informa PLC	603.20	-1.80	Weir Group PLC	1661	-15.00
Intercontinental Hotels Group PLC	4769	7.00	Whitbread PLC	2614	14.00
International Consolidated Airlines Group S.A.	127.84	-2.22	Wpp PLC	799.80	-0.20

UK STOCK MARKET TRADING DATA

	Dec 20	Dec 19	Dec 16	Dec 15	Dec 14	Yr Ago
Order Book Turnover (m)	1046.34	93.57	93.57	93.57	518.98	1865.51
Order Book Bargains	513710.00	851537.00	851537.00	851537.00	655002.00	547320.00
Order Book Shares Traded (m)	1183.00	2985.00	2985.00	2985.00	1133.00	1287.00
Total Equity Turnover (£m)	18656.69	19616.71	19616.71	19616.71	5856.96	11070.25
Total Mkt Bargains	675108.00	1051844.00	1051844.00	1051844.00	840215.00	722695.00
Total Shares Traded (m)	6690.00	8043.00	8043.00	8043.00	6207.00	5711.00

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

All data provided by Morningstar unless otherwise noted. All elements listed are indicative and believed accurate at the time of publication. No offer is made by Morningstar or the FT. The FT does not warrant nor guarantee that the information is reliable or complete. The FT does not accept responsibility and will not be liable for any loss arising from the reliance on or use of the listed information.
For all queries e-mail ft.reader.enquiries@morningstar.com

Data provided by Morningstar | www.morningstar.co.uk

POWERED BY MORNINGSTAR

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	
Hargreave Hale AIM VCT	Pre			**88.670L**	67.871	**33.420L**	30.450	**2.00000**	3.15000	Feb 10	**3.000**	4.900
Insig AI	Int	**0.954**	0.896	**2.598L**	0.844L	**2.660L**	0.007L	**0.00000**	0.00000	-	**0.000**	0.000
Sure Ventures	Int			**0.193L**	0.892	**3.080L**	1484.000	**0.00000**	0.00000	-	**0.000**	0.000
Thruvision Group	Int	**2.771**	1.962	**1.892L**	2.001L	**1.230L**	1.340L	**0.00000**	0.00000	-	**0.000**	0.000

UK RECENT EQUITY ISSUES

Issue date	Issue price(p)	Sector	Stock code	Stock	Close price(p)	+/-	High	Low	Mkt Cap (£m)
12/15	29.84	AIM	S247	Smarttech247 Group PLC	30.75	-0.06	31.46	30.39	3815.4
12/05	0.30		HELD	Hellenic Dynamics PLC	0.16	-0.01	0.32	0.13	2004.8
11/09	250.00		ITH	Ithaca Energy PLC	178.00	0.90	254.90	166.50	178918.9

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$)							
ANZ Bank	23.79	0.07	28.33	20.78	6.20	10.20	47625.14
BHP Group	45.26	-0.73	53.72	35.83	8.88	10.87	152720.67
CmwBkAu	105.33	-0.30	109.20	86.98	3.25	20.25	118539.89
CSL	285.92	-2.49	304.70	240.10	1.03	41.86	91900.91
NatAusBk	30.28	0.02	33.75	25.43	2.90	16.49	63620.61
Telstra	4.04	-0.01	4.20	3.62	2.42	33.60	31114.57
Wesfarmers	45.34	-1.61	60.34	40.03	3.84	23.83	34270.87
Westpac Bank	23.28	0.03	24.67	18.80	3.73	17.32	54328.08
Woolworths	34.15	-0.26	39.63	31.67	3.09	39.82	27690.31
Belgium (€)							
AnBshInBv	56.14	-0.08	58.72	45.56	0.91	29.23	103763.09
KBC Grp	58.14	0.74	81.70	45.53	5.67	9.87	25787.71
Brazil (R$)							
Ambev	14.58	-0.65	16.88	12.81	3.89	21.86	44269.29
Bradesco♦	13.11	0.46	17.72	12.03	6.37	6.02	12309.56
Cielo	5.04	0.31	6.22	2.01	2.91	16.93	2639.66
ItauHldFin♦	21.29	0.44	26.04	18.86	3.66	8.36	20350.06
Petrobras	25.96	0.41	42.08	23.61	18.61	3.67	37245.99
Vale	85.96	0.59	107.11	61.90	15.21	3.81	79192.12
Canada (C$)							
Bausch Hlth	9.22	-0.30	36.26	5.10	-	-2.86	2451.18
BCE	59.93	0.26	74.09	55.66	5.64	20.75	40151.88
BkMontrl	121.64	1.55	154.47	113.73	3.59	9.68	62596.3
BkNvaS	65.56	1.08	95.00	63.19	5.47	8.48	57382.76
Brookfield	58.88	11.29	63.88	41.28	1.09	19.91	69948.82
CanadPcR	101.93	0.31	111.43	86.12	0.72	25.25	69652.91
CanImp	55.17	0.82	83.75	54.12	10.51	3.95	36722.06
CanNatRs	72.90	0.31	88.18	48.42	2.65	11.68	59304.65
CanNatRy	162.79	-0.83	175.39	137.26	1.46	24.46	80689.16
Enbridge	52.33	0.57	59.69	46.88	6.16	18.88	77845.35
GtWesLif	30.48	0.25	41.50	27.99	6.12	8.86	20866.05
ImpOil	63.83	-0.16	79.83	41.04	1.56	18.99	27393.36
Manulife	23.93	0.02	28.09	20.81	4.72	7.00	33115.69
Nutrien	99.64	0.15	147.93	85.62	2.25	14.80	38098.5
RylBkC	127.90	1.14	149.60	116.75	3.36	11.75	130196.61
SHOP	49.33	0.86	185.00	33.00	-	1.77	36193.49
Suncor En	41.09	0.49	53.62	28.77	2.47	15.36	40736.73
ThmReut	152.68	0.08	159.82	119.23	1.29	10.88	53795.17
TntoDom	87.75	1.14	109.08	77.27	3.60	11.37	117438.52
TrnCan	54.18	-0.13	74.44	53.85	6.20	30.16	40515.93
China (HK$)							
AgricBkCh	2.60	0.02	3.15	2.22	8.14	3.43	10263.39
Bk China	2.75	-0.01	3.20	2.51	8.03	3.42	29532.04
BkofComm	4.34	0.02	5.74	3.84	8.00	3.60	19513.86
BOE Tech	0.64	-0.15	0.86	0.57	-	10.37	16.35
Ch Coms Cons	3.79	-0.02	5.17	3.09	5.33	3.16	2150.52
Ch Evrbrght	2.30	-0.02	3.11	2.04	10.33	3.13	3744.92
Ch Rail Cons	4.73	-0.03	5.95	3.75	5.50	2.53	1261.2
Ch Rail Gp	4.14	-0.04	5.88	3.48	4.93	3.35	2236.9
ChConstBk	4.61	-0.03	6.23	4.12	7.99	3.37	142331.86
China Vanke	16.02	-0.70	21.70	9.96	8.82	7.25	3922.27
ChinaCitic	3.39	-	4.08	2.92	8.21	3.16	6478.95
ChinaLife	12.00	-0.04	15.04	8.53	5.65	5.27	11467.22
ChinaMBank	41.25	-0.85	70.80	25.40	3.44	7.64	24319.66
ChinaMob	50.90	-0.30	58.65	46.20	6.28	7.89	133739.63
ChinaPcIns	17.10	-0.04	25.90	12.10	7.62	5.60	6094.56
ChMinsheng	2.64	-0.02	3.29	2.19	9.24	3.43	2820.83
ChMrchSecs	13.11	-0.10	17.77	12.06	3.38	11.55	13959.01
Chna Utd Coms	4.52	-0.04	5.25	3.30	2.51	22.39	20077.27
ChShenEgy	22.30	-0.15	27.65	17.94	9.12	6.79	9672.37
ChShpbldng	3.53	-0.01	4.31	3.36	-	-259.12	11183.46
ChStConEng	5.49	-0.04	6.40	4.67	3.96	4.20	32161.53
ChUncHK	4.50	0.01	4.89	3.27	3.47	9.96	17682.35
CNNC Intl	6.05	-0.01	8.92	5.78	2.09	15.61	16360.83
CSR	3.17	-	3.73	2.37	6.48	8.75	1779.42
Daqin	6.54	-0.05	7.25	5.95	7.44	9.78	13948.61
GuosenSec	8.82	-0.06	11.70	8.43	2.64	10.01	11169.04
HaitongSecs	4.75	-	7.34	3.77	6.01	5.18	2079.84
Hngzh HikVDT	33.45	-0.75	53.10	28.10	2.42	18.15	44031.57
Hunng Pwr	3.24	-0.08	5.74	2.62	6.05	-3.65	1955.74
IM Baotou Stl	1.93	-	3.14	1.75	-	32.45	8770.79
In&CmBkCh	3.79	-0.01	4.94	3.37	7.96	3.49	42243.53
IndstrlBk	16.98	-0.35	23.22	15.01	4.63	4.59	50605.02
Kweichow	1715	-58.00	2216.96	1359	1.14	38.14	309066.59
Midea	0.40	-0.01	0.60	0.32	-	-4.36	15.47
New Ch Life Ins	17.84	-0.02	24.70	12.04	8.52	3.40	2369.17
PetroChina	3.49	-0.02	4.49	3.01	6.79	7.07	9456.32
PingAnIns	49.10	-0.80	69.40	31.30	5.07	7.84	46960.4
PngAnBnk	12.76	-0.28	17.71	10.39	1.38	7.52	35522.82
Pwr Cons Corp	7.11	-0.03	9.81	6.65	1.27	14.59	11211.23
SaicMtr	14.72	-0.31	21.13	13.77	4.09	7.27	24672.32
ShenwanHong	0.10	0.00	0.18	0.05	-	2.91	110.90
ShgPdgBk	7.14	-0.10	8.80	6.64	6.53	4.51	30065.43
Sinopec Corp	3.67	-0.03	4.28	3.06	3.77	4.44	11998.84
Sinopec Oil	1.96	0.02	2.37	1.70	-	643.42	3815.44
Denmark (kr)							
DanskeBk	131.25	1.05	133.35	91.28	1.46	9.38	16184.58
MollerMrsk	14855	30.00	24070	13185	2.19	2.53	17788.58
NovoB	925.00	9.00	940.00	604.40	0.97	46.55	230532.5
Finland (€)							
Nokia	4.34	-0.03	5.71	4.12	-	15.61	26287.68
SampoA	48.88	0.14	49.73	35.85	3.35	10.86	27722.44
France (€)							
Airbus Grpe	111.08	0.14	120.36	86.52	-	21.25	93153.25
AirLiquide	133.60	0.50	153.40	114.48	1.97	25.73	74401.48
AXA	26.39	0.13	29.09	20.34	5.19	9.28	65997.49
BNP Parib	52.94	0.74	68.07	40.67	4.84	7.96	69524.64
ChristianDior	680.00	-8.00	734.50	513.00	0.99	25.91	130595.19
Cred Agr	9.53	0.09	14.27	8.09	8.04	5.44	30862.94
Danone	48.82	-0.75	58.24	46.48	3.81	17.33	35100.95
EDF	12.00	-	12.03	6.64	3.89	9.63	49621.73
Engie SA	13.49	-0.46	14.68	9.79	3.76	9.92	34963.39
EssilorLuxottica	170.45	-1.30	188.64	132.70	0.61	54.25	81140.61
Hermes Intl	1466	-12.50	1585.5	957.60	0.30	65.68	164662.63
LOreal	330.00	-5.05	424.25	300.45	1.16	41.96	187906.64
LVMH	682.90	-4.40	739.40	535.00	0.98	29.84	365653.89
Orange	9.14	-0.09	11.94	9.08	6.29	3164.66	25853.68
PernodRic	183.10	-0.05	213.00	166.60	1.63	28.85	50250.73
Renault	31.85	-1.07	38.07	20.47	-	-24.82	10021.12
Safran	116.90	0.32	119.28	87.85	0.35	1220.34	53139.05
Sanofi	88.81	0.05	106.08	76.45	3.45	18.74	119764.76
Sant Gbn	44.94	0.32	64.82	35.20	2.90	11.22	24660.5
Schneider	130.72	-1.24	173.78	110.02	1.91	24.07	79427.67
SocGen	22.90	0.51	37.68	18.34	2.32	4.04	20702.51
Total	57.30	0.65	60.44	42.30	4.52	11.49	159674.24
UnibailR	47.70	-2.38	73.09	39.68	-	-7.09	7042.14
Vinci	93.43	0.57	103.74	80.74	2.76	21.63	59443.08
Vivendi	8.72	-0.01	12.16	7.59	6.59	-16.26	10289.6
Germany (€)							
Allianz	200.00	0.68	232.50	156.22	4.60	13.19	85821.53
BASF	45.80	0.28	69.15	37.90	6.90	7.92	44756.65
Bayer	49.37	0.57	67.99	44.60	3.88	50.53	51604.2
BMW	83.35	-0.27	97.60	67.58	2.18	4.64	53385.29
Continental	55.34	-0.34	95.09	44.44	-	8.90	11776.2
Deut Bank	10.51	0.57	14.64	7.46	-	10.79	23106.59
Deut Tlkm	18.88	-0.06	19.86	14.47	3.04	22.66	100186.48
DeutsPost	34.60	-0.22	56.91	29.68	3.83	9.14	45613.27
E.ON	9.07	-0.02	12.54	7.28	4.96	5.26	25488.91
Fresenius Med	29.11	-0.41	63.66	26.19	4.41	9.18	9074.85
Fresenius SE	25.62	-0.17	38.11	19.76	3.37	8.45	15223.94
HenkelKgaA	61.05	-0.40	74.75	56.55	2.87	16.95	16874.89
Linde	307.75	-2.45	334.70	244.00	1.16	49.91	161280.11
Mercedes-Benz	62.00	-0.63	77.90	50.19	2.09	6.47	70572.01
MuenchRkv	301.80	2.40	310.20	205.15	3.11	15.05	44985.96
SAP	97.79	-1.10	125.26	81.35	1.81	22.89	127818.6
Siemens	127.78	-0.24	153.06	93.67	2.62	20.06	115559.27
Volkswgn	152.65	-3.65	268.20	152.15	3.01	5.39	47926.31
Hong Kong (HK$)							
AIA	84.65	1.10	92.50	57.25	1.41	21.70	128057.57
BOC Hold	26.50	0.30	32.75	23.55	4.20	13.63	35980.76
Ch OSLnd&Inv	20.25	-0.65	27.35	14.58	5.31	5.04	28462.39
ChngKng	47.15	0.80	57.00	42.90	3.36	10.81	21829.57
Citic Ltd	7.86	-0.03	9.26	7.01	6.13	3.64	29363.42
Citic Secs	15.36	-0.18	21.32	11.82	2.79	7.93	5168.21
CK Hutchison	45.80	0.55	60.45	38.80	4.45	5.81	22553.18
CNOOC	9.87	-0.08	12.54	7.75	4.10	8.63	56501.49
HangSeng	127.20	0.20	169.50	110.00	4.29	20.50	31230.2
HK Exc&Clr	325.00	-4.60	483.60	208.20	2.52	36.71	52915.41
MTR	40.10	-0.05	43.70	33.45	2.75	29.09	31938.57
SandsCh	25.20	0.30	27.20	12.50	-	-27.88	26191.18
SHK Props	103.70	-1.40	107.60	83.10	4.27	11.87	38590.43
Tencent	309.40	-11.00	488.00	198.60	0.46	12.20	381085.34
India (Rs)							
Bhartiartl	828.95	-11.45	860.55	628.75	-	177.61	59655.07
HDFC Bk	1633.4	-11.35	1722.1	1271.6	-	27.79	110054.64
Hind Unilevr	2674.55	-43.55	2741.6	1927	1.19	71.90	75935.03
HsngDevFin	2700.3	-10.25	2933.8	2026	0.85	23.07	59525.35
ICICI Bk	909.70	3.25	958.20	642.15	0.22	28.96	76676.95
Infosys	1507.3	-0.05	1923.3	1360	2.01	29.89	76644.85
ITC	340.15	-0.35	361.45	207.00	3.15	28.36	51009.64
L&T	2163.25	-20.75	2211.6	1456.35	0.83	36.01	36733.66
OilNatGas	145.85	0.05	189.80	119.85	6.23	4.14	22171.48
RelianceIn	2621.8	22.50	2856.15	2222	0.27	30.11	214353.39
SBI NewA	604.45	-	629.55	430.70	0.66	16.92	65185.19
SunPhrmInds	988.35	0.40	1070.95	764.05	0.76	36.96	28655.02
Tata Cons	3243.95	41.90	3920	2950.1	1.12	31.09	143430.61
Israel (ILS)							
TevaPha	30.15	-0.39	37.23	23.83	-	25.62	9684.49
Italy (€)							
Enel	5.05	0.00	7.07	3.96	6.96	24.51	54592.83
ENI	13.00	0.01	14.85	10.43	4.97	5.71	49870.46
Generali	16.73	0.05	21.55	13.67	8.42	9.81	28142.97
IntSPaolo	2.08	0.04	2.92	1.58	1.69	67.15	42907.13
Unicred	13.20	0.51	15.93	7.75	0.87	20.45	31411.02
Japan (¥)							
AstellasPh	2071.5	-34.50	2205	1782	2.27	31.23	28938.6
Bridgestne	4839	-56.00	5509	4042	3.51	11.02	26280
Canon	2989	-56.00	3516	2538.5	3.34	14.48	30336.1
CntJpRwy	16010	-435.00	17920	14660	0.83	-30.06	25096.53
Denso	6905	-101.00	9575	6549	2.07	18.95	41401.36
EastJpRwy	7537	-102.00	8280	6373	1.36	-7.57	21675.43
Fanuc	20090	-510.00	24930	18740	2.30	23.93	30866.79
FastRetail	79200	-1500.00	88230	54310	0.68	37.23	63927.51
Fuji Hvy Ind	2127	-110.00	2684	1664.5	2.69	24.47	12449.4
Hitachi	6890	-129.00	7463	4750	1.71	10.11	49183.07
HondaMtr	3120	-98.00	3755	3043	4.23	6.61	43006.17
JapanTob	2832.5	7.50	2858.5	2000	4.93	14.44	43107.72
KDDI	3989	-37.00	4636	3321	3.08	13.39	69897.04
Keyence	53370	-1960.00	74710	44880	0.38	44.67	98771.02
MitsbCp	4330	-44.00	4845	3596	3.26	9.67	48571.69
MitsubEst	966.41	-12.36	1013.24	876.51	-	-	-
MitsubishiEle	1331	-14.00	1518	1225.5	3.07	11.91	21747.33
MitsuiFud	872.46	-45.90	1007.12	684.38	-	-	-
MitUFJFin	818.40	46.20	846.50	620.20	3.25	8.31	80106.05
Mizuho Fin	1767	68.50	1816.5	1436.5	4.52	8.46	34142.63
Murata Mfg	6946	-148.00	9410	6604	1.77	13.96	35719.23
Nippon TT	3727	-29.00	4128	3071	2.88	11.75	102722.23
Nissan Mt	428.00	-22.70	643.00	424.30	-	13.61	13746.28
Nomura	476.20	-1.10	562.20	460.30	4.94	-32.07	11717.27
Nppn Stl	2198	-47.00	2318.5	1787	3.72	3.40	15894.73
Panasonic	1189.5	-20.50	1325	1006.5	2.15	11.77	22212.84
Seven & I	5585	-84.00	6083	4870	1.88	20.81	37672.85
ShnEtsuCh	16920	-315.00	20200	14185	1.75	15.87	52910.24
Softbank	5726	-292.00	7180	4210	0.79	4.82	75072.35
Sony	10350	-395.00	14745	9213	0.59	12.94	99320.44
SumitomoF	4974	253.00	5141	3672	4.11	9.48	52031.46
Takeda Ph	4072	-40.00	4203	3122	4.52	14.31	49028.56
TokioMarine	2891.5	77.50	2970.5	2037	7.78	4.60	44885.75
Toyota	1845	-65.00	2375.5	1805	2.83	8.15	229054.1
Mexico (Mex$)							
AmerMvl	18.09	0.07	21.45	15.67	1.87	14.12	38776.35
FEMSA UBD	152.35	2.07	169.96	120.63	1.38	120.18	16663.57
WalMrtMex	71.79	0.70	82.93	64.81	0.73	34.52	63442.16
Netherlands (€)							
ASML Hld	530.00	-7.30	724.50	376.10	0.61	42.71	227327.06
Heineken	88.28	-	100.95	77.50	1.06	15.97	54101.55
ING	11.46	0.20	14.00	7.90	5.02	9.73	45437.36
Unilever	47.50	-0.32	49.09	39.36	3.02	24.39	146011.96
Norway (Kr)							
DNB	186.85	-0.05	220.50	168.05	9.36	11.88	29463.22
Equinor	362.85	1.20	410.95	231.10	1.37	15.57	116514.07
Telenor	87.68	-2.02	148.80	87.60	10.32	14.74	12408.06
Qatar (QR)							
QatarNtBk	18.00	-0.01	27.00	17.50	2.82	14.46	45652.71
Saudi Arabia (SR)							
AlRajhiBnk	75.70	2.70	117.40	71.80	2.85	14.29	80510.52
Natnlcombnk	47.85	-0.15	82.00	45.75	2.72	17.88	56972.16
SaudiBasic	86.00	2.40	141.40	79.20	3.39	12.46	68598.78
SaudiTelec	35.75	-	48.88	35.05	10.05	7.04	47527.25
Singapore (S$)							
DBS	34.21	0.10	37.49	29.45	3.23	14.75	65200.06
JardnMt US$	51.14	0.74	62.10	42.60	3.01	9.49	14821.61
OCBC	12.29	0.08	13.54	11.20	3.06	12.89	40899.15
SingTel	2.56	-0.04	2.88	2.31	2.62	45.45	31294.36
UOB	31.04	0.08	33.33	25.91	2.86	14.53	38493.62
South Africa (R)							
Firstrand	62.50	-0.14	79.34	58.21	4.09	11.47	20249.41
MTN Grp	125.62	-0.20	211.49	115.46	-	17.37	13671.34
Naspers N	2769	-61.00	2941.17	1392.5	0.21	15.10	69651.58
South Korea (KRW)							
HyundMobis	202000	-1000.00	265500	189500	1.93	8.10	14768.03
KoreaElePwr	21400	100.00	25100	16500	5.57	-12.85	10652.53
SK Hynix	78300	-700.00	134000	77500	1.91	5.76	44200.04
SmsungEl	58600	-900.00	80800	51800	2.40	10.43	271259.04
Spain (€)							
BBVA	5.56	0.15	6.12	3.97	6.40	7.90	35652.4
BcoSantdr	2.81	0.10	3.48	2.32	2.61	5.88	50255.06
CaixaBnk	3.62	0.08	3.64	2.22	0.71	24.81	31002.78
Iberdrola	10.81	0.03	11.49	8.47	3.74	19.36	73172.67
Inditex	24.54	0.03	28.58	18.55	0.86	27.02	81374.04
Repsol	14.43	0.21	16.23	9.63	3.98	9.19	21146.97
Telefonica	3.29	-0.01	5.06	3.22	10.09	2.50	20184.98
Sweden (SKr)							
AtlasCpcoB	113.46	-1.20	133.60	22.08	6.63	7.41	17010.24
Ericsson	60.66	-0.60	117.32	58.81	3.82	8.75	17901.07
H & M	109.28	-2.68	191.86	98.25	5.94	14.74	15331.78
Investor	187.92	-1.00	228.75	158.22	1.92	7.91	32885.58
Nordea Bk	109.56	1.98	113.78	85.25	13.74	12.51	38814.74
SEB	118.20	0.25	126.35	91.64	8.80	9.67	24461.17
SvnskaHn	103.65	0.30	107.45	80.88	4.97	9.95	19361.46
Swedbank	173.80	0.80	185.70	124.50	8.63	9.09	18897.21
Telia Co	26.22	-0.11	41.70	26.04	7.86	9.05	10299.49
Volvo	188.72	-1.28	218.65	148.24	3.55	12.03	28793.5
Switzerland (SFr)							
ABB	27.90	-0.28	33.86	23.84	2.72	13.97	59200.17
CredSuisse	2.73	-0.05	8.77	2.65	3.34	-4.47	7815.25
Nestle	106.94	-0.98	128.90	103.42	2.34	19.38	317603.55
Novartis	83.58	-0.56	88.42	73.32	3.29	9.47	216969.62
Richemont	116.45	-1.65	139.80	90.28	1.53	28.97	65648.15
Roche	296.15	-4.15	404.20	296.15	2.70	20.70	224703.21
Swiss Re	84.54	0.02	102.20	68.18	6.37	21.31	28987.77
Swisscom	501.20	2.90	587.40	443.40	4.00	15.56	28039.46
UBS	16.65	-0.11	19.90	13.10	1.90	8.95	63378.34
Zurich Fin	435.30	-3.20	461.70	376.20	4.19	15.13	70733.1
Taiwan (NT$)							
Chunghwa Telecom	111.50	-	132.50	105.50	3.82	24.38	28120.44
Formosa PetChem	79.70	-0.60	103.50	75.20	0.74	15.42	24682.81
HonHaiPrc	100.00	-1.50	116.00	99.50	3.99	10.13	45069.69
MediaTek	646.00	-10.00	1200	533.00	5.71	9.23	33591.3
TaiwanSem	457.50	-9.00	650.00	370.00	2.33	18.29	385680.69
Thailand (THB)							
PTT Explor	31.25	-	41.25	30.75	6.03	8.84	25674.99
United Arab Emirates (Dhs)							
Emirtestele	24.30	0.70	38.98	11.60	2.75	27.17	57535.64
United Kingdom (p)							
Anglo American	3124	11.00	4292.5	2487.5	5.71	6.19	50724.02
AscBrFd	1543	-19.00	2063	1223	0.40	25.50	14769.19
AstraZen	11126	18.00	11540	8214	1.86	1883.85	209277.25
Aviva	440.80	2.40	606.58	341.92	4.84	58.00	14999.67
Barclays	155.74	0.36	209.45	132.06	1.93	3.78	29998.54
BP	467.45	0.85	503.30	319.95	3.37	16.96	102411.78
BrAmTob	3314.5	-17.50	3645	2717.5	6.50	11.21	89959.54
BT	112.00	-0.60	201.40	110.55	-	10.87	13501.23
Compass	1901.5	-2.00	1970.5	1479.5	0.74	46.27	40497.19
Diageo	3629.5	-6.50	4097	3282.5	2.00	27.92	100078.51
GlaxoSmh	1427	6.20	2753.96	1280.92	5.61	16.48	70921.27
Glencore	548.00	11.20	571.80	354.10	1.62	20.06	85412.95
HSBC	502.80	7.05	567.20	434.00	3.21	10.98	121876.71
Imperial Brands	2066	4.00	2185	1434.23	6.69	6.91	23541.21
Jardine Mathes.	62.50	-	60.50	46.89	2.46	11.60	18114.01
LlydsBkg	45.52	0.52	56.00	38.10	5.65	6.32	37176.03
LSE Group	7104	-30.00	8612	6230	1.08	72.64	43845.69
Natl Grid	994.00	-2.40	1271.45	844.29	4.95	23.17	44165.85
Natwest Group	262.20	2.90	284.42	196.92	4.00	10.32	30758.89
Prudential	1058	3.00	1311	782.40	1.11	17.18	35309.67
ReckittB	5682	-66.00	6824	5400	3.07	-24.59	49366.54
RELX	2284	-13.00	2474	2056	2.09	30.13	53094.28
RioTinto	5663	54.00	6343	4436.95	8.87	5.92	85905.26
RollsRoyce	88.43	-0.41	125.86	64.44	-	60.16	8982.2
Shell PLC	2307.5	20.50	2527	1535.56	2.62	12.16	196540.98
StandCh	621.20	4.00	641.00	421.20	1.43	13.93	21828.61
Tesco	224.40	0.70	304.10	194.35	4.08	11.43	20071.08
Unilever	4156.5	-17.00	4229.5	3267.5	3.48	21.34	127768.14
Vodafone	83.80	-0.49	141.60	83.24	9.23	-187.47	27827.39
WPP	799.80	-0.20	1231.5	713.00	3.31	15.23	10397.5
United States of America ($)							
21stC Fox A	29.60	0.11	44.95	28.02	1.42	13.37	8953.25
3M	121.53	-0.60	179.18	107.07	4.37	13.40	67174.85
AbbottLb	106.59	-0.01	142.60	93.25	1.51	30.18	185838.81
Abbvie	160.96	-0.54	175.91	128.23	2.90	27.84	284645.78
Accenture	259.42	4.02	417.37	242.95	1.28	29.39	170799.15
Activision Bli.	76.02	0.03	82.00	60.67	0.55	24.66	59495.18
Adobe	339.15	10.39	582.88	274.73	-	37.23	157670.84
Advanced Micro	65.34	0.75	156.73	54.57	-	28.37	105355.06
AEP	93.60	-0.40	105.60	80.30	2.87	21.06	48097.64
Aflac	70.24	1.32	72.70	52.07	1.68	12.26	43674.43
AirProd	312.71	-1.01	328.56	216.24	1.72	36.65	69379.71
Allstate	134.20	3.21	144.46	111.46	2.16	8.82	35591.12
Alphabet	88.42	-0.02	151.55	83.34	-	0.88	528132.66
Altria	46.19	-0.19	57.05	40.35	6.83	38.46	82780.45
Amazon	85.32	0.40	172.94	84.33	-	1.47	870405.13
AmerAir	12.44	-0.04	21.42	11.65	-	-3.71	8084.77
AmerExpr	145.60	0.59	199.55	130.65	1.15	15.78	108794.09
AmerIntGrp	62.80	1.33	65.73	47.05	1.83	6.48	46659.14
AmerTower	209.52	-0.10	291.99	178.17	2.23	41.30	97553.22
Amgen	264.20	-1.50	296.67	214.39	2.39	28.68	140971.63
Amphenol Corp	76.19	0.24	88.45	61.67	0.92	33.87	45340.25
Analog Devices	165.19	0.05	180.01	133.48	1.51	61.89	84130.6
Anthem	482.58	12.71	-	-	-	-	-
Aon Cp	299.26	2.20	341.98	246.21	0.60	60.16	61902.81
Apple	132.10	-0.27	182.94	129.04	0.59	24.44	2101462.39
Applied Materi.	104.12	0.13	167.06	71.12	0.82	16.03	87891.83
Aptiv	93.63	0.52	166.02	77.96	-	53.85	25369.01
ArcherDan	93.07	0.42	98.88	63.04	1.43	21.65	51123.79
AT&T	17.99	0.13	21.53	14.46	10.36	7.27	128214.73
Autodesk	188.17	-0.37	285.38	163.20	-	92.85	40600.97
AutomData	243.07	-1.99	274.92	192.26	1.41	41.98	100832.19
AutoZone	2377.03	-2.14	2610.05	1703.32	-	23.97	45119.42
Avago Tech	545.87	-3.76	677.76	415.07	2.47	34.40	228111.51
BakerHu	28.81	0.55	39.78	20.42	2.30	74.40	28852.28
Bank of NY	44.43	0.26	64.63	36.22	2.62	11.97	35911.88
BankAm	32.49	0.43	50.11	29.31	2.15	10.15	260648.82
Baxter	50.07	0.12	89.70	49.00	1.94	22.08	25241.33
BectonDick	250.49	2.03	277.29	215.90	1.20	48.35	71206.28
BerkshHat	457489.99	2209.99	544389.26	393012.25	-	8.58	273041.92
Biogen	288.10	3.72	311.88	187.16	-	30.91	41486.8
BlackRock	693.49	1.02	929.06	503.12	2.13	20.25	104159.13
Boeing	188.76	3.08	223.23	113.02	-	-29.46	112087.8
Booking Holdings	1930.74	-0.70	2715.66	1616.85	-	76.47	74892.22
Bristol-Myers	72.75	-0.42	81.44	60.88	2.48	26.02	154667.53
Broadcom	545.87	-3.76	677.76	415.07	2.47	34.40	228111.51
Cadence Design	161.72	0.77	194.97	132.32	-	72.18	44362.38
CapOne	88.34	0.47	160.54	86.98	2.03	3.66	33719.25
CardinalHlth	79.88	0.54	81.57	48.41	2.20	46.18	20939.27
Carnival	8.08	-0.02	23.86	6.11	-	-1.07	8985.11
Caterpillar	234.79	2.50	239.85	160.60	1.63	22.14	122186.91
Centene Corp	81.31	-0.12	98.53	73.20	-	39.79	46039.74
CharlesSch	80.11	1.85	96.24	59.35	0.81	31.58	145458.32
Charter Comms	306.34	0.18	669.87	297.66	-	13.97	47688.65
Chevron Corp	172.19	2.31	189.68	110.73	2.76	23.60	332945.49
Chipotle Mexic.	1421.86	6.88	1776.67	1196.28	-	69.28	39415.4
Chubb	214.56	2.60	222.00	173.78	1.33	12.42	89053.19
Cigna	331.09	0.31	340.11	213.03	1.08	23.48	101225.6
Cintas Corp	443.42	-0.10	470.23	343.86	0.73	43.37	45026.72
Cisco	47.31	-0.09	64.29	38.61	2.83	18.74	194389.42
Citigroup	44.12	0.19	69.11	40.01	4.14	4.85	85453.95
CME Grp	170.00	-0.68	256.94	166.58	1.90	26.02	61153.25
Coca-Cola	62.98	0.14	67.20	54.02	2.39	31.23	272357.85
Cognizant	55.35	0.37	93.47	51.33	1.55	15.25	28445.55
ColgtPlm	77.43	-0.55	85.18	67.84	2.07	33.88	64670.64
Comcast	34.31	0.33	51.20	28.39	2.61	12.59	147999.17
ConocPhil	112.82	2.38	138.49	66.06	1.55	20.74	140581.74
Constellation	229.34	-0.96	261.53	207.59	1.20	-1152.19	36974.42
Corning	31.76	0.01	43.47	28.98	2.71	27.68	26858.74
Corteva	58.97	0.67	68.43	43.74	0.81	27.75	42133.59
Corteva	58.97	0.67	68.43	43.74	0.81	27.75	42133.59
Costco	458.91	0.28	612.27	406.51	0.62	40.87	203693.79
CrownCstl	133.69	0.48	208.69	121.71	3.66	55.87	57892.8
CSX	30.76	-0.42	38.63	25.80	1.14	18.96	64670.09
CVS	94.50	-0.55	111.25	86.28	1.90	17.72	124169.74
Danaher	256.44	-2.28	330.46	233.71	0.32	32.65	186678.76
Deere	435.60	2.93	448.40	283.81	0.81	26.69	129912.15
Delta	33.00	0.08	46.27	27.20	-	44.18	21156.01
Devon Energy	59.18	-0.08	79.40	35.55	2.98	15.76	38685.97
Digital Realty	100.02	0.63	176.53	85.76	4.16	18.79	28757.98
DiscFinServ	95.68	0.51	129.12	87.64	1.76	5.99	26142.24
Disney	86.41	0.63	157.50	85.41	-	56.06	157576.58
Dollar General	240.96	-1.48	262.21	183.25	0.63	26.19	53872.58
DominRes	59.14	-0.11	88.78	57.18	3.82	20.69	49279.9
DukeEner	99.67	-0.56	116.33	83.76	3.51	22.56	76752.16
DuPont	68.17	0.61	84.08	49.52	1.58	23.55	33866.1
Eaton	155.08	0.58	172.52	122.50	1.76	32.40	61673.33
eBay	40.88	-0.46	67.65	35.92	1.58	120.03	22183.9
Ecolab	141.14	-0.07	236.89	131.04	1.24	40.28	40200.63
Edwards Lifesc.	74.15	0.72	131.73	67.13	-	34.76	45840.92
Eli Lilly	360.03	2.25	375.25	231.87	0.85	65.64	342092.55
Emerson	95.38	0.80	100.00	72.41	1.91	23.24	56404.78
EOG Res	127.02	1.49	150.88	80.67	1.14	17.74	74610.21
Equinix	657.94	-0.25	847.10	494.89	1.56	132.75	60884.08
EquityResTP	58.96	-0.69	94.32	58.63	3.66	19.20	22282.1
Exelon	41.88	0.11	50.71	29.10	3.27	26.85	41612.95
ExxonMb	106.86	1.69	114.66	57.96	2.93	22.12	440063.13
Fedex	166.24	-2.54	260.21	141.92	1.55	9.98	43258.94
Fidelity NIS	67.57	0.22	122.06	56.53	2.07	112.52	40091.68
Fiserv	99.55	0.88	110.94	87.03	-	55.81	63213.87
FordMtr	11.44	-0.26	25.87	10.61	0.78	2.87	45164.16
Franklin	25.95	0.17	34.29	20.24	3.90	7.66	12963.55
GenDyn	248.09	3.79	256.86	197.03	1.69	23.97	68112.85
GenElectric	80.18	2.12	101.91	59.93	0.36	-27.53	87610.13
GenMills	83.30	-3.83	88.34	61.67	2.22	24.55	49438.55
GenMotors	35.14	-0.28	67.21	30.33	-	5.85	49923.29
GileadSci	84.15	-2.27	89.74	57.17	3.02	19.05	105544.62
GoldmSchs	345.26	0.65	391.33	277.84	1.69	6.48	116916.98
Halliburton	36.90	0.84	43.99	21.07	0.64	23.13	33502.39
HCA Hold	240.68	2.01	279.02	164.47	0.71	12.69	68044.26
Hew-Pack	26.56	-	41.47	24.08	2.83	5.35	26085.79
Hilton Worldwi.	128.82	-1.08	167.99	108.41	-	98.45	34840.69
HiltonWwde	128.82	-1.08	167.99	108.41	-	98.45	34840.69
HomeDep	314.77	-2.56	413.44	264.51	1.90	22.40	322238.37
Honywell	211.37	1.96	220.96	166.63	1.60	29.82	142108.75
HumanaInc	504.00	-0.84	571.30	363.73	0.50	24.81	63806.56
IBM	140.19	1.32	153.21	115.55	4.19	30.02	126749.47
IDEXX Laborato.	403.66	1.49	664.70	317.06	-	52.37	33429.89
IllinoisTool	218.24	0.95	248.11	173.52	1.94	28.61	67038.82
Illumina	192.57	0.98	389.89	173.45	-	42.63	30290.47
Intcntl Exch♦	100.82	0.54	138.46	88.60	1.17	15.67	56311.11
Intel	26.61	-0.19	53.13	24.59	4.68	6.11	109798.84
Intuit	388.25	4.73	658.84	339.36	0.59	54.25	109069.18
John&John	175.87	0.39	186.69	155.72	2.14	25.13	459809.23
JohnsonCn	63.59	0.13	81.69	45.52	1.62	32.40	43667.5
JPMrgnCh	131.41	1.35	160.24	101.28	2.59	9.55	385437.79
Kimb-Clark	134.39	-1.27	144.53	108.74	3.14	28.14	45355.56
KinderM	17.56	0.05	20.20	15.01	5.67	42.33	39470.58
KLA Corp	386.63	2.97	442.44	250.20	0.90	22.20	54792.56
Kraft Heinz	39.64	-0.47	44.87	32.73	3.62	53.94	48556.23
Kroger	44.38	-0.03	62.78	41.82	1.59	22.60	31764.6
LasVegasSd	46.49	0.13	49.73	28.88	-	-34.35	35526.09
LibertyGbl	18.44	0.03	29.08	15.22	-	0.88	3169.88
Lilly (E)	360.03	2.25	375.25	231.87	0.85	65.64	342092.55
Linde	328.02	0.97	347.60	262.47	1.16	50.00	161569.77
Lockheed	489.39	7.60	498.95	333.42	2.03	23.45	128256.38
Lowes	200.66	-2.51	259.25	170.12	1.35	18.42	124549.78
Lyondell	81.05	0.75	117.22	71.46	4.91	5.39	26391.86
Marathon Ptl	113.04	1.97	127.62	59.96	1.84	62.44	52975.64
Marsh&M	165.88	2.15	183.14	142.80	1.45	28.47	82278.06
MasterCard	341.92	0.66	399.92	276.87	0.59	43.55	326123.67
McDonald's	265.86	0.03	281.67	217.68	1.77	29.55	194722.22
McKesson	378.49	2.95	401.78	229.04	0.42	47.83	53667.41
Medtronic	76.86	0.42	114.31	75.77	2.91	23.40	102242.42
Merck	110.08	0.64	112.17	72.88	2.15	25.27	279102.47
Meta	-	-	-	-	-	-	-
Metlife	71.95	0.79	77.36	57.41	2.37	10.98	56448.49
Microsoft	241.22	0.77	344.30	213.43	0.85	28.66	1798657.53
Mnstr Bvrg	100.83	0.41	104.65	71.78	-	43.78	52607.41
MondelezInt	65.86	0.16	69.47	54.72	1.81	24.17	89939.63
Monsanto	10.11	-0.46	11.13	9.56	-	51.71	252.75
MorganStly	85.92	0.37	109.73	72.05	2.19	11.94	145205.75
Netflix	287.21	-1.09	620.61	162.71	-	28.51	127814.34
NextEraE	83.53	0.01	92.91	67.22	1.74	122.43	165987.78
Nike	102.24	-0.81	171.19	82.22	1.03	29.82	129195.85
NorfolkS	244.42	-2.58	296.87	203.65	1.53	22.52	56586.7
Northrop	536.09	3.57	556.27	364.62	1.03	13.74	82510
NXP	160.18	-0.09	234.42	132.08	1.26	26.32	41508.22
Occid Pet	62.63	0.22	77.13	26.05	0.06	33.92	56925.29
Oracle	80.99	0.49	96.42	60.78	1.43	34.17	218369.53
Pepsico	181.57	0.23	186.84	153.37	2.10	36.90	250150.66
Perrigo	31.16	0.04	43.90	30.78	2.76	-35.47	4194.7
Pfizer	51.17	-0.19	61.71	41.45	2.73	14.53	287233.3
Phillips66	102.17	1.56	113.53	68.57	3.18	38.38	48288.83
PhilMorris	100.75	0.14	112.48	82.85	4.36	19.28	156182.88
PNCFin	152.58	2.42	214.50	143.52	2.82	13.41	61538.42
PPG Inds	123.97	-1.66	172.78	107.06	1.72	30.35	29136.35
ProctGmbl	150.32	-0.08	165.35	122.18	2.13	28.50	358588.28
Prudntl	98.07	0.95	124.22	85.46	4.20	5.61	36480.18
PublStor	285.42	0.99	421.76	270.73	2.51	32.27	50130.71
Qualcomm	112.34	-0.27	192.10	101.93	2.15	14.36	125933.14
Raytheon	98.45	0.91	106.02	79.69	1.83	42.58	144727.48
Regen Pharm	731.32	10.22	779.00	538.01	-	11.34	78311.98
S&P Global	333.31	-2.35	481.44	279.32	0.83	29.73	108592.4
Salesforce	129.55	0.54	260.78	126.89	-	96.75	129550
Schlmbrg	51.42	1.59	56.04	27.65	0.87	43.46	72913.24
Sempra Energy	156.13	-1.16	176.47	124.44	2.53	43.44	49075.3
Shrwin-Will	236.98	-1.13	354.15	195.24	0.83	37.88	61411.81
SimonProp	115.45	-0.17	161.87	86.02	5.55	18.83	37746.32
SouthCpr	60.27	0.75	79.32	42.42	4.76	15.32	46594.64
Starbucks	97.80	-0.50	117.34	68.39	1.69	29.49	112254.84
StateSt	78.07	0.51	103.76	58.62	2.50	12.12	28647.02
Stryker	238.74	-0.29	279.28	188.84	0.97	51.13	90346.36
Sychrony Fin	32.54	0.16	47.11	27.22	2.49	4.78	14660.62
T-MobileUS	140.96	-0.66	154.38	101.51	-	65.26	175375.97
Target	143.21	-1.45	254.87	137.16	2.00	11.23	65911.91
TE Connect	115.16	-0.38	164.12	104.76	1.54	17.46	36532.27
Tesla Mtrs	141.95	-7.93	384.29	141.51	-	32.32	448227.17
TexasInstr	167.17	-0.44	193.28	144.46	2.26	22.58	151718.76
TheTrvelers	185.67	2.16	191.16	149.65	1.75	12.77	43511.3
ThrmoFshr	528.55	-1.62	668.94	475.77	0.18	30.31	207294.96
TJX Cos	77.92	-0.17	81.17	53.69	1.21	31.90	90036.88
Truist Financial Corp	41.48	0.36	66.10	40.01	4.02	10.35	55034.27
Twitter	53.70	0.35	60.16	31.30	-	-224.30	41093.72
UnionPac	204.77	-1.62	278.94	183.70	2.03	21.11	125892.76
UPS	174.72	-3.71	233.72	154.87	2.09	13.28	127514.31
USBancorp	42.09	0.14	60.50	38.39	3.75	9.21	62538.31
UtdHlthcre	521.43	-2.17	558.10	445.74	0.96	32.18	487197.64
ValeroEngy	121.41	1.70	146.81	65.13	2.89	59.68	46807.88
Verizon	36.90	-0.14	55.51	34.55	6.16	7.74	154952.26
VertexPharm	292.45	0.86	324.75	213.25	-	36.22	75069.42
VF Cp	25.34	-0.71	73.66	25.15	6.97	9.27	9846.26
Visa Inc	204.70	-0.12	235.85	174.60	0.58	37.81	333215.4
Walgreen	39.66	0.34	53.46	30.39	4.33	6.41	34200.18
WalMartSto♦	144.11	1.31	160.77	117.27	1.38	32.71	388635.86
Walt Disney	86.41	0.63	157.50	85.41	-	56.06	157576.58
Waste Manage.	157.70	0.11	175.98	138.58	1.31	41.02	64732.24
WellsFargo	41.36	-0.46	60.30	36.54	1.67	9.33	157614.48
Williams Cos	32.15	0.08	37.97	24.86	4.57	28.93	39169.63
Workday	171.98	1.94	280.91	128.72	-	1584.03	34739.96
Yum!Brnds	127.96	-0.42	139.85	103.97	1.40	27.40	36044.78
Zoetis	142.53	-0.67	249.27	124.15	0.63	37.24	66426.91
Zoom	68.95	-0.14	205.22	67.92	-	16.93	17304.74
Venezuela (VEF)							
Bco de Vnzla	2.10	-0.20	2.30	0.32	150.92	-	479.27
Bco Provncl	4.20	-0.05	4.39	1.70	-	0.00	98.56

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 %
Cielo	4.99	4.73	0.26	5.50	0.55	12.4	-1.38
CaixaBnk	3.62	3.53	0.08	2.35	0.31	9.4	6.42
MitUFJFin	818.40	772.20	46.20	5.98	62.90	8.3	14.40
Boeing	188.76	185.68	3.08	1.66	12.26	6.9	6.29
SumitomoF	4974.00	4721.00	253.00	5.36	319.00	6.9	8.01
BOC Hold	26.50	26.20	0.30	1.15	1.35	5.4	10.42
Avago Tech	545.87	549.63	-3.76	-0.68	27.37	5.3	5.32
Broadcom	545.87	549.63	-3.76	-0.68	27.37	5.3	5.32
Halliburton	36.90	36.06	0.84	2.32	1.85	5.3	-4.77
Deut Bank	10.45	9.94	0.51	5.13	0.48	4.8	4.44
Mizuho Fin	1767.00	1698.50	68.50	4.03	81.00	4.8	8.26
JardnMt US$	51.14	50.40	0.74	1.47	2.32	4.8	10.55
Workday	171.98	170.04	1.94	1.14	7.26	4.4	9.52
Bradesco	13.10	12.65	0.45	3.56	0.53	4.2	-1.13
NovoB	925.00	916.00	9.00	0.98	36.10	4.1	13.92
ItauHldFin	21.53	20.85	0.68	3.26	0.81	3.9	-5.61
Midea	0.40	0.41	-0.01	-2.44	0.02	3.9	8.11
Adobe	339.15	328.76	10.39	3.16	12.47	3.8	-0.60
MTR	40.10	40.15	-0.05	-0.12	1.45	3.8	6.81
Marathon Ptl	113.04	111.07	1.97	1.77	4.04	3.7	-6.81

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 %
BOE Tech	0.64	0.79	-0.15	-18.99	-0.16	-20.0	-15.07
Tesla Mtrs	141.95	149.87	-7.93	-5.29	-32.10	-18.4	-27.52
Charter Comms	306.34	306.16	0.18	0.06	-68.55	-18.3	-22.35
Volkswgn	153.00	156.30	-3.30	-2.11	-26.95	-15.0	-11.61
FordMtr	11.44	11.69	-0.26	-2.18	-1.67	-12.7	-21.21
VF Cp	25.34	26.05	-0.71	-2.73	-3.63	-12.5	-24.00
CredSuisse	2.73	2.78	-0.05	-1.76	-0.34	-11.1	-28.89
Chna Utd Coms	4.52	4.56	-0.04	-0.88	-0.56	-11.0	19.58
ASML Hld	532.20	537.30	-5.10	-0.95	-61.00	-10.3	-6.72
Accenture	259.42	255.40	4.02	1.57	-27.27	-9.5	-10.60
MediaTek	646.00	656.00	-10.00	-1.52	-66.00	-9.3	-10.53
DeutsPost	34.70	34.82	-0.12	-0.34	-3.51	-9.2	-8.57
Carnival	8.08	8.09	-0.02	-0.19	-0.82	-9.2	-22.01
Bristol-Myers	72.75	73.16	-0.42	-0.57	-7.19	-9.0	-4.27
UnibailR	48.09	50.08	-2.00	-3.98	-4.62	-8.8	-6.45
Bausch Hlth	9.55	9.52	0.03	0.32	-0.87	-8.3	-5.82
HumanaInc	504.00	504.84	-0.84	-0.17	-45.18	-8.2	-4.69
Digital Realty	100.02	99.39	0.63	0.63	-8.78	-8.1	-10.45
VertexPharm	292.45	291.59	0.86	0.29	-25.13	-7.9	-3.63
Devon Energy	59.18	59.26	-0.08	-0.13	-5.07	-7.9	-17.60

Based on the FT Global 500 companies in local currency

BONDS: HIGH YIELD & EMERGING MARKET

Dec 20	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

Dec 20	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	124.42	0.68	0.00	-0.11	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	121.70	0.93	0.00	0.02	-
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-	128.68	3.20	0.00	-0.01	0.40
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	137.45	2.19	-0.03	0.02	-

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

Dec 20	Rate	Current	Since	Last
US	Fed Funds	4.25-4.50	15-12-2022	3.00-3.25
US	Prime	6.25	22-09-2022	5.50
US	Discount	3.25	22-09-2022	2.50
Euro	Repo	0.53	01-11-2022	0.374
UK	Repo	3.50	15-12-2022	3.00
Japan	O'night Call	0.00-0.10	01-02-2016	0.00
Switzerland	Libor Target	-1.25-0.25	15-01-2015	-0.75--0.25

INTEREST RATES: MARKET

Dec 20 (Libor: Dec 19)	Over night	Change Day	Change Week	Change Month	One month	Three month	Six month	One year
US$ Libor	4.32029	0.003	0.502	0.001	4.35386	4.73829	5.14986	5.42771
Euro Libor	-0.64957	-0.064	0.000	0.001	-0.61943	-0.58057	-0.55600	-0.48571
£ Libor	0.18063	-0.005	0.000	-0.005	3.45970	3.78870	4.30700	0.81363
Swiss Fr Libor				-0.002	-0.77540	-0.75300	-0.70280	-0.55320
Yen Libor				0.000	-0.06005	-0.04590	0.03836	0.04867
Euro Euribor				0.049	1.79700	2.06300	2.58500	3.05700
Sterling CDs				0.000	0.50000	0.63000	0.78500	
US$ CDs				0.000	4.31000	4.65000	5.03000	
Euro CDs				-0.040	1.72000	2.05000	2.49000	

Dec 20	Short term		7 Days notice		One month		Three month		Six month		One year	
Euro	1.64	1.94	1.64	1.94	1.57	1.87	1.90	2.20	2.34	2.64	2.76	3.06
Sterling					0.45	0.55	0.58	0.68	0.71	0.86	0.90	1.05
US Dollar	4.13	4.33	4.15	4.35	4.21	4.41	4.55	4.75	4.93	5.13	5.11	5.31
Japanese Yen	-0.15	0.05	-0.20	0.00	-0.20	0.00	-0.15	0.05	-0.10	0.20	-0.05	0.25

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	202.56	0.11	2.65	-7.84	3.95	-7.74
Corporates(£)	325.79	-0.69	-0.85	-17.69	-0.15	-18.76
Corporates(€)	209.89	-0.02	-0.52	-13.10	0.34	-13.75
Eurozone Sov(€)	212.79	-0.20	-2.15	-16.36	-1.51	-17.86
Gilts(£)	272.66	-1.19	-3.29	-24.15	-3.47	-25.82
Overall(£)	281.36	-1.04	-2.65	-22.27	-2.64	-23.80
Overall(€)	208.58	-0.13	-1.57	-15.44	-0.88	-16.69
FTSE						
Sterling Corporate (£)	-	-	-	-	-	-
Euro Corporate (€)	104.47	-0.05	-	-	0.54	-1.73
Euro Emerging Mkts (€)	733.99	-8.54	-	-	20.99	1.20
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	506.56	-3.16	68.71	32.68	688.92	426.04
Europe 5Y	98.86	0.82	14.58	4.34	142.08	81.55
Japan 5Y	88.73	6.58	11.74	4.07	119.29	75.61
Senior Financials 5Y	108.41	0.78	15.81	4.78	155.06	89.99
Markit CDX						
Emerging Markets 5Y	247.75	5.89	11.66	-4.85	335.29	222.68
Nth Amer High Yld 5Y	496.43	7.76	29.82	16.62	625.47	450.15
Nth Amer Inv Grade 5Y	85.00	1.83	7.00	3.55	110.98	75.62

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

VOLATILITY INDICES

	Dec 20	Day Chng	Prev	52 wk high	52 wk low
VIX	22.00	-0.42	22.42	38.93	16.62
VXD	19.16	-0.08	19.24	45.37	3.27
VXN	27.28	-0.13	27.41	44.05	9.94
VDAX	21.07	0.30	20.77	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	-	-	-	-	-	-	-	-
	05/32	1.25	81.89	3.53	0.08	0.15	0.01	-
	02/50	1.00	101.04	1.43	0.07	0.24	0.01	1.35
Austria	02/29	0.50	87.78	2.68	0.02	0.31	0.32	2.95
	02/47	1.50	78.58	2.72	0.04	0.31	0.21	2.40
Belgium	06/27	0.80	92.91	2.48	0.00	0.28	0.28	2.93
	06/47	1.60	76.40	2.97	0.04	0.32	0.25	2.35
Canada	03/25	1.25	95.22	3.54	0.02	-0.20	-0.28	2.44
	06/30	1.25	89.38	2.84	0.07	-0.06	-0.14	1.59
	12/48	2.75	95.61	2.99	0.10	0.08	-0.07	1.33
Denmark	11/29	0.50	87.87	2.43	0.01	0.28	0.28	2.67
	11/52	0.25	59.79	2.07	0.06	0.32	0.22	1.93
Finland	09/24	0.00	95.82	2.49	-0.04	0.25	0.26	3.17
	09/29	0.50	86.74	2.68	0.01	0.26	0.27	2.97
France	05/28	0.75	91.11	2.52	0.01	0.30	0.30	2.87
	05/48	2.00	83.79	2.91	0.04	0.35	0.27	2.35
Germany	08/29	0.00	86.68	2.17	0.01	0.29	0.28	2.67
	08/50	0.00	58.06	1.99	0.07	0.34	0.24	2.04
Greece	01/23	3.50	100.21	1.53	0.00	0.00	0.16	1.82
	01/28	3.75	100.51	3.64	0.02	0.48	0.31	3.04
Ireland	-	-	-	-	-	-	-	-
	05/26	1.00	95.56	2.38	0.01	0.27	0.26	2.82
	02/45	2.00	85.17	2.92	0.02	0.33	0.26	2.43
Italy	02/25	0.35	94.28	3.17	0.01	0.48	0.44	3.27
	05/30	0.40	88.26	2.12	0.03	0.70	0.73	2.89
	03/48	3.45	86.15	4.36	0.08	0.52	0.50	2.69
Japan	04/25	0.05	99.92	0.08	0.01	0.00	0.00	0.01
	12/29	0.10	99.06	0.24	0.01	0.02	0.02	0.30
	12/49	0.40	77.45	1.41	0.05	0.06	0.00	0.76
Netherlands	07/27	0.75	93.08	2.37	0.01	0.29	0.31	2.89
	01/47	2.75	107.46	2.34	0.05	0.36	0.29	2.35
New Zealand	05/31	1.50	80.77	4.24	-0.03	0.14	0.11	1.98
	09/40	2.50	123.73	2.14	0.00	0.06	-0.12	1.48
Norway	08/30	1.38	89.40	2.94	-0.03	0.17	-0.22	1.45
Poland	01/23	2.50	99.53	7.49	0.31	0.60	0.20	4.70
	07/27	2.50	83.04	6.93	0.08	0.23	0.07	3.65
	04/47	4.00	67.56	6.75	0.08	-0.45	-0.80	3.23
Portugal	04/27	4.13	105.84	2.67	0.00	0.35	0.36	2.95
Spain	-	-	-	-	-	-	-	-
	10/29	0.60	85.44	2.98	0.02	0.34	0.34	2.89
	10/46	2.90	91.37	3.44	0.03	0.31	0.26	2.45
Sweden	06/30	0.13	117.36	-0.26	0.00	0.00	0.00	1.88
	03/39	3.50	122.24	1.90	0.02	0.30	0.08	1.53
Switzerland	04/28	4.00	114.42	1.18	0.04	0.12	0.19	1.61
	06/29	0.00	92.34	1.23	0.04	0.15	0.24	1.61
United Kingdom	07/23	0.75	98.52	3.30	0.08	0.02	0.11	2.94
	07/27	1.25	90.69	3.46	0.14	0.17	0.18	2.90
	07/47	1.50	62.57	3.87	0.11	0.18	0.36	2.87
United States	-	-	-	-	-	-	-	-
	03/25	0.50	92.21	4.12	0.08	-0.13	-0.11	3.13
	02/30	1.50	86.86	3.60	0.10	-0.05	-0.10	2.26
	02/50	0.25	70.69	1.58	0.08	0.19	-0.06	-

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

GILTS: UK CASH MARKET

Dec 20	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 0.75pc '23	98.53	3.30	1.85	2.80	7.84	768.42	100.46	97.34	34.36
Tr 0.125pc '24	96.10	3.74	1.63	6.25	16.15	605.66	98.99	94.34	35.55
Tr 2pc '25	95.97	3.57	2.88	5.93	15.16	561.11	105.00	93.15	39.93
Tr 0.125pc '26	90.16	3.49	3.56	8.05	12.22	546.30	97.94	86.33	35.32
Tr 1.25pc '27	90.22	3.58	3.77	8.16	9.15	539.29	103.24	85.65	40.99
Tr 0.875pc '29	84.01	3.53	4.13	9.29	9.29	443.08	100.90	78.21	43.62
Tr 4.25pc '32	105.12	3.61	4.03	10.40	11.76	356.96	133.43	98.13	40.33
Tr 4.25pc '36	104.32	3.83	3.23	8.19	9.74	316.30	142.50	94.91	31.68
Tr 4.5pc '42	106.81	4.00	2.56	6.67	12.04	308.16	163.53	93.79	28.35
Tr 3.75pc '52	97.10	3.92	2.62	5.66	15.98	312.63	169.72	82.51	25.11
Tr 4pc '60	104.89	3.75	1.90	5.34	18.67	341.18	196.58	87.32	25.13

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	Dec 20	Day's chg %	Total Return	Return 1 month	Return 1 year	Yield
1 Up to 5 Years	81.26	-0.24	2337.58	-0.66	-5.03	3.61
2 5 - 10 Years	146.72	-0.91	3122.49	-2.29	-16.03	3.59
3 10 - 15 Years	156.97	-1.27	3606.53	-4.19	-24.15	3.83
4 5 - 15 Years	148.22	-1.01	3237.60	-2.86	-18.62	3.68
5 Over 15 Years	215.27	-1.66	3706.43	-9.99	-41.97	3.87
7 All stocks	135.34	-0.96	3022.78	-4.67	-25.31	3.80

Index Linked	Dec 20	Day's chg %	Month chg %	Year's chg %	Total Return	Return 1 month	Return 1 year
1 Up to 5 Years	322.50	-0.31	-0.92	1.33	2726.95	-0.92	2.50
2 Over 5 years	542.46	-2.06	-9.53	-39.90	4134.75	-9.53	-39.63
3 5-15 years	445.15	-1.18	-4.32	-18.30	3600.28	-4.32	-17.68
4 Over 15 years	617.18	-2.65	-12.72	-48.53	4567.07	-12.72	-48.37
5 All stocks	513.75	-1.78	-8.20	-35.66	3994.88	-8.20	-35.31

Yield Indices	Dec 20	Dec 19	Yr ago		Dec 20	Dec 19	Yr ago
5 Yrs	3.50	3.37	0.53	20 Yrs	3.98	3.87	1.03
10 Yrs	3.72	3.59	0.79	45 Yrs	3.66	3.58	0.74
15 Yrs	3.92	3.80	0.97				

Real yield	inflation 0% Dec 20	inflation 0% Dur yrs	inflation 0% Previous	inflation 0% Yr ago	inflation 5% Dec 20	inflation 5% Dur yrs	inflation 5% Previous	inflation 5% Yr ago
Up to 5 yrs	0.30	2.75	0.19	-3.67	-0.11	2.76	-0.23	-4.16
Over 5 yrs	0.44	19.78	0.34	-2.44	0.41	19.85	0.30	-2.47
5-15 yrs	0.38	9.64	0.26	-2.99	0.28	9.66	0.15	-3.09
Over 15 yrs	0.46	26.54	0.36	-2.37	0.44	26.56	0.34	-2.39
All stocks	0.44	16.96	0.34	-2.46	0.39	17.06	0.29	-2.49

See FTSE website for more details www.ftse.com/products/indices/gilts
©2018 Tradeweb Markets LLC. All rights reserved. The Tradeweb FTSE Gilt Closing Prices information contained herein is proprietary to Tradeweb; may not be copied or re-distributed; is not warranted to be accurate, complete or timely; and does not constitute investment advice. Tradeweb is not responsible for any loss or damage that might result from the use of this information.

COMMODITIES

www.ft.com/commodities

Energy		Price*	Change	Agricultural & Cattle Futures		Price*	Change
Crude Oil†	Feb	76.19	0.81	Corn♦	Mar	649.00	1.75
Brent Crude Oil‡		79.30	-0.50	Wheat♦	Mar	748.25	-0.25
RBOB Gasoline†	Jan	2.19	0.02	Soybeans♦	Jan	1468.75	8.00
Natural Gas†	Jan	5.48	-0.37	Soybeans Meal♦	Jan	452.10	3.00
Base Metals (♠ LME 3 Months)				Cocoa (ICE Liffe)⊕	Mar	1991.00	16.00
Aluminium		2385.00	15.00	Cocoa (ICE US)♥	Mar	2514.00	15.00
Aluminium Alloy		1675.00	-905.00	Coffee(Robusta)⊕	Jan	1959.00	14.00
Copper		8371.00	90.50	Coffee (Arabica)♥	Mar	166.85	2.55
Lead		2183.00	37.50	White Sugar⊕		562.80	9.60
Nickel		28580.00	1345.00	Sugar 11♥		20.42	0.28
Tin		23850.00	450.00	Cotton♥	Mar	85.52	1.44
Zinc		3076.50	51.50	Orange Juice♥	Jan	208.60	0.60
Precious Metals (PM London Fix)				Live Cattle♣	Dec	155.18	0.13
Gold		1790.80	-1.75	Feeder Cattle♣	May	134.88	-
Silver (US cents)		2324.00	41.00	Lean Hogs♣	Feb	85.63	-0.15
Platinum		992.00	-5.00				
Palladium		1726.00	-4.00		Dec 19	% Chg Month	% Chg Year
Bulk Commodities							
Iron Ore		109.56	-0.71	S&P GSCI Spt	584.85	-5.48	10.23
Baltic Dry Index		1596.00	48.00	DJ UBS Spot	111.69	-2.69	17.12
Richards Bay ICE Futures		213.60	-3.80	TR/CC CRB TR	293.15	-1.75	22.49
				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 Dec 19	Yield Dec 19	Yield Prev	Month return	Value stock	Market	No of stocks
Can 4.25%' 26	111.91	1.152	1.108	1.33	5.25	73861.46	8
Fr 0.25%' 24	101.37	-0.599	-0.684	-0.68	17.92	251474.33	17
Swe 1.00%' 25	125.77	-0.212	-0.215	0.13	35.38	220102.74	6
UK 0.125%' 24	102.39	-1.748	-1.908	-0.12	15.24	576939.80	31
UK 2.50%' 24	375.79	-0.352	-0.502	-0.36	6.82	576939.80	31
UK 2.00%' 35	244.39	0.245	0.115	-3.58	9.08	576939.80	31
US 0.625%' 24	97.72	2.799	2.778	-0.04	40.98	1627935.05	47
US 3.625%' 28	109.89	1.673	1.625	-0.37	16.78	1627935.05	47

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	3.53	1.35	-0.07	Netherlands	2.37	0.20	-1.23
Austria	2.68	0.50	-0.93	New Zealand	4.24	2.07	0.64
Canada	2.84	0.67	-0.76	Norway	2.94	0.77	-0.66
Denmark	2.43	0.26	-1.17	Portugal	2.67	0.50	-0.93
Finland	2.68	0.51	-0.92	Spain	2.98	0.80	-0.62
Germany	2.17	0.00	-1.43	Sweden	-0.26	-2.43	-3.86
Italy	2.12	-0.05	-1.48	Switzerland	1.23	-0.94	-2.37
Japan	0.24	-1.94	-3.36	United States	3.60	1.43	0.00

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

All data provided by Morningstar unless otherwise noted. All elements listed are indicative and believed accurate at the time of publication. No offer is made by Morningstar, its suppliers, or the FT. Neither the FT, nor Morningstar's suppliers, warrant or guarantee that the information is reliable or complete. Neither the FT nor Morningstar's suppliers accept responsibility and will not be liable for any loss arising from the reliance on the use of the listed information. For all queries e-mail ft.reader.enquiries@morningstar.com

Data provided by Morningstar | www.morningstar.co.uk

POWERED BY MORNINGSTAR

A landmark in Australian art

The Art Gallery of New South Wales's extension is Sydney's most important building since the Opera House – and its curators have done it proud, writes Jane Ure-Smith

Sanaa, the Pritzker prize-winning architects, buck the trend for flashy art-world architecture. In Manhattan, the practice's Kazuyo Sejima and Ryue Nishizawa memorably stacked "boxes" above the Bowery to give the New Museum a new home. For the Sydney Modern Project, an expansion of the Art Gallery of New South Wales, they have used the box concept again, but this time as an exercise in concealment.

Flanked by the Royal Botanic Garden and the green space of the Domain, a series of limestone-clad pavilions step down towards the water. The aim was a construction "that breathes with the city, the park and the harbour", the pair said at the building's unveiling in late November.

In what is arguably the most significant new Sydney landmark since Jørn Utzon's Opera House, a public art garden links the North Building (as it's called for the moment) to the neoclassical original. But it is only when you step inside and peer into its vast glass atrium – 11 metres at its tallest point – that you grasp the scope of Sanaa's A$344mn (US$230mn) creation. Below, two banks of steep escalators sweep visitors down and down again, beside an eco-friendly rammed-earth wall, to an airy café, terraces with harbour views, green roofs, green spaces and galleries built into the hillside.

Sanaa's initial challenge had centred on a massive fuel bunker, one of a pair dating from the early 1940s buried in the hillside. Filled in its heyday with 6mn litres of oil, the tank supplied the nearby Garden Island naval base during the second world war. Sanaa's solution was to preserve the tank, complete with oil smears and graffiti on the walls and, removing just one of its 125 pillars, insert an elegant, white spiral staircase to connect it to the museum above. Director Michael Brand last year compared it to a lotus rising out of a muddy pond.

The Argentine artist Adrián Villar Rojas is the first to respond to this mysterious space: for *The End of Imagination* he has populated the Tank with perplexing sculptures – composites of wax, tree bark, used car parts and more – that began life as time-travellers in a virtual world. Clusters of spotlights shuttle around overhead, seeking out and illuminating each one in turn, and from time to time plunging viewers into darkness.

In the gallery's new set-up, indigenous Australian art takes pride of place. The Yiribana gallery, dedicated to the display of Aboriginal and Torres Strait Islander art, is the first space visitors encounter when they enter the building.

Clockwise from main: aerial view of the Art Gallery of New South Wales's extension; the Yiribana Gallery is dedicated to Aboriginal and Torres Strait Islander art; Darren Siwes's 'Jingli Kwin' (2013) — Iwan Baan; Zan Wimberley

Yhonnie Scarce's "Death Zephyr" (2017), composed of 2,000 glass yams suspended in a cloudlike formation, sits at its heart, its aesthetic allure at odds with its grim message. Scarce's work alludes to the radioactive poison that lingered around Maralinga, near her birthplace in South Australia, in the wake of atomic tests carried out by the British in the 1950s. Close by is Vernon Ah Kee's equally haunting "Unwritten #9" (2008), in which a mass of ruled charcoal lines powerfully evokes a skull-like face. Ah Kee made the work in response to the death in custody of an Aboriginal man on Palm Island, Queensland, in 2004.

"As an art gallery I think we have an obligation to talk about difficult moments in Australia's history," says Cara Pinchbeck, senior curator for Aboriginal and Torres Strait Islander art. "We wanted to refer to difficult issues, as well as humorous ones – and everything in between."

In the hands of Darren Siwes and Vincent Namatjira, humour comes with a political edge. For "Jingli Kwin" (2013), Siwes dresses an Aboriginal couple in mock-royal regalia for a portrait. In a 2016 animated film, Namatjira hails the moment in 1975 when the prime minister, Gough Whitlam, symbolically returned Aboriginal land to its rightful owners by pouring red earth into the hands of a Gurindji man, Vincent Lingiari. But as Whitlam's successors chatter on, the film fades out amid peals of kookaburra laughter.

The museum has been working on gender parity. With works by female artists outnumbering those by men in the North Building, "Walawuru ngunytju kukaku ananyi (Mother eagles going hunting)" by Iluwanti Ken is among the standout pieces. In this wildly energetic ink and acrylic painting, large eagles swoop, dive and fly upside down, dwarfing flora and fauna below them.

"Eagles have lots of lessons to share with Anangu women, particularly with regard to motherhood," notes Ken in the wall text. "I love the chaos of it: so much of motherhood is like that!" says Pinchbeck as we contemplate the picture. "Narrbong-galang (many bags)" (2022) by Wiradjuri artist Lorraine Connelly-Northey, an array of ochre and yellow scrap-metal sculptures, evokes the bags used in the bush to collect everything from frogs to yam daisies, and is also a real treat.

If the Sydney Modern Project is about elevating female and Indigenous artists, it is also about amplifying the voices of artists raised in protest. These themes come together in a green glass panel depicting six hooded figures, a new work by Wiradjuri artist Karla Dickens installed in a long-empty niche above the entrance to the original building. Dickens began making hoods in response to stories of the suffocating spit-hoods forced on inmates of a youth detention centre in the Northern Territory, then gravitated to wearing and photographing them. "Once I put one on, it became a lot more personal, about wanting or not wanting to be invisible," she says.

An exhilarating rehang of the 20th-century collection has produced thrilling "vignettes" that shed new light on familiar works. Sidney Nolan's "First-class marksman" (1946), for example, part of his *Ned Kelly* series, is now flanked by fragments from a 1906 Kelly Gang movie and Tom Roberts's bushranger (bandit) scene "Bailed up". Captions are packed with additional information: we learn that the townspeople from Inverell posed as models for Roberts, among them Bob Bates, a stagecoach driver who had in fact been held up 30 years earlier by local bushranger Fred Ward; Ward was married to a Worimi woman, Mary Ann Bugg, whose knowledge of Country was key to the bushranger's survival.

In the gallery's new set-up, indigenous Australian art takes pride of place

At the press view, much was made of the fact that, after 10 years, the Sydney Modern Project has been completed on budget and on time. In fact, a significant piece is still to come: "bial gwiyuŋo (the fire is not yet lighted)" by Wiradjuri and Kamilaroi artist Jonathan Jones is a "living sculpture" – a seasonal "fire garden" – slated for completion in mid-2023. Tiered ambitiously across 3,000 square metres of the Art Garden, Jones's work will respond to the site and its history and – perhaps controversially – underline fire's regenerative power. It should also underline the Sydney Modern Project's success in regenerating the museum.

artgallery.nsw.gov.au

Anti-capitalism is a profitable business

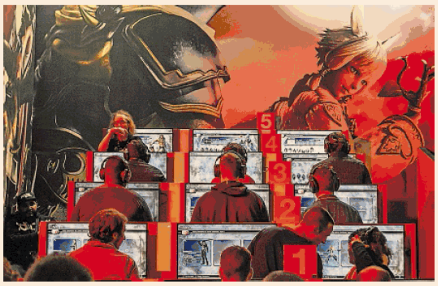
GAMING

Tom Faber

Is communism "overpowered"? This is the question currently concerning players of strategy game *Victoria 3*. While guiding their chosen nations through the 19th century, making decisions on political, social and economic governance, gamers found that adopting socialist policies made for more productive, happier countries than any alternative. They realised that forming worker co-operatives and redistributing wealth was simply too effective, almost like a cheat code to the perfect nation. "Damn this game made me value subsidies and welfare in real life," wrote one player on Reddit. The outcry was such that the developer, Paradox, rebalanced the game's systems in an update.

The merits and – far more regularly – pitfalls of capitalism are a common topic in video games. Yet all too often, this important topic is not given the intelligent scrutiny it deserves. In the rare cases where there is a smart critique, it still exists within the gaming ecosystem, an industry which exhibits many of the worst excesses of unchecked capitalism. Can games critique economic systems? Or is their message undermined by their medium?

Usually, the commentary isn't smart. Developers lean into tired tropes such as nefarious corporations and cast cartoon capitalists as stock villains. In *Cyberpunk 2077* you're a rebel hacker roving around a megacity controlled by corporations and in *Grand Theft Auto V* you're pitted against the villainous billionaire Devin Weston. This satire is partly neutered by its crudeness – depicting unchecked capitalism as fat cats chomping cigars and entire worlds owned by a single tycoon misses the subtler ways



Visitors try out new games at a gaming fair in Paris — LightRocket via Getty Images

anyway). Add to this the industry's fondness for money-grabbing business models of microtransactions and loot boxes. Similarly dubious practices resulted in *Fortnite* creator Epic Games agreeing this week to pay a $520mn settlement to the US Federal Trade Commission. Knowing this, when games take aim at immoral corporations, their critiques ring hollow. They have adopted anti-capitalism as an aesthetic.

When games take aim at immoral corporations, their critiques ring hollow

The conditions behind game production inevitably shape the stories that games tell. It is revealing that capitalist ideology is built into the most fundamental mechanics of gameplay: in almost every game you acquire resources to make yourself more powerful than everyone else and dominate the world.

It's a shame because games can also be a uniquely effective medium to explore ideologies since players participate in

games to tackle politics, set in a world of working-class uprisings, corrupt unions and militarised governments where players are encouraged to grapple with different ideologies. *Citizen Sleeper* casts players as androids trying to escape the clutches of a tech company which owns their mind and body, while *Kentucky Route Zero* and *Night in the Woods* both offer intimate and elegiac depictions of rural American poverty.

Other games take a more direct approach. In *Democratic Socialism Simulator* you play the first socialist president of America and must make decisions to enact radical leftwing policies while navigating scandals, lobbyists and impending environmental collapse. Meanwhile, *Tonight We Riot* casts players as a revolutionary crowd killing cops and trying to topple the government. By making players a collective rather than a single character, it offers a rare admission in gaming that it usually takes more than one person to change the world. The developers match the ideals of their games by structuring their team as a worker-owned collective.

Games are contradictory things – they're products of intense labour designed for idle pleasure, telling stories that might envision a better world but

FT BIG READ. COMMERCIAL PROPERTY

The great green office crunch

New environmental regulations are being applied to a commercial real estate sector still reeling from the pandemic. With companies keen to jettison space, will these stricter rules lead to zombie buildings?

By George Hammond

When FW Woolworth appointed Richard Seifert to design its new London headquarters, both retailer and architect were on the path to pre-eminence. Woolworths opened its 1,000th UK store soon after construction on the Marylebone block started in 1957; Seifert went on to design Centre Point, one of London's first skyscrapers.

Since then, Woolworths has gone under, victim to the rise of online shopping and the financial crisis, which together have deprived British high streets of some of their most iconic brands. The Marylebone building that Seifert conceived is undergoing an extensive renovation under developer General Projects and investor Henderson Park. The new owners hope to stop the building slipping, like its former occupier, into obsolescence.

The challenge in central London is replicated in Berlin, New York, Edinburgh and everywhere between. Buildings account for 39 per cent of global energy-related carbon emissions, according to the World Green Building Council, an industry group. Roughly three-quarters of that comes from running them; the remainder from the construction process.

But new environmental regulations to tackle the problem are kicking in at the worst possible time for an industry still reeling from the impact of the pandemic. Companies were already having to think about jettisoning space which homeworking has left surplus to requirements; now the new rules will be phased in as economies tip into recession. That will put acres of office space worth hundreds of billions around the world at risk of redundancy, say market analysts.

According to estate agency Savills, three-quarters of the UK office market falls below minimum energy efficiency standards which are set to be in place by 2030. A third of Italian offices and a quarter of those in Ireland face the same problem.

> 'There are going to be tonnes of stranded assets. There are vast numbers of buildings where it just won't make sense'

In New York, researchers at Columbia and New York University estimate $500bn in office value could be destroyed by 2029 as demand falls and green standards kick in.

Savills estimates the cost of upgrading a building from today's standards to 2030 requirements to be roughly £40 per sq ft, on top of normal refurbishment costs. Leading landlords in the West End or City of London, charging as much as £100 per sq ft, might be able to absorb the cost. But for owners of buildings in smaller towns, charging more like £20 per sq ft, bearing that cost is impossible.

"There are going to be tonnes of stranded assets, let's be honest," says Jacob Loftus, founder and chief executive of General Projects, which specialises in green refurbishments. "Even for those owners which would like to improve [their buildings] there are vast numbers of buildings where it just won't make sense."

Over the past few years, landlords have maintained that hitting climate change targets is their biggest concern — a conviction that was not swayed even as the pandemic raged, war broke out in Europe and the global economy clouded over.

Once spun by ethical or image conscious landlords as the "right" thing to do, upgrading dirty old buildings is increasingly the only option, both legally and commercially. The question is: can they do enough to prevent a plague of zombie offices?

Carbon comes to the fore

Creating a green building is hard, even for those developers who are starting from scratch and using modern techniques and materials.

In Copenhagen, investor and developer Nordic Real Estate Partners is piecing together a new neighbourhood that aims to set a benchmark for environmental performance. In one of the most ambitious pledges across the sector, the company has committed to being net zero by 2028, without making use of the carbon offsets that feature in the plans of many other companies.

In a modern office overlooking the

The challenge facing London landlords is replicated around the world. Once spun as the 'right' thing to do, upgrading dirty old buildings is increasingly the only option, both legally and commercially

FT montage: Bloomberg

At NREP's new development in Ørestad, Morten Erfurt Hansen, a project manager at contractor CG Jensen, is responsible for delivering UN17, a technically complex building that aims to hit all 17 of the UN's sustainable development goals.

Standing at the edge of the new neighbourhood, rimmed by a vast green expanse, Erfurt Hansen points to the building site from which UN17 will emerge and bemoans the challenges of building for a net zero pioneer: "You can say, 'It's a very good business case, it gets a lot of crosses on the sustainability card', but it's extremely hard to carry out in real life."

Frederiksen is clear that action, however complex, must be taken today. "A [net zero] target of 2050 gives us probably 20 years of doing nothing and then five more of thinking, 'Oh my god'," she says. She also criticises others in the sector who pay lip service to lowering emissions but give little time to actually doing it, accusing them of "greenwashing from lack of knowledge, lack of care and lack of intent".

But Ørestad is proof that sustainable construction is hard even with a clean slate and deep pockets. Most property owners and investors have neither: four in five buildings standing today are expected to still be in place by 2050, and the pressing challenge is how to breathe new life into them before then.

Blocks owned by well-off investors are the tip of a multitrillion-pound iceberg, beneath which is a mass of older, out-of-the-way commercial buildings that would cost more to fix up than they could ever command in rental income. Those blocks risk becoming stranded without urgent intervention.

That is now being forced by tighter regulation. In the UK, buildings receive an energy performance certificate, or EPC, with a top grade of A and a bottom of G. Ministers intend to ratchet up minimum energy efficiency standards (MEES), making it illegal to let out offices with an F or G rating from April next year. The minimum standard is set to rise to a C rating by 2027 and to a B by 2030, a level which around 70 per cent of offices in the capital fall short of, according to Savills.

In the US, regulations differ state to state and city to city, but commercial property landlords face similar pressures to their peers in the UK. Minimum energy performance standards are also being gradually raised in Europe as the European Commission looks to fully decarbonise building stock by 2050.

With regulations tightening over the next decade, landlords may be tempted to upgrade offices incrementally. But that is difficult because occupiers moving in for 10 years or more need tomorrow's buildings today.

"A lot of people are looking at MEES regulations in 2030 and thinking, 'That's eight years off.' But if you are a tenant taking a long-term lease now, you wouldn't be able to sublease it [in

building is green. Tenants who have drawn up their own carbon reduction plans are increasingly shunning older blocks and zeroing in on offices wearing those badges of honour.

Buildings with the highest levels of green accreditation make up less than 10 per cent of the London market, but account for around 60 per cent of all space leased in London this year, according to Savills.

But Julie Hirigoyen, chief executive of the UK Green Building Council, suggests prospective tenants should be cautious.

Her organisation is working with various other sector bodies on a unified "net zero carbon buildings verification standard" that captures the full impact of constructing and operating an office.

"Until this standard has emerged, we don't really know what we're targeting," she says.

A huge bill

Ultimately, tougher regulations will "cut emissions, tackle energy poverty, reduce people's vulnerability to energy prices and support the economic recovery and job creation", according to the European Commission. But they also come with a colossal price tag for property owners.

> 'The challenge is very much to refurbish and retrofit the stock we have. We cannot build our way out of this crisis'

A handful of landlords have estimated the costs of upgrading their portfolios to new standards, reaching a wide range of conclusions about the ultimate costs. Landsec, a listed UK landlord, estimates work to get its £11bn portfolio to the EPC B grade required by 2030 will come at a net cost of just £135mn, a shade over 1 per cent of the buildings' value. But privately owned peers such as the Crown Estate have suggested costs could run to £1bn, roughly 13 per cent of the value of its total real estate portfolio.

According to a report published last year by estate agency Savills, the stock of commercial property worldwide is worth close to $33tn, much of that made up of offices. Even if the costs of transitioning are lower than widely expected

lenge is very much to refurbish and retrofit the stock we have. We cannot build our way out of this crisis," says Edward Dixon, head of environment, social and governance at Aviva Investors.

According to Dixon, there is too great a focus from developers on building new offices which can more easily hit sustainability scores. A better approach is to upgrade buildings which are standing. But that is complex and costly work.

"Most owners . . . don't have sustainability teams or net zero plans or quite possibly the capital behind them on the equity side. That's the part of the market that I worry about more," says Peter Cosmetatos, chief executive of the Commercial Real Estate Finance Council Europe, the trade association for European property lenders.

A recent analysis of 243 listed real estate companies around the world holding almost $2tn worth of real estate by Dutch private bank Van Lanschot Kempen, found that just a tenth of landlords have committed to comprehensive net zero carbon targets for 2050.

"While three-quarters of listed real estate companies have some sort of decarbonisation or climate change strategy in place, if you scratch the surface, you will find that many are very light on detail," says Lars Dijkstra, chief sustainability officer at the bank.

There is also evidence that targets are slipping as higher interest rates divert developers' attention from the green agenda. A year ago, 70 per cent of London office developers told Deloitte they expected all their new developments to be net zero by 2030. When the same survey was repeated recently, just 36 per cent were confident in that timeframe.

Older stock that is uneconomical to bring up to standard is already pinched, but no one can say how far up the scale pain will be felt. The $500bn that academics at Columbia and New York University estimate is at risk in New York is equivalent to a quarter of the entire value of the market.

Government intervention is the best way to accelerate change across a highly fragmented industry, according to Dixon at Aviva Investors. "It's an enormously complex sector. The only thing that can cut across this is policy sweeping up . . . smaller organisations which don't have the shareholders or investors [to support them]," he says.

How bad could it get?

There is growing concern that the crisis facing office landlords as a result of higher environmental standards could dwarf the impact on retail property owners from ecommerce over the past decade.

The shift of shoppers online, and away from high streets and malls, has left barren shopping centres and vacant storefronts, particularly in the UK and US where ecommerce has grown fastest.

Retail property owners have seen the value of their shops bleed away as a result. Green Street's index of European retail values shows they have fallen by a third since 2007. Office owners have so far had an easier ride but, as a result of the pandemic and interest rate rises, values have fallen sharply since 2019, with office values up just 5 per cent over the past 15 years, according to the commercial real estate analytics firm. Recent falls are widely expected to accelerate as the market adjusts to higher interest rates and the cost of hitting net zero.

Like shopping centre landlords, they are dealing with a tectonic shift for their tenants: as a result of homeworking, occupancy levels in England remain stubbornly close to 30 per cent, which is half pre-pandemic norms; in New York, occupancy is stuck below 50 per cent.

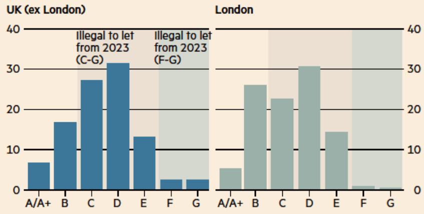
Where peers in the retail sector were eviscerated by the financial crisis, office owners are now contending with a rapidly turning economy. Environmental upgrades are increasingly urgent but also increasingly expensive, as borrowing costs soar and inflation drives building material prices ever higher.

Similar conditions triggered a devastating spiral for retail property more than a decade ago, particularly in oversupplied markets in the UK and US. After 15 years, that sector appears as if it has yet to hit the bottom. Office owners are not blind to the danger but console themselves by suggesting that the fallout will be limited at the top of the market. Yet even high-end malls have suffered, dragged down by the collapse of poorer-quality rivals.

When the Woolworths' building opened its doors in the late 1950s, the company's leaders foresaw a bright future. Carved into the block are depic-

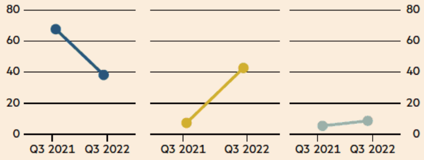
Office space at risk over new green regulations

Per cent, by energy performance certificate (the higher the rating, the 'cleaner' the building)



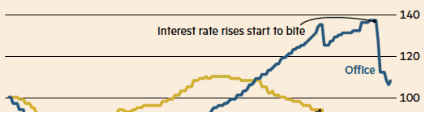
Developers have become less ambitious about hitting their green targets

When do developers expect to hit net zero on all their new developments (% of surveyed respondents)



Retail property values are below 2007 levels, with offices falling fast

Green Street pan-European property sector indices



The FT View

FINANCIAL TIMES
'Without fear and without favour'
ft.com/opinion

Now is the time to boost financial literacy

The FT's charity is filling vital gaps in public understanding of money

FT FLIC, the Financial Times's charity to promote financial literacy, is now more than a year old. As cost of living pressures weigh down on populations, its mission could not be more resonant. Early in 2020 we decided to be more ambitious in our charitable outreach than partnering as before with different NGOs and raising awareness of their work. The cause we chose addresses an issue that the financial world has both created and neglected.

Vast gaps in basic financial knowledge and understanding, estimated by the World Bank to afflict two-thirds of the global population, are compounding the financial pressures inflicted by high inflation. Boosting financial literacy levels can help relieve those pressures. It can also empower individuals to save, invest and found businesses.

The issue affects all strata of society. Celebrities who didn't understand their own finances have been hoodwinked by unscrupulous hangers-on. Those on the lowest incomes may unwittingly be drawn into borrowing at ultra-high interest rates. Even professional financiers can make poor decisions about confusing mortgage products.

FLIC, the FT's Financial Literacy and Inclusion Campaign, has been targeting groups that research has shown are most likely to benefit from a boost to financial literacy. These include women and young people, as well as a range of disenfranchised communities from gig workers to older people without access to digital services.

In its first year, FLIC has hosted a number of educational sessions for its target groups. It has also developed a programme of financial education for workers with unpredictable incomes, in partnership with the Association of British Insurers. But much of its work has focused on developing and delivering financial literacy education for school students.

In the UK, the absence of a committed curriculum means most young people leave school knowing more about baking and biology than about budgeting and borrowing. In England and Wales, for example, most financial education is supposed to happen within the PSHE curriculum. But this hodgepodge subject — covering sex, health and drugs — leaves little time to deliver meaningful financial information. PSHE is a subject often taught by non-specialists who may lack finance expertise themselves.

FLIC has developed its own curriculum of financial education material — aimed both at teachers and students. Several pilot programmes have taken place across the UK, and a whole-school pilot is scheduled to begin in February, with nationwide rollout via partner organisations later in 2023. It is up to date and engaging and will be freely available via the FLIC website.

> In the UK, most young people leave school knowing more about baking and biology than about budgeting and borrowing

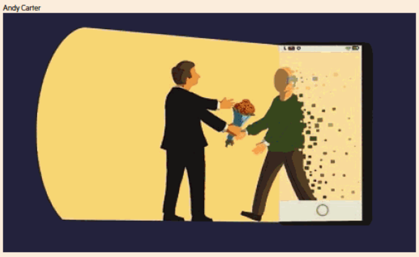
The charity has also begun lobbying for change with ministers and MPs. FLIC firmly believes mandatory financial education — within the maths curriculum and beyond — is a crucial foundation for people's ability to deal with money in later life. In the US, Next Gen Personal Finance, headed by FLIC donor Tim Ranzetta, has made a big difference with a state-by-state lobbying campaign of its own. Some 27 US states now require high schools to offer a personal finance course, though only 15 require students to take a financial literacy course to graduate.

Closer to the FT's home, the Lord Mayor of London, Nicholas Lyons, has agreed to make financial literacy a theme of his one-year tenure as head of the governing body for the City of London. FLIC and the Financial Times are proud to join that initiative. We encourage readers to find out more, and contribute at ftflic.com. And most importantly, to spread the word about the importance of financial literacy.

Opinion Innovation

'Grief tech' avatars aim to take the sting out of death

Andy Carter



Anjana Ahuja

Some might lay an extra place setting at the Christmas table, or put a symbolic gift under the tree that will never be unwrapped. Others may commemorate the loss of a loved one by raising a quiet toast or hiking a favourite trail.

But the rise of "grief tech" could soon allow those left behind to interact more vividly with the dead. Companies such as HereAfter AI are building "legacy avatars" of living people that can be called upon after their deaths to console the bereaved. These personalised chatbots are able to answer questions about their lives based on information they provided when they were alive.

> In limited situations, the chatbot might feel more engaging than listening to voicemails on repeat

The trend towards AI-assisted grieving, which goes beyond simply preserving the digital legacies of the deceased, may end up reshaping the way we memorialise our dead.

In some ways, technology applications of this kind are as inevitable as death itself. We already converse with avatars such as Apple's virtual assistant Siri and Amazon's Alexa. Deep-learning language models such as OpenAI's GPT-3, which produces human-like text from a prompt, can be adapted to evoke the manner of a specific person, by training the model on what that person has said before. Voice cloning can then turn that text into sound that mimics their voice. Weaving such technologies together can produce a conversational artificial intelligence, or chatbot, designed to speak like a loved one.

The chatbots generated by HereAfter AI are not sophisticated polymaths like Alexa but instead offer a fairly limited repertoire of spoken responses based on personal biographies.

Charlotte Jee, a reporter for MIT Technology Review who created avatars of her living parents, described the experience of interacting with

than listening to voicemails on repeat.

Another company, StoryFile, adds video to its digital offering. Its chief executive, Stephen Smith, showcased StoryFile's wares by displaying a video avatar of his mother bidding farewell — at her own funeral. The companies charge either an upfront fee or a monthly subscription to access the avatars.

Lucy Selman, associate professor in palliative and end-of-life care at Bristol university in the UK, and founder of the online Good Grief Festival, describes grief tech as "an interesting advance". But, she says, "before it is introduced more widely, a lot more research is needed into its ethical dimensions and how and when it might be useful, or indeed harmful, in serious illness and in bereavement".

While the prospect of a continued relationship after death may reassure some, Selman says, the technology could risk delaying or prolonging grief for others. What is certain, she insists, is that this approach "won't be for everyone, because grief is as unique as our relationships with each other".

James Vlahos, who founded HereAfter AI in 2019 after creating a bot based on his father from recordings made before he died, said in an email that the company never created digital replicas against a person's wishes: "Any and all people who create life-story avatars with HereAfter AI must give their active consent. They must also voluntarily participate in the process of sharing memories about their lives that provide the biographical information for their avatars."

Parents can create avatars of terminally ill children, he explained, but as users are not questioned about their circumstances (the data-gathering interviews with participants are generally automated) he said he did not know whether any currently fitted that profile.

I do wonder what my late father would have made of it all. When alive, he resisted talking about a difficult childhood in India, a reticence that felt like an essential part of his being. Asking his avatar to spill the beans, even if he had consented to providing the information beforehand, would feel somehow wrong.

Perhaps a chatbot that can converse convincingly from beyond the grave is the next natural — or unnatural — step for some families. But, says Selman, who lost her own father when she was 15 and later suffered a stillbirth, "[grief tech] reminds us of the importance of prioritising conversations and

---

Letters

Email: letters.editor@ft.com
Include daytime telephone number and full address
Corrections: corrections@ft.com
If you are not satisfied with the FT's response to your complaint, you can appeal to the FT Editorial Complaints Commissioner: complaints.commissioner@ft.com

Healthcare must embrace gene therapy to catch up with science

Your report "Health experts question cost of gene therapies" (December 15) contributes to an important conversation about the future of healthcare and our rapidly evolving scientific capabilities to treat, and possibly cure, devastating diseases.

There are debates to have about cost and access. But we must also ask whether we can afford to keep the healthcare systems we currently have, in which far too many patients face death or serious disability and have few, or no, treatment options. For those "fortunate" enough to have options, the status quo is often burdensome chronic treatment that may only partially alleviate symptoms and suffering.

Cell and gene therapies seek to disrupt this broken model. Transformative treatments now exist for diseases including spinal muscular atrophy, haemophilia, beta thalassaemia and blood cancers like leukaemia that don't respond to conventional treatments like chemotherapy. Patients are benefiting. Take Emily Whitehead, a 17-year-old American who just reached her 10th anniversary of being cancer-free after becoming the first paediatric patient in the world to receive a chimeric antigen receptor T-cell therapy for her aggressive form of leukaemia that failed to respond to other treatments.

We know that cell and gene therapy challenges conventional healthcare systems, by design. That's why we're working collaboratively with payers and stakeholders in Europe, the US and beyond to modernise healthcare systems by creating new, innovative reimbursement models that share risk across multiple stakeholders and improve patient access. In contrast to how healthcare and pharmaceutical markets have historically functioned, cell and gene therapy developers are often willing to rebate payers if a therapy doesn't produce the intended effect in a patient.

We have reached an important moment in Europe, through the revision of the EU pharma legislation, and in the US, where important reforms are needed in government-run insurance schemes. The future of medicine is rapidly approaching. Healthcare systems must catch up with science.

Timothy D Hunt
Chief Executive, Alliance for Regenerative Medicine, Washington, DC, US

Not much has changed in 50 years on the railways

Camilla Cavendish laments the anachronism of today's rail service (Opinion, December 10).

In 1976 I joined British Rail as a management trainee. At that time, managers were routinely rostering train crew overtime — and rest-day — working to keep down headcount, thus forfeiting any leverage with their trade unions. It took 18 months to train a train driver. The published timetable dissolved into fiction every weekend because of "engineering works".

The fares system was too complicated for the public to understand, and passenger information, particularly during disruptions, was an afterthought.

I'm not sure much has changed in the past 50 years, under public or private ownership, although the cost to the taxpayer has certainly increased in real terms. At current cost levels, it's not clear this is a public service the country should afford.

Gary Backler
London TW1, UK

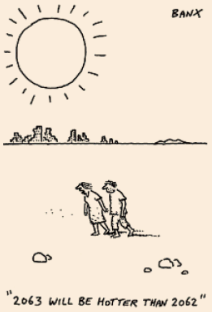
Nurses were paid less then, society looked after them

A fundamental element in the English nurses' strike is consistently ignored by politicians and commentators, including in the FT ("UK ministers co-ordinate response to historic strike disruption", Report, FT.com, December 19).

Nurses have never been well paid but they benefited from an implicit covenant with society and government which gave assurance that in exchange for long hours, stress and urgent demands on them, they would be cared for. My mother was paid £5 a year during training in the 1920s but enjoyed her work. She lived in nurses' accommodation and did not have to pay for her training.

After 12 years of Conservative governments nurses have to pay for their training, live in scruffy bedsits — since their hostels were sold off — and even if they get the pay rise they seek, they will still be worse off than in 2010.

The social contract between nurses, society and governments has been ignored and destroyed. Their real incomes need to be restored, albeit in stages, decent accommodation provided and training should be free. Their goodwill and loyalty have been stretched to breaking point and moral blackmail is being heaped on them



"2063 WILL BE HOTTER THAN 2062"

What the 'lived experience director' job says of NHS

Camilla Cavendish's courageous article on the NHS ("An exhausted NHS limps towards its high noon", Opinion, December 17) resonated strongly with both my path as a patient over the past few years and also numerous conversations with professional colleagues in the service.

The pandemic did indeed hand back more decision-making to the medical experts and more got done in a highly collaborative manner, arguably as a result.

In my opinion, strong backing for her point of view comes from a current job advertisement from the Midlands Partnership NHS Foundation for a "director for lived experience", starting salary "£110k".

"This is an exciting opportunity", it reads, "for advancing lived experience leadership at the highest level and we believe the first such Trust Board Directorship in the NHS."

So more to come apparently.

I can't wait.

Andrew Mackintosh
Oxford, UK

Independent pay review boards are anything but

As reported daily in your pages, the government keeps telling us that its stance on public sector pay is based on recommendations from independent bodies.

But the so-called independent pay review bodies are not independent. Their members are appointed by, and report to, ministers in the relevant

Steps Japan should take if it is to expand its military

Before the Japanese government expands its military capability to the level of a typical western nation, the Japanese people must repeal Article 9 of the constitution outlawing war as a means to settle international disputes involving the state ("Japan scraps pacifist postwar defence strategy", Report, December 17).

The repeal would confirm that they will wage war to defend their homeland. The lack of repeal indicates that the Japanese remain committed to pacifism even in a hail of foreign missiles that obliterate schools, hospitals, etc. In that case, no amount of new hardware for the Japanese military will be sufficient to subdue the foreign power.

If the Japanese successfully repeal Article 9, their government should follow up with nationalising the Yasukuni Shrine, removing its war criminals, and changing the nearby museum to a memorial to the Japanese and non-Japanese victims of war. This latter action would set the right tone for the military expansion.

Japan can then proceed to fulfil the aspiration of late prime minister Shinzo Abe: Japan becomes a normal western country that can use its military to achieve western objectives.

Dwight Sunada
Stanford, CA, US

A generous offer of Covid drugs can reset China ties

The article by Edward White and William Langley "China urged to avert Covid deaths with jabs" (Report, December 16) can be the subtle signal that the country is unprepared for a new disaster within the Covid-19 pandemic and the new wave of influenza. How effective and available are the Chinese vaccines? Are the hospitals and the intensive care units prepared for a huge influx of patients? Will a spread of these viruses and their mutation present a new threat to the rest of the world?

There is a golden opportunity for the US and Europe to lower international tensions and prevent a new war in the next five years, as well as protect their own populations from new Covid variants.

The way to do this is to offer China, using the forum of the UN, all surplus mRNA vaccines if Xi Jinping and the Chinese government cover the transportation and fuel costs. Widely

A Russian's personal view of the sanctions regime

If speech is silver, silence is golden. That's what comes to mind when all parties to an oil deal do not comment on it ("Russia ships crude to India despite rejecting G7 price cap", Report, December 17).

A price cap, especially a symbolic G7 one, is always a half-measure compared to an embargo since if the US can do without Cuban products, the world can't do without Russian mineral resources.

And there is a difference between what you describe as pain at the pump and, say, a Russian's experience of now being unable to travel abroad three times a year or buy an iPhone as soon as a new model arrives.

Besides, as a Russian I'm aware that being under sanctions is what comes with the territory in my country, the largest land-grabber in the world.

So we are accustomed to them as the Japanese are accustomed to earthquakes.

Mergen Mongush
Moscow, Russia

In Oslo, some migrants are better treated than others

Am I the only reader who was struck by Richard Milne's article from Oslo that some economic migrants are treated more favourably than others ("Norwegian millionaires flee wealth tax", Report, December 17)?

It was reported that more than 30 of the richest Norwegians had fled their home country to seek a better life in Switzerland, Cyprus, Italy and Canada. I trust they had a safe and legal route to their new lives. Like with other economic migrants, it is likely they will contribute a great deal to where they have settled.

Jeremy Ali
Birmingham, UK

ChatGPT's limitations and why journalism will live on

ChatGPT is "eerily impressive" writes John Gapper ("ChatGPT is fluent, clever and dangerously creative", Opinion, December 10). His perspicacious article, however, is itself an example of ChatGPT's limitations, as the tool could never have generated one as good. "Real" journalism will live to see another day.

Paul Forster
Cambridge, UK

Opinion

West's axis of prudence risks a Kremlin victory by default in Ukraine

GLOBAL AFFAIRS

Constanze Stelzenmüller

As 2022 ends and western leaders ponder coming challenges, few questions are as globally consequential as what to do about Russia's invasion of Ukraine. Vladimir Putin's relentless campaign to bomb the country into dark, cold misery amid warnings of Kremlin preparations for a reorganised ground offensive adds both military and moral urgency to the issue.

Eastern Europeans especially want Kyiv to win and Moscow to lose, and they believe the transatlantic alliance should do whatever it takes to help Ukraine repel the aggressors as quickly and completely as possible. They have committed allies in high places in the US government as well as among the leaders of Germany's Greens.

But many western Europeans worry that supporting too-forceful a push by Kyiv against the Kremlin's forces might trigger a nuclear escalation, a war between Russia and Nato or an irreparable rift between the alliance and the global south. That conviction is firmly shared by French president Emmanuel Macron, German chancellor Olaf Scholz and, crucially, US president Joe Biden. Their line — call it the realists' Axis of Prudence — has, so far, imposed itself.

Consider what Biden's national security adviser Jake Sullivan, a master of calibrated circumspection, said to a Washington audience last week: "We don't know where this is going to end up. What we do know is that it's our job to continue to sustain our military support to Ukraine, so they're in the best possible position on the battlefield, so that if and when diplomacy is right, they will be in the best position at the negotiating table."

Scholz — who intones the formula "decisive yet prudent" in interviews like a call sign — told a German newspaper that "our goal is that Russia ends its war of aggression and Ukraine defends its integrity". Notably, both of these articulations are carefully ambiguous about how the war should end or what a sustainable peace would look like. The US, which has given Ukraine about $20bn in military aid since the beginning of the war, has declined to provide it with aircraft, tanks or long-range ATACMS missiles. Yet in the light of Russia's sustained onslaught on Ukraine's civilian infrastructure, Washington is now expected to announce a delivery of the longer-range Patriots surface-to-air defence system, which it had long resisted. Germany has given Kyiv howitzers, Gepard anti-aircraft guns and the brand new Iris-T air defence system, but it refuses to send the Leopard tanks Volodymyr Zelenskyy's government has been asking for.

> What is debatable is whether the calculus of containing the conflict is actually working

But who is right? The advocates of victory for Ukraine and defeat for Russia? Or those who are seemingly willing to contemplate a battlefield stalemate for the sake of preventing escalation, in the hope that this will ultimately lead to a ceasefire and a negotiated settlement?

Prudence in a democratic leader is not just a virtue but a responsibility. What is debatable is whether the calculus of containing the conflict in Ukraine is actually prudent. Or whether it is working.

Putin has not used substrategic nuclear weapons — not even after his troops' rout from Kherson. Both the US and the Chinese have left no doubt that acting on his repeated threats would have stark consequences.

But to see this as proof that containment is working is a fallacy. Because the waves of Russian drone and missile strikes keep coming, the worst since the beginning of the invasion. What else is this but escalation? If Kyiv is denied the means to counter it, its allies risk Ukraine's defeat, western disarray and a Russian victory by default. Its profit would go to China.

Moreover, the notion of containment followed by a negotiated resolution assumes a degree of rationality and control, and the possibility of a stable post-war political equilibrium. But what if Putin's rants about Nazis in Ukraine and satanism in the west are not political theatre but — as the historian Lawrence Freedman has suggested — a paranoid projection of fear at the irredeemable rot in his own system? What if, in other words, we need to take the Russian dictator, like his admirer Donald Trump, both seriously and literally?

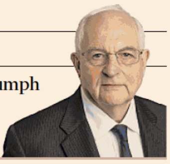
In truth, Ukraine's allies have exactly two choices: one failing state to Europe's east, or two. Conversely, if Ukraine is given the chance to win, and to transform into a well-defended, stable democracy with a Slavic culture, that would not just be a huge security gain for Europe but a model for Russia. That, of course, is what Putin fears most.

The writer directs the Center on the US and Europe at the Brookings Institution

Glimmers of light in a terrible year

Martin Wolf Economics

From the return of Nato to the triumph of democracy, not everything that happened in 2022 was bad



Few will regret the passing of 2022. It has seen a brutal onslaught on a peaceful neighbour by a vile despot. It has seen soaring inflation and falling real incomes in a global cost of living crisis. It has seen rising interest rates, a strong dollar and widespread difficulties over debt: according to the IMF, 60 per cent of low-income countries are in debt distress or at high risk of being so.

It has seen falling asset prices and heightened volatility in markets. It has seen important moves towards uncoupling between the US and China and the formation of competing blocs centred on the two superpowers, with Russia firmly in China's camp. It has seen the failure of the COP27 conference to bend the curve of emissions of greenhouse gases downwards. It has not even seen full recovery from the dire outcomes of the Covid pandemic, especially among the world's poorest people. (See charts.)

This is bad. Worse may still be to come, possibly even much worse. Vladimir Putin, in particular, is an unknowable quantity. So, too, as we have seen over his policy towards Covid, is Xi Jinping. Who knows what financial mayhem the Republicans might unleash over the US debt ceiling in 2023? Again, will the EU really stay the course on Ukraine as interest rates rise, economies fall into recession and debt distress increases?

Yet it is not all bad. In 2022, light also shone in the gloom. Let us celebrate this before we plunge into a new year.

The west is back. The invasion of Ukraine has brought those who share democratic values together. For the Nato alliance, it was a time of rebirth. For Germany, it was a *Zeitenwende*. For Finland and Sweden, it was time to reject neutrality. Donald Trump's fawning over Putin failed to undermine US support for Ukraine. Volodymyr Zelenskyy won the propaganda war, hands down. He is the heroic leader Ukraine — and the west — so desperately needed.

Putin is not the only strongman to look weaker today than a year ago. So, too, do Xi and Trump. The former's zero-Covid policy has ended in ignominy. The claim of today's version of ancient Chinese despotism to rule more competently than messy democracy lies in tatters. Iran's despots are under assault from their young. Trump's candidates were substantially repudiated in the midterm elections. Yes, he has vastly too many supporters for comfort. The Republican elite remains craven. But Congress has now made his attempted insurrection as plain as day.

Meanwhile, in battered Britain, the value of democracy has also been proven. Moved by fears of electoral defeat, the Conservatives ditched Boris Johnson, followed by the staggeringly incompetent Liz Truss in 44 days. No one died. Democracy is not perfect, especially when it takes the form of referendums on topics the people cannot be expected to understand in full. But they do learn: a recent YouGov poll shows 51 per cent regretting Brexit and a mere 34 per cent still supporting it. This shift will allow a future government to bring the UK closer to the EU again.

Too late, but with determination, the Federal Reserve has acted to bring domestic inflationary pressures under control in the US, where they were strongest. Partly as a result, inflation expectations remain under control. Pain is still to come. But the chances are good that inflation will be brought under control in the US and elsewhere in 2023. A return to growth should follow.

> The world is not deglobalising: trade is just not growing as fast as before

Rising nominal and real interest rates have shaken the markets. The cyclically adjusted price/earnings ratio in the S&P 500 has fallen from 39 in December 2021, the second-highest peak in history, to a recent low of 27. That is still far above the long-term average of 17. But it is a move towards reality. Markets have also become noticeably more volatile and some speculative assets have tumbled badly. Bitcoin is down from a peak of $69,000 last year to $17,000. This proves that it is neither a unit of account nor a store of value. It has never been a useful means of payment. As went Bitcoin, so went Sam Bankman-Fried's FTX. Interest rates may not stay high in real or nominal terms. But their jumps have reminded investors of risk. Good.

Globalisation is also not dead. Indeed, outside the US, where whining about unfair trade has become almost epidemic, most countries understand that they need buoyant trade to thrive. Encouragingly, the IMF forecasts the volume of world trade in goods and services to rise by 4.3 per cent this year. Interestingly, this is faster than the 2.9 per cent growth in trade in goods: trade in services is taking the lead. This follows 10.1 per cent growth in the volume of trade in goods and services and 10.8 per cent growth in trade in goods in 2021. Meanwhile, global gross domestic product is forecast to grow only 3.2 per cent in 2022, after 6 per cent in 2021.

So, the world is not deglobalising: trade is just not growing as fast as before. That is in part a natural development. Globalisation could not grow as fast as before. But it is still at work. The world economy also continues to grow.

Finally, in a messy and ill-co-ordinated way the world is leaving Covid behind. This is greatly helped by the vaccines, even though these are not as widely distributed as they should be. Worse variants are likely and new pandemics probable. But this is progress.

It is easy to be overwhelmed by the dangers, injustices, conflicts and failures of our world. Surely, enough of them exist. But not all that happened this year was a disaster. For those of us who believe in democracy, the rule of law, continued economic advance, global economic integration, sound financial markets and monetary stability, 2022 was not entirely bad. Yet let us hope that 2023 is better. It needs to be.

martin.wolf@ft.com

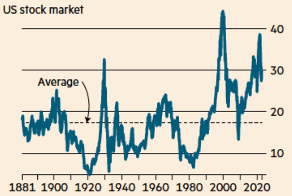
The British public feels 'Bregret'

Responses to poll question 'In hindsight, do you think Britain was right or wrong to vote to leave the EU?' (%)

Source: YouGov

The valuation of the US stock market has fallen but is still high

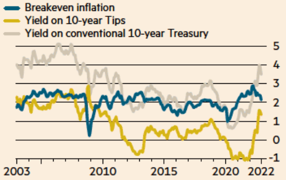
Cyclically adjusted price-earnings ratio on US stock market



Source: Robert J Shiller

Yields on US Treasuries are up, but 'breakeven' inflation is falling

US inflation expectations, derived from Treasury yields (%)



Source: Refinitiv

Strikes are an inevitability, not an aberration

Torsten Bell

The snow and strikes which dominated UK headlines last week have a surprising amount in common. Both close schools and cancel trains but, while the snow has melted away leaving little trace, strikes are here to stay well into 2023.

There is a great deal of industrial

poorer, but they don't automatically determine who gets poorer or how. That is instead shaped by power, policy and politics, as well as markets. Strikes are just one part of that messy process. It's no coincidence that in the 1970s both energy prices and industrial disputes surged.

The scale of the pain to be shared is large, with the highest inflation in four decades. Capital and labour are in an unusually high stakes contest, and one with plenty of scope for both to lose: real wages are down by 2.7 per cent over the past year, but profits as a share of gross domestic product aren't rising and firms

lance workers, highlight the focus of disputes in the public (and pseudo-public) sector. Private sector workers lack the unionisation rates (only 13 per cent are members) for widespread strike action. Instead, thanks to their good fortune of holding this contest during a tight labour market, they can seek a pay rise

> Threatening to move employer is less use for public sector workers given centrally set wages

warned, unpersuasively, that successful strikes for higher public sector pay risk stoking inflation. Fast rising prices are causing public sector strikes not vice versa, and it is far higher wage growth in the private sector that is concerning inflation hawks at the Bank of England.

There are real trade-offs when it comes to public sector pay, but they're not about wage-price spirals. Nurses' salaries can't cause that kind of spiral when the NHS, thankfully, doesn't have prices. Instead it's wage-tax spirals that really worry the government. Having already announced plans to raise the tax take to its highest level since the sec-

— more broadly — on taxpayers or public service users.

Ignore the claims that it would cost an extra £28bn to inflation-proof public sector wages — some pay rises are already pencilled in and public sector workers do actually pay tax. But the burden-sharing choices being made here are substantial: double-digit pay rises could easily cost low double-digit billions.

Seen through that lens, the chancellor's approach is understandable. But it is also untenable. The chasm between public and private sector pay growth (2.7 per cent vs 6.9 per cent respec-

economic impact of closing the rail network is small, but the indirect effects are significant (a third of rail commuters have jobs that can't be done from home). Strikes in the NHS will mean fewer operations and, with more than 7mn people already waiting to start routine treatment, it's clear our failure to improve the population's health is undermining our ability to generate wealth.

Ministers will say that this is why workers should stop striking. But a more pragmatic conclusion is that there are real benefits from resolving the disputes quickly. A pay rise agreed today is

Lex.

Twitter: @FTLex

BoJ/Kuroda: addicted to quack

Critics have derided Bank of Japan governor Haruhiko Kuroda as a lame duck since 2016. With just months to go before his term ends in April, he has tried to prove them wrong.

But the BoJ's surprise decision to widen its bond yield target band will not be enough to lift the economy out of its slump.

The bank shocked markets by unexpectedly heightening guide rails, allowing long-term interest rates to rise. The 10-year bond yield can edge up to around 0.5 per cent from a previous upper limit of 0.25 per cent. Bond prices dropped, the yen strengthened and the benchmark Nikkei fell 2.5 per cent.

The beneficiaries are Japanese banks and insurers. The steeper upper limit means higher interest income and profits for banks such as Mitsubishi UFJ Financial Group and Sumitomo Mitsui Financial Group. These have long suffered from negative rates.

The change bolsters insurers, who are reliant on bond returns to fund liabilities. They can count on higher investment returns and improved cash flow. As the gap between short- and long-term government bond yields widens, they can use long-term bonds to match liabilities.

The BoJ's goal is to boost the yen — its weakness meant record trade deficits this year. The value of imports rose 45 per cent in the first half. This lifted raw material prices for local companies, weakening earnings. Higher import costs caused GDP to contract in the third quarter.

Yesterday's move is justified. It may mark the start of a gradual shift away from the strict bond yield controls emblematic of Japan's status as the last big economy sticking to ultra low rates.

But the move is too little too late. It comes six years after the BoJ adopted negative interest rates. It is the boldest step Kuroda has taken after enduring after years of criticism, and only when he has one foot out of the door. Even after spiking, the yen remains at two-decade lows to the dollar.

Moreover, the BoJ plans to increase monthly purchases of government bonds to Y9tn ($67bn) a month, up from Y7.3tn before. That lengthens odds on a sustained move away from current ultra dovish policies. Low interest rates — and yen weakness — will persist. The yen remains vulnerable to a sell-off as the yield spread with countries such as the US continue to widen.

Rheinmetall: the tracks of my tears

A moralistic take on war is that arms manufacturers are the only winners. Sometimes the outcome is less clear. Shares in defence giant Rheinmetall are up 80 per cent this year due to the Ukraine War's revival of conventional conflict in Europe. But the stock has fallen about 10 per cent in two days after an explosive row with the German government over Puma tanks.

This is the downside of having a few large defence ministries as your clients. Big contract wrangles often result.

Rheinmetall's Puma tanks appear to be a lot less reliable than the sports shoes of the same name. Germany has bought 350 of the armoured vehicles, 40 of which boast an upgraded design. Almost 20 of these reportedly broke down during a training session.

That is frustrating for a German government keen to improve its military capabilities. Two new Puma-related contracts — for €1.5bn-€2bn — hang in the balance. Germany accounts for a third of Rheinmetall's sales.

It is not clear why the tank tracks fell off the Puma project. A possible culprit is a complex original design. Maintenance issues could be another.

Big military contracts have a history of time and cost overruns, with mudslinging from both sides. The UK's Ajax armoured vehicle veered off course. The Nimrod MRA4, a British patrol aircraft, was £800mn over budget and more than nine years late when its project was cancelled.

In this context, the Puma debacle is all in a normal day's work for defence contractors. Rheinmetall may emerge with only a few nicks and scratches.

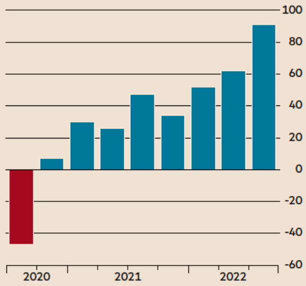
The Ukraine war is spawning new orders. In December, contractors gained €10bn of them in Europe, says researcher Agency Partners. While big government clients have heft, suppliers hold a lot of cards too. Rheinmetall is strong on scarce ammunition, recently winning a €500mn-plus order from Berlin. Expect governments and suppliers to stay locked in an uneasy truce as spending increases on conventional battlefield weapons.

TSB/Sabadell: the Spanish, patient

Sabadell has started to see decent profits from TSB six years after the Spanish bank bought its UK peer. Despite a disastrous IT project, TSB has recovered lost share in the local mortgage market. Sabadell's high group exposure to retail banking explains the strong performance of its shares this year

TSB purchase is finally paying off for Sabadell

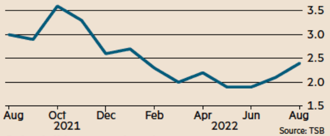
Pre-provision operating profit (£mn)



FT graphic Source: TSB

TSB bouncing back in UK mortgage market

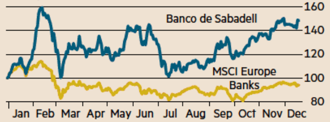
Monthly mortgage lending market share (%)



Source: TSB

Sabadell is outperforming

Share prices (rebased)



Source: Refinitiv

Spain's Banco de Sabadell may have forgotten why it bought UK retail bank TSB seven years ago. Big IT hiccups locked depositors out of their online accounts in 2018. The chief executive was ousted. Yesterday, UK regulator the Financial Conduct Authority finally closed the book on the affair with a 115-page report and a fine of £48.7mn.

Resolving this problem has already cost Sabadell about £330mn. When two companies try to merge their IT systems, it can cause disastrous problems.

According to the FCA, TSB needed eight months to return to "business as usual" having paid out £32.7mn to affected customers. And yet, Sabadell's perseverance — having refused at least one offer for TSB over the years — may have paid off.

Investors have taken a shine to Sabadell shares, up 59 per cent over one year. That is partly due to its high proportion of retail pre-tax profits, about 70 per cent, well above average for the European sector according to Citigroup.

Retail banks tend to have high and positive earnings sensitivity to rising interest rates. Sabadell has similar exposure in the UK from TSB.

Pity it took so long. Sabadell was too ambitious in its aims. A 2017 investor presentation revealed that Sabadell had planned to close 250 branches while changing IT platforms. Subsequently, TSB reversed from profit to loss from 2018 until 2021, according to Sabadell's accounts. The FCA fine comes when this former English Patient is properly adding to Sabadell's coffers. Pre-provision operating profits almost doubled year on year in the quarter through September to £91mn.

TSB's mortgage market share has begun to recover since the summer. Meanwhile, its own common equity tier one capital ratio is high at more than 16 per cent. This year, TSB should provide the largest earnings contribution to its Spanish parent in six years.

The hapless TSB has quietly gone from a public-relations nightmare to a steady profit provider. Sabadell's international expansion is finally paying off.

Brenntag/Univar: bulking large

Bigger is better, right? Wrong, says activist investor PrimeStone. It opposes plans by the world's largest chemical distributor to buy number two Univar. Germany's Brenntag has not outlined terms publicly. US-listed target Univar is capitalised at more than $5bn.

Customers are often taken for granted in big takeovers. Acquirers expect "synergies" — cost savings and marketing benefits. But that depends on customers staying put. PrimeStone is sceptical that they would do so if Brenntag combined with Univar.

It is easy to see why a deal appeals to Brenntag management. Supply chain turmoil during the pandemic boosted profits. That effect is fading and shares have been slowly deflating. A big takeover could bring the chance to cut costs and push up margins.

But PrimeStone, which holds 2 per cent of Brenntag, thinks that logic is flawed. It believes a deal would trigger an exodus of clients spooked by the risk to supply chains of swapping two suppliers for one. Some might defect to independent distributors. The activist says that happened after Univar bought rival Nexeo, erasing $220mn of organic ebitda in the years following.

PrimeStone bases its views in part on the way chemicals are distributed. This differs between bulk chemicals and speciality chemicals. The latter tend to be distributed via exclusive contracts. The former are sold through more of a free-for-all. It is here that customer risk is concentrated.

The activist believes Brenntag should split itself into a bulk chemicals group and a speciality chemicals company. Pure play groups of the latter type demand much higher ratings. IMCD and Azelis trade on 22 times forward earnings against Brenntag's 9 times.

Lex calculates spinning off speciality chemicals would add about a third to the group value of €8.8bn. Over two-fifths of Brenntag profits originate from this division. Growth could flow from smaller bolt-on acquisitions. Size does matter — but can be achieved without an expensive and risky takeover.

Musk/Twitter: Vibe check

The meme stock phenomenon has not ended. It has merely migrated. Zombie companies such as GameStop inspired retail investors to rally on social media then drive up share prices.

Elon Musk can apparently create a similar vibe at Twitter. The app is now privately held by the billionaire entrepreneur and institutional investors. Its value has plummeted from the $44bn purchase price, stung by the advertising downturn and Musk's erratic leadership.

Few CEOs could run an investment into the ground this quickly. Musk has, for example, broached a bankruptcy multiple times. Yet the Musk circus has an approving as well as a disapproving audience. Perhaps that alone can temporarily upend the laws of finance.

As if hoping to prove this, Musk has been marketing more equity. Even more remarkably, this has generated a modicum of interest.

Musk and co-investors committed $33bn of equity to fund the original deal. That was one reason banks lent $13bn. The "equity cushion" was designed to absorb value degradation before debt. The latter is now stuck on the balance sheet of Morgan Stanley and others, on offer for 60 cents on the dollar. So the equity cushion that would-be equity investors envisage adding to has already been incinerated.

Normally, new investors could buy Twitter debt at a discount and take over the company. That would leave little reason to buy common equity, let alone at the buyout price.

But perhaps buying equity really just represents the chance to attend an annual meeting with Musk, get a verified account and gain other psychic benefits from being in his club.

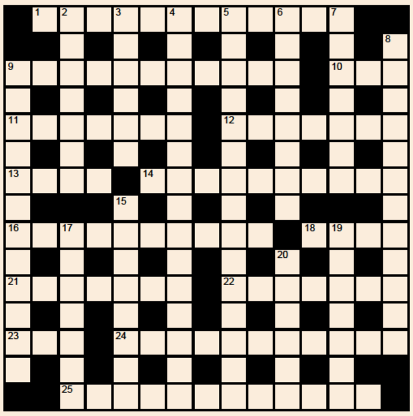
Musk, if he wanted to, could simply hand the keys of Twitter to his creditors. Tesla shareholders would prefer to have his attention again. Instead, he is selling billions of Tesla's stock seemingly to support Twitter.

It seems Musk is also willing to burn cash irrationally to remain in the clique of which he is the leading member.

Lex on the web
For notes on today's stories go to **www.ft.com/lex**

CROSSWORD

No 17,283 Set by IO



ACROSS

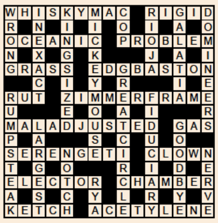
1 Vigilante, say, turned off news about noisy dispute (8,4)
9 Capital cuts inaccurately give us a projection (6,5)
10 Quite like battery acid, this soup? (3)
11/12 Cyrano found fame this costly! (7,3,4)
13 What you should do if you don't know about opening keg (4)
14 What present onset of Christmastide will become with a little time? (6,4)
16 Tipsy cakes go for a song (4,2,4)
18 Fairly rebutted these facts (4)
21/22 The risks people take involving the press (7,7)
23 Starts being 18 with this logical circuit? (3)
24 As correspondents are doing business — remotely placed? (7,4)
25 Simple means to travel south via busy North Parade (5,3,4)

DOWN

2 Being inferior, 20 succeeded in 24s (2,5)
3 Notice that repairs are on the way (4,2)
4 Excluding considerable influences wouldn't make you this mean (8,7)
5 I needed to read it in this original form (4,4,7)
6 In character, unveiled egg dish (8)
7 Receiving one doddery old PM with a certificate (7)
8 The final stage in hand (4,8)
9 Who might resort to violence when smuggling gold? (4,8)
15 Chopin, Paderewski et al rating director (4,4)
17 On air, where did we witness the World Cup build-up coming to a head? (7)
19 Where Phoenix is risen? Old stories about it (7)
20 Enough time to embrace love in court? (6)

JOTTER PAD

Solution 17,282



You can now solve our crosswords in the new FT crossword app at ft.com/crosswordapp