FINANCIAL TIMES

MONDAY 2 MARCH 2020 | WORLD BUSINESS NEWSPAPER | ASIA

Electric dreams
Volkswagen's bold ambitions to take on Tesla and win — PAGE 7

Comeback grandpa
Biden's big primary win reboots his campaign — EDWARD LUCE, PAGE 2

Online food fight
Delivery apps turn their attention to humble groceries — PAGE 9

Italy unveils €3.6bn stimulus as world tallies cost of coronavirus

Fears of Chinese contraction • Korean factories shut • Berlin stands ready with funds

FT REPORTERS

Italy will inject €3.6bn into its economy to mitigate the impact of the biggest outbreak of coronavirus in Europe as policymakers around the world grapple with the consequences of transport and supply chain disruptions resulting from efforts to contain the disease.

Roberto Gualtieri, economy minister, said yesterday that Rome would introduce tax credits for companies that reported a 25 per cent drop in revenues, as well as tax cuts and extra cash for the health system.

The package will amount to 0.2 per cent of gross domestic product, he told La Repubblica, and would come in addition to €900m of measures unveiled on Friday for the most severely hit regions.

Rome will also seek authorisation from Brussels to increase the budget deficit for this year, the Treasury said.

The move in Italy, which was on the brink of recession before the disease, comes as investors and policymakers anticipate greater harm to the global economy than previously thought. World markets fell sharply last week over fears that the response to the outbreak will deal a heavy economic blow.

Data released over the weekend showed that China's manufacturing sector suffered the steepest decline in activity on record in February, leading some economists to warn that the country could report its first quarterly contraction since the 1970s.

Official figures suggest the flu-like virus, known as Covid-19, is now spreading faster outside China, where it originated. Beijing reported 573 new cases and 35 deaths yesterday, bringing total confirmed cases there to 79,824.

South Korea, which has suffered the largest outbreak outside China with 3,736 cases and 18 deaths, has also announced new stimulus measures to help buffer the fallout for Asia's fourth-biggest economy, after a series of stoppages at the country's factories prompted concerns over damage to the global technology supply chain.

Samsung Electronics, the world's top producer of smartphones and computer chips, suspended production at a smartphone factory over the weekend after an employee tested positive.

South Korean soldiers spray disinfectant at Dongdaegu railway station
YONHAP/AFP via Getty

> I've wondered for years when the fragility inherent in complex multinationals would force them to shift business models. I think we've reached that moment
>
> **Rana Foroohar**
> Page 17

Italy, with more than 1,500 confirmed cases and 34 dead, is home to one of the largest coronavirus outbreaks outside Asia.

The country has placed 11 towns in the wealthy north — and their 50,000 residents — under lockdown until the end of next week, closed schools and universities and cancelled football matches and fashion shows.

France banned all indoor gatherings of more than 5,000 people over the weekend, while the Louvre Museum in Paris closed yesterday.

In Germany, the number of coronavirus infections more than doubled to 117 over the weekend, according to Robert Koch Institute, a public health body.

Finance minister Olaf Scholz said yesterday that the German government had the financial firepower to fund an economic stimulus programme should it become necessary.

Late on Friday, Federal Reserve chair Jay Powell signalled that the US central bank was considering cutting interest rates in response to the "evolving risks" posed by the spread of coronavirus, which has now spread to more than 60 countries and killed more than 3,000 people worldwide.

Reports & Analysis page 4
Shipping signals page 6
Editorial Comment page 16

Briefing

▸ UK warns Deutsche on dirty money rules
The London regulator has criticised the German lender for failing to improve anti-money laundering and compliance controls, warning its access to the UK after Brexit could be jeopardised.— PAGE 6

▸ Questions linger after Afghan peace deal
The peace deal signed between Washington and Taliban leaders on Saturday, aimed at securing the withdrawal of US and allied troops, has left open questions over the longest-running US war.— PAGE 2

▸ Elliott sets out Twitter governance fears
The activist hedge fund has laid out concerns to the board as it pushes for the removal of chief executive Jack Dorsey. The fund's 4 per cent stake puts it in the social network's top 10 shareholders.— PAGE 6

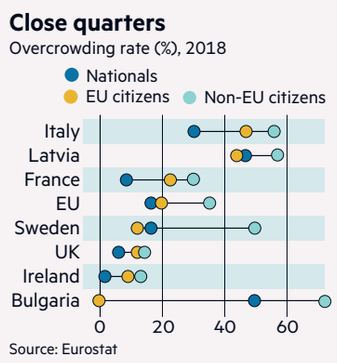
▸ Big bets against US oil and gas sector
Short-sellers have bumped up their bets against an industry bruised by plunging prices and oversupply. The S&P index of energy stocks is down 25 per cent so far in 2020.— PAGE 7

▸ Protest call after Macron pension decree
French trade unions have called for new protests against the president's reforms after the legislation was pushed through by decree. Some 40,000 amendments had been tabled to the bill.— PAGE 3

▸ Irish central bank chief in housing alert
Gabriel Makhlouf has warned of the dangers of big spending to address an affordable housing shortage despite the issue's leading to a surge in support for the nationalist Sinn Féin last month.— PAGE 3

▸ NMC hires Moelis for debt advice
The embattled healthcare group has sought advice on debt restructuring as signs of a cash crunch mount. Some staff yesterday complained they had not yet received their February salaries.— PAGE 8

Datawatch



More than a third of migrants from outside the EU live in overcrowded conditions — in terms of the number of rooms appropriate to the household size — in Europe. The rate is 17 per cent for nationals and 20 per cent for foreign EU citizens

Ukrainian rabbi's dream soured by Giuliani links

Big Read ▸ PAGE 15

Brussels calls emergency Idlib summit after Turkey 'opens gates' for refugees

JIM BRUNSDEN AND MICHAEL PEEL — BRUSSELS

Brussels has called an emergency meeting of EU foreign ministers as Turkey's conflict with the Syrian regime risks creating a new refugee crisis.

Josep Borrell, the EU's high representative for foreign affairs, said that the fighting around the province of Idlib, Syria's last rebel-held enclave, represented "a serious threat to international peace and security" and that the EU had to "redouble efforts to address this terrible human crisis with all the means at its disposal".

Turkish president Recep Tayyip Erdogan said over the weekend that his country had "opened the gates" to the EU for refugees, as nearly 1m people flee the conflict in Idlib.

The situation is a test of a refugee deal Turkey struck with the EU in 2016 that has limited the flow of irregular migrants and asylum seekers into Greece in exchange for refugee funding from European countries.

The agreement contributed to a sharp reduction in the number of migrant arrivals into the EU compared with the peak of the refugee crisis. New arrivals numbered fewer than 125,000 last year, compared with more than 1m in 2015.

Mr Borrell said he had called the meeting, which will take place during the coming week, "in particular at the request" of the Greek government, whose refugee camps and reception facilities are already at breaking point.

Greek police said that within a few hours of Mr Erdogan's statement yesterday morning at least 500 people had arrived by sea at the chain of Greek islands close to Turkish territory. The UN's International Organisation for Migration estimated that around 13,000 people were gathered at various points along the Greek-Turkish border.

European countries have resisted Russian pressure to normalise relations with the Assad regime in Syria and release large-scale reconstruction funds, although Hungary has upgraded its diplomatic presence in Damascus.

One EU official said a main purpose of this week's emergency meeting should be to shore up unity on Syria policy and the migration response and to "make sure panicky individual member states don't go off on tangents".

Ministers are also likely to review humanitarian aid for Syria and migration support for Greece, Bulgaria and Turkey, measures which closely involve the European Commission.

New Syria operation page 2

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

© THE FINANCIAL TIMES LTD 2020

No: 40,337 ★

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

9 770307 176814 10>

World Markets

STOCK MARKETS

	Feb 28	Feb 21	%Week
S&P 500	2954.22	3337.75	-11.49
Nasdaq Composite	8567.37	9576.59	-10.54
Dow Jones Ind	25409.36	28992.41	-12.36
FTSEurofirst 300	1464.48	1667.89	-12.20
Euro Stoxx 50	3329.49	3800.38	-12.39
FTSE 100	6580.61	7403.92	-11.12
FTSE All-Share	3673.61	4132.71	-11.11
CAC 40	5309.90	6029.72	-11.94
Xetra Dax	11890.35	13579.33	-12.44
Nikkei	21142.96	23479.15	-9.95
Hang Seng	26129.93	27609.16	-5.36
MSCI World $	2177.25	-	
MSCI EM $	1030.67	-	
MSCI ACWI $	521.92	-	

CURRENCIES

	Feb 28	Feb 21		Feb 28	Feb 21
$ per €	1.099	1.085	£ per $	0.783	0.772
$ per £	1.277	1.296	€ per £	1.163	1.194
£ per €	0.860	0.837	¥ per €	118.485	121.222
¥ per $	107.865	111.705	£ index	80.004	81.201
¥ per £	137.776	144.759	SFr per £	1.236	1.268
SFr per €	1.063	1.062			
€ per $	0.910	0.922			

COMMODITIES

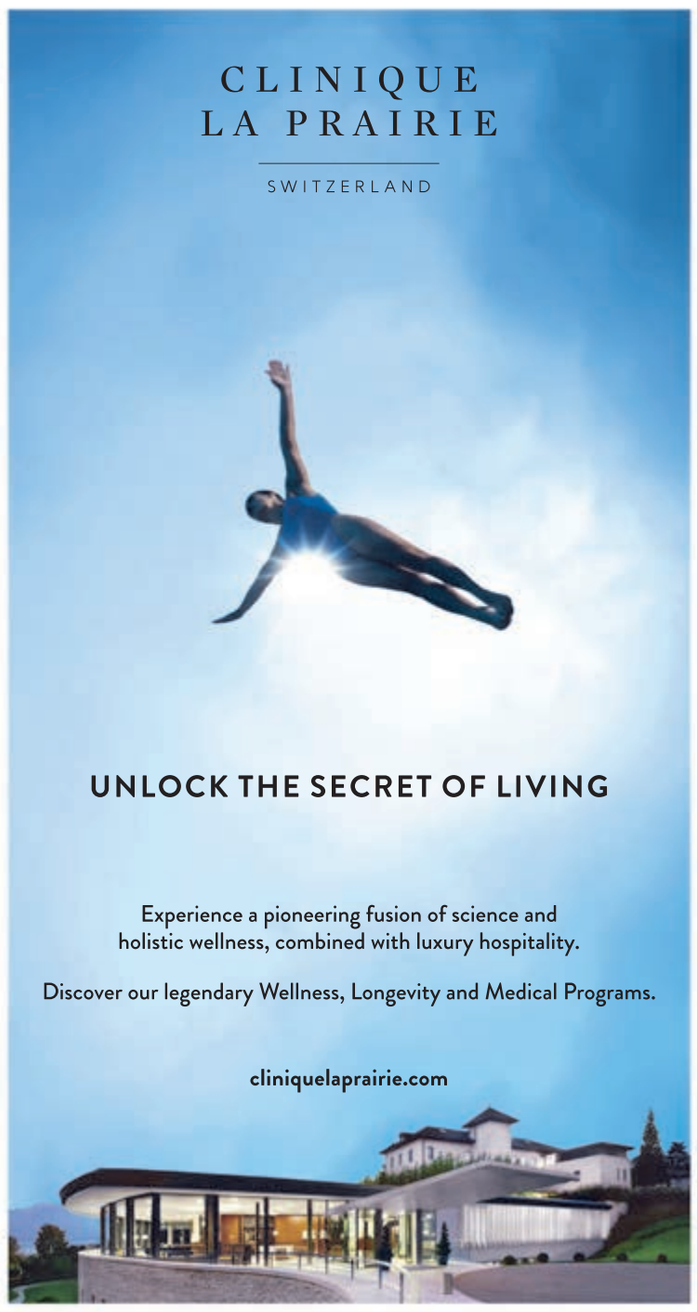
	Feb 28	Feb 21	%Week
Oil WTI $	45.19	53.34	-15.28
Oil Brent $	50.00	58.39	-14.37
Gold $	1652.00	1619.00	2.04

INTEREST RATES

	price	yield	chg
US Gov 10 yr		1.16	-0.13
UK Gov 10 yr		0.44	-0.03
Ger Gov 10 yr	105.62	-0.61	-0.06
Jpn Gov 10 yr		-0.16	-0.05
US Gov 30 yr	120.93	1.67	-0.12
Ger Gov 2 yr	105.90	-0.78	-0.04

	price	prev	chg
Fed Funds Eff	1.55	1.55	0.00
US 3m Bills	1.45	1.53	-0.08
Euro Libor 3m	-0.46	-0.46	0.00
UK 3m	0.72	0.73	-0.01

Prices are latest for edition — Data provided by Morningstar



A Nikkei Company

Military offensive

Turkey declares new operation in Syria

Mounting death toll puts Ankara's partnership with Moscow under strain

LAURA PITEL — ANKARA
CHLOE CORNISH — BEIRUT
KERIN HOPE — ATHENS

Turkey officially announced its fourth military operation in Syria in as many years in a bid to reverse gains by the Russian-backed regime of President Bashar al-Assad as clashes escalated in the embattled Syrian province of Idlib.

Turkey's defence minister, Hulusi Akar, said that operation Spring Shield had been launched after the killing of 34 Turkish soldiers last Thursday — the deadliest day that Turkey has suffered in Syria since the start of the country's civil war nine years ago.

Turkish-made armed drones launched hundreds of strikes on Syrian targets in the wake of the attack. The Syrian Observatory for Human Rights, a British-based monitor, said that 74 Syrian soldiers had been killed since Friday.

Frontlines in Idlib, Syria's last rebel-held enclave, have shifted quickly, with gains by both Turkish-backed rebels and regime forces supported by Russia.

Yesterday, Turkey said that it had downed two Su-24 fighter jets belonging to Damascus. The Syrian government, which hours earlier had declared that it would enforce a no-fly zone over the north-west of the country, confirmed that two of its planes had been targeted and said that the pilots had survived.

In comments that underscored Turkey's careful stance towards Russia, Mr Akar said that the aim of the offensive in Idlib was not to "face off against" Moscow. "Our sole aim is to put an end to the carnage by the regime and thus prevent radicalisation and migration," he said.

Mr Akar said that the Russians "must use their influence on the regime to halt regime attacks and ensure the withdrawal [of regime forces] to the Sochi agreement borders".

Moscow accuses Turkey of failing to uphold the deal by failing to halt attacks by jihadi groups that dominate militias.

The mounting Turkish death toll has placed strain on the close partnership forged between Turkey's President Recep Tayyip Erdogan and Russian president Vladimir Putin. The casualties have pushed relations to their most tense point since the Turkish military downed a Russian fighter jet in 2015.

Despite their differences, Turkey has shown little sign of wanting to sever ties with Russia. Mr Erdogan has pushed for a face-to-face meeting with Mr Putin, and is expected to travel to Moscow to meet with him on March 5 or 6.

The Syrian regime's offensive to retake Idlib, part of Mr Assad's campaign to reclaim "every inch" of his country, has triggered the worst humanitarian catastrophe of the country's civil war, according to the UN.

> 'Our sole aim is to put an end to the carnage by the [Assad] regime'
> Hulusi Akar, Turkey defence minister

Nearly 1m people have been forced to flee in search of safety. Turkey, home to more than 4m refugees from Syria and other nations, has said it cannot take any more people in. Its calls for global support to create a buffer or no-fly zone inside Idlib to protect the province's 3m civilians have fallen on deaf ears.

Following last week's attack, Turkey has sought to dial up the pressure on the EU by following through on a threat to open its borders to Europe for refugees, prompting alarm in European capitals.

Thousands of people from countries including Afghanistan, Iraq, Iran and Syria have streamed into a buffer zone between Turkey and Greece in recent days. Most have found themselves trapped as Athens has strengthened security on the border.

Additional reporting by Jim Brunsden in Brussels and Henry Foy in Moscow

Afghanistan. America's longest conflict

Taliban deal brings hope of end to war

Broad agreement has been reached but there are plenty of obstacles to a lasting peace

KATRINA MANSON — WASHINGTON

US president Donald Trump declared in September that talks with the Taliban were "dead". But after nine halting rounds of negotiations, the US signed a peace deal with Taliban leaders on Saturday that aimed to secure the withdrawal of all US and allied troops from Afghanistan. So is this the end of America's longest-running war?

Terms of the deal

The US has agreed to withdraw all its military forces from Afghanistan, including contractors, trainers and advisers, within 14 months. All coalition partners, including Nato, will also withdraw their 39,000 troops in this timeframe. The US will start with a reduction of about 4,000 troops within 135 days, bringing the total remaining to 8,600. The US will aim to remove UN sanctions against the Taliban by May 29, and to remove its own sanctions and any rewards it offers for the capture of certain Taliban by August 27. Up to 5,000 Taliban prisoners will be released by March 10, with the rest to be released three months after that.

In return, the Taliban has agreed to break with al-Qaeda, meaning it will no longer host, recruit, train, fundraise for or co-operate with any terrorist groups to ensure they no longer threaten the security of the US from Afghan soil. The Taliban has also agreed to start talks with Afghan political representatives and civil society, on March 10. These negotiations will seek a permanent ceasefire and could lead to the Taliban's inclusion in the Afghan government.

Rights of women and minorities

The deal is silent on this issue, but it goes to the heart of 40 years of war in Afghanistan. The agreement commits the Taliban only to hold talks with "Afghan sides" on March 10 aimed at ending the violence.

The Taliban want Afghans to live under their version of sharia law. It is unclear how their inclusion at the heart of Afghan government could accommodate the rights of women and girls, who now make up 39 per cent of Afghans who attend school. Under Taliban rule, women were banned from work and education, were required to wear burkas in public and subjected to forced underage marriage.

Any deal will also seek to address the historical grievances of the three main ethnic groups — Pashtun, Tajik and Hazara.

A US soldier wounded in a 2012 clash with the Taliban in Kandahar is evacuated. The US has agreed to pull all its forces out in 14 months
Baz Ratner/Reuters

The next steps

Mr Trump said he would "be meeting personally with Taliban leaders in the not too distant future" and he hoped the group would continue to "kill terrorists", a reference to the Taliban's own war against Isis in Afghanistan.

Afghan negotiators are due to start talks on March 10 in Oslo, but US officials have said both time and location could shift. One stumbling block is that US officials are still trying to persuade the Kabul government to agree to release thousands of Taliban by that date for intra-Afghan talks to start.

Afghan president Ashraf Ghani said yesterday he had made "no commitment" to release prisoners before talks start. He said negotiations could instead include prisoner release as one of its agenda points, but this could scupper negotiations before they begin.

Negotiations will probably focus on ways to include the Taliban in government and the impact that will have on politics, security and society, including the role of women.

The negotiations will also be complicated by antipathy to Mr Ghani from Abdullah Abdullah, the opposition politician who refused to recognise his election victory and threatened to set up a parallel government until the US last week dissuaded him. The deal also commits the US to support the economic reconstruction of Afghanistan.

The end of war

Far from it. Both al-Qaeda and Isis have fighters in Afghanistan and are opposed to the deal, so could seek to wreck it. UK officials suggested the changing dynamics between allied forces and Afghan security forces could give terrorist groups space to operate differently.

US officials also fear Taliban fighters could continue their association with al-Qaeda or even join Isis, the group's foe. It remains unclear whether Pakistan will refuse safe haven to any groups that threaten US security. The US says it will progressively withdraw troops only if the Taliban maintains its commitments.

Additional reporting by Stephanie Findlay in New Delhi, Farhan Bokhari in Islamabad and Helen Warrell in London

GLOBAL INSIGHT
US POLITICS

Edward Luce

Grandpa's comeback intensifies pressure on Bloomberg to quit race

You could almost hear the establishment's collective exhalation after Joe Biden's thumping win in South Carolina on Saturday night. Finally, on the fourth sampling in this remarkably polarised Democratic primary, Bernie Sanders has met a barrier, which is the African-American vote. The former US vice-president can now credibly take on Mr Sanders in the decisive cluster of primaries over the next few days.

But Mr Biden's win should not yet be mistaken for national momentum. He owes a lot to James Clyburn, the South Carolina congressman, whose moving endorsement this week was cited by almost half of black voters as influencing their choice. In that respect, all politics is local. Moreover, Mr Biden has focused almost all his time and money on winning this one state at the expense of far bigger ones next week.

Yet he is back from the near dead. In 1992 Bill Clinton turned into the "comeback kid" after he pulled off a second-place finish in New Hampshire. Mr Biden has now earned the moniker "comeback grandpa".

> The Democratic establishment will need to unite behind one non-Sanders candidate

It would take a psephological sea change to convert the momentum he brings from South Carolina to come out top in the Super Tuesday sweep this week. Mr Biden trails Mr Sanders in the national polls by double digits. Many big states, notably California, where Mr Sanders' lead has been prohibitive for weeks, have already had unusually high rates of early voting.

Tomorrow's likelier outcome is that Mr Sanders comes out top and there is a tussle between Mr Biden, Mike Bloomberg and Elizabeth Warren for second place. It is hard to believe Pete Buttigieg and Amy Klobuchar will not follow Tom Steyer's lead in pulling out. Neither has much chance of winning any of the 14 states that vote tomorrow.

At that point, the Democratic establishment will need to unite behind one non-Sanders candidate — assuming it is not already too late. If the party wants to convert Saturday night's relief into actionable hope, it should persuade Mr Bloomberg to pull out of the race. It has been obvious for several weeks that the unintended beneficiary of the former New York mayor's record spending has been Mr Sanders.

> It is increasingly obvious that Bloomberg is the biggest obstacle to Biden's nomination

It is hard to imagine Mr Bloomberg can be persuaded to drop out the day before his name first appears on any ballot. He took out a three-minute advertisement in yesterday morning's prime time window to address America on the coronavirus. Logic suggests Mr Bloomberg would have a far bigger impact if he spent that money on Mr Biden. Emotion will doubtless dictate otherwise.

The situation is rich and potentially bitter in irony. Mr Bloomberg entered the race in November after he concluded that Mr Biden was too weak to take on the left (Ms Warren was in the lead then, not Mr Sanders).

Yet it has become increasingly obvious that his presence is the biggest obstacle to Mr Biden's nomination. Mr Bloomberg could continue to run for the White House for several lifetimes without exhausting his personal wealth. "United we stand" is a chant of the left. The Democratic bigwigs should try to convert Mr Bloomberg to that way of thinking as fast as it can.

edward.luce@ft.com

FT **Super Tuesday showdown**
Big win in South Carolina for former vice-president Joe Biden sets up Super Tuesday showdown with Democratic nomination front-runner Bernie Sanders
ft.com/us-presidential-election

MAKE A SMART INVESTMENT
Subscribe to the FT today at **FT.com/subscription**

FINANCIAL TIMES
18th 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, 18th Floor, Nan Fung Tower, 88 Connaught Road Central, Hong Kong
Asia Editor: Jamil Anderlini

Printed by
Australia: Spotpress Pty Ltd, 24-26 Lillian Fowler Place, Marrickville, NSW 2204
Hong Kong: Kin Ming Printing Co Ltd, 15/F BLK A, 18 Ka Yip Street, Ming Pao Industrial Centre, Chai Wan; Representative; Angela Mackay; ISSN 1025-918X
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: Singapore Press Holdings Ltd, 2 Jurong Port Road, 619088
Representative, Anjali Mahindroo

© Copyright The Financial Times Limited 2020. All rights reserved.
Reproduction of the contents of this newspaper in any manner is not permitted without the publisher's prior consent. 'Financial Times' and 'FT' are registered trade marks of The Financial Times Limited.

The Financial Times and its journalism are subject to a self-regulation regime under the FT Editorial Code of Practice: www.ft.com/editorialcode

Reprints are available of any FT article with your company logo or contact details inserted if required (minimum order 100 copies). One-off copyright licences for reproduction of FT articles are also available.
For both services phone +44 20 7873 4816, or alternatively, email syndication@ft.com

Wall Street clash

Sanders' agenda would remake financial world

KADHIM SHUBBER — WASHINGTON
ROBERT ARMSTRONG — NEW YORK

While Bernie Sanders may have taken the lead in the race for the Democratic presidential nomination, Wall Street is only now beginning to weigh up the possibility that the self-proclaimed democratic socialist might be the next US president.

The billionaire-bashing Vermont senator's policy platform has been defined by broad welfare programmes — from Medicare for All to student debt forgiveness — but for Wall Street his agenda reads like a declaration of war.

Mr Sanders' agenda, if enacted, would radically remake the financial world.

Here are some of the areas in which he is looking to make big changes.

Breaking up banks

Mr Sanders wants to reinstate the Glass-Steagall Act's separation of investment and retail banking, which would force JPMorgan Chase, for example, to break itself up. He has also pledged to end "too big to fail" banks. A Senate bill he introduced in 2018 would break up any bank with "total exposure" equivalent to more than 3 per cent of gross domestic product, or about $650bn in assets. That would force Wells Fargo, JPMorgan, Bank of America and Citigroup to split.

At just seven pages long, the bill is relatively short on specifics. "There's a lot more detail in the [Elizabeth] Warren stuff. The Sanders [bank] break up bill is what I could call more impressionistic," said Bartlett Naylor, a financial policy advocate at Public Citizen, the consumer watchdog group.

Financial transactions tax

Mr Sanders has proposed slapping a tax of a fraction of a per cent on every financial transaction — 0.5 per cent on stock trades, 0.1 per cent on bond trades and 0.005 per cent on derivatives trades — to fund some of his social welfare programmes.

Such a levy could transform the economics of high-speed trading by making it costly to rapidly enter and exit market positions — and ultimately "restrict rapid-fire financial speculation", according to his campaign website.

Consumer banking

Mr Sanders has proposed a cap on interest rates on all consumer loans at 15 per cent to cut debt costs for Americans. Such a move would radically reduce the size of the credit card operations of banks from Citibank to PNC Financial. It would also reshape the subprime auto and payday lending industries by banning higher cost debt that such companies use to ensure their profits while lending to riskier borrowers.

He also wants to overhaul retail banking by offering current and savings accounts, debit cards, online banking and "low-interest, small dollar loans" through the existing US Postal Service network.

The Fed

Mr Sanders has come out in support of a plan to "audit the Federal Reserve and make it a more democratic institution" — a broad proposal to give Congress more checks over the central bank, which could mean a range of things in practice.

While he has not divulged who he would appoint to the Fed if elected president, Mr Sanders previously joined Ms Warren in signing a 2016 letter urging the Fed to find ways to assemble a more diverse group of policymakers, including women and racial and ethnic minorities, in order to better serve the needs of disadvantaged groups.

Raising taxes for the super-rich – and normal rich

Mr Sanders has long advocated raising taxes on the richest Americans, including a special wealth tax on the top 0.1 per cent of US households — those with a net worth over $32m. The tax would start at 1 per cent and rise to 8 per cent for wealth of more than $10bn.

He also proposes eliminating the income cap on the Social Security tax that is taken out of every US worker's pay cheque: a 12 per cent levy, split between employer and the employee. Right now income above $137,700 is not subject to the tax, so removing it would represent a major tax increase on those earning significantly more than that threshold.

One of Mr Sanders' most recent policy ideas — outlined in a Senate bill he introduced last week — is to eliminate tax breaks for special executive retirement plans, under which corporate bosses can put off paying taxes on compensation they defer until after retirement.

Doing so would recoup an estimate $15bn in federal tax revenue, according to Mr Sanders, which he would use to shore up multiemployer retirement plans for workers.

Ireland's bank chief warns on cash for homes

Trade tensions and potential for no-deal Brexit pose threat to economy, says Makhlouf

MARTIN ARNOLD — BERLIN
ARTHUR BEESLEY — DUBLIN

Ireland's central bank chief has warned against starting a spending spree to address the country's shortage of affordable housing after the issue led to a surge in support for the nationalist Sinn Féin party in elections last month.

Gabriel Makhlouf told the Financial Times that even though Ireland's economy was one of the top performers in Europe last year with growth of close to 5 per cent, there were risks ahead that could cause a sharp downturn.

Mr Makhlouf said a no-deal Brexit was the biggest immediate risk to the Irish economy, because of its close trading links to the UK. He added that Ireland's economy was also likely to be hit by trade tensions, changes to international tax rules and the disruption of the coronavirus outbreak.

"I'm calling this an interesting conjecture because in a bad scenario . . . you could suddenly find the fiscal surpluses that the current government has forecast are suddenly challenged very much by that change in sentiment and activity," he said.

> 'The supply of housing needs to be addressed . . . It will take a while . . . it is not simply construction'

A lack of affordable housing was the dominant issue in last month's general election, which boosted Sinn Féin and left the country with a deadlocked parliament.

Sinn Féin's left-leaning manifesto tapped into the anger over housing by promising a big increase in spending on public housing, a rent freeze and changes to banking rules to cap mortgage rates — which are higher than in much of Europe.

The central bank has found that one dwelling was built for every seven extra people in the population over the past eight years. House prices have rebounded since the 2008 crisis, although they dipped last year and remain below pre-crisis levels. Rents have risen 40 per cent in the past five years, while average earnings are up only 14 per cent.

"Absolutely the supply of housing needs to be addressed," Mr Makhlouf said. "Whether you can do that overnight is extremely unlikely, so it is going to take a while. It is not simply construction."

He said housing supply would also depend on changes to the planning system, public infrastructure and availability of labour. "When you are running, as Ireland is at the moment, an economy at full capacity, you have to meet all of those challenges in my view to deliver the housing supply that you may want and need," he said. "It is more than a fiscal question."

Ireland's public debt ratio has almost halved in recent years to just over 60 per cent of its gross domestic product but that figure is distorted by high foreign direct investment.

The country's per capita debt remains one of the world's highest. Although the outgoing government achieved a 0.4 per cent of GDP budget surplus, the central bank has predicted that growth could drop to below 1 per cent in a no-deal Brexit scenario. The country is also heavily reliant on increased corporation tax revenues from multinational companies with Irish operations, such as Apple, Google, Facebook and Microsoft.

A British citizen born in Egypt, Mr Makhlouf is the first overseas official to lead Ireland's central bank. The 60-year-old's appointment last year was clouded by controversy in New Zealand, where as head of its treasury department, he was found to have wrongly blamed hackers for a budget leak.

He said public housing concern could threaten the credibility of the Irish central bank. On a recent visit to a technology college in south-west Ireland, he asked the audience what inflation had been in the past decade and most people said it had been around 6 to 7 per cent — above the actual level close to 1 per cent.

"If people's reality is different to the one that we assert, then we have got a problem," he said. "Housing costs, I think, at least in Ireland are the main issue" in creating a gulf in public perceptions of prices and the actual data.

He added his voice to those calling for the cost of housing to be given more weight in the way inflation is calculated in the eurozone.

The EU has long debated whether it should follow the US, UK and other countries by including the cost of owner-occupied housing in its data, even though it is hard to measure.

"The main thing here is it's not how you do it. It needs to be done," he said. "The key thing is credibility, for me, and connecting much more with people."

Risks ahead: Gabriel Makhlouf advises against loosening the purse strings to address Ireland's housing shortage, the issue that dominated last month's general election
Vivek Prakash/Bloomberg

Constitutional gambit

France faces fresh protests as pension bill passed by decree

DAVID KEOHANE — PARIS

France's trade unions and opposition parties called for new protests against Emmanuel Macron's pension reform after the government pushed through the contentious legislation by decree.

The pension overhaul, which aims to unify 42 different profession-specific retirement schemes, sparked the longest public transport strike in France's history before making it to parliament.

Late on Saturday, Edouard Philippe, the prime minister, announced he would trigger article 49.3 in the constitution allowing the government to override parliament to adopt the legislation.

Mr Philippe did so "not to put an end to debate but to end this period of non-debate" after opposition parties introduced more than 40,000 amendments to the bill, he told lawmakers.

The government's decision to use the constitutional provision underlines the toxic political environment facing President Macron, whose approval ratings have slid to about 33 per cent. The reform has become the biggest challenge to his presidency since the *gilets jaunes* street protests that kicked off in late 2018.

Even though the French leader would have had no problem passing the pension bill because of his large majority in the lower house of parliament, the lengthy and tense discussions were threatening to overshadow mayoral elections later this month, in which Mr Macron's party is expected to suffer a nationwide defeat.

"This was the only way for the government to speed up the process considering the strategy of the opposition to pose 30-40 thousand amendments to block the legislation," said Vincent Martigny, a professor of political science at the University of Nice.

"The opposition pushed the government to this route. The France Insoumise [party] knew the government would probably do this and now they can say the government is not respectful of democracy," he said.

Philippe Martinez, head of the leftwing CGT trade union, told AFP that the unions would take to the streets once again next week against the reforms.

Jean-Luc Mélenchon, leader of the far-left France Insoumise — France Unbowed — decried the "extraordinarily violent" methods of the government while Marine Le Pen, leader of the far-right Rassemblement National, or National Gathering, said the French "will not forgive this outrageous manoeuvre".

Article 49.3 was last invoked by François Hollande, former Socialist president, to push through labour reforms in 2016 and before that a slate of business-friendly reforms put together by Mr Macron as his economy minister in 2015. Mr Hollande took the action in light of his government's small parliamentary majority, which put the law's passage in jeopardy.

Opposition parties have now called for a no-confidence vote against the government, which is positioned to win comfortably next week. "The timing is absolutely central because it is clear any debate in parliament would have taken months," added Mr Martigny.

exec-appointments.com

Looking for senior talent?

Choose the right solution to reach the best executive level candidates

exec-appointments.com, the dedicated recruitment site of the Financial Times, is the leading job board for executive-level positions across multiple sectors with an average of 33 high quality applications per C-suite role.

Our recruitment advertising packages target a broad and talented group of C-suites, business leaders, banking and finance professionals that can add real value to any business, maximising the exposure of your role and providing you with a great branding opportunity.

Contact us at **+44 (0)207 873 3600** to discuss advertising opportunities on **exec-appointments.com**

A service from the **Financial Times**

Emergency legislation

UK draws up battle plan to beat coronavirus

Health chief warns of city lockdowns and school closures as cases leap to 35

SARAH NEVILLE — LONDON

The UK government could ban mass gatherings, close schools and urge people to avoid public transport to halt the spread of coronavirus, Matt Hancock, health secretary, said yesterday.

The plans were announced before the Department of Health and Social Care said a further 12 people in England had tested positive for Covid-19, taking the total across the UK to 35.

A government plan to deal with the escalating outbreak in Britain due to be unveiled this week is expected to say that a war room of scientists and other experts will be established, with each Whitehall department nominating a minister to lead on the effort.

As Boris Johnson prepares to chair his first emergency ministerial meeting on the coronavirus outbreak today, Mr Hancock told the BBC that newly retired doctors and nurses could be called back into the National Health Service to fill in for sick or otherwise absent colleagues.

Employers could also be encouraged to tell staff to work from home if the disease strengthens its hold in the UK.

Asked whether the government would consider locking down entire cities, Mr Hancock said: "There's clearly a huge economic and social downside to that. But we don't take anything off the table at this stage, because you've got to make sure that you have all the tools available, if that is what's necessary."

However, he wanted "to minimise the social and economic disruption", stressing such drastic so-called social distancing measures were not yet imminent and emphasising the steps individuals can take to limit their chances of catching coronavirus.

"So long as people are washing hands and taking the precautions that are set out that is the right thing to do," said Mr Hancock.

> [The government would] 'only look at things that epidemiologically, scientifically make sense'

The UK authorities on Friday reported that a man living in Surrey was the first case of coronavirus in a patient who had not been abroad.

The health department said yesterday another patient, this time from Essex, had contracted coronavirus without travelling.

It added that among the 12 new cases were people from London, West Yorkshire, Greater Manchester, Hertfordshire and Gloucestershire.

Mr Hancock made clear that the government had not given up hope that the coronavirus outbreak could be stopped from becoming pandemic.

However, should scientists tell the government that "it's going to go right through the world and therefore become endemic here", ministers would move into the delay phase, "where we have to take judgments about how much action to take that might have downsides and costs in order to delay it", he added.

The government would "only look at things that epidemiologically, scientifically make sense", said Mr Hancock. The government plan to deal with the escalating Covid-19 outbreak is expected to provide for emergency legislation giving the public sector new powers to respond.

For example, this could include allowing school class sizes to rise to take account of sick teachers.

Mr Hancock said such "enabling powers to help the public services to continue to operate effectively" would "be temporary, if they're taken, and they are essentially about how to deal with a very large-scale problem".

He also moved to reassure people that the NHS could cope, promising an additional 5,000 critical care beds could be made available. The government plan is based on a 2011 document that was drawn up to respond to a flu pandemic.

Editorial Comment page 16

Central banks. Recession risk

Policymakers face calls to prevent 'doom loop'

Spread of virus around world prompts demands for fiscal and monetary intervention

CHRIS GILES — LONDON
ROBIN HARDING — TOKYO
BRENDAN GREELEY — WASHINGTON

Disruptions caused by the coronavirus outbreak that originated in China and is now spreading through the rest of the world are driving the global economy closer to a recession, triggering calls for fiscal and monetary intervention.

Capital Economics cut its growth forecast by 0.4 percentage points to 2.5 per cent for 2020, in what the IMF considers recession territory. But Jennifer McKeown, head of economic research at Capital Economics, cautioned that if the outbreak became a global pandemic — a state some epidemiologists say has already been reached — the effect "could be as bad as 2009, when world GDP fell by 0.5 per cent".

Predictions a week ago by IMF chief Kristalina Georgieva that global growth would be hit by just 0.1 percentage points at 3.2 per cent this year already seem out of date. The OECD in Paris will rush out a new interim forecast today, setting out a greater impact than the IMF's reading, and outlining an alternative scenario with what officials describe as "more serious consequences".

A global recession in the first half of this year is "suddenly looking like a distinct possibility", said Erik Nielsen, chief economist at UniCredit.

The question for policymakers is what to do as pressure grows for them to take preventive measures to stimulate the economy. "The ability of the economy to bounce back strongly depends in large part on whether we see effective policy intervention," said Karen Ward, chief European market strategist at JPMorgan Asset Management.

Some monetary policymakers have argued that coronavirus is a supply shock to the economy, removing workers from their places of employment and components from factories, and therefore makes stimulus ineffective.

Bank of England deputy governor Jon Cunliffe said on Thursday that since coronavirus was "a pure supply shock there is not much we can do about it".

A woman at the Shanghai Stock Exchange has her temperature taken last week Aly Song/Reuters

It depends on the magnitude of the supply shocks, other economists say, however. In a study of a global flu pandemic, Oxford university professors estimated a four-week closure of schools — almost exactly what Japan has introduced — would knock 0.6 per cent off output in one year as parents would have to stay off work to look after children.

For policymakers, it is also almost impossible to distinguish between a lack of demand caused by people deciding not to spend at a time of an epidemic and pure supply shocks. The point of taking action is "to prevent the supply disruption triggering a doom loop" of weaker supply that in turn leads to lower spending, said Roger Farmer, professor of economics at UCLA.

Fiscal policy would also help pay for medical interventions and boost demand, while monetary policy can help keep demand higher and seek to prevent financial distress among indebted companies, said Olivier Blanchard, senior fellow at Washington DC-based think-tank the Peterson Institute.

There are signs central bankers and governments are weighing bolder steps:

US

Federal Reserve chair Jay Powell signalled on Friday the central bank was considering cutting interest rates in response to the "evolving risks" to the US economy. The Department of the Treasury, meanwhile, has been reluctant to speak about the risks posed by the virus on growth, or to commit to a response. A Treasury official said before Mr Powell's statement that the most likely outcome was still "V-shaped" — a shortlived hit, contained within a quarter, followed by a sharp recovery.

Eurozone

The European Commission has earmarked €232m to help contain the disease. Yesterday, Italy announced a €3.6bn stimulus package, saying it would seek authorisation from Brussels to widen its budget deficit this year. The European Central Bank has yet to signal any imminent intervention.

> A global recession in the first half of this year is 'suddenly looking like a distinct possibility'

Japan

The coronavirus has hit Japan just as the government was seeking to implement a new stimulus package to help mitigate a damaging rise in consumption tax.

If there is a big hit to demand, the Bank of Japan has little room to respond, with overnight interest rates at minus 0.1 per cent and 10-year bond yields capped at zero.

That leaves fiscal policy as the main tool for action. But the government has just finished legislation on a supplementary budget for the fiscal year to March 2020 and it is likely to be months before it can consider any further measures.

Additional reporting by Martin Arnold in Frankfurt

Companies & Markets page 6
Rana Foroohar page 17

China

Forced Uighur labour reported in multinational supply chains

YUAN YANG AND CHRISTIAN SHEPHERD
BEIJING

China's Uighur minority are being moved from their homes and mass detention camps into factories to work under conditions that strongly suggest forced labour for suppliers to a range of multinationals including Apple and Huawei, according to new research.

More than 80,000 Uighur residents and former detainees from the north-western region of Xinjiang have been transferred to factories in a range of supply chains including electronics, textiles and automotives, according to the report released yesterday by the Australian Strategic Policy Institute. At least 83 Chinese and foreign multinationals are known to be benefiting from "forced Uyghur labour under a state-sponsored labour transfer scheme", it found.

The think-tank names 27 factories in nine Chinese provinces as beneficiaries of workers transferred from Xinjiang since a crackdown on the Uighur Muslim minority began in 2017. While a handful of companies had previously been named in public reports, their supply chains were concentrated in Xinjiang, particularly the cotton industry.

Over the past three years, China has detained some 1.8m Uighur Muslims in a system of camps in the region. While Beijing says some have been released, many have been sent to work in factories across China as part of government-organised labour-transfer schemes. The schemes also include individuals who have not previously been interned.

The transferred workers typically undergo "ideological training outside working hours, are subject to constant surveillance, and are forbidden from participating in religious observances", according to ASPI. The think-tank arrived at its conclusions by cross-referencing state media and government reports announcing Xinjiang work-transfer projects to lists of suppliers for global brands, as well as local companies' claims of whom they supplied.

The factories implicated by Xinjiang labour transfers stretch as far as Nanchang, a city in southern China where Apple supplier O-Film Technology has three factories. O-Film says it supplies Huawei and other multinationals with camera and touchscreen components.

Media in southern Xinjiang reported that in the space of a few days in 2017, 700 workers were transferred to O-Film's Jiangxi plants. It described the work-transfer programme as aiming to "gradually change their ideas, letting them grow into . . . youth who would understand the Party's compassion and feel gratitude for the Party".

The phrase is reminiscent of Beijing's official line that the purpose of the camps are "re-education". China has a target to transfer 100,000 people from the Uighur-majority region into industrial labour in the three years to 2020.

Asked to comment on the findings, Apple pointed to a statement previously given to The Washington Post: "Apple is dedicated to ensuring that everyone in our supply chain is treated with the dignity and respect they deserve. We have not seen this report but we work closely with all our suppliers to ensure our high standards are upheld."

Huawei declined to comment.

Infection threat

Japan school closures cause parental alarm and political backlash in country with little childcare

ROBIN HARDING, KANA INAGAKI AND LEO LEWIS — TOKYO

The school holidays are a time of childhood delight and parental dread but for Tomoyo Koike, a 40-year-old single mother of three children, every day is now a holiday as Japan begins an unprecedented school shutdown.

Ms Koike has been left with just days to organise childcare after Prime Minister Shinzo Abe called on every elementary, middle and high school across the country to close from today until April to reduce social contact and the spread of coronavirus.

The decision comes as the virus, which seems to be about 20 times as deadly as the seasonal flu, is spreading faster outside China, where it has originated, causing alarm and triggering quarantines, transport and manufacturing disruptions in Europe, Asia and the Middle East.

Schools in Hong Kong have been shut since January because of protests, and the coronavirus has extended those closures to April. South Korea has postponed the start of the new school year by a week to March 9.

In Japan, the measure has fuelled parental desperation in a country with little culture of nannies and babysitters, exposing inflexible work practices and gender inequality, as well as social gaps created by the rise of single parents and families with two earners.

Experts have decried the decision as politically motivated and some municipalities have refused to close their schools after the sudden move by Mr Abe, who is desperate to stave off any threat to the Tokyo Olympics, and has come under criticism for his handling of the coronavirus outbreak.

Ms Koike's job at a non-profit organisation does not offer remote working and she has no relatives nearby to help look after her children. "My two kids in elementary school will stay home on their own and I've told them not to go out," Ms Koike said. "On the educational front, I'm worried they'll just spend the entire day playing games."

She plans to set a study schedule and will ask her children to send photos of their homework through a messaging app while she is at work until 5.30pm. If the shutdown is prolonged, she worries about nutrition, because her children will be eating frozen food if she cannot prepare lunch boxes.

Even greater chaos awaits if the day care facility for her four-year-old daughter shuts down as well. In that scenario, Ms Koike is considering hiring a babysitter or taking time off work to avoid the expense.

"If my two kids stay at home and my youngest goes to day care, I'm not sure the government measure will be effective," Ms Koike said.

"The risk is also higher for me to become infected by going to work so I feel like I'm the biggest danger in my household."

So far, Japan's government has urged day care centres to stay open, giving hope to parents of small children. After-school clubs will also continue at some schools, helping parents who work late, but also raising questions about the purpose of the shutdown as children will continue to mix in enclosed spaces.

Some municipalities have refused to close their schools — Tomohiro Ohsumi/Getty

Mr Abe's decision has triggered a backlash. Nobuhiko Okabe, director of the Kawasaki City Institute for Public Health and a member of Japan's expert panel on the coronavirus, said the group was not consulted on school closures. "We have to think about the balance of daily life," he said, noting that Covid-19 appeared to affect adults more than children. "My opinion is to limit school closures to specific areas."

The mayor of Kanazawa in central Japan refused to follow the prime minister's request, saying the economic impact was too large.

Renho Murata, deputy leader of the opposition Constitutional Democratic party, said: "To say 'just leave the children at home' when there's no change in their parent's work situation . . . is the worst kind of grandstanding."

According to an online poll by Yahoo Japan, 49 per cent of parents say they will leave their children home alone, 20 per cent will take time off work and 14 per cent will ask grandparents to take care of them.

In the hours that followed Mr Abe's demand for school closures Amazon's Japanese website received a flurry of orders as families sought to prepare their homes for a prolonged stint of child-minding. Orders for maps, foldable homework-tables, Play-Doh and Lego soared by between 300 and 800 per cent from the previous day.

A workbook with 366 facts that primary school children should know saw orders climb almost 13,000 per cent. Devices such as miniature trampolines and ping-pong sets that can be attached to dining tables surged more than sixfold.

Erika Yokokawa, an employee at a trading house in Tokyo's Shinjuku area, was dropping her five-year-old son at a primary school in Hatsudai on Friday. "The first thing we did last night after we heard the prime minister's words was call my mother in Sendai," she said.

"If she cannot come down to help us, then we have a problem in my home because my husband and I both work and neither of us has been told that we can work from home yet. My company is not very flexible."

She added: "It might be that my mother just tells me to stop working. She doesn't understand the situation well."

CAPITALISM. TIME FOR A RESET.

Business must make a profit but should serve a purpose too.

Visit FT.com/NewAgenda

THE NEW AGENDA

Rana Foroohar Coronavirus has exposed the deep vulnerabilities inherent in the global economy ➔ OPINION

Deutsche Bank compliance failings raise red flags in UK

- BoE cites lack of progress on controls
- Lender's post-Brexit access at risk

STEPHEN MORRIS — LONDON
OLAF STORBECK — FRANKFURT

The UK financial regulator has criticised Deutsche Bank for failing to improve its anti-money laundering and compliance controls, and warned this could jeopardise the German lender's access to the UK after Brexit.

Bank of England supervisors have told Deutsche executives they now require monthly updates, instead of the normal quarterly meetings, according to people familiar with the matter.

Regulators are concerned that issues are still occurring four years after Deutsche was first censured and placed under special supervision by the Financial Conduct Authority for "serious" and "systemic" failings in its controls against money laundering, terrorist financing and sanctions breaches.

> Regulators are concerned issues are still occurring four years after Deutsche was first censured

Deutsche has been embroiled in a plethora of compliance and misconduct scandals in the UK, US and Europe over the past decade, which have dented its reputation and resulted in billions of dollars in fines. Further compliance and systems blunders occurred at the start of this year, the Financial Times has learnt.

On January 16, the German bank accidentally sent the data relating to 12,500 transactions of 500 clients to Amazon, one of its biggest corporate customers, people briefed on the error said.

Deutsche's tardiness in notifying affected clients and regulators led to concerns internally it was close to breaching FCA principle 11, which states firms must be "open and co-operative" in their dealings with regulators, and "disclose to the appropriate regulator anything relating to the firm of which that regulator would reasonably expect notice".

A spokesman for Deutsche denied it had breached principle 11.

In a separate IT systems failing two weeks ago, Deutsche was unable to access Chaps, the UK's high-value payments system, for three hours in the middle of the day, the people familiar with the matter said. A bank spokesman said all payments were eventually processed that day.

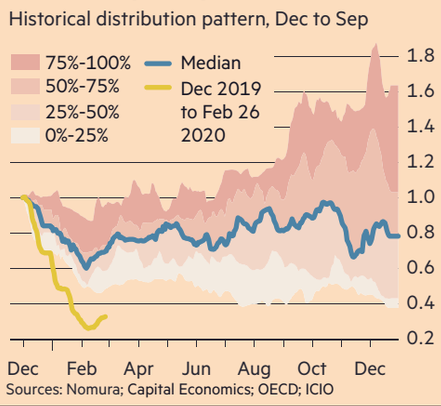
The BoE's Prudential Regulation Authority and FCA have been monitoring Deutsche's progress since 2015, and placed it under special supervision a year later. They have warned the German lender its post-Brexit reauthorisation could be pushed back if improvements are not seen soon, although this outcome is still a remote possibility, according to several people involved.

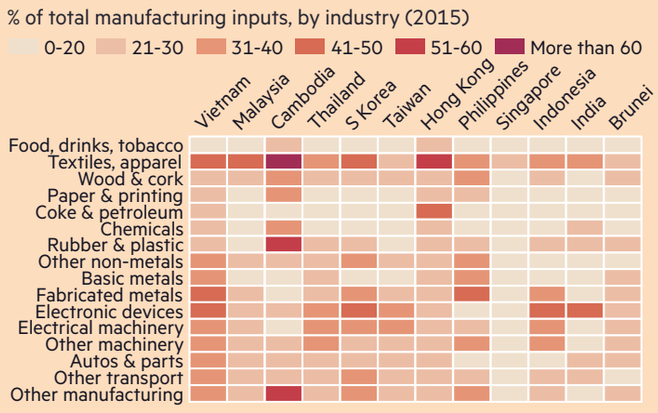
Deutsche, as with other non-British banks, uses EU passporting rights to operate in the UK. It is required to go through a reauthorisation process — which includes assessments of its controls and IT stability — as part of the country's departure from the bloc. The reviews are supposed to be completed by December 31, when the Brexit transition period is due to end.

Deutsche said in a statement that it had tripled the number of staff in its anti-financial crime division since 2015, and pledged €4bn to improve its controls. The PRA and FCA declined to comment.

Shipping signals Fall in large container leasing provides clue to global impact of coronavirus

Chinatopix via AP





Sources: Nomura; Capital Economics; OECD; ICIO

ANNA GROSS — LONDON

Investors around the world have been on the hunt for fresh insights into the possible long-term effects of the coronavirus outbreak.

That has meant that one indicator has come back into fashion: the Baltic Dry index, a measure of shipping costs for a wide range of bulk commodities such as coal, iron ore and grain.

The index shows rates for leasing the largest "Capesize" ships have dropped two-thirds since the start of December, and are well below the average level of the past 20 years. That suggests a drop in demand in China, the world's biggest consumer of iron ore and other industrial commodities.

But the real value of the BDI may not be in what it tells us about the impact of the epidemic so far, but rather what it says about potential developments in coming weeks.

Masanari Takada, a macro strategist at Tokyo-based Nomura, points out that the BDI has a tendency to work its way downward through the first half of February — knocked by the effects of China's Lunar New Year holiday period — but then bottoms out in the middle of the month.

Indeed, since reaching lows of 411 in early February this year, its lowest level since April 2016, the BDI — a composite of rates for four sizes of ship — has gained about 29 per cent.

In the past few years, the index had been lifted by economic stimulus measures introduced by China at the end of February, Mr Takada explained. It remains to be seen if this year's supercharged set of measures, including cuts to benchmark lending rates and waivers on bad loans, can boost output this year.

"If [the BDI] doesn't recover this year, it will indicate a much more severe effect than usual on the global supply chain," he said.

Analysts note that falls in the BDI do not always indicate drops in demand, as supply-side factors such as port congestion and the vagaries of the two- or three-year cycle from order to delivery of new ships also have a bearing on prices.

Elliott seeks to oust Twitter boss over dual CEO roles

SUJEET INDAP, ORTENCA ALIAJ AND HANNAH MURPHY — NEW YORK

Activist hedge fund Elliott Management has laid out concerns over Twitter's corporate governance to the social network's board and is pushing for the removal of its chief executive Jack Dorsey after taking a more than $1bn stake in the social media company.

The New York-based activist hedge fund has taken issue with Mr Dorsey simultaneously holding the CEO title at both Twitter and Square, the fintech company Mr Dorsey also co-founded, according to people familiar with the matter.

Elliott, whose near-4 per cent stake in Twitter places it among the company's top 10 shareholders, has had talks with the board and has privately submitted four nominees to stand for election at the company's annual shareholder meeting to be held in May.

The $38bn firm has flagged leadership issues with Twitter's board of directors, said people familiar with its thinking, stemming from a CEO it believes is distracted by other activities and a high turnover rate among senior operating and financial executives.

Twitter's board named Mr Dorsey chief executive in 2015 despite publicly stating that it would only accept a candidate that could do the job full-time. Mr Dorsey has remained at the helm even as investors flagged concerns that he has more skin in the game at Square, a company that is more valuable than Twitter and in which he has a 13 per cent stake.

Shares in Twitter dropped by a fifth in October after it reported a poor third quarter which was marred by technical problems in its advertising placement technology. Twitter shares trade just a quarter higher than its 2013 IPO price and have been overtaken by rival Facebook whose market cap of more than $500bn is 20 times that of Twitter's.

Mr Dorsey raised eyebrows last year when he announced plans to move to Africa for as long as six months in 2020 to explore opportunities in blockchain and digital currencies. Mr Dorsey owns more than a tenth of Square, a stake worth nearly $5bn. In contrast, his Twitter stake of roughly 2 per cent is worth around $500m.

Mr Dorsey did not immediately respond to a request for comment.

Twitter declined to comment.

The space for this advertisement was kindly donated by the Financial Times. Thank you.

40,000 STRONG
JOIN OUR MISSION TO HELP ALL WOUNDED VETERANS STAND STRONG

40,000 lives derailed by injury. Everyday this number grows.

Join our mission to help all wounded Veterans stand strong

HELP for HEROES

#40ThousandStrong

Travel & leisure. Football

Major League Soccer plays the long game

> Beckham and fellow club owners keep investing despite losses as 25th season starts

MURAD AHMED — NEW YORK

When David Tepper bought a Major League Soccer franchise for $325m in December, the hedge fund billionaire agreed a price similar to one needed to acquire football clubs in the sport's financial stronghold of Europe.

Yet frothy valuations for sides in the US and Canada's top tier of football — or soccer, as it is known in North America — have been achieved despite most MLS teams failing to turn a profit since the competition kicked off 25 years ago.

"The concept of profitability is one that will come when we're able to . . . see the results of all the investments that we've been making over the last 20 years," said Don Garber, MLS commissioner. "Our owners have no doubt that's coming."

The privately held league reveals few financial details but Mr Garber said most franchise owners were in "deep investment mode", building stadiums, for example, and were willing to sustain losses as the league grew.

The line that current spending will lead to future returns appears to be working. The competition is set to expand from the 24 teams that featured last season to 30 by 2022.

Among them is Inter Miami CF, which makes its debut when the MLS season begins this weekend. The new club is owned by David Beckham, the former footballer, and a group of investors that includes Masayoshi Son and Marcelo Claure, the top executives at SoftBank, the Japanese investment group.

Mr Beckham paid a cut price for his franchise, triggering an option to acquire an MLS team for $25m as part of his 2007 transfer from Spain's Real Madrid to Los Angeles Galaxy — a move that raised global interest in the league.

Since then, team values have spiralled. In 2013, City Football Group, the Abu Dhabi-controlled parent company of England's Manchester City, paid $110m for a New York-based franchise.

Last year, Meg Whitman, the former Hewlett-Packard and eBay chief executive, paid $100m for a 20 per cent stake in FC Cincinnati, valuing the club at $500m.

While these prices are similar to those paid for teams in Europe's "Big Five" leagues — England, Spain, Germany Italy, France — those divisions benefit from multibillion-euro broadcasting contracts unmatched elsewhere.

A consortium led by Daniel Friedkin, the billionaire, is in late-stage talks to buy AS Roma for €750m ($803m), while an investment group backed by Saudi Arabia's sovereign wealth fund has offered £350m ($448m) for England's Newcastle United.

But these rival European leagues are significantly higher in quality and offer better wages to entice the best players. US television ratings for English Premier League matches consistently beat those for MLS games.

Since 2000, no MLS side has even won the North American version of the Champions League, a continental club competition that has been dominated by sides from Mexico's Liga MX. Analysts say the unique structure of MLS helps explain its teams' rising valuations.

While most leagues have promotion and relegation, with the worst teams dropping out of the top division, MLS is open only to new entrants willing to pay "expansion fees", which are then shared between existing owners.

Other arrangements more familiar to US domestic sports leagues, such as player salary caps, also keep costs down.

"You have scarcity because the number of franchises is tightly controlled," said Dan Jones, head of the sports business group at Deloitte. "The sealed league system and collective bargaining agreements [with players] help to avoid volatility in revenues for investors."

MLS team values have leapt to parallel those of European leagues — Darryl Dyck/AP

Mr Tepper was convinced to pay $325m for his new franchise in Charlotte, North Carolina, partly because it would become the 30th side in MLS. Mr Garber said the competition would not grow beyond this number of teams for the foreseeable future.

"Beyond the dilution impact of adding more owners . . . when our revenues are still growing slowly, the real issue is we have six new teams coming on in the next number of years and we need to be very thoughtful about onboarding all those teams," said Mr Garber.

Franchise owners also benefit from an equal share in Soccer United Marketing, a profitable organisation that owns rights to MLS broadcasting, sponsorship and merchandising. SUM also has the commercial rights to football across North America, such as matches held by US Soccer, the governing body behind the men's and women's national teams.

Mr Garber is also chief executive of SUM and said "almost half" of its revenues were "non-MLS related", without providing further details.

While this business model has not led to team profits, Mr Garber insisted the league had come a long way since it almost ceased operations because of financial difficulties in 2001.

With the football World Cup set to be played across North America in 2026, he said investors were betting that the sport would eventually gain the same popularity in the US and Canada as it had across the world.

"The rationale [behind the prices paid for MLS franchises is] soccer is a sport on the rise in North America," he said. "MLS is driving an enormous amount of energy and momentum and value for fans, communities, players and investors because we have so much growth in our future."

VW faces long haul on road to electric profits

Ambitious plan to sell 26m emission-free vehicles in next nine years and overtake Tesla has yet to convince investors

JOE MILLER AND PETER CAMPBELL
WOLFSBURG

When Volkswagen unveiled its first battery-powered prototype in 2009, chief executive Martin Winterkorn warned about "electro hype" — the idea that this new technology could be as affordable and ubiquitous as its fleet of petrol and diesel cars.

A decade later, VW's incumbent boss Herbert Diess is spending more than €33bn on proving him wrong.

The German group has launched a wildly ambitious plan to produce 26m emission-free vehicles in the next nine years, leapfrogging Tesla to become the world's largest electric carmaker.

But perhaps the most radical element of the scheme is its focus on generating profits almost from the get-go, in defiance of dire industry-wide projections.

"When it comes to pricing for the next generation . . . [profitability is] on the level of a Golf [VW's best-selling combustion-engine car]," Mr Diess told the Financial Times. The first car to make Golf-level margins will be a battery-powered model to be released next year that will be the size of VW's Tiguan sport utility vehicle and built on VW's purpose-designed modular "electric skateboard" platform, he added.

This forecast puts the company in pole position, ahead of some of the automotive world's largest players, including Toyota and General Motors, which caution that their electric cars are years — perhaps even a decade — from being able to generate petrol-level profits. "This is a very bold statement," said one person close to VW's top investors. "It would be a surprise if that was possible."

> 'There are hirings and firings all the time at VW, but what I like is the culture of ambition'

Consultancy McKinsey estimates midsized electric vehicles cost $12,000 more to produce than their petrol or diesel counterparts, forcing carmakers to charge more or face squeezed margins.

Volkswagen's rivals "face three or four years of pressure on their profit margins" due to electrification, said Jürgen Pieper, a car analyst at Frankfurt-based private bank Metzler. What sets VW apart, he added, is its "very tough" culture. "I probably wouldn't like to work there," he said. "There are hirings and firings all the time, but what I like is the culture of ambition."

That culture was in part what led to Dieselgate, the 2015 scandal in which VW admitted to having sold 11m cars worldwide fitted with devices that under-reported emissions of nitrogen oxide.

The fallout is still being felt five years later, with VW on Friday agreeing to an €830m settlement in a lawsuit brought by more than 400,000 affected drivers in Germany.

The scandal also made the company a lightning rod for criticism of the industry from environmental groups and European lawmakers.

Today, Mr Diess admits the company is the "focus" of EU rules that force carmakers to lower CO2 emissions. "We are happy with it," he says, "because if society decides, OK, we'll go for electric cars, actually that's good for us."

Ever since he ascended to the top position at VW's Wolfsburg headquarters in 2018, Mr Diess has been insistent: despite concerns about the lack of consumer demand, inadequate charging infrastructure and bottlenecks in battery supply chains, the company's decision to bet the farm on electric vehicles is more than a high-risk gamble.

"There is no other alternative to electric cars," he said, in an office overlooking the sprawling factory halls and railway tracks that criss-cross VW's home.

In a week in which production of Audi's electric e-tron model ground to a halt because of battery shortages, Mr Diess added he was confident the company had identified enough lithium-ion cell supply to see it through to the end of 2023, by which point it hopes to have produced 1m emission-free vehicles.

But the former BMW executive, who arrived at VW just a few months before Dieselgate broke in 2015, wants to do more than just shepherd the company out of its self-created crisis.

His long-term aim is to convince capital markets to treat VW more like Tesla than an old-world car manufacturer, propelling it to a market value of €200bn, more than double its current €75bn valuation.

Investors are yet to be fully convinced. VW boasts annual sales of almost 11m and has suffered only two lossmaking years in the past three decades, on Friday reporting a 17 per cent increase in pre-tax profit for 2019, and pledging to vastly increase its dividend.

Yet the company is eclipsed in market value by Tesla, which has sold fewer than 1m vehicles in its 17-year existence, and has yet to post a yearly profit.

Mr Diess, who was on stage at a car industry award ceremony in Berlin when Elon Musk announced Tesla would be building his first European factory a mere 150 miles from VW's base, has gone out of his way to compliment the Twitter-keen chief executive, crediting him with "paving the way" for electric cars.

"[Mr Musk] is taking risks we couldn't," said Mr Diess. "So I think we make a good pair because he is pulling ahead and we are fast followers — we try to keep as close as possible."

Despite Mr Diess's confidence, the odds of achieving this goal appear to be stacked against the German carmaker.

Its unique ownership structure, in which the Porsche and Piëch families indirectly own a majority stake, and the state of Lower Saxony has a blocking minority, prevents the company from rushing through seismic shifts in strategy. The strength of the unions on its supervisory board also makes radically reducing VW's 300,000-strong German workforce almost impossible.

Additionally, while Tesla can raise more than $2bn overnight by issuing new shares, "Mr Diess would have to sell 2.5m cars to get that money", said a person close to investors. VW has to rely on debt to finance its overhaul, and has "de facto no equity capital market access", he added. "What Diess is doing is braver than what Musk is doing. He needs to fund this transition with 4 per cent profit margins from the VW [brand]."

It is unsurprising, therefore, that improving returns is high on the VW chief's agenda. Addressing 120 of the company's managers in Berlin this year, Mr Diess made it clear he would happily halve Bentley's annual sales in exchange for higher earnings. Returning to profitability in the US, where VW has languished for years, is also a priority.

But the fate of the world's biggest carmaker, he emphasised, is not merely dependent on boosting margins, but "more about managing the transition [to electric] better than others", Mr Diess said. "If you look at Tesla's evaluation, it's not about profitability, it's a new game, and that's also what I have always said."

The rules of the game have been set partially in Brussels, which has fuelled the shift to electric vehicles by forcing car manufacturers operating in Europe to lower their fleet-wide CO2 emissions drastically over the next few years, or face billions of euros in fines.

Thousands of miles away, the likes of Google and Uber in the US are threatening to rewrite the carmaker playbook, betting that decades of auto-building expertise can be aped or acquired.

It is a threat Mr Diess takes seriously. "[Tech companies] have to invest a lot [to become carmakers]," he said. "It's still scary because they are so rich that they could. If you have 100-and-something billion in cash, you can buy whatever you want. The question is, do they really want to?"

Before waiting to find out the answer, the VW boss is intent on taking the battle to Silicon Valley.

In a country whose postwar economic growth has been driven by hardware excellence, Mr Diess hopes to attract the necessary talent to help VW write the 300m lines of software code that will power electric and semi-autonomous vehicles, as well as battery-management tools and entertainment systems.

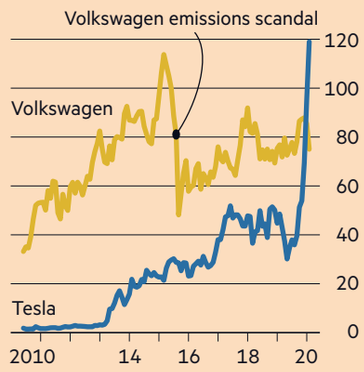
The company's efforts are focused on the ID. 3, VW's talismanic electric model, and its first emissions-free mass-market hatchback. Launched in November by Angela Merkel, Germany's chancellor, the car will be priced at about €30,000 and is due to go on sale in August. It will feature a 4G-enabled, centralised software system.

But production at VW's Zwickau factory in Germany has been plagued by complications over the installation of complex technology inside the car.

Other short-term risks could prove an even bigger hurdle for VW. But Mr Diess is adamant neither the coronavirus outbreak nor an economic downturn will curb his commitment to electric.

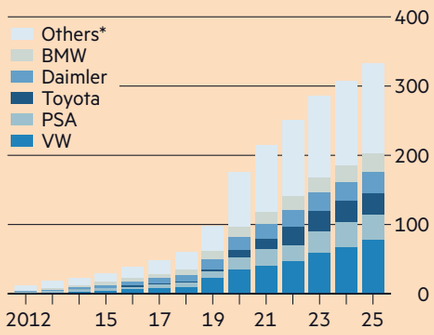
Volkswagen, from its Wolfsburg base above, has to clear numerous regulatory, technical and logistical challenges to meet its electric-vehicle targets — AFP via Getty

Tesla hurtles past Volkswagen
Market cap (€bn)



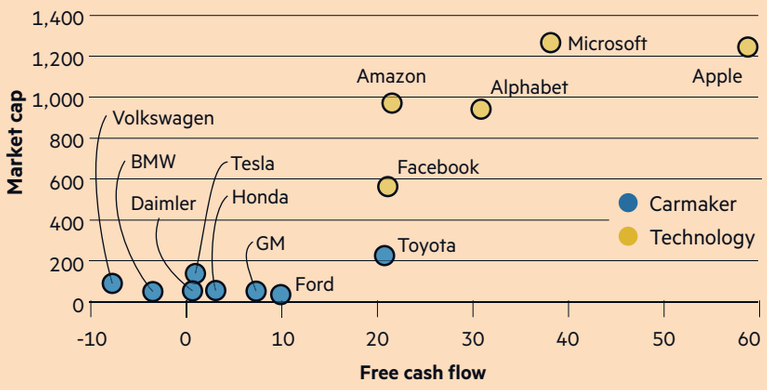
Sources: Bloomberg; Transport & Environment

A spate of new electric cars is set to be launched in Europe
Number of models by carmaker

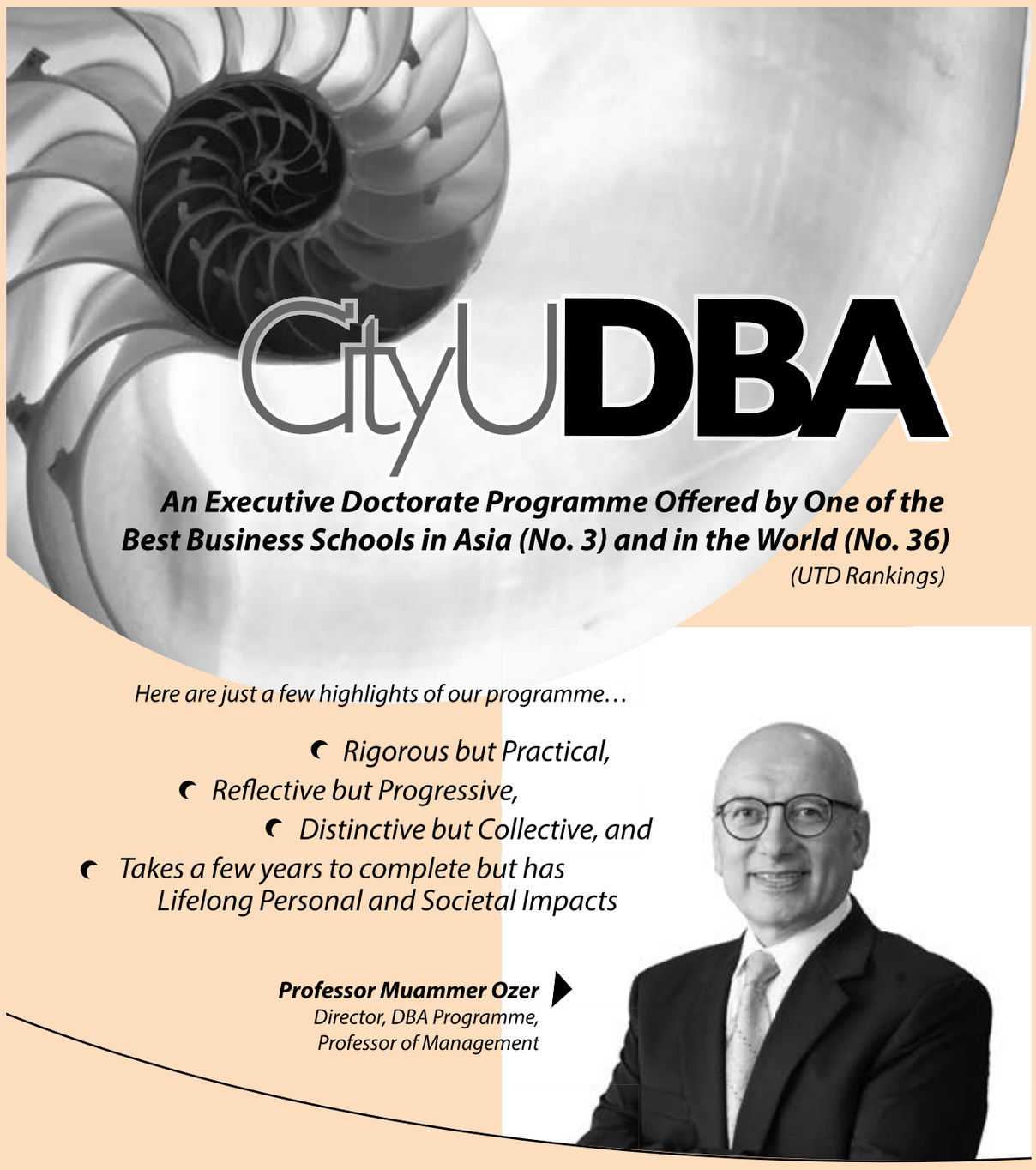


* Includes electric models from several carmakers

Tech companies have the cash to take on carmakers
Market cap and free cash flow ($bn)



Accreditation



Application Deadline : 30 April 2020
Online Application : www.cityu.edu.hk/dba/admission

www.cityu.edu.hk/dba
Email: dba@cityu.hk Tel : (852) 3442 9564

Herbert Diess says tech rivals have 'scary' sums of cash

Energy

Speculators raise bets against US oil and gas

DEREK BROWER — LONDON

Bruised by plunging commodity prices and oversupply across the industry, US oil and gas companies have come into the sights of market speculators, who have placed huge bets against equity valuations in the sector.

Short sellers have added more than $460m to their short-interest positions since the start of February, according to data from S3 Partners, a research company, the largest move of this kind in the sector since June 2019, when oil prices tumbled into a bear market.

In addition, two exchange traded funds considered proxies for US energy, XOP and OIH, have drawn particular attention from funds seeking to profit from the sector's deepening slump. Short interest in both now amounts to around 40 per cent of their shares.

Investor disenchantment with US oil and gas is not new — but it has suddenly accelerated. The sector's high debt burden, patchy record of paying back investors and the inability of some producers to spend within cash flow has consistently dragged on equity valuations.

The S&P index of energy stocks is down 25 per cent so far in 2020, compared with a 7.5 per cent drop for the S&P 500, and is barely positive over the past 10 years. Bank of America calculated that the sector was now underperforming the broader market by the biggest margin in almost 80 years.

Short sellers think worse is imminent for energy equities. Some spent recent days drawing up lists of especially vulnerable companies, reflecting a sudden negative shift in mood about the coronavirus among hedge funds in the US, according to conversations with people close to these moves.

"Short sellers have put a lot more cash into the pot by shorting another $462m worth of energy stocks, anticipating further price weakness in the short term," said Ihor Dusaniwsky, head of predictive analysis at S3.

Healthcare

NMC cash crunch felt in staff wage delays

Under pressure health provider picks Moelis to lead debt restructuring

SIMEON KERR — DUBAI
ROBERT SMITH — LONDON

NMC Health has hired Moelis to advise on debt restructuring as the embattled healthcare group faces signs of a cash crunch with staff members complaining about late salary payments.

The mandate was welcomed by lenders that have become increasingly concerned about their loan exposure to the scandal-hit FTSE 100 company. Trading of its shares was suspended last week as the UK's Financial Conduct Authority launched an investigation into its finances.

"We just desperately need to see some stabilisation," said one banker.

While NMC reported £500m of cash on its balance sheet as recently as June, the true state of its finances is now unclear after the company announced last week it had found discrepancies in its bank statements.

The group, based in Abu Dhabi, is also operating without a full finance department, after suspending a member of its treasury team and granting "extended sick leave" to its chief financial officer.

Some staff at NMC facilities yesterday complained that they had yet to receive their February salaries. "We are all very worried," said one administrator. "They don't give us any information."

One manager said salaries would be paid, blaming the delay of several days on recent management changes. "We will have to look elsewhere for work quickly if the money doesn't come through," said another employee.

Late salary payments have heightened concerns among the group's lenders that the company could collapse without external assistance.

"They are running out of cash," said one person briefed by NMC management on the state of its finances. He said that the delayed salaries were affecting staff at facilities across the United Arab Emirates.

Two people briefed on the matter said NMC's interim management and some shareholders have been in talks with officials in Abu Dhabi over the weekend seeking a financial solution to save the company, which faces questions over its true debt position.

The Financial Times reported last week that the group had resorted to pledging future credit card payments from customers to secure funding, a form of receivables financing arrangement more commonly used by small businesses or those short of cash.

NMC did not respond to requests for comment. Moelis declined to comment on the appointment, which was first reported by Reuters.

Moody's, the rating agency, said last week that uncertainty surrounding NMC's share ownership "could trigger a change of control and lead to a debt acceleration" on its main loan facility — meaning that banks could demand full repayment immediately.

One investor said that NMC is now at risk of losing access to working capital loans from some UAE banks, which could make it even harder for the company to pay staff and suppliers.

Market questions. US primaries

'Super Tuesday' and prospect of Sanders presidency spell volatility for equities

FT REPORTERS

Making gains: tomorrow's primaries could cement Bernie Sanders as the Democratic frontrunner after a string of recent wins
Eric Gay/AP Photo

What will 'Super Tuesday' mean for US investors?

While US investors grapple with the impact of the coronavirus, another factor has them bracing for further swings in domestic stocks: the presidential election calendar.

Danielle DiMartino Booth of Quill Intelligence, a research firm, said President Donald Trump's chances of re-election would be "appreciably lower" if the US economy were tipped into recession by the outbreak. That "opens the door to the presumptive candidate at this juncture — Bernie Sanders."

Tomorrow's "Super Tuesday", when 14 states and one US territory hold contests for the Democratic presidential nomination, could cement Mr Sanders as the party frontrunner after a string of wins in recent, smaller battles.

Profits in at least two sectors of the stock market — healthcare and energy — would be "decimated" under a Sanders administration, given the candidate's aims to in effect eliminate private health insurance and nationalise energy exploration and production, said Ms DiMartino Booth. Other sectors that could be vulnerable include financials, because of Mr Sanders' planned transaction taxes, as well as technology.

As Michael Bloomberg's chances appear to wane, investors are also watching Joe Biden, who is showing signs of a resurgence. A win for Mr Biden is seen by some as negative for markets, given his preference for an increase in the corporate tax rate.

The October Vix future, a proxy for equity volatility around the presidential election, is now 3 points above its September counterpart. "This tells me that investors are very worried about how November will play out," said Stephen Aniston, president of vixcontango.com. *Jennifer Ablan*

How far could European stocks fall as coronavirus spreads?

European stocks, like those in the US and elsewhere, have had their worst week since the financial crisis as the fallout from the spread of the coronavirus grows. After a 13 per cent drop in the Stoxx 600 index, a popular benchmark, investors were left asking just how bad it could get for a region so reliant on exports to China.

Few investors are willing to put a figure on the potential fallout, and the uncertainty is exacerbating the unease. Part of the problem is that modelling the impact of the virus is so difficult.

The 2003 Sars outbreak has been widely used as a template, but firms such as First State Investments note that Sars had only a limited impact on Chinese output and exports, while the country's share of global gross domestic product is now much higher. Oxford Economics draws a parallel with the Fukushima nuclear disaster in 2011, but notes that China's share of global GDP is about three times higher than Japan's was in 2011. In both cases, the market impact in Europe was muted.

As prices tumble, fund managers are trying to rein in risk, stick to what they know and pick up cheap stocks if they can, rather than try to guess the bottom.

Didier Saint-Georges of Carmignac, a French asset manger, said it was hard to estimate the overall impact on European stocks. He preferred large-cap "growth" stocks, whose earnings he expected to be less affected than small-cap "value" stocks.

Pieter Taselaar of Lucerne Capital, a Europe-focused hedge fund, believed markets were close to "maximum panic". He has been using the sell-off to add to positions in stocks such as Telenet, the Belgian broadband provider, which he believed had been hit too hard. *Laurence Fletcher*

Where next for the gold price?

Gold rallied strongly this year, rising as high as 9 per cent, before it was dragged into the deepening sell-off across markets towards the end of last week.

Having been powered by a flight to "safe" assets due to the coronavirus outbreak, a sharp downturn since Thursday cut its year-to-date gains back to about 5 per cent, at $1,589 a troy ounce.

The strength of gold's early rise had exceeded most analysts' forecasts for 2020. Analysts predicted an average price of $1,558, according to the London Bullion Market Association.

Gold had been in favour because of falling bond yields, which reduce the downside of holding gold, which provides no income at all. The yield on the 10-year US Treasury hit a record intraday low of 1.147 per cent last week.

Holdings in gold-backed exchange traded funds have hit a record high of 3,018.8 tonnes, according to the World Gold Council, worth $162bn.

But analysts noted that the turnround last week suggested that investors were willing to sell any liquid asset to meet margin calls on other investments.

Gold prices slipped by more than 3 per cent on Friday, the biggest intraday drop since 2013.

Still, gold has held on to the bulk of its gains and is likely to go higher this year, given the market now expects further interest rate cuts by the Federal Reserve, according to Suki Cooper at Standard Chartered in New York. "Safe-haven gains tend to be sustained when the market starts to price in a greater likelihood that a given negative shock is likely to impact global growth and trigger a recession." *Henry Sanderson*

FT
FastFT
Our global team gives you the market-moving news and views, 24 hours a day
ft.com/fastft

Oil & gas

Wyoming in talks to buy land from Occidental

GREGORY MEYER AND JAMES FONTANELLA-KHAN — NEW YORK

Wyoming is in talks to buy millions of acres from Occidental Petroleum in what lawmakers say would be the biggest land purchase since the US bought Alaska from Alexander II of Russia.

The US state is advancing bills authorising the use of state funds to acquire the properties. People involved say the price ranges between $1bn and $3bn.

Occidental, the oil and gas producer, has put the land on the block as it pays down debt from its $55bn acquisition of Anadarko Petroleum in 2019. The company is under pressure, with oil prices sliding below $50 a barrel and Carl Icahn, the activist shareholder, agitating for change.

The land lies on either side of the Union Pacific railroad, which originally received it from the federal government during the frontier era.

"Opportunities like this don't come along very often," Mark Gordon, state governor, and leaders of the Republican-controlled legislature wrote last week. "It's likely this would be the largest government purchase of private land since the US purchased Alaska."

The land on offer — more than 1m acres of surface land and 4m acres of underground mineral rights — could deepen the Wyoming economy's exposure to natural resources. State finances are deteriorating as taxes on coal and natural gas decline.

> 'Opportunities like this don't come along very often'
> Mark Gordon, state governor

State officials view the land as a potential bonanza for oil and gas extraction, wind and solar farms, power transmission lines, soda-ash mining, livestock grazing and big-game hunting.

Houston-based Occidental has confirmed the auction for the acreage, which cuts mostly through Wyoming's arid southern tier.

"While the state has clearly communicated a lot of interest in this asset, it is a competitive process and there's a large number of qualified participants in that," said Oscar Brown, Occidental senior vice-president. "The winner of that asset will be one of the largest land and mineral owners in the United States."

Several energy-focused private equity groups and at least two publicly listed exploration and production companies have expressed interest, according to people briefed on the sale process.

Critics at first panned the 1867 US purchase of Alaska as "Seward's folly," after William Seward, then US secretary of state, who negotiated it.

Shannon Anderson, staff attorney at the Powder River Basin Resource Council, said the Wyoming conservation group was "very concerned about the risk to our state if we spend our savings to acquire this land and minerals that Occidental can't wait to get rid of."

The state government already owns 3.5m acres of surface land and 3.9m mineral acres. Leases and royalties generate almost $200m in annual revenue for the government, according to its Office of State Lands and Investments. The federal government owns 29m acres of Wyoming, almost half the total.

Aerospace & defence. Regulation

US ponders how to open skies to drones and flying cars

Start-ups work with regulator on system to identify and track unmanned vehicles

PATRICK MCGEE — SAN FRANCISCO

Three challenges stand in the way of filling the sky with drones and flying cars.

The first two — money and technology — are being tackled with zeal. Huge sums are flowing into aerial vehicle start-ups; Joby Aviation, for example, raised a staggering $590m for its vision of flying taxis in December. Meanwhile, almost 70 prototypes are in development, with backing from the likes of Toyota, Hyundai and Daimler.

Mark Groden, chief executive of Skyryse, whose system can fully automate helicopter flights, said it was "entirely possible" to offer low-cost taxi flights "with technology that already exists".

The third challenge is harder: how should countries regulate their airspace so that vast fleets of drones and flying vehicles can operate safely?

In the US, the Federal Aviation Administration does not have the resources to oversee the sector. Today, 15,000 air traffic controllers manage 45,000 daily flights in the US. But such an analogue system cannot scale up to handle millions of unmanned flights.

Instead, the FAA is working with private companies to develop an unmanned traffic management system. One of the leading companies it is working with is AirMap, a Los Angeles-based start-up backed by Airbus, Microsoft, Qualcomm, Sony, Baidu and others.

AirMap's system would allow any aerial vehicle to know the location of anything flying nearby and to broadcast its own co-ordinates, trajectory and speed before it even leaves the ground.

"Immediately prior to take-off, a drone can simply tell the unmanned traffic management system where it wants to go, and the system provides a safe and efficient route that is deconflicted from all previously planned trajectories," said Ben Marcus, AirMap's chairman.

At least 20 other companies have also partnered with the FAA to open up airspace. These include GE-owned AiRXOS, as well as Kittyhawk and SkyGrid — each backed by Boeing.

But for this to become a reality the FAA needs to first lay down a framework of "digital licence plates" for all unmanned aircraft. Known as "Remote ID", this would pave the way for aerial vehicles to fly beyond the line of sight of pilots, near airports and over people — which are all prohibited today.

The framework would allow construction sites, for instance, to make use of emerging "drone-in-a-box" technology to programme self-flying aircraft for surveillance trips. "Today the skies are basically empty, so the potential is virtually limitless," Mr Marcus said.

A precursor programme known as Laanc, or low altitude authorisation and notification capability, has already shown the demand, said Dan Burton, chief executive of DroneBase, which provides drone pilots for businesses. Before Laanc, DroneBase had to decline 40 per cent of requests because it took up to 90 days to apply for authorisation to fly in large swaths of airspace.

A helicopter over California. AirMap is working with the FAA — Patrick McGee/FT

Laanc automated the process and instantly issued permits. "Now we say no to probably less than 1 per cent of requests," Mr Burton said.

But while everyone agrees that some sort of Remote ID rules are necessary, the FAA's specific proposal was widely considered too onerous by drone and model aeroplane hobbyists, whose collective displeasure saw nearly 30,000 responses to a consultation process that ends today.

The FAA wants virtually all aerial vehicles to be individually registered, for a fee, and equipped with both radio and internet connectivity to communicate its location and that of the pilot. Anyone unable to meet these criteria would be restricted to specific flying sites designated by the FAA.

DJI, by far the world's biggest maker of drones, called the FAA's proposal "deeply flawed" and warned it would be "complex, expensive and intrusive" for its customers.

Sally French, a drones enthusiast known as The Drone Girl, said the biggest problem with the FAA proposal was that it required drones to communicate via an internet connection, because places that lack cellular towers were often where drones could have the most positive impact on people's lives.

Indeed, California group Zipline has become the world's largest delivery drone company and operates in Rwanda and Ghana, where local regulations allow for self-flying drones. Since 2016, Zipline has delivered more than 30,000 packages of blood and medical supplies to remote hospitals using drones.

When the FAA has reached a solution, it will lay the framework for a whole world of flying vehicles well beyond drones, said Mr Marcus.

"Once [drones are] operating in an automated way for some period of time, then we can have enough trust to put people in these giant drones that we call electric vertical take-off and landing aircraft — and you can fly to work in those."

How to Lead. Yves Perrier, chief executive of Amundi

Carrying out a successful mega-deal

The European investment group boss has managed to win over staff to his unorthodox approach, writes Owen Walker

Perrier says he always planned for Amundi to become the biggest player in Europe
Magali Delporte/FT

Yves Perrier is a philosopher at heart. The one-time footballer who now runs Amundi, Europe's biggest investment group, signs off meetings with analysts and journalists with his catchphrase "life is beautiful".

When we meet, after Amundi's announcement of its latest acquisition, Spanish bank Sabadell's investment arm, Mr Perrier, 65, offers a pearl of wisdom. "If you want to build a ship," he says, quoting writer Antoine de Saint-Exupéry, "don't drum up people to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea."

Mr Perrier is explaining his approach to making sure large deals are well executed and integrated — especially when it comes to motivating staff through potentially traumatic transitions. Mega transactions in the investment industry have a notoriously low success rate.

The tie-ups in recent years between Standard Life and Aberdeen Asset Management, as well as Henderson Global Investors and Janus Capital, have resulted in larger but still underperforming businesses, accompanied by staff cuts, lost clients, low morale and disenchanted shareholders.

The question of how to combine investment businesses successfully has become more pressing, following a spate of recent transactions, from Franklin Templeton's $6.5bn purchase of Legg Mason to Jupiter Fund Management's £419m capture of Merian Global Investors.

Mr Perrier is well placed to opine on M&A, having built Amundi up through a series of deals. The largest was the €3.5bn all-cash purchase of Pioneer Investments from UniCredit, the Italian bank. It stands out as the most successful of the industry's recent large deals and catapulted Amundi into the trillion-dollar club, the world's biggest investment groups by assets managed.

Since the deal's announcement in December 2016, Amundi's shares had risen more than 60 per cent before last week's sell-off, compared with a 16 per cent rise for S&P's index of global asset managers. Amundi says it has not lost any significant clients or portfolio managers as a result of the deal — problems that typically blight investment tie-ups. On a range of financial measures, the deal also stands out as a rare success story in asset management M&A. The businesses were fully integrated within 18 months — an especially quick time for such a large transaction — while the €175m of cost savings was €25m over that originally planned. Amundi's net income is up 41 per cent to €959m since the Pioneer acquisition.

Mr Perrier formed Amundi in January 2010, bringing together the investment arms of French banks Société Générale and Crédit Agricole. He says that from the moment he and his fellow executives at the two lenders conceived the idea for the merger, they set out to become the biggest player in Europe. But he concedes that at the time the ambition was "not so realistic".

Over the past decade the group's assets have more than doubled, from €670bn to €1.6tn, placing it inside the world's top 10 investment businesses.

Mr Perrier says that the early years after launching Amundi were the hardest, and lessons learnt then have made subsequent integrations easier. He says he initially struggled to convince staff that his belief that the industry needed to go through a period of what he calls "industrialisation" would work. "We were really presenting a view of the industry that was not mainstream," he says. "Many people had doubts at the time. Today, nobody has doubts."

> 'We were really presenting a view of the industry that was not mainstream'

He says the task of convincing staff to follow his unorthodox approach started with getting workers to buy into his ambition of becoming the leading player in Europe. Then he set about hiring managers who were convinced of the merits of the transformation and could carry it out. But he says the most important aspect was being consistent with the approach, and how it was articulated inside and outside the business. "The strategy I defined in 2010 has not changed," he adds.

Mr Perrier has a prosaic view of the investment industry. He compares it to car manufacturing, where core components such as equities or bonds are developed by the investment managers into products or savings vehicles, and then distributed to clients through a vast network of sales channels. "With this view, we practice value analysis in order to improve efficiency, quality and reduce cost," he says, adding that low interest rates have put efficiency at the centre of the company's strategy.

The emphasis on cost reduction has inevitably led to large job cuts when businesses are bought and overlapping roles are made redundant. The Pioneer deal led to 600 roles being culled. Mr Perrier says the best way to avoid staff morale being affected is to select the best performers to stay regardless of which side of the business they come from, so management cannot be accused of favouritism, and to act swiftly to limit anxiety.

Mr Perrier eschews the star fund manager culture that was so popular in the 1990s and 2000s. He insists there are "no stars at Amundi apart from Amundi itself", and the group's pay policy reflects that view. Managers are paid well but not excessively, with bonuses linked to personal targets as well as corporate ones.

He received a 16 per cent pay rise last year, taking his salary to €1m with a €2m bonus, which in total was 21.9 times the average worker's pay at the group. His pay rise was criticised by Institutional Shareholder Services, the proxy advisory group, but his overall remuneration is dwarfed by his peers at the top of UK and US businesses.

As a teenager, Mr Perrier rejected the chance to become a professional footballer for French club Lyon, favouring a career in finance. He has a passion for the game, in particular Manchester United. But it is not the club's former player and fellow amateur philosopher Eric Cantona he most admires. He looks instead to ex-manager Alex Ferguson for leadership inspiration. "He built not only a team, but a club and then a brand," Mr Perrier says. "And that's what I have tried to build with Amundi."

CV

Education
1976 Graduates from Essec business school, Paris

Career
1987-95 Various positions at Société Générale
1995-99 SocGen chief financial officer
1999-2003 Executive committee member, Crédit Lyonnais
2003-07 Deputy chief executive of Calyon (now CACIB)
2007 Chairman and CEO of Crédit Agricole Asset Management (CAAM)
2009 Led merger of CAAM and SocGen's (SGAM) asset management activities to create Amundi
2010 to present CEO of Amundi

FT **Leadership**
More interviews illuminating the personalities of high-profile leaders by focusing on the issues they faced
ft.com/howtolead

We may have tired of meal kit deliveries but the food shopping disrupters are ready to feed us

Amy Lewin
Technology

Meal kit delivery companies — the likes of Blue Apron, HelloFresh and Gousto — were once the golden boys and girls of the start-up world. They offered time-strapped, cash-rich city dwellers a convenient way to shake up their cooking routines at home — and venture capitalists (who fit that profile to a T) lapped it up, just as they eagerly swallowed the promises of on-demand food delivery businesses such as Deliveroo.

But it is not looking so good for these over-funded, cash-and customer-losing businesses. Last week it was reported that Blue Apron, the US-based veteran of the sector, is laying off staff and looking for a buyer.

UK-based Deliveroo is also looking wobbly, as the Competition and Markets Authority drags out its probe into Amazon's investment in the company.

Perhaps it is time to take a step back: is this really the convenience we need when it comes to filling our bellies?

The average person does not live by takeaway alone; most of us buy the majority of our food in the humble supermarket.

And we do, generally, buy it in the supermarket: in Europe and the US, more than 90 per cent of grocery spending still happens in store. Yet, while online grocery shopping is not a new phenomenon, it's been slow to take off.

For many of us, shopping for food online is not offering the convenience we want: it is too expensive; the delivery windows are too narrow; the bananas arrive too green or too yellow; loading up an online shopping basket is a pain; and we have no idea what we want to have for dinner next week anyway.

There are plenty of young companies hoping to crack parts of this conundrum and tap into what feels sure to be an enormous market, eventually. There's La Fourche in France, an online store which offers members heavily discounted organic goods, and Matsmart in Sweden, which sells dry goods for between 20 and 90 per cent of their original price.

Even takeaway delivery companies such as Deliveroo and its Spanish competitor Glovo are testing out whether it makes sense for them to offer super-speedy, small basket grocery deliveries.

French entrepreneur Jacques-Edouard Sabatier thinks he has a somewhat different solution.

His app, Jow (pronounced "Joe"), recommends 15-minute recipes to users and then automatically fills up their shopping basket with the ingredients they need to make them.

Jow's core customers are people in their 30s and 40s with young families — people like Mr Sabatier, who became a father three years ago and rediscovered the weekly horror of the supermarket shop and dinnertime indecision. "I tried every supermarket app in France and found it horrible," he says. "It took more than one hour to fill a cart, and then after my fridge was filled I had the very same question: what shall we cook tonight?"

On Jow, parents can find "life-proof" recipes for steak chimichurri, pasta alla norma and coconut-breaded cod. Once they have filled their baskets with food and other essentials — nappies, toilet roll, detergent — the majority choose to pick up their pre-packed orders from their local store. (Jow is working with six big supermarkets in France.)

"It's way more flexible than the meal kits — and usually three or four times cheaper than the HelloFresh or Blue Apron equivalent," Mr Sabatier says.

"In a world where you have Netflix to recommend movies and Spotify to recommend music, there's not one global service to recommend you food," Mr Sabatier adds, somewhat ambitiously.

But that, I think, might be once again taking convenience too far. I am not sure I want an algorithm to tell me what to make for dinner. Cooking food is not an optional activity like watching films or listening to music. It has to be done and I have to do it.

And there are, we all know, only so many new recipes you can make in a row before you just want some plain old beans on toast.

Amy Lewin is deputy editor of Sifted, the FT-backed media site for European start-ups

> The average person does not live by takeaway food alone; many of us buy most of our food in the humble supermarket

FT FINANCIAL TIMES
With The Support Of
Deloitte.

FT US PHARMA AND BIOTECH SUMMIT
14 May 2020 | New York

Alexander Hardy
CEO, *Genentech*

Jessica Mega
Chief Medical and Scientific Officer, *Verily Life Sciences*

Sandy Macrae
President and Chief Executive Officer, *Sangamo Therapeutics*

Husseini Manji
Global Therapeutic Head for Neuroscience, *Janssen Research & Development*

Mary Rozenman
Chief Financial and Chief Business Officer, *Insitro*

Veena Rao
Vice President, External Innovation, *Eli Lilly and Company*

For the agenda, speaker line-up and to register visit: live.ft.com/uspharma

An event from FINANCIAL TIMES LIVE

GLOBAL CLINICAL RESEARCH PARTNER
ICON

LEAD SPONSORS
insmed
SAMSUNG BIOEPIS

ASSOCIATE SPONSORS
Livongo
tracelink NETWORK FOR GREATER GOOD

MARKET DATA

WORLD MARKETS AT A GLANCE

FT.COM/MARKETSDATA

Change during previous day's trading (%)

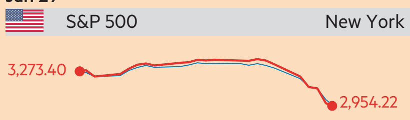
S&P 500	Nasdaq Composite	Dow Jones Ind	FTSE 100	FTSE Eurofirst 300	Nikkei	Hang Seng	FTSE All World $	$ per €	$ per £	¥ per $	£ per €	Oil Brent $ Sep	Gold $
-0.82%	0.01%	-1.39%	-3.18%	-3.64%	-3.67%	-2.42%	-1.77%	No change	-0.777%	-1.932%	0.821%	-2.52%	1.05%

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

AMERICAS

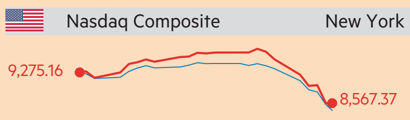
Jan 29 - - — Index — All World

S&P 500 New York



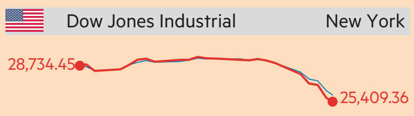
Day -0.82% Month -9.83% Year 6.10%

Nasdaq Composite New York



Day 0.01% Month -7.58% Year 13.74%

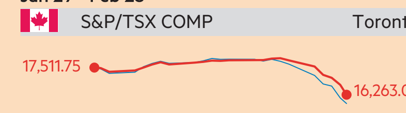
Dow Jones Industrial New York



Day -1.39% Month -11.54% Year -1.95%

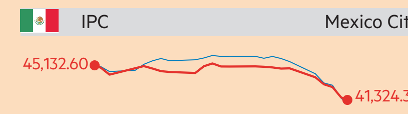
Jan 29 - Feb 28 — Index — All World

S&P/TSX COMP Toronto



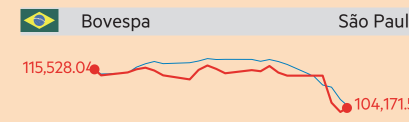
Day -2.72% Month -7.07% Year 1.65%

IPC Mexico City



Day -0.68% Month -7.59% Year -3.50%

Bovespa São Paulo

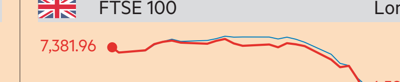


Day 1.15% Month -10.57% Year 8.98%

EUROPE

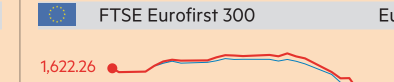
Jan 29 - Feb 28 — Index — All World

FTSE 100 London



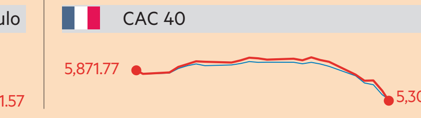
Day -3.18% Month -12.23% Year -7.19%

FTSE Eurofirst 300 Europe



Day -3.64% Month -10.60% Year -0.34%

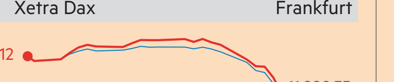
CAC 40 Paris



Day -3.38% Month -10.39% Year 1.32%

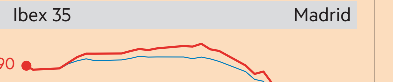
Jan 29 - Feb 28 — Index — All World

Xetra Dax Frankfurt



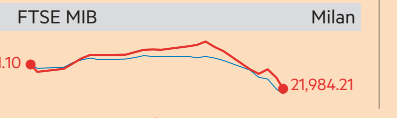
Day -3.86% Month -10.76% Year 3.25%

Ibex 35 Madrid



Day NaN% Month NaN% Year NaN%

FTSE MIB Milan

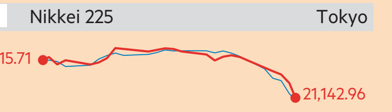


Day -3.58% Month -8.41% Year 6.52%

ASIA

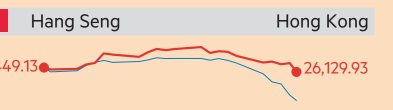
Jan 29 - Feb 28 — Index — All World

Nikkei 225 Tokyo



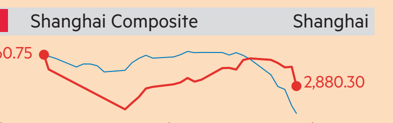
Day -3.67% Month -9.43% Year -1.92%

Hang Seng Hong Kong



Day -2.42% Month -6.57% Year -9.20%

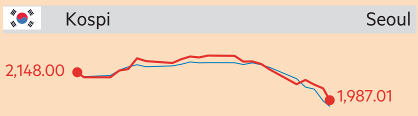
Shanghai Composite Shanghai



Day -3.71% Month -3.23% Year -2.49%

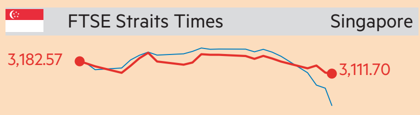
Jan 29 - Feb 28 — Index — All World

Kospi Seoul



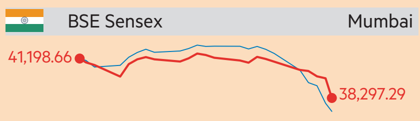
Day -3.30% Month -11.54% Year -11.09%

FTSE Straits Times Singapore



Day -3.23% Month -7.04% Year -7.33%

BSE Sensex Mumbai



Day -3.64% Month -6.94% Year 6.66%

Country	Index	Latest	Previous
Argentina	Merval	34973.18	35387.05
Australia	All Ordinaries	6511.50	6737.40
	S&P/ASX 200	6441.20	6657.90
	S&P/ASX 200 Res	4283.60	4491.00
Austria	ATX	2787.39	2845.94
Belgium	BEL 20	3488.60	3639.51
	BEL Mid	8037.02	8352.42
Brazil	Bovespa	104171.57	102983.54
Canada	S&P/TSX 60	972.15	997.73
	S&P/TSX Comp	16263.05	16717.44
	S&P/TSX Div Met & Min	402.28	399.65
Chile	S&P/CLX IGPA Gen	20748.06	21410.35
China	FTSE A200	10421.14	10775.20
	FTSE B35	9000.71	8988.96
	Shanghai A	3018.36	3134.71
	Shanghai B	230.73	239.61
	Shanghai Comp	2880.30	2991.33
	Shenzhen A	1885.06	1982.88
	Shenzhen B	922.07	943.58
Colombia	COLCAP	1556.69	1589.74
Croatia	CROBEX	2013.05	2011.29

Country	Index	Latest	Previous
Cyprus	CSE M&P Gen	68.46	68.68
Czech Republic	PX	977.11	1002.24
Denmark	OMXC Copenahgen 20	1124.07	1157.51
Egypt	EGX 30	13008.94	13328.26
Estonia	OMX Tallinn	1267.50	1271.28
Finland	OMX Helsinki General	9447.45	9733.56
France	CAC 40	5309.90	5495.59
	SBF 120	4215.94	4363.05
Germany	M-DAX	25366.62	26196.77
	TecDAX	2848.71	2942.21
	XETRA Dax	11890.35	12367.46
Greece	Athens Gen	720.35	768.83
	FTSE/ASE 20	1823.29	1949.42
Hong Kong	Hang Seng	26129.93	26778.62
	HS China Enterprise	10302.36	10593.11
	HSCC Red Chip	4033.53	4148.24
Hungary	Bux	40229.64	42679.40
India	BSE Sensex	38297.29	39745.66
	Nifty 500	9236.05	9579.35
Indonesia	Jakarta Comp	5452.70	5535.69
Ireland	ISEQ Overall	6397.37	6569.59
Israel	Tel Aviv 125	1542.55	1609.09

Country	Index	Latest	Previous
Italy	FTSE Italia All-Share	23907.05	24767.22
	FTSE Italia Mid Cap	37144.16	38225.87
	FTSE MIB	21984.21	22799.37
Japan	2nd Section	6053.61	6384.83
	Nikkei 225	21142.96	21948.23
	S&P Topix 150	1267.22	1314.75
	Topix	1510.87	1568.06
Jordan	Amman SE	1835.92	1836.55
Kenya	NSE 20	2409.53	2429.19
Kuwait	KSX Market Index	6633.44	6603.51
Latvia	OMX Riga	1013.65	1028.86
Lithuania	OMX Vilnius	688.05	702.35
Luxembourg	LuxX	1241.03	1282.07
Malaysia	FTSE Bursa KLCI	1482.64	1505.59
Mexico	IPC	41324.31	41607.42
Morocco	MASI	12380.29	12410.25
Netherlands	AEX	539.38	559.97
	AEX All Share	778.39	806.57
New Zealand	NZX 50	11261.16	11437.17
Nigeria	SE All Share	26808.24	26974.38
Norway	Oslo All Share	912.79	926.09
Pakistan	KSE 100	38087.32	38338.33

Country	Index	Latest	Previous
Philippines	Manila Comp	6787.91	6967.84
Poland	Wig	49276.54	51318.69
Portugal	PSI 20	4765.73	4952.14
	PSI General	3280.84	3401.87
Romania	BET Index	9121.27	9562.63
Russia	Micex Index	2785.08	2915.84
	RTX	1299.69	1386.20
Saudi-Arabia	TADAWUL All Share Index	7628.34	7711.12
Singapore	FTSE Straits Times	3011.08	3111.70
Slovakia	SAX	357.52	357.98
Slovenia	SBI TOP	873.85	-
South Africa	FTSE/JSE All Share	51038.18	53444.83
	FTSE/JSE Res 20	41998.11	44857.60
	FTSE/JSE Top 40	45851.76	48032.83
South Korea	Kospi	1987.01	2054.89
	Kospi 200	268.02	277.09
Spain	IBEX 35	8723.20	8985.90
Sri Lanka	CSE All Share	5592.92	5667.87
Sweden	OMX Stockholm 30	1668.84	1721.59
	OMX Stockholm AS	640.58	661.57
Switzerland	SMI Index	9831.03	10205.46

Country	Index	Latest	Previous
Taiwan	Weighted Pr	11536.61	11292.17
Thailand	Bangkok SET	1340.52	1395.08
Turkey	BIST 100	116840.94	116315.98
UAE	Abu Dhabi General Index	4901.42	4890.68
UK	FT 30	2829.70	2911.70
	FTSE 100	6580.61	6796.40
	FTSE 4Good UK	6090.40	6284.68
	FTSE All Share	3673.61	3787.97
	FTSE techMARK 100	5480.83	5627.73
USA	DJ Composite	8394.63	8530.18
	DJ Industrial	25409.36	25766.64
	DJ Transport	9388.19	9484.44
	DJ Utilities	839.96	865.47
	Nasdaq 100	8461.83	8436.67
	Nasdaq Cmp	8567.37	8566.48
	NYSE Comp	12380.97	12547.25
	S&P 500	2954.22	2978.76
	Wilshire 5000	30125.07	30385.63
Venezuela	IBC	108292.73	111216.76
Vietnam	VNI	882.19	898.44

Country	Index	Latest	Previous
Cross-Border	DJ Global Titans ($)	336.94	339.62
	Euro Stoxx 50 (Eur)	3329.49	3455.92
	Euronext 100 ID	1021.98	1059.35
	FTSE 4Good Global ($)	7282.21	7361.11
	FTSE All World ($)	338.41	344.50
	FTSE E300	1464.48	1519.76
	FTSE Eurotop 100	2806.86	2915.28
	FTSE Global 100 ($)	1851.21	1868.80
	FTSE Gold Min ($)	1921.85	1987.75
	FTSE Latibex Top (Eur)	4440.00	4432.20
	FTSE Multinationals ($)	2074.76	2155.96
	FTSE World ($)	601.05	611.48
	FTSEurofirst 100 (Eur)	3917.03	4072.30
	FTSEurofirst 80 (Eur)	4590.15	4758.74
	MSCI ACWI Fr ($)	521.92	539.82
	MSCI All World ($)	2177.25	2258.62
	MSCI Europe (Eur)	1573.14	1626.99
	MSCI Pacific ($)	2613.63	2645.85
	S&P Euro (Eur)	1533.86	1588.69
	S&P Europe 350 (Eur)	1508.61	1564.75
	S&P Global 1200 ($)	2385.25	2424.28
	Stoxx 50 (Eur)	3060.01	3183.37

(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
Apple	265.5	273.36	-0.16
Amazon.com	166.8	1883.75	-0.55
Microsoft	143.9	162.01	3.83
Nvidia	71.3	270.07	17.47
Facebook	57.9	192.47	2.72
Jpmorgan Chase & Co	51.9	116.11	-5.26
Bank Of America	48.5	28.50	-0.63
Alphabet	48.4	1339.25	24.30
Alphabet	46.1	1339.33	21.24
Advanced Micro Devices	42.8	45.48	1.47

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Cimarex Energy Co	33.05	2.40	7.83
Norwegian Cruise Line Holdings Ltd	37.26	2.52	7.25
Nvidia	270.07	17.47	6.92
Qorvo	100.58	5.78	6.10
Autodesk	190.88	10.23	5.66
Downs			
Aes	16.73	-1.56	-8.53
Mylan Nv	17.19	-1.49	-7.98
American Airlines	19.05	-1.55	-7.52
Amgen	199.73	-14.81	-6.90
L Brands	21.66	-1.39	-6.03

Based on the constituents of the S&P500

LONDON

ACTIVE STOCKS	stock traded m's	close price	Day's change
Royal Dutch Shell	667.4	1661.40	-70.20
Hsbc Holdings	544.5	523.90	-5.40
Bp	391.5	396.15	-18.00
Astrazeneca	357.9	6794.00	-348.00
Diageo	348.9	2765.50	-54.50
Rolls-royce Holdings	345.8	620.00	19.40
Royal Dutch Shell	342.1	1663.60	-68.80
Rio Tinto	333.4	3608.00	-71.00
Lloyds Banking	309.7	50.20	-0.15
British American Tobacco	280.5	3062.50	-100.00

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Fisher (james) & Sons	1840.00	160.00	9.52
Plus500 Ltd	949.60	77.20	8.85
Finablr	61.10	3.90	6.82
Euromoney Institutional Investor	1080.00	44.00	4.25
G4s	171.15	6.55	3.98
Downs			
Hochschild Mining	159.70	-21.90	-12.06
Fresnillo	603.80	-81.40	-11.88
Ip	66.60	-7.20	-9.76
Centamin	128.95	-12.55	-8.87
Tui Ag	600.00	-55.80	-8.51

Based on the constituents of the FTSE 350 index

EURO MARKETS

ACTIVE STOCKS	stock traded m's	close price	Day's change
Allianz Se Na O.n.	1041.7	194.80	-9.65
Sap Se O.n.	1032.6	111.56	-3.98
Lvmh	870.4	370.85	1.00
Bayer Ag Na O.n.	841.4	65.21	-1.70
Siemens Ag Na O.n.	828.2	93.20	-3.50
Asml Holding	810.6	248.10	-7.75
Royal Dutch Shella	764.0	19.41	-1.07
Intesa Sanpaolo	740.1	2.20	-0.09
Total	702.3	38.38	-1.30
Airbus	615.9	108.10	-6.90

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Amadeus It	63.50	2.02	3.29
Norsk Hydro	2.56	0.04	1.41
Volkswagen Ag St O.n.	152.30	1.25	0.83
Casino Guichard	35.19	0.13	0.37
Lvmh	370.85	1.00	0.27
Downs			
Ab Inbev	50.73	-4.37	-7.93
Grifols	29.00	-2.08	-6.69
Adp	133.80	-9.40	-6.56
Linde Eo 0,001	171.75	-11.25	-6.15
Bouygues	35.48	-2.32	-6.14

Based on the constituents of the FTSEurofirst 300 Eurozone index

TOKYO

ACTIVE STOCKS	stock traded m's	close price	Day's change
Softbank .	1239.7	5013.00	-226.00
Fast Retailing Co.,	772.5	53440.00	-1560.00
Sony	769.3	6611.00	-266.00
Toyota Motor	756.8	7127.00	-257.00
Mitsubishi Ufj Fin,.	713.5	531.90	-12.70
Tokyo Electron	540.9	22325.00	-1305.00
Sumitomo Mitsui Fin,.	464.4	3484.00	-47.00
Shin-etsu Chemical Co.,	437.5	12145.00	-785.00
Recruit Hldgs Co Ltd	422.2	3758.00	-256.00
Canon .	420.1	2733.50	-60.00

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Haseko	1390.00	94.00	7.25
All Nippon Airways Co.,	2907.50	8.50	0.29
Chugai Pharmaceutical Co.,	11715.00	-65.00	-0.55
Seven & I Holdings Co.,	3696.00	-27.00	-0.73
Tokai Carbon Co.,	965.00	-8.00	-0.82
Downs			
Unitika	290.00	-31.00	-9.66
Minebea Co.,	1904.00	-149.00	-7.26
Pacific Metals Co.,	1955.00	-149.00	-7.08
Kddi	3058.00	-226.00	-6.88
Nec	4040.00	-290.00	-6.70

Based on the constituents of the Nikkei 225 index

UK MARKET WINNERS AND LOSERS

FTSE 100	Feb 28 price(p)	%Chg week	%Chg ytd
Winners			
Nmc Health	938.40	9.7	-46.5
Pearson	557.60	-0.7	-14.2
Rolls-royce Holdings	620.00	-4.0	-9.0
Bunzl	1870.00	-4.0	-10.6
Rentokil Initial	484.00	-4.8	6.2
Glaxosmithkline	1562.20	-5.8	-12.1
Ocado	1064.00	-6.3	-15.5
Hsbc Holdings	523.90	-6.8	-12.0
Sainsbury (j)	195.75	-7.1	-15.7
Admiral	2112.00	-7.2	-8.3
Hikma Pharmaceuticals	1788.00	-7.2	-9.9
Johnson Matthey	2511.00	-7.3	-17.2
Losers			
Tui Ag	600.00	-29.5	-39.5
Easyjet	1100.50	-27.0	-23.0
Int Consolidated Airlines S.a.	472.00	-24.2	-25.8
Wpp	752.80	-22.2	-29.5
Carnival	2435.00	-19.1	-33.3
M&g	198.80	-18.7	-18.5
Whitbread	3894.00	-18.3	-20.5
Barclays	148.74	-17.2	-19.7
Legal & General	260.00	-17.2	-16.4
Jd Sports Fashion	737.00	-16.1	-11.4
Evraz	326.30	-15.8	-19.7
Anglo American	1791.80	-15.7	-18.6

FTSE 250	Feb 28 price(p)	%Chg week	%Chg ytd
Winners			
Plus500 Ltd	949.60	10.7	9.3
Pollen Street Secured Lending	866.00	4.8	4.6
Hunting	318.00	4.3	-21.8
Nextenergy Solar Fund	117.50	0.9	-6.7
Ei	284.60	0.0	0.1
Daejan Holdings	7980.00	-0.5	47.2
Sequoia Economic Infrastructure ome Fund	113.40	-1.2	-3.1
Foresight Solar Fund	113.50	-1.7	-10.6
Weir	1305.50	-2.1	-13.9
Bank Of Georgia	1692.00	-2.1	1.8
Hilton Food	1032.00	-2.1	-7.4
The Renewables Infrastructure	134.00	-2.2	-3.7
Losers			
Playtech	250.00	-28.0	-38.4
Sig	63.10	-27.0	-49.6
Premier Oil	77.64	-24.4	-22.0
Ssp	507.00	-23.9	-23.4
Jupiter Fund Management	300.00	-23.2	-27.6
William Hill	148.85	-22.6	-23.8
Wizz Air Holdings	3415.00	-22.5	-14.4
Frasers	383.80	-22.0	-16.5
Iwg	351.70	-20.9	-20.0
Hochschild Mining	159.70	-20.5	-9.5
Bakkavor	110.20	-19.8	-24.4
Mitchells & Butlers	335.00	-19.8	-26.6

FTSE SmallCap	Feb 28 price(p)	%Chg week	%Chg ytd
Winners			
De La Rue	139.20	23.2	0.7
Indivior	43.25	15.3	9.5
Batm Advanced Communications Ld	47.00	8.0	21.4
Mitie	139.80	5.8	-3.5
Pollen Street Secured Lending	866.00	4.8	4.6
Dignity	573.50	3.3	-4.4
Mcbride	67.90	2.9	-22.8
Bluefield Solar ome Fund	137.00	2.6	-2.8
Alcentra Eur Floating Rate ome Fund	99.80	1.6	0.9
Bh Macro	2650.00	0.4	1.5
Consort Medical	1005.00	0.0	-2.4
Highbridge Tactical Credit Fund	194.25	-1.1	5.3
Losers			
Jpmorgan Global Growth & ome	302.00	-	-
Petra Diamonds	4.15	-32.8	-53.0
Amigo Holdings	34.85	-30.2	-50.7
Menzies(john)	290.00	-29.4	-38.3
Saga	32.30	-27.9	-40.1
Topps Tiles	58.40	-27.9	-22.1
Dialight	214.00	-26.2	-7.0
On The Beach	323.20	-25.2	-33.9
Riverstone Energy	312.00	-23.9	-27.6
Mccoll's Retail	32.95	-21.5	-13.3
Enquest	20.00	-21.4	-9.3
Keller	649.00	-21.3	-15.4

Industry Sectors	Feb 28 price(p)	%Chg week	%Chg ytd
Winners			
Industrial Engineering	11794.95	-8.0	-
Aerospace & Defense	4742.17	-8.2	-4.6
Gas Water & Multiutilities	5441.37	-8.2	1.0
Health Care Equip.& Services	7634.61	-8.4	-8.6
Nonlife Insurance	2998.07	-8.6	-7.6
Electricity	8764.57	-8.6	4.5
Pharmaceuticals & Biotech.	15834.87	-8.9	-
Tobacco	31905.22	-9.0	-7.6
Fixed Line Telecommunication	1714.48	-9.6	-
Banks	3203.60	-9.6	-
Chemicals	11169.61	-9.6	-
Personal Goods	35231.17	-9.8	-7.9
Losers			
Industrial Metals	3073.14	-16.1	-
Travel & Leisure	8608.17	-15.9	-
Index - Technology Hardware & Equipment	1656.31	-15.8	-
Life Insurance	6994.93	-15.1	-
Mining	15557.65	-14.9	-
Automobiles & Parts	3946.84	-14.7	-
Mobile Telecommunications	3047.18	-13.6	-9.1
General Retailers	2148.84	-13.3	-
General Financial	11654.80	-12.8	-9.9
Oil & Gas Producers	6253.67	-12.4	-
Real Estate & Investment Servic	2748.99	-12.2	-8.8
Household Goods	17533.13	-12.1	-2.5

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

CURRENCIES

Feb 28	Currency	DOLLAR Closing Mid	DOLLAR Day's Change	EURO Closing Mid	EURO Day's Change	POUND Closing Mid	POUND Day's Change
Argentina	Argentine Peso	62.2069	0.0641	68.3314	0.0614	79.4570	-0.5425
Australia	Australian Dollar	1.5510	0.0304	1.7037	0.0332	1.9811	0.0236
Bahrain	Bahrainin Dinar	0.3771	-	0.4142	-0.0001	0.4816	-0.0038
Bolivia	Bolivian Boliviano	6.9100	-	7.5903	-0.0010	8.8262	-0.0694
Brazil	Brazilian Real	4.5117	0.0361	4.9558	0.0390	5.7627	0.0011
Canada	Canadian Dollar	1.3424	0.0067	1.4745	0.0072	1.7146	-0.0049
Chile	Chilean Peso	820.3300	4.9300	901.0952	5.2972	1047.8094	-1.8951
China	Chinese Yuan	6.9900	-0.0260	7.6782	-0.0296	8.9283	-0.1037
Colombia	Colombian Peso	3547.0600	36.0750	3896.2840	39.1180	4530.6681	10.8042
Costa Rica	Costa Rican Colon	568.6900	-1.2250	624.6801	-1.4282	726.3891	-7.2906
Czech Republic	Czech Koruna	23.1977	0.1438	25.4816	0.1547	29.6305	-0.0479
Denmark	Danish Krone	6.8031	0.0014	7.4730	0.0006	8.6897	-0.0665
Egypt	Egyptian Pound	15.6326	0.0266	17.1717	0.0270	19.9676	-0.1228
Hong Kong	Hong Kong Dollar	7.7930	-0.0015	8.5603	-0.0027	9.9541	-0.0802
Hungary	Hungarian Forint	307.3832	-1.2688	337.6464	-1.4384	392.6212	-4.7216
India	Indian Rupee	72.1675	0.5913	79.2727	0.6391	92.1797	0.0361

Feb 28	Currency	DOLLAR Closing Mid	DOLLAR Day's Change	EURO Closing Mid	EURO Day's Change	POUND Closing Mid	POUND Day's Change
Indonesia	Indonesian Rupiah	14347.5000	312.5000	15760.0936	341.2483	18326.1281	258.1709
Israel	Israeli Shekel	3.4914	0.0332	3.8351	0.0360	4.4596	0.0077
Japan	Japanese Yen	107.8650	-2.1250	118.4848	-2.3501	137.7762	-3.8193
..One Month		107.8648	-2.1254	118.4848	-2.3501	137.7761	-3.8196
..Three Month		107.8645	-2.1260	118.4849	-2.3500	137.7759	-3.8200
..One Year		107.8632	-2.1286	118.4850	-2.3497	137.7761	-3.8208
Kenya	Kenyan Shilling	101.2000	0.2000	111.1636	0.2051	129.2630	-0.7593
Kuwait	Kuwaiti Dinar	0.3060	-0.0002	0.3361	-0.0003	0.3909	-0.0033
Malaysia	Malaysian Ringgit	4.2150	-	4.6300	-0.0006	5.3838	-0.0423
Mexico	Mexican Peso	19.7965	0.3685	21.7456	0.4020	25.2861	0.2755
New Zealand	New Zealand Dollar	1.6123	0.0288	1.7710	0.0315	2.0593	0.0209
Nigeria	Nigerian Naira	365.7500	-	401.7597	-0.0529	467.1733	-3.6746
Norway	Norwegian Krone	9.4718	0.0722	10.4043	0.0779	12.0984	-0.0022
Pakistan	Pakistani Rupee	154.5550	0.3250	169.7716	0.3347	197.4135	-1.1344
Peru	Peruvian Nuevo Sol	3.4560	0.0244	3.7963	0.0264	4.4144	-0.0032
Philippines	Philippine Peso	50.9750	0.1600	55.9937	0.1684	65.1105	-0.3062

Feb 28	Currency	DOLLAR Closing Mid	DOLLAR Day's Change	EURO Closing Mid	EURO Day's Change	POUND Closing Mid	POUND Day's Change
Poland	Polish Zloty	3.9427	0.0100	4.3309	0.0104	5.0360	-0.0267
Romania	Romanian Leu	4.3846	0.0047	4.8162	0.0045	5.6004	-0.0381
Russia	Russian Ruble	67.2000	0.9400	73.8161	1.0230	85.8347	0.5350
Saudi Arabia	Saudi Riyal	3.7515	-0.0010	4.1209	-0.0016	4.7918	-0.0390
Singapore	Singapore Dollar	1.3957	0.0008	1.5331	0.0007	1.7827	-0.0130
South Africa	South African Rand	15.7315	0.2835	17.2803	0.3092	20.0939	0.2069
South Korea	South Korean Won	1214.5000	-2.7000	1334.0731	-3.1421	1551.2837	-15.6779
Sweden	Swedish Krona	9.6951	0.0437	10.6496	0.0466	12.3836	-0.0411
Switzerland	Swiss Franc	0.9680	-0.0019	1.0632	-0.0023	1.2364	-0.0122
Taiwan	New Taiwan Dollar	30.2795	-	33.2607	-0.0044	38.6761	-0.3042
Thailand	Thai Baht	31.5550	-0.1075	34.6617	-0.1227	40.3053	-0.4554
Tunisia	Tunisian Dinar	2.8631	0.0011	3.1449	0.0008	3.6570	-0.0273
Turkey	Turkish Lira	6.2492	0.0686	6.8645	0.0745	7.9822	0.0255
United Arab Emirates	UAE Dirham	3.6729	-0.0002	4.0345	-0.0008	4.6914	-0.0372
United Kingdom	Pound Sterling	0.7829	0.0061	0.8600	0.0066	-	-
..One Month		0.7830	0.0061	0.8599	0.0066	-	-

Feb 28	Currency	DOLLAR Closing Mid	DOLLAR Day's Change	EURO Closing Mid	EURO Day's Change	POUND Closing Mid	POUND Day's Change
..Three Month		0.7832	0.0061	0.8597	0.0066	-	-
..One Year		0.7837	0.0060	0.8590	0.0066	-	-
United States	United States Dollar	-	-	1.0985	-0.0001	1.2773	-0.0100
..One Month		-	-	1.0982	-0.1889	1.2774	-0.0100
..Three Month		-	-	1.0979	-0.1889	1.2776	-0.0101
..One Year		-	-	1.0964	-0.1888	1.2781	-0.0102
Venezuela	Venezuelan Bolivar Fuerte	-	-	-	-	-	-
Vietnam	Vietnamese Dong	23241.0000	-0.5000	25529.2207	-3.9110	29685.8348	-234.1293
European Union	Euro	0.9104	0.0001	-	-	1.1628	-0.0090
..One Month		0.9102	0.0001	-	-	1.1627	-0.0090
..Three Month		0.9098	0.0001	-	-	1.1626	-0.0090
..One Year		0.9084	0.0002	-	-	1.1618	-0.0090

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 Feb 28	Day's chge%	Euro Index	£ Strlg Feb 27	£ Strlg Feb 26	Year ago	Div yield%	Cover	P/E ratio	X/D adj	Total Return
FTSE 100 (100)	6580.61	-3.18	5953.00	6796.40	7042.47	7106.73	5.01	1.41	14.22	58.81	6140.13
FTSE 250 (250)	19330.92	-2.29	17487.28	19783.45	20622.95	19399.65	3.42	1.63	17.96	44.73	15082.33
FTSE 250 ex Inv Co (189)	20446.75	-2.20	18496.69	20905.78	21827.33	20534.12	3.61	1.41	19.62	38.54	16305.79
FTSE 350 (350)	3715.60	-3.02	3361.24	3831.35	3974.21	3962.47	4.73	1.43	14.76	28.89	6917.28
FTSE 350 ex Investment Trusts (288)	3661.47	-3.03	3312.26	3775.96	3916.81	3917.16	4.82	1.41	14.73	29.15	3517.26
FTSE 350 Higher Yield (109)	3123.36	-3.09	2825.48	3222.88	3340.73	3579.86	6.94	1.25	11.50	33.00	6334.40
FTSE 350 Lower Yield (241)	4033.66	-2.96	3648.96	4156.54	4314.43	3988.18	2.59	1.90	20.31	20.53	4707.60
FTSE SmallCap (269)	5384.70	-2.96	4871.15	5549.03	5706.00	5464.02	3.94	1.13	22.56	24.37	8381.44
FTSE SmallCap ex Inv Co (150)	4441.37	-2.73	4017.78	4566.21	4683.00	4518.15	4.47	0.81	27.68	12.52	7264.09
FTSE All-Share (619)	3673.61	-3.02	3323.25	3787.97	3928.00	3911.07	4.70	1.42	14.94	28.15	6909.11
FTSE All-Share ex Inv Co (438)	3592.72	-3.03	3250.07	3704.83	3842.16	3839.88	4.82	1.40	14.87	28.23	3505.63
FTSE All-Share ex Multinationals (546)	1134.54	-2.48	850.64	1163.36	1210.84	1157.44	4.06	1.30	18.87	4.28	2228.97
FTSE Fledgling (98)	8719.23	-4.17	7887.65	9098.57	9348.70	10436.34	3.80	-0.30	-86.76	35.01	17549.09
FTSE Fledgling ex Inv Co (43)	10372.85	-3.95	9383.56	10799.02	11109.21	15166.54	5.92	-1.22	-13.78	37.47	20542.56
FTSE All-Small (367)	3726.57	-3.03	3371.15	3842.93	3951.47	3814.31	3.93	1.05	24.23	16.76	7441.16
FTSE All-Small ex Inv Co (193)	3307.94	-2.77	2992.45	3402.26	3489.61	3409.82	4.52	0.72	30.54	9.41	6853.63
FTSE AIM All-Share (738)	856.64	-3.42	774.94	886.96	911.16	915.82	1.71	1.33	44.09	1.19	976.90
FTSE Sector Indices											
Oil & Gas (12)	**6487.95**	**-4.11**	**5869.18**	**6765.79**	**6982.69**	**9095.80**	**8.14**	**1.28**	**9.60**	**127.00**	**7016.51**
Oil & Gas Producers (8)	6275.48	-4.13	5676.97	6545.75	6755.04	8787.91	8.15	1.29	9.53	125.00	7033.79
Oil Equipment Services & Distribution (4)	7576.09	-2.82	6853.54	7796.04	8083.66	11346.37	7.20	0.89	15.66	0.00	6512.17
Basic Materials (25)	**5229.35**	**-3.29**	**4730.61**	**5407.51**	**5666.27**	**6410.30**	**6.44**	**2.45**	**6.33**	**1.42**	**6010.59**
Chemicals (8)	11990.42	-1.16	10846.86	12130.82	12685.37	14892.64	2.83	2.17	16.30	33.37	11348.61
Forestry & Paper (1)	19187.61	-3.55	17357.63	19893.94	19900.08	21828.66	4.62	2.08	10.41	0.00	22662.01
Industrial Metals & Mining (2)	3310.26	-3.28	2994.55	3422.44	3772.85	5941.41	21.38	0.88	5.33	0.00	3896.70
Mining (14)	14876.74	-3.52	13457.91	15419.80	16191.69	18148.40	6.71	2.57	5.80	0.00	9005.89
Industrials (103)	**5501.42**	**-2.67**	**4976.74**	**5652.44**	**5839.84**	**5158.39**	**2.63**	**1.35**	**28.08**	**3.46**	**6029.72**
Construction & Materials (15)	6515.48	-2.63	5894.08	6691.22	6928.87	6030.24	2.91	0.68	50.57	0.00	7362.30
Aerospace & Defense (9)	4997.85	-1.63	4521.19	5080.42	5191.07	4889.13	2.69	1.00	37.06	1.81	5667.12
General Industrials (6)	4503.48	-3.66	4073.97	4674.39	4831.26	4483.18	3.63	0.83	32.96	0.00	5546.76
Electronic & Electrical Equipment (10)	9348.64	-3.86	8457.03	9723.77	10086.26	8400.26	1.55	1.88	34.27	0.00	8900.05
Industrial Engineering (12)	12937.23	-2.68	11703.37	13293.52	13666.77	12943.99	2.64	1.64	23.11	0.00	16686.70
Industrial Transportation (6)	3226.94	0.43	2919.18	3213.07	3385.21	3782.89	7.49	0.86	15.47	0.00	3264.47
Support Services (45)	8501.82	-2.89	7690.98	8754.66	9067.86	7675.32	2.30	1.81	24.09	10.07	9350.55
Consumer Goods (43)	**18558.87**	**-2.69**	**16788.86**	**19070.95**	**19664.16**	**18670.40**	**4.54**	**1.63**	**13.50**	**105.20**	**15258.00**
Automobiles & Parts (2)	3967.07	-2.73	3588.72	4078.21	4257.82	6475.97	2.75	2.19	16.58	0.00	4055.69
Beverages (6)	22143.39	-2.18	20031.52	22636.33	23514.98	23508.67	2.56	2.12	18.43	195.72	16734.06
Food Producers (11)	7175.46	-2.93	6491.12	7392.23	7650.04	7082.08	2.57	2.09	18.57	7.75	6579.68
Household Goods & Home Construction (14)	14685.53	-1.79	13284.93	14953.84	15601.34	13529.82	4.11	1.88	12.97	0.00	11572.65
Leisure Goods (2)	16852.18	-1.12	15244.95	17042.84	17864.59	9485.39	3.02	1.48	22.46	109.33	17473.39
Personal Goods (6)	30544.47	-3.22	27631.37	31560.18	32172.32	30389.46	3.32	2.75	10.96	220.67	22379.15
Tobacco (2)	31905.27	-3.59	28862.38	33092.85	33740.00	33687.20	7.79	1.05	12.20	258.35	24340.58
Health Care (17)	**11472.43**	**-4.34**	**10378.27**	**11992.57**	**12224.28**	**10711.81**	**3.72**	**0.89**	**30.06**	**178.48**	**9800.33**
Health Care Equipment & Services (8)	7709.59	-3.71	6974.30	8006.88	8098.20	6976.71	1.80	1.92	28.84	7.87	6975.67
Pharmaceuticals & Biotechnology (9)	15724.69	-4.42	14224.99	16451.60	16786.39	14739.65	3.98	0.83	30.23	274.58	12069.27
Consumer Services (85)	**4865.51**	**-2.27**	**4401.48**	**4978.71**	**5220.36**	**5026.75**	**3.18**	**1.61**	**19.54**	**18.11**	**4918.27**
Food & Drug Retailers (6)	3833.77	-0.84	3468.13	3866.17	4029.18	3990.73	2.84	1.47	24.04	0.00	4730.70
General Retailers (25)	2040.73	-0.88	1846.10	2058.82	2162.57	2188.60	3.09	1.62	19.94	2.83	2543.05
Media (18)	8181.20	-2.61	7400.94	8400.65	8812.33	7924.89	3.26	1.57	19.54	3.43	5416.04
Travel & Leisure (36)	8408.44	-3.13	7606.50	8679.70	9111.99	9005.29	3.27	1.69	18.05	76.27	8623.74
Telecommunications (6)	**1959.86**	**-3.18**	**1772.94**	**2024.16**	**2105.54**	**2165.40**	**6.76**	**0.02**	**648.77**	**0.00**	**2589.81**
Fixed Line Telecommunications (3)	1777.38	1.08	1607.87	1758.31	1843.57	2551.17	10.04	1.45	6.85	0.00	1942.66
Mobile Telecommunications (3)	3042.57	-4.69	2752.39	3192.19	3311.15	2997.15	5.53	-0.95	-18.96	0.00	3600.88
Utilities (8)	**7846.23**	**-4.25**	**7097.92**	**8194.48**	**8308.93**	**7024.74**	**5.48**	**0.51**	**35.99**	**33.14**	**10481.83**
Electricity (3)	8744.67	-2.31	7910.67	8951.42	9164.60	7257.32	6.05	-0.35	-46.70	126.30	15375.40
Gas Water & Multiutilities (5)	7191.33	-4.84	6505.47	7556.99	7639.95	6586.40	5.30	0.81	23.19	7.47	9501.13
Financials (305)	**4524.41**	**-2.56**	**4092.90**	**4643.09**	**4851.71**	**4807.91**	**4.69**	**1.49**	**14.33**	**42.31**	**4671.44**
Banks (10)	3161.61	-1.38	2860.08	3205.69	3359.36	3741.06	6.63	1.42	10.65	70.15	2689.16
Nonlife Insurance (8)	3431.87	-2.30	3104.57	3512.62	3595.66	3721.74	4.17	1.64	14.67	6.45	6606.37
Life Insurance/Assurance (7)	7115.19	-3.94	6436.60	7407.16	7865.88	7946.89	5.61	1.78	10.00	0.00	7744.60
Real Estate Investment & Services (19)	2709.98	-2.70	2451.52	2785.22	2907.79	2600.61	1.92	2.23	23.32	1.42	7688.71
Real Estate Investment Trusts (40)	2673.58	-2.96	2418.59	2755.19	2874.88	2672.28	4.39	0.01	1711.12	9.83	3713.54
General Financial (40)	9875.67	-3.26	8933.80	10208.65	10654.82	8631.82	3.04	1.62	20.26	21.72	12350.65
Equity Investment Instruments (181)	10215.63	-2.90	9241.34	10520.55	10891.95	10161.66	2.75	2.25	16.18	45.03	5982.70
Non Financials (314)	**4354.83**	**-3.19**	**3939.50**	**4498.39**	**4651.35**	**4640.21**	**4.70**	**1.40**	**15.18**	**30.61**	**7170.72**
Technology (15)	**1996.48**	**-2.48**	**1806.07**	**2047.20**	**2119.63**	**2063.94**	**3.37**	**0.84**	**35.50**	**11.50**	**2755.81**
Software & Computer Services (13)	2188.37	-2.41	1979.66	2242.42	2321.68	2286.40	3.50	0.78	36.73	13.43	3197.01
Technology Hardware & Equipment (2)	3775.00	-3.41	3414.97	3908.20	4048.25	3284.01	1.55	2.65	24.24	0.00	4612.71

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	6986.75	6924.69	6941.66	6939.09	6968.92	6984.17	6973.95	7001.26	7023.30	7044.32	6873.31
FTSE 250	20667.46	20391.90	20356.02	20371.04	20433.04	20411.54	20445.89	20538.21	20600.46	20667.46	20235.29
FTSE SmallCap	5762.71	5682.66	5643.24	5648.33	5657.79	5661.71	5672.45	5693.57	5703.23	5762.71	5641.25
FTSE All-Share	3906.08	3867.72	3873.15	3872.61	3888.07	3894.25	3891.08	3906.68	3918.70	3928.96	3839.42

Time of FTSE 100 Day's high:16:29:00 Day's Low09:12:00 FTSE 100 2010/11 High: 7674.56(17/01/2020) Low: 7017.88(25/02/2020)
Time of FTSE All-Share Day's high:16:29:00 Day's Low09:12:00 FTSE 100 2010/11 High: 4257.93(17/01/2020) Low: 3921.63(25/02/2020)

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.

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.

FT 30 INDEX

	Feb 28	Feb 27	Feb 26	Feb 25	Feb 24	Yr Ago	High	Low
FT 30	2829.70	2911.70	3041.80	3047.10	3112.10	0.00	3314.70	2881.30
FT 30 Div Yield	-	-	-	-	-	0.00	3.93	2.74
P/E Ratio net	-	-	-	-	-	0.00	19.44	14.26

FT 30 since compilation: 4198.4 high: 19/07/1999; low49.4 18/02/1900Base Date: 1/7/35

FT 30 hourly changes

8	9	10	11	12	13	14	15	16	High	Low
2911.7	2802.1	2797	3120.5	2826.3	2829.6	2815.4	2789	2808.3	2911.7	2773.9

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

FX: EFFECTIVE INDICES

	Feb 27	Feb 26	Mnth Ago		Feb 28	Feb 27	Mnth Ago
Australia	-	-	-	Sweden	-	-	-
Canada	-	-	-	Switzerland	-	-	-
Denmark	-	-	-	UK	80.00	80.78	80.69
Japan	-	-	-	USA	-	-	-
New Zealand	-	-	-	Euro	-	-	-
Norway	-	-	-				

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

FTSE GLOBAL EQUITY INDEX SERIES

Feb 28 Regions & countries	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
FTSE Global All Cap	8844	586.41	-3.3	-7.6	-7.9	887.31	-7.6	2.5
FTSE Global All Cap	7079	462.39	0.3	7.3	-0.3	624.68	0.2	2.5
FTSE Global Large Cap	1793	525.35	-3.3	-7.3	-7.4	818.25	-7.2	2.6
FTSE Global Mid Cap	2129	754.23	-3.2	-8.3	-9.0	1074.64	-8.9	2.4
FTSE Global Small Cap	4922	784.09	-3.1	-8.4	-9.3	1076.31	-9.2	2.2
FTSE All-World	3922	344.50	-3.3	-7.5	-7.7	551.49	-7.5	2.6
FTSE World	2575	611.48	-3.5	-7.7	-7.9	1314.24	-7.7	2.6
FTSE Global All Cap ex UNITED KINGDOM In	8541	614.51	-3.2	-7.5	-7.6	913.26	-7.4	2.4
FTSE Global All Cap ex USA	7052	476.56	-1.9	-6.9	-8.1	782.93	-7.9	3.2
FTSE Global All Cap ex JAPAN	7497	605.01	-3.4	-7.5	-7.7	924.48	-7.5	2.5
FTSE Global All Cap ex Eurozone	8188	613.50	-3.4	-7.7	-7.8	909.39	-7.6	2.4
FTSE Developed	2161	558.71	-3.5	-7.6	-7.7	852.66	-7.5	2.5
FTSE Developed All Cap	5653	583.42	-3.5	-7.7	-8.0	878.16	-7.7	2.5
FTSE Developed Large Cap	895	521.81	-3.6	-7.5	-7.5	810.23	-7.2	2.6
FTSE Developed Europe Large Cap	233	351.35	-2.6	-6.4	-8.5	641.48	-8.2	3.8
FTSE Developed Europe Mid Cap	347	576.95	-2.8	-6.1	-8.8	925.97	-8.7	3.1
FTSE Dev Europe Small Cap	719	809.11	-3.2	-6.9	-9.9	1252.01	-9.8	3.0
FTSE North America Large Cap	260	647.40	-4.5	-7.8	-7.1	930.68	-6.8	2.1
FTSE North America Mid Cap	409	867.30	-3.7	-8.5	-8.3	1149.91	-8.2	1.9
FTSE North America Small Cap	1319	868.51	-3.5	-8.4	-9.0	1114.01	-8.9	1.7
FTSE North America	669	425.19	-4.3	-7.9	-7.3	624.58	-7.1	2.1
FTSE Developed ex North America	1492	249.02	-2.1	-7.2	-8.5	440.80	-8.2	3.3
FTSE Japan Large Cap	183	363.55	-1.7	-7.8	-8.4	498.63	-8.3	2.5
FTSE Japan Mid Cap	320	544.16	-2.0	-10.7	-13.4	709.52	-13.4	2.4
FTSE Global wi JAPAN Small Cap	844	589.45	-2.4	-12.4	-15.3	795.96	-15.2	2.4
FTSE Japan	503	151.48	-1.8	-8.3	-9.4	232.68	-9.3	2.5
FTSE Asia Pacific Large Cap ex Japan	934	689.29	-0.2	-5.5	-5.2	1166.61	-5.0	2.9
FTSE Asia Pacific Mid Cap ex Japan	819	796.33	-0.3	-8.2	-8.0	1294.52	-7.9	3.2
FTSE Asia Pacific Small Cap ex Japan	1739	505.72	-0.9	-7.8	-6.9	803.54	-6.7	3.2
FTSE Asia Pacific Ex Japan	1753	537.43	-0.2	-5.8	-5.4	966.30	-5.3	2.9
FTSE Emerging All Cap	3191	732.95	-1.3	-6.0	-7.2	1177.13	-7.1	3.0
FTSE Emerging Large Cap	898	703.82	-1.1	-5.6	-7.1	1137.94	-7.0	2.9
FTSE Emerging Mid Cap	863	883.99	-2.2	-8.5	-9.2	1416.60	-9.0	3.7
FTSE Emerging Small Cap	1430	709.89	-1.6	-7.4	-6.1	1091.99	-6.0	3.3
FTSE Emerging Europe	75	385.81	-4.7	-11.3	-12.3	694.48	-12.2	7.0
FTSE Latin America All Cap	237	821.83	-4.2	-12.9	-16.6	1377.18	-16.2	3.4
FTSE Middle East and Africa All Cap	332	615.18	-3.1	-7.4	-10.8	1034.14	-10.6	3.9
FTSE Global wi UNITED KINGDOM All Cap In	303	312.85	-3.9	-9.5	-12.5	584.19	-11.9	4.7
FTSE Global wi USA All Cap	1792	728.82	-4.3	-8.1	-7.7	1012.14	-7.4	2.0
FTSE Europe All Cap	1448	414.92	-2.8	-6.6	-8.8	728.78	-8.5	3.7
FTSE Eurozone All Cap	656	398.50	-2.2	-5.7	-8.4	698.64	-8.2	3.4
FTSE RAFI All World 3000	3258	6482.77	-3.2	-8.5	-10.3	9274.55	-10.0	3.5
FTSE RAFI US 1000	1048	11512.89	-4.4	-9.5	-10.7	16109.63	-10.3	2.7
FTSE EDHEC-Risk Efficient All-World	3922	396.63	-3.1	-7.9	-8.3	586.04	-8.2	2.6
FTSE EDHEC-Risk Efficient Developed Europe	580	312.28	-2.7	-5.8	-7.6	511.00	-7.5	3.2

Feb 28 Sectors	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
Oil & Gas	151	289.67	-3.9	-3.9	-20.4	518.83	-19.7	5.5
Oil & Gas Producers	102	274.94	-4.1	-4.1	-22.1	503.15	-21.5	5.7
Oil Equipment & Services	38	231.21	-3.5	-3.5	-13.7	373.51	-12.9	5.3
Basic Materials	351	448.66	-3.1	-3.1	-12.7	739.79	-12.6	3.7
Chemicals	161	659.52	-3.1	-3.1	-12.1	1080.41	-12.0	3.1
Forestry & Paper	20	242.80	-2.7	-2.7	-12.7	448.53	-12.5	4.0
Industrial Metals & Mining	91	308.32	-2.7	-2.7	-18.5	511.30	-18.4	4.9
Mining	79	649.58	-3.2	-3.2	-10.9	1089.68	-10.8	4.2
Industrials	749	411.91	-2.7	-2.7	-8.2	624.61	-8.0	2.1
Construction & Materials	148	506.37	-1.7	-1.7	-8.7	802.98	-8.6	2.4
Aerospace & Defense	36	817.14	-3.5	-3.5	-8.7	1224.01	-8.5	2.1
General Industrials	64	205.87	-2.4	-2.4	-9.7	341.19	-9.2	2.5
Electronic & Electrical Equipment	133	463.03	-2.4	-2.4	-9.0	637.10	-9.0	1.8
Industrial Engineering	150	739.96	-2.5	-2.5	-10.8	1114.53	-10.6	2.5
Industrial Transportation	127	676.99	-2.8	-2.8	-10.6	1033.05	-10.4	2.5
Support Services	91	488.50	-3.0	-3.0	-3.2	701.08	-3.1	1.4
Consumer Goods	542	470.43	-3.0	-3.0	-7.8	743.58	-7.7	2.8
Automobiles & Parts	132	348.69	-3.1	-3.1	-8.4	538.07	-8.4	3.4
Beverages	65	658.88	-4.0	-4.0	-7.0	1050.27	-6.9	2.5
Food Producers	132	637.13	-2.3	-2.3	-6.6	1026.17	-6.4	2.4
Household Goods & Home Construction	59	473.97	-4.0	-4.0	-6.4	746.30	-6.1	2.6
Leisure Goods	42	222.85	-2.2	-2.2	-8.0	303.59	-8.0	1.3
Personal Goods	99	814.68	-2.3	-2.3	-9.6	1198.50	-9.5	2.0
Tobacco	13	913.65	-2.9	-2.9	-8.3	2166.78	-8.1	6.6
Health Care	278	573.45	-2.5	-2.5	-6.1	869.11	-5.9	2.0
Health Care Equipment & Services	94	1076.05	-2.7	-2.7	-8.2	1286.50	-8.2	1.0
Pharmaceuticals & Biotechnology	184	389.79	-2.4	-2.4	-5.0	625.20	-4.7	2.6
Consumer Services	451	517.35	-3.4	-3.4	-7.2	718.67	-7.1	1.5
Food & Drug Retailers	65	264.41	-3.3	-3.3	-10.3	392.25	-10.0	2.7
General Retailers	149	875.00	-3.7	-3.7	-3.3	1171.58	-3.2	1.1
Media	90	351.72	-3.2	-3.2	-8.5	491.52	-8.4	1.6
Travel & Leisure	147	444.79	-3.1	-3.1	-14.1	630.34	-13.9	2.1
Telecommunication	93	151.75	-2.3	-2.3	-5.4	318.21	-4.9	4.5
Fixed Line Telecommuniations	38	123.31	-3.0	-3.0	-8.9	289.33	-8.2	5.3
Mobile Telecommunications	55	166.20	-1.5	-1.5	-0.4	306.09	-0.3	3.5
Utilities	186	316.40	-3.1	-3.1	-0.5	674.37	0.0	3.4
Electricity	129	353.22	-3.7	-3.7	-0.8	742.56	-0.3	3.3
Gas Water & Multiutilities	57	322.03	-1.8	-1.8	0.3	707.71	0.6	3.6
Financials	847	241.41	-3.1	-3.1	-8.7	427.24	-8.4	3.4
Banks	277	187.98	-2.9	-2.9	-12.0	363.89	-11.6	4.6
Nonlife Insurance	71	287.74	-3.5	-3.5	-6.8	441.91	-6.6	2.4
Life Insurance	59	215.26	-2.6	-2.6	-10.8	372.73	-10.6	3.6
Financial Services	209	348.28	-3.4	-3.4	-5.9	503.75	-5.8	1.8
Technology	274	345.69	-4.5	-4.5	-3.9	439.46	-3.7	1.3
Software & Computer Services	144	599.49	-4.5	-4.5	-1.4	714.28	-1.3	0.8
Technology Hardware & Equipment	130	259.12	-4.5	-4.5	-6.8	349.68	-6.6	2.0
Alternative Energy	11	126.26	-0.9	-0.9	-0.2	176.85	-0.2	1.2
Real Estate Investment & Services	152	349.82	-0.4	-0.4	-5.3	625.34	-5.2	3.1

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 www.ftse.com/geis. 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 SECTORS: LEADERS & LAGGARDS

Year to date percentage changes

Electricity	4.25	Financial Services	-9.39	FTSE 100 Index	-12.75
Utilities	1.61	FTSE SmallCap Index	-9.51	Beverages	-12.79
Leisure Goods	1.33	Health Care	-10.88	Tech Hardware & Eq	-13.24
Gas Water & Multi	0.82	Food Producers	-11.14	Life Insurance	-13.37
Household Goods & Ho	-2.46	Pharmace & Biotech	-11.14	Telecommunications	-13.78
Aerospace & Defense	-4.15	Real Est Invest & Tr	-11.33	Consumer Services	-14.37
Support Services	-6.76	FTSE 250 Index	-11.66	General Retailers	-15.26
Nonlife Insurance	-7.44	Software & Comp Serv	-11.69	Banks	-15.37
Tobacco	-7.48	Technology	-11.79	Chemicals	-15.51
Real Est Invest & Se	-7.73	Construct & Material	-11.79	Travel & Leisure	-16.89
Personal Goods	-7.80	Forestry & Paper	-11.88	Basic Materials	-17.62
Consumer Goods	-7.83	Media	-11.90	Industrial Transport	-17.97
Industrials	-8.22	Financials	-12.07	Mining	-18.17
Electronic & Elec Eq	-8.63	Food & Drug Retailer	-12.10	Industrial Metals &	-18.67
Mobile Telecomms	-8.75	Industrial Eng	-12.26	Oil & Gas	-22.33
Health Care Eq & Srv	-8.77	FTSE All{HY-}Share Index	-12.46	Oil & Gas Producers	-22.48
Equity Invest Instr	-9.14	NON FINANCIALS Index	-12.60	Fixed Line Telecomms	-24.81
		Oil Equipment & Serv	-12.63	Automobiles & Parts	-27.84

FTSE 100 SUMMARY

FTSE 100	Closing Price	Week's Change	FTSE 100	Closing Price	Week's Change
3I Group PLC	1008	-163.00	Legal & General Group PLC	260.00	-53.90
Admiral Group PLC	2112	-163.00	Lloyds Banking Group PLC	50.20	-5.15
Anglo American PLC	1791.8	-333.20	London Stock Exchange Group PLC	7576	-846.00
Antofagasta PLC	752.00	-108.20	M&G PLC	198.80	-45.80
Ashtead Group PLC	2389	-352.00	Meggitt PLC	542.00	-73.80
Associated British Foods PLC	2255	-328.00	Melrose Industries PLC	209.40	-35.20
Astrazeneca PLC	6794	-896.00	Mondi PLC	1562	-155.00
Auto Trader Group PLC	519.60	-50.20	Morrison (Wm) Supermarkets PLC	171.25	-14.70
Aveva Group PLC	4388	-482.00	National Grid PLC	982.80	-81.00
Aviva PLC	350.80	-53.30	Next PLC	6082	-996.00
Bae Systems PLC	608.40	-60.60	Nmc Health PLC	938.40	83.20
Barclays PLC	148.74	-30.88	Ocado Group PLC	1064	-71.50
Barratt Developments PLC	757.20	-106.00	Pearson PLC	557.60	-3.80
Berkeley Group Holdings (The) PLC	4754	-716.00	Persimmon PLC	2839	-443.00
Bhp Group PLC	1418.4	-243.20	Phoenix Group Holdings PLC	691.20	-97.50
BP PLC	396.15	-57.40	Polymetal International PLC	1194	-150.00
British American Tobacco PLC	3062.5	-290.00	Prudential PLC	1267	-222.00
British Land Company PLC	501.00	-55.20	Reckitt Benckiser Group PLC	5721	-693.00
Bt Group PLC	141.62	-14.66	Relx PLC	1867.5	-204.50
Bunzl PLC	1870	-78.50	Rentokil Initial PLC	484.00	-24.40
Burberry Group PLC	1649	-221.50	Rightmove PLC	619.00	-69.00
Carnival PLC	2435	-575.00	Rio Tinto PLC	3608	-594.50
Centrica PLC	72.12	-7.26	Rolls-Royce Holdings PLC	620.00	-25.60
Coca-Cola Hbc AG	2474	-324.00	Royal Bank Of Scotland Group PLC	178.65	-25.45
Compass Group PLC	1710.5	-242.50	Royal Dutch Shell PLC	1663.6	-222.80
Crh PLC	2639	-265.00	Royal Dutch Shell PLC	1661.4	-226.40
Croda International PLC	4554	-461.00	Rsa Insurance Group PLC	518.80	-50.20
Dcc PLC	5532	-720.00	Sage Group PLC	681.80	-92.00
Diageo PLC	2765.5	-334.00	Sainsbury (J) PLC	195.75	-14.95
Easyjet PLC	1100.5	-408.00	Schroders PLC	2854	-522.00
Evraz PLC	326.30	-61.10	Scottish Mortgage Investment Trust PLC	561.00	-79.00
Experian PLC	2591	-272.00	Segro PLC	821.20	-100.20
Ferguson PLC	6740	-826.00	Severn Trent PLC	2465	-229.00
Flutter Entertainment PLC	8266	-786.00	Smith & Nephew PLC	1739	-185.00
Glaxosmithkline PLC	1562.2	-96.00	Smith (Ds) PLC	314.20	-41.80
Glencore PLC	193.26	-31.09	Smiths Group PLC	1533	-212.50
Halma PLC	1929	-298.00	Smurfit Kappa Group PLC	2598	-232.00
Hargreaves Lansdown PLC	1536.5	-173.50	Spirax-Sarco Engineering PLC	8395	-970.00
Hikma Pharmaceuticals PLC	1788	-139.50	Sse PLC	1529	-157.00
HSBC Holdings PLC	523.90	-38.30	St. James's Place PLC	1015.5	-150.50
Imperial Brands PLC	1554.8	-174.20	Standard Chartered PLC	562.60	-64.40
Informa PLC	682.40	-93.40	Standard Life Aberdeen PLC	276.40	-46.60
Intercontinental Hotels Group PLC	4302	-720.00	Taylor Wimpey PLC	202.20	-30.20
International Consolidated Airlines Group S.A.	472.00	-151.00	Tesco PLC	228.50	-27.20
Intertek Group PLC	5270	-574.00	Tui AG	600.00	-251.00
Itv PLC	116.55	-14.05	Unilever PLC	4170	-423.00
Jd Sports Fashion PLC	737.00	-141.80	United Utilities Group PLC	944.20	-113.80
Johnson Matthey PLC	2511	-198.00	Vodafone Group PLC	134.36	-20.52
Just Eat Takeaway.Com N.V.	6815	-755.00	Whitbread PLC	3894	-875.00
Kingfisher PLC	189.35	-29.65	Wpp PLC	752.80	-215.40
Land Securities Group PLC	834.60	-126.60			

UK STOCK MARKET TRADING DATA

	Feb 28	Feb 27	Feb 26	Feb 25	Feb 24	Yr Ago
	-	-	-	-	-	-
Order Book Turnover (m)	152.82	107.24	107.24	110.33	55.74	55.74
Order Book Bargains	2304920.00	1155562.00	1155562.00	1235141.00	791459.00	791459.00
Order Book Shares Traded (m)	3447.00	1748.00	1748.00	1915.00	1708.00	1708.00
Total Equity Turnover (£m)	8707.33	6446.92	6446.92	6601.65	7824.82	7824.82
Total Mkt Bargains	2687819.00	1386122.00	1386122.00	1474790.00	966474.00	966474.00
Total Shares Traded (m)	7714.00	4876.00	4876.00	6007.00	5130.00	5130.00

† 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 COMPANY RESULTS

Company		Turnover		Pre-tax		EPS(p)		Div(p)		Pay day	Total	
Bakkavor Group	Pre	**1885.900**	1857.200	**43.800**	77.900	**6.400**	11.600	**4.00000**	4.00000	May 28	**6.000**	6.000
BlackRock World Mining Trust	Pre			**116.152**	89.742L	**64.760**	51.630L	**0.00000**	9.00000	-	**4.000**	12.000
ConvaTec Group	Pre	**1827.200**	1832.100	**18.900**	201.200	**0.000**	0.110	**0.00000**	3.93000	-	**1.800**	5.600
Essentra	Pre	**974.100**	1025.600	**65.500**	36.300	**14.700**	9.300	**14.40000**	14.40000	Jun 1	**20.700**	20.700
Greencoat UK Wind	Pre			**43.294**	200.678			**1.73500**	1.69000	Feb 28	**3.470**	3.380
Hastings Group Holdings	Pre	**627.000**	644.100	**82.100**	152.900	**10.600**	19.900	**5.50000**	9.00000	May 29	**10.000**	13.500
Howden Joinery Group	Pre	**1583.600**	1511.300	**260.700**	238.500	**35.000**	31.300	**9.10000**	7.90000	Jun 19	**13.000**	11.600
Hunting	Pre	**960.000**	911.400	**45.600**	74.700	**0.240**	0.544	**6.00000**	4.89900	May 15	**11.200**	8.900
London Stock Exchange Group	Pre	**2311.000**	2129.000	**651.000**	685.000	**119.500**	138.300	**49.90000**	43.20000	May 27	**70.000**	60.400
Mondi	Pre	**7268.000**	7481.000	**1103.000**	1105.000	**1.676**	1.701	**55.72000**	52.26900	May 14	**83.300**	74.000
Rentokil Initial	Pre	**2714.400**	2472.300	**2787.300**	2112.700	**15.330**	5.350L	**3.64000**	3.16000	May 20	**5.150**	4.471
Rightmove	Pre	**289.320**	267.821	**213.562**	198.270	**19.570**	17.800	**4.40000**	4.00000	May 4	**7.200**	6.500
Rolls-Royce Holdings	Pre	**16587.000**	15729.000	**891.000L**	2947.000L	**69.070L**	129.150L	**0.00000**	7.10000	-	**4.600**	11.700
St James's Place	Pre	**16544.600**	2706.600L	**708.900**	84.600L	**27.600**	33.000	**31.22000**	29.73000	May 22	**49.710**	48.220

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

UK RECENT EQUITY ISSUES

Issue date	Issue price(p)	Sector	Stock code	Stock	Close price(p)	+/-	High	Low	Mkt Cap (£m)
02/27	195.00	AIM	SPEC	Inspecs Group PLC	195.00	0.00	199.00	190.00	13795.4

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

MARKET DATA

FT500: THE WORLD'S LARGEST COMPANIES

Stock	Price	+/-Week	52 Week High	52 Week Low	Yld	P/E	MCap m
Australia (A$)							
ANZ	24.83	-2.20	29.30	24.09	6.99	10.72	45404.73
BHPBilltn	33.60	-4.92	42.33	33.50	5.47	12.96	63817.69
CmwBkAu	81.78	-6.07	91.05	69.72	5.76	16.39	93340.5
CSL	309.44	-29.24	342.75	189.14	0.88	47.01	90554.66
NatAusBk	25.10	-2.30	30.00	23.89	7.86	13.27	47697.73
Telstra	3.43	-0.36	4.01	3.09	3.98	17.35	26301.91
Wesfarmers	40.65	-6.29	47.42	33.21	5.91	21.71	29716.9
Westpc	23.64	-2.05	30.05	23.52	8.62	11.51	55048.87
Woolworths	38.80	-4.80	43.96	28.76	2.67	31.27	31550.94
Belgium (€)							
AnBshInBv	50.73	-15.42	92.71	50.35	3.78	11.22	94355.24
KBC Grp	60.02	-9.66	73.56	48.65	6.00	10.35	27452.58
Brazil (R$)							
Ambev	14.54	-1.71	20.77	14.01	2.47	18.56	50705.69
Bradesco	27.29	-2.08	35.89	26.48	1.34	11.89	24388.17
Cielo	6.85	-0.20	11.30	6.25	12.44	7.22	4124.91
ItauHldFin	28.61	-0.77	32.79	27.19	4.83	9.92	31442.3
Petrobras	27.15	-3.70	33.70	25.92	1.93	11.38	44786.83
Vale	44.31	-5.82	57.36	42.44	-	13.35	51900.09
Canada (C$)							
BCE	58.95	-5.52	65.45	57.70	5.58	16.95	39699.21
BkMontrl	91.21	-9.71	106.51	88.24	4.49	10.45	43461.21
BkNvaS	70.22	-4.02	76.75	67.17	5.01	10.43	63459.59
Brookfield	80.27	-9.73	90.72	58.97	1.09	15.51	62756.86
CanadPcR	332.67	-18.38	365.69	265.80	0.94	19.15	33889.98
CanImp	102.16	-7.01	115.96	97.55	5.53	9.06	33877.57
CanNatRs	34.55	-5.26	42.57	30.01	4.44	9.64	30553
CanNatRy	113.79	-9.96	127.96	111.52	1.91	17.52	60530.59
Enbridge♦	49.96	-5.35	57.32	43.02	6.07	16.45	75360.16
GtWesLif	31.57	-2.55	35.60	27.52	5.42	11.30	21786.01
ImpOil	29.39	-2.18	40.59	27.68	2.93	7.81	16287.32
Manulife	22.56	-3.23	27.78	21.37	4.66	8.80	32752.41
Nutrien	54.25	-1.99	73.64	51.90	4.46	17.41	23142.37
RylBkC	99.82	-9.39	109.68	97.30	4.11	11.32	105885.58
Suncor En	36.99	-3.19	46.50	35.77	4.60	11.07	42218.88
ThmReut	99.71	-7.55	109.99	70.65	2.04	209.87	36951.38
TntoDom	69.04	-6.73	77.96	67.72	4.22	10.96	93254.85
TrnCan	69.96	-5.92	76.58	58.72	4.42	15.52	48907.09
ValeantPh	30.80	0.74	36.02	14.01	-	-12.48	8158.48
China (HK$)							
AgricBkCh	3.12	-0.07	3.88	2.93	6.32	4.67	12306.6
Bk China	3.08	-0.14	3.84	2.91	6.81	4.46	33049.2
BkofComm	5.00	-0.20	7.06	4.90	6.80	4.46	22463.61
BOE Tech	0.70	0.04	1.06	0.58	-	26.94	17.87
Ch Coms Cons	5.81	0.00	8.78	5.40	4.62	4.39	3300.88
Ch Evrbrght	3.12	-0.21	4.10	3.09	5.84	4.52	5076.06
Ch Rail Cons	8.92	0.22	11.78	7.47	2.66	5.93	2376.55
Ch Rail Gp	4.40	-0.27	8.05	4.14	3.30	5.06	2375.53
ChConstBk	6.30	-0.25	7.21	5.55	5.52	5.35	194355.77
China Vanke	30.00	-0.90	35.60	26.25	3.96	7.74	6074.43
ChinaCitic	4.05	-0.17	5.41	3.92	6.43	3.93	7734.11
ChinaLife	18.26	-1.30	23.35	17.38	1.00	14.07	17435.49
ChinaMBank	36.75	-2.00	42.75	34.60	2.90	9.23	21649.5
ChinaMob	61.30	-5.45	87.70	58.30	5.23	10.20	161059.74
ChinaPcIns	25.65	-2.70	34.75	25.40	4.42	7.27	9134.59
ChMinsheng	5.26	-0.26	6.34	4.98	7.46	3.84	5615.87
ChMrchSecs	17.65	-1.67	19.83	14.74	1.52	21.74	14440.72
Chna Utd Coms	5.48	-0.10	7.57	5.00	0.99	34.37	16617.71
ChShenEgy	13.52	-0.72	19.92	13.46	7.60	5.20	5896.13
ChShpbldng	4.41	-0.26	7.10	4.09	0.21	228.67	11535.32
ChStConEng	5.37	-0.06	6.72	4.93	3.18	5.75	31606.22
ChUncHK	6.15	-0.61	10.70	6.14	2.52	14.97	24146.82
CNNC Intl	4.59	-0.21	6.73	4.37	2.65	15.70	10221.05
CSR	5.00	-0.32	8.49	4.94	3.41	10.52	2804.48
Daqin	7.08	-0.34	9.03	7.05	6.88	7.27	15058.28
Gree Elec Apl	0.11	-0.01	0.37	0.01	-	-0.03	4.99
GuosenSec	11.77	-0.97	15.13	10.38	1.03	19.01	13807.41
HaitongSecs	8.37	-0.77	11.44	7.01	2.03	9.48	3661.98
Hngzh HikVDT	35.00	-3.79	40.09	23.55	1.74	26.73	40509.21
Hunng Pwr	3.14	-0.25	5.22	3.07	3.74	22.98	1893.88
IM Baotou Stl	1.17	-0.05	2.11	1.10	0.61	23.74	5302.13
In&CmBkCh	5.33	-0.22	6.13	4.81	5.33	5.48	59361.92
IndstrlBk	17.29	-0.86	20.66	16.80	4.05	5.57	47126.53
Kweichow	1057	-61.00	1241.61	733.65	1.40	31.97	189957.26
Midea	0.99	-0.04	1.65	0.98	5.06	-3.47	27.32
New Ch Life Ins	29.65	-2.35	46.95	29.20	2.94	6.18	3934.44
PetroChina	3.02	-0.40	5.47	3.02	5.00	11.70	8176.25
PingAnIns	86.65	-4.95	101.00	80.40	2.47	8.67	82808.71
PngAnBnk	14.50	-1.09	17.60	11.60	1.01	9.10	40255.1
Pwr Cons Corp	4.25	0.21	6.25	3.64	2.34	8.91	6775.91
SaicMtr	22.21	-0.79	30.30	20.33	5.76	8.78	37123.03
ShenwanHong	0.07	0.00	0.14	0.04	-	-3.68	79.79
ShgPdgBk	10.85	-0.38	13.33	10.22	3.27	5.27	43623.22
Sinopec Corp	4.02	-0.21	6.93	4.00	10.93	9.13	13160.85
Sinopec Oil	2.16	-0.05	3.35	1.90	-	96.77	3721.3
Denmark (kr)							
DanskeBk	104.65	-15.90	135.65	85.90	8.36	6.51	13262.62
MollerMrsk	6770	-1336.00	10555	6634	2.35	22.33	10011.46
NovoB	395.80	-42.90	447.70	310.15	2.12	23.71	108361.98
Finland (€)							
Nokia	3.45	-0.36	5.62	3.02	2.99	-47.84	21344.8
SampoA	36.88	-4.20	43.38	34.45	7.95	17.57	22449.25
France (€)							
Airbus Grpe	108.10	-22.74	139.40	105.66	1.57	21.67	92996.27
AirLiquide	122.90	-16.35	140.70	99.32	2.04	26.14	63869.27
AXA	20.96	-3.18	25.62	20.53	6.65	32.09	55654.9
BNP Parib	43.79	-9.44	54.22	38.88	7.10	7.18	60110.1
ChristianDior	381.00	-48.00	498.20	365.40	1.64	24.64	75544.41
Cred Agr	10.81	-2.33	13.80	9.68	6.57	8.43	34253.63
Danone	63.72	-7.28	82.38	62.94	3.17	18.34	48024.01
EDF	12.59	-0.96	13.61	8.93	2.56	20.51	42921.65
Engie SA	15.03	-1.57	16.80	12.31	5.19	43.77	40206
EssilorLuxottica	123.10	-18.95	145.00	95.50	1.72	36.74	59169.51
Hermes Intl	630.00	-64.60	725.60	552.60	0.75	43.75	73056.81
LOreal	241.00	-25.00	278.50	218.50	1.66	33.04	147752.74
LVMH	370.85	-33.65	439.05	285.70	1.68	27.15	205728.87
Orange	12.19	-1.25	15.38	11.98	5.97	16.50	35618.58
PernodRic	146.40	-19.05	179.50	144.55	0.96	25.68	42683.44
Renault	26.50	-5.19	64.20	25.23	13.94	3.00	8606.57
Safran	124.10	-19.70	152.30	115.70	1.53	23.85	58240.03
Sanofi	83.93	-9.40	95.06	71.74	3.81	28.20	115596.19
Sant Gbn	31.60	-4.22	39.57	30.18	4.38	-151.85	18906.6
Schneider	90.50	-11.15	105.50	67.14	2.70	21.24	57863.51
SFR Group	34.50	0.00	34.56	21.87	-	-23.02	17905.81
SocGen	25.59	-5.48	32.23	20.81	8.84	8.00	23987.8
Total	38.38	-5.92	52.27	37.72	7.13	11.33	109691.87
UnibailR	190.00	0.35	236.45	177.35	5.80	17.44	22215.04
Vinci	90.98	-14.47	107.35	82.26	3.05	16.10	60583.32
Vivendi	23.02	-2.12	26.69	22.87	2.26	58.21	29953.69
Germany (€)							
Allianz	194.80	-35.90	232.60	191.64	4.75	10.33	89266.2
BASF	53.08	-7.66	74.61	52.36	6.20	19.04	53552.78
Bayer	65.21	-8.88	78.34	52.02	4.42	-43.42	70371.25
BMW	58.93	-5.58	78.30	57.16	6.11	7.61	38968.3
Continental	101.62	-10.26	157.40	99.12	4.81	-92.32	22325.66
Daimler	37.54	-5.06	60.00	36.72	8.91	9.65	44115.8
Deut Bank	7.88	-1.65	10.37	5.78	1.44	-3.50	17887.34
Deut Tlkm	14.76	-1.74	16.75	14.39	4.88	24.31	77177.48
DeutsPost	27.12	-4.71	35.00	26.07	4.36	12.80	36835.65
E.ON	10.43	-0.94	11.56	8.08	4.24	37.55	30261.27
Fresenius Med	69.32	-6.36	81.10	57.24	1.74	16.04	23181.3
Fresenius SE	42.42	-7.25	52.82	40.46	1.94	12.23	21063.36
HenkelKgaA	76.85	-7.00	90.30	75.30	2.45	14.79	21930.99
Linde	171.75	-30.85	208.60	145.50	1.90	16.49	101343.38
MuenchRkv	230.70	-43.50	284.20	203.60	4.12	11.70	36572.09
SAP	111.56	-14.60	129.60	92.60	1.38	38.18	150545.31
Siemens	93.20	-12.14	119.90	84.42	4.19	14.33	87019.57
Volkswgn	152.30	-15.85	185.00	139.90	3.24	5.56	49366.94
Hong Kong (HK$)							
AIA	76.90	-2.75	88.50	71.30	1.10	20.51	119290.43
BOC Hold	26.75	-0.90	35.90	25.05	5.49	8.91	36291.6
Ch OSLnd&Inv	26.15	-1.60	31.30	23.70	3.45	6.13	36764.08
ChngKng	48.70	-2.05	72.50	48.60	3.91	5.89	23080.65
Citic Ltd	8.65	-0.86	12.28	8.50	4.75	4.72	32289.03
Citic Secs	16.66	-1.46	20.50	13.12	2.38	14.16	4870.61
CK Hutchison	67.85	-2.10	86.45	64.30	4.68	6.65	33574.29
CNOOC	10.68	-1.54	15.14	10.52	6.54	7.27	61187.11
HangSeng	162.50	-1.90	212.60	156.00	4.68	12.64	39865.57
HK Exc&Clr	255.80	-15.60	286.20	222.00	2.63	33.75	41397.81
MTR	43.85	-0.80	55.75	42.50	2.74	18.56	34650.23
SandsCh	36.25	-3.60	45.45	32.80	5.47	19.09	37623.62
SHK Props	110.80	-2.90	142.00	106.00	4.25	7.14	41200.06
Tencent	386.00	-24.00	420.00	312.20	0.26	38.02	473169.43
India (Rs)							
Bhartiartl	523.50	-22.10	568.85	277.33	0.46	-9.43	39574.39
HDFC Bk	1177.65	-39.45	1305.5	1035	0.67	25.33	89401.98
Hind Unilevr	2174.75	-73.50	2308.2	1650	1.07	67.42	65236.09
HsngDevFin	2175.75	-193.75	2499.9	1838.3	1.02	17.00	52194.73
ICICI Bk	497.25	-49.75	552.20	350.65	0.21	46.09	44589.6
Infosys	731.70	-65.30	847.00	615.10	2.52	19.18	43178.19
ITC	197.55	-9.90	310.00	192.05	3.07	16.36	33648.51
L&T	1187.55	-93.05	1607	1162	1.60	16.86	23097.56
OilNatGas	91.95	-10.85	178.90	89.50	8.04	4.27	16028.79
RelianceIn	1328.65	-157.30	1617.55	1095.3	0.52	17.97	116709.4
SBI NewA	303.00	-24.65	373.80	244.35	-	20.85	37470.61
SunPhrmInds	372.90	-32.05	484.25	344.55	0.78	19.58	12397.72
Tata Cons	2000.15	-156.65	2296.2	1925	1.64	21.95	103998.77
Indonesia (Rp)							
Bk Cent Asia	22300	200.00	24700	16800	-	-	38879.26
Israel (ILS)							
TevaPha	42.05	-2.25	62.60	21.75	-	-2.98	13289.39
Italy (€)							
Enel	7.58	-0.87	8.61	5.28	3.80	29.46	84605.99
ENI	11.16	-1.61	16.06	11.05	7.74	15.72	44542.61
Generali	16.26	-2.17	19.63	15.52	5.76	11.08	28037.52
IntSPaolo	2.20	-0.32	2.63	1.80	9.22	8.55	42285.12
Unicred	11.54	-1.65	14.44	9.07	2.41	5.20	28305.75
Japan (¥)							
AstellasPh	1699	-214.00	1987	1375	2.37	12.64	29325.32
Bridgestne	3606	-377.00	4734	3571	4.59	9.23	23859.42
Canon	2733.5	-54.00	3338	2656	6.06	17.32	33800.05
CntJpRwy	17780	-2945.00	26255	17625	0.87	7.46	33956.15
Denso	4220	-247.00	5225	4081	3.43	12.96	30826.75
EastJpRwy	8319	-695.00	10940	8207	1.96	10.01	29147.73
Fanuc	17970	-2500.00	22060	17580	2.01	29.81	33991.12
FastRetail	53440	-6200.00	70230	51690	0.87	35.10	52552.51
Fuji Hvy Ind	2619.5	-303.00	3184	2411.5	5.69	11.22	18679.43
Hitachi	3637	-552.00	4693	3139	2.56	15.12	32614.83
HondaMtr	2799.5	-241.50	3259	2412	4.14	9.08	47013.34
JapanTob	2144	-123.00	2855.5	2126	7.33	10.00	39753.4
KDDI	3058	-351.00	3451	2353.5	3.72	11.21	66775.43
Keyence	34410	-3940.00	40520	29260	0.30	38.23	77585.65
MitsbCp	2690	-162.00	3256	2520	4.88	7.84	39654.26
MitsubEst	1844	-296.00	2283	1814	1.80	20.42	23782.74
MitsubishiEle	1371	-195.50	1658	1213	3.02	13.19	27291.64
MitsuiFud	2477.5	-465.50	3035	2263.5	1.92	14.13	22491.94
MitUFJFin	531.90	-30.90	603.00	490.50	4.57	9.82	66974.99
Mizuho Fin	147.60	-11.10	177.50	146.00	5.26	279.71	34746.59
Murata Mfg	5721	-568.00	16430	4304	3.38	68.84	35842.94
NipponTT	2529.5	-246.50	2908	2264	7.77	5.50	91475.88
Nissan Mt	463.60	-40.80	969.00	453.00	8.59	12.69	18140.51
Nomura	479.50	-84.90	586.40	330.70	3.88	-5.12	15530.18
Nppn Stl	1216	-142.00	2081	1200	4.25	6.14	10713.31
NTTDCMo	2927.5	-203.50	3164	2257.5	4.06	15.15	90519.54
Panasonic	1030.5	-158.50	1264	787.70	3.01	8.56	23438.13
Seven & I	3696	-224.00	4916	3573	2.74	14.46	30373.98
ShnEtsuCh	12145	-1600.00	13945	8826	1.79	15.64	46913.92
Softbank	5013	-518.00	6045	3958	0.68	11.04	97123.62
Sony	6611	-911.00	8113	4507	0.63	9.58	78025.98
SumitomoF	3484	-267.00	4167	3380	5.49	10.48	44352.93
Takeda Ph	3763	-400.00	4822	3401	4.95	-135.02	54993.1
TokioMarine	5801	-325.00	6317	5177	3.30	11.84	38183.93
Toyota	7127	-625.00	8026	6274	3.19	10.32	215597.11
Mexico (Mex$)							
AmerMvl	15.57	-0.99	16.72	12.69	1.20	16.31	35288.66
FEMSA UBD	160.50	-12.76	192.50	157.91	1.62	15.39	17521.73
WalMrtMex	55.41	-3.42	59.87	48.77	1.76	24.22	48874.12
Netherlands (€)							
Altice	4.84	-1.54	6.86	1.79	-	4.24	5522.05
ASML Hld	248.10	-36.90	294.40	155.22	0.87	45.33	116003.57
Heineken	90.22	-13.63	105.00	87.44	1.85	26.12	57083.33
ING	8.61	-1.27	12.14	8.20	8.13	7.24	36850.34
Unilever	47.62	-6.31	57.77	46.93	3.44	12.94	76399.63
Norway (Kr)							
DNB	155.90	-19.85	178.10	141.50	5.72	8.89	26010.78
Equinor	141.25	-17.25	203.90	139.15	6.79	8.77	49788.42
Telenor	150.35	-11.15	190.80	149.05	5.97	35.86	22896.76
Qatar (QR)							
QatarNtBk	18.84	-0.66	21.25	16.47	3.33	12.61	47789.74
Russia (RUB)							
Gzprm neft	202.65	-29.35	272.68	148.83	8.80	2.82	71390.56
Lukoil	5699.5	-750.50	6810	4980	4.71	5.44	58764.71
MmcNrlskNckl	20250	-1970.00	22698	13352	11.38	12.09	47685.58
Novatek	964.80	-129.40	1382.2	906.20	2.90	3.13	43592.67
Rosneft	403.40	-58.35	489.90	394.55	6.90	6.04	63620.65
Sberbank	233.36	-17.44	270.80	202.25	7.36	5.38	74963.27
Surgutneftegas	38.44	-8.32	54.89	24.06	1.82	3.44	20433.48
Saudi Arabia (SR)							
AlRajhiBnk	61.90	-3.60	76.90	56.70	6.33	13.46	41239.18
Natnlcombnk	45.40	-1.10	64.40	40.60	5.08	11.39	36295.8
SaudiBasic	78.70	-5.30	128.00	78.30	5.66	15.74	62918.04
SaudiTelec	82.60	-6.20	117.40	81.30	5.06	13.82	44023.98
Singapore (S$)							
DBS	24.11	-0.99	28.64	23.92	5.21	9.33	44121.15
JardnMt US$	54.40	-3.60	69.30	50.98	3.14	12.15	39870.19
JardnStr US$	28.71	-2.64	40.70	28.46	1.18	10.04	31814.54
OCBC	10.60	-0.44	12.19	10.45	4.74	9.67	33419.82
SingTel	3.00	-0.13	3.56	2.92	6.10	31.90	35098.87
UOB	24.48	-1.39	27.97	23.39	4.49	9.25	29459.41
South Africa (R)							
Firstrand	55.12	-4.43	71.79	53.59	5.77	9.14	19654.52
MTN Grp	73.70	-13.69	114.43	73.00	7.60	13.68	8827.56
Naspers N	2380.94	-283.67	3750.01	2000.16	0.32	20.11	66833.39
South Korea (KRW)							
HyundMobis	210000	-21000.00	268500	197500	2.51	8.90	16479.54
KoreaElePwr	21300	-4700.00	36000	21150	-	-7.18	11258.82
SK Hynix	87900	-16100.00	106000	62400	1.80	10.31	52689.51
SmsungEl	54200	-5800.00	62800	40850	2.75	14.21	266415.99
Spain (€)							
BBVA	4.33	-0.78	5.68	4.19	6.17	5.69	31747.47
BcoSantdr	3.33	-0.46	4.68	3.26	5.10	10.14	60731.9
CaixaBnk	2.32	-0.38	3.16	1.98	7.54	8.77	15249.74
Iberdrola	10.32	-0.86	11.35	7.28	3.50	19.83	72120.77
Inditex	28.13	-3.46	32.28	23.77	2.35	23.44	96303.05
Repsol	10.13	-1.83	15.67	10.02	9.30	9.10	17425.9
Telefonica	5.36	-0.75	7.90	5.29	7.68	15.79	30569.82
Sweden (SKr)							
AtlasCpcoB	295.80	-19.80	350.40	217.30	1.09	20.21	11905.68
Ericsson	76.68	-10.06	96.74	74.02	1.33	-28.20	24300.04
H & M	173.36	-30.89	214.35	133.46	5.83	21.66	26118.57
Investor	477.30	-81.90	568.60	404.30	2.78	15.97	22423.96
Nordea Bk	75.68	-9.99	86.73	57.20	9.99	22.28	31613.97
SEB	91.44	-10.81	104.90	78.88	6.71	10.27	20466.69
SvnskaHn	96.48	-13.17	113.80	82.02	5.83	11.24	19353.29
Swedbank	144.75	-16.65	181.10	120.75	10.03	8.00	16901.09
Telia Co	37.93	-4.06	44.90	37.75	6.28	19.85	16468.94
Volvo	148.80	-21.90	175.10	125.30	3.43	9.32	25347.27
Switzerland (SFr)							
ABB	20.81	-2.70	24.69	17.25	3.78	46.09	46613.11
CredSuisse	10.81	-2.58	14.14	10.68	2.44	9.86	28545.36
Nestle	98.85	-10.17	113.20	90.26	2.47	31.80	303918.17
Novartis	81.25	-13.15	96.38	76.96	3.52	26.73	212148.58
Richemont	65.40	-6.70	87.44	63.24	3.08	24.18	35269.18
Roche	309.70	-36.10	351.60	255.95	2.80	22.71	224788.13
Swiss Re	91.64	-12.56	117.05	89.26	5.82	71.46	30996.81
Swisscom	513.60	-58.60	577.80	458.20	4.31	17.71	27486.42
Syngent	453.40	1.40	471.20	402.50	-	39.22	43035.76
UBS	10.60	-2.09	13.81	9.86	6.50	10.16	42260.44
Zurich Fin	370.90	-61.40	439.90	313.30	5.00	14.39	57326.95
Taiwan (NT$)							
Chunghwa Telecom	108.00	-1.50	123.50	106.50	4.20	23.41	27669.03
Formosa PetChem	86.10	-3.50	119.00	85.90	5.64	31.67	27087.16
HonHaiPrc	80.30	-2.50	101.50	70.10	5.04	8.97	36764.1
MediaTek	360.00	-34.00	464.00	266.00	2.53	27.00	18904.28
TaiwanSem	316.00	-9.50	366.00	220.00	2.48	25.45	270612.05
Thailand (THB)							
PTT Explor	39.00	-5.75	50.25	38.00	5.48	11.12	35302.15
United Arab Emirates (Dhs)							
Emirtestele	15.80	-0.38	17.80	15.20	5.29	14.54	37409
United Kingdom (p)							
AscBrFd	2255	-328.00	2730	2078.81	2.01	20.30	22802.73
AstraZen	6794	-896.00	8227.88	5626	3.38	52.16	109902.33
Aviva	350.80	-53.30	442.30	3.87	8.55	6.06	17982.45
Barclays	148.74	-30.88	192.99	131.04	4.71	13.83	32418.76
BP	396.15	-57.40	583.40	4.69	8.38	20.87	100849.72
BrAmTob	3062.5	-290.00	3507	34.85	6.50	11.40	72932.41
BSkyB	1727.5	0.50	1740	893.50	0.76	36.60	38843.72
BT	141.62	-14.66	231.50	134.92	10.87	6.50	17947.92
Compass	1710.5	-242.50	2150	20.62	2.25	24.47	35931.43
Diageo	2765.5	-334.00	3633.5	2682	2.40	21.26	88925.74
GlaxoSmh♦	1562.2	-96.00	1857	1485.2	5.12	17.11	98130.99
Glencore	193.26	-31.09	2334.5	187.04	8.13	35.14	35607.62
HSBC	523.90	-38.30	741.00	5.76	7.86	10.09	134171.28
Imperial Brands♦	1554.8	-174.20	2673	1527.4	12.44	14.70	18940.74
LlydsBkg	50.20	-5.15	73.66	47.88	6.49	16.73	46212.13
Natl Grid	982.80	-81.00	1073.8	8.90	4.82	23.02	42136.11
Prudential	1267	-222.00	1532.78	1109.67	3.90	12.45	41871.1
RBS	178.65	-25.45	274.20	2.23	3.08	10.80	27305.19
ReckittB	5721	-693.00	8191.3	5510	2.98	17.83	51459.4
RELX	1867.5	-204.50	2109	1597	2.25	24.22	46119.81
RioTinto	3608	-594.50	5039	3468.5	6.69	5.82	61810.09
RollsRoyce	620.00	-25.60	972.40	586.20	1.89	-4.94	14728.58
RylDShlA	1661.4	-226.40	2637.5	3.04	9.17	8.16	97556.28
Shire#	4690	0.00	4780	2944	0.58	11.63	56567.13
StandCh	562.60	-64.40	742.60	544.00	2.93	45.32	23691
Tesco	228.50	-27.20	332.67	210.70	2.53	17.06	23897
Vodafone	134.36	-20.52	195.65	122.22	5.93	-20.33	45777.05
WPP	752.80	-215.40	1085.5	729.20	7.97	13.52	12174.33
United States of America ($)							
21stC Fox A	30.74	-5.25	41.70	27.73	1.55	12.35	10599.42
3M	149.24	-7.69	219.75	145.97	3.94	17.08	85820.56
AbbottLb	77.03	-10.42	92.45	72.36	1.67	40.39	135837.26
Abbvie	85.71	-9.25	97.86	62.66	5.04	36.43	126778.52
Accenture	180.59	-31.30	216.39	160.39	1.24	24.42	118637.89
Adobe	345.12	-27.83	386.75	249.10	-	58.55	166393.04
AEP	89.26	-12.45	104.97	80.36	3.11	19.98	44109.57
Aetna	-	-	-	-	-	-	-
Aflac	42.85	-8.68	57.18	41.92	2.59	10.18	30960.01
AirProd	219.61	-35.36	257.01	178.00	2.16	26.68	48463.2
Alexion	94.03	-9.11	141.86	90.00	-	13.91	20818.32
Allergan	190.67	-9.48	202.22	114.27	1.60	-6.62	62730.81
Allstate	105.25	-18.37	125.92	92.24	1.93	13.54	33355.16
Alphabet	1339.25	-144.21	1530.74	1027.03	-	27.74	401634.63
Altria	40.37	-5.52	57.88	38.58	8.32	41.88	75022.27
Amazon	1883.75	-212.22	2185.95	1586.57	-	80.52	937750.42
AmerAir	19.05	-8.77	35.96	18.77	2.18	5.19	8116.42
AmerExpr	109.93	-24.97	138.13	106.68	1.51	12.82	88827.91
AmerIntGrp	42.16	-6.44	58.66	41.11	3.15	19.94	36823.47
AmerTower	226.80	-20.21	258.62	172.39	1.65	60.78	100452.4
Amgen♦	199.73	-23.06	244.99	166.30	2.94	14.80	117802.12
Anadarko	72.77	-	76.23	40.40	1.50	-63.37	36563.54
Anthem	257.09	-37.62	312.48	227.16	1.27	15.09	64871.5
Aon Cp	208.00	-23.51	238.19	156.09	0.84	33.95	48169.08
Apple	273.36	-39.69	327.85	169.50	1.14	22.18	1196081.21
ArcherDan	37.65	-6.25	47.20	35.80	3.81	17.30	21004.46
AT&T	35.22	-3.33	39.70	29.67	6.00	15.24	252628.98
AutomData	154.74	-23.84	182.32	148.15	2.12	27.49	66809.65
Avago Tech	272.62	-31.88	331.58	250.09	3.84	42.75	108900.4
BakerHu	22.08	0.28	31.26	20.09	3.40	47.09	11412.93
BankAm	28.50	-5.86	35.72	26.21	2.29	10.15	248763.11
Baxter	83.47	-9.20	95.00	72.42	0.95	27.82	42616.1
BB & T	54.24	-0.48	55.66	40.68	3.26	12.85	41564.3
BectonDick	237.82	-19.53	286.72	221.47	1.34	58.23	64490.4
BerkshHat	309096	-34353.00	347400	294510.58	-	18.07	216489.6
Biogen	308.39	-28.32	374.99	215.78	-	10.59	53679.6
BkNYMeln	39.90	-5.14	54.27	38.54	2.99	10.00	36795.74
BlackRock	463.01	-93.99	576.81	403.54	2.92	17.23	71475.18
Boeing♦	275.11	-55.27	446.01	269.60	2.97	40.46	154928.8
BrisMySq	59.06	-6.57	68.34	42.48	2.88	16.47	133328.59
CapOne	88.26	-12.89	107.59	78.45	1.88	7.56	40345.65
CardinalHlth	52.12	-7.60	60.69	41.03	3.81	-3.58	15207.76
Carnival	33.46	-8.23	58.68	30.19	6.27	7.20	17655.48
Caterpillar	124.24	-12.97	150.55	111.75	3.01	11.35	68342.26
Celgene	108.24	-	110.70	58.59	-	12.71	77035.98
CharlesSch	40.75	-5.44	51.65	34.58	1.63	14.51	52413.29
Charter Comms	493.17	-42.17	546.54	335.53	-	86.19	103553.85
Chevron Corp	93.34	-15.67	127.34	90.11	5.21	12.92	175416.17
Chubb	145.03	-18.72	167.74	131.63	2.12	17.69	65727.93
Cigna	182.94	-34.25	224.64	141.95	0.02	15.72	68314.44
Cisco	39.93	-6.37	58.26	38.47	3.55	14.67	169338.34
Citigroup	63.46	-12.98	83.11	60.05	3.04	8.12	133677.65
CME Grp	198.82	-10.01	225.36	161.05	1.54	33.71	71249.24
Coca-Cola	53.49	-6.64	60.13	44.61	3.08	27.45	229486.87
Cognizant	60.93	-9.16	74.85	56.73	1.36	15.93	33428.46
ColgtPlm	67.57	-8.70	77.41	64.75	2.61	24.14	57774.36
Comcast	40.43	-5.39	47.74	37.89	2.10	14.45	183697.35
ConocPhil	48.42	-10.02	70.06	45.12	2.61	6.38	52348.43
Corning	23.86	-4.10	35.34	22.81	3.39	17.18	18220.17
Costco	281.14	-40.81	325.26	215.77	0.89	33.77	124195.74
CrownCstl	143.29	-24.77	168.75	117.40	3.26	69.82	59575.46
CSX	70.45	-9.11	80.73	63.97	1.38	16.22	54516.01
CVS	59.18	-12.33	77.03	51.72	3.50	17.04	77180.17
Danaher	144.58	-17.30	169.19	123.50	0.48	41.27	100661.96
Deere	156.48	-20.95	181.99	132.68	1.92	15.62	49261.16
Delphi	14.12	-0.88	26.82	9.52	1.25	6.28	1215.33
Delta	46.13	-11.74	63.44	45.03	3.26	6.29	29527.54
Devon Energy	16.24	-4.73	35.39	14.79	2.17	6.27	6218.3
DiscFinServ	65.58	-9.74	92.98	63.25	2.59	7.16	20220.78
Disney	117.65	-21.32	153.41	107.32	1.55	18.10	212409.86
DominRes	78.18	-11.20	90.89	72.61	4.76	55.46	64349.44
DowDupont	30.52	-0.56	48.38	30.06	10.05	7.87	68559.76
DukeEner♦	91.70	-10.73	103.79	84.28	4.21	18.47	67245.62
Eaton	90.72	-14.21	105.78	74.29	3.19	15.57	37503.65
eBay	34.64	-3.56	42.00	33.53	1.26	15.12	27576.24
Ecolab	180.45	-27.05	211.24	168.01	1.06	33.42	52013.7
Emerson	64.11	-7.98	78.38	55.98	3.17	16.67	39225.13
EOG Res	63.26	-10.95	107.89	56.34	1.55	11.85	36802.4
EquityResTP	75.10	-11.91	89.55	72.64	3.10	34.02	27935.58
Exelon	43.11	-6.61	51.18	42.33	3.44	17.55	42002.92
ExpScripts	92.33	-	101.73	66.93	-	11.10	52061.19
ExxonMb	51.44	-7.69	83.49	48.01	6.81	14.43	217703.89
Facebook	192.47	-17.71	224.20	159.28	-	29.76	463033.88
Fedex	141.17	-22.08	199.32	134.07	1.82	408.46	36862.18
FordMtr♦	6.96	-0.93	10.56	6.67	8.94	16.79	27102.78
Franklin	21.76	-3.44	35.82	21.36	4.95	8.93	10812.49
GenDyn	159.69	-27.91	193.76	155.47	1.93	13.36	46250.59
GenElectric	10.88	-1.37	13.26	7.65	0.38	524.83	95093.72
GenMills	49.00	-4.92	56.40	46.19	3.95	14.26	29636.02
GenMotors	30.50	-4.15	41.90	29.33	5.17	4.79	43584.56
GileadSci	69.36	-0.34	78.88	60.89	3.68	31.56	87645.84
GoldmSchs	200.77	-29.85	250.46	180.73	1.91	8.65	69400.72
Halliburton	16.96	-4.30	32.30	16.32	4.40	12.03	14923.3
HCA Hold	127.01	-20.99	151.97	110.31	1.26	12.27	42983.65
Hew-Pack	20.79	-1.91	23.93	15.93	3.04	10.17	30211.77
HiltonWwde	97.20	-12.37	115.48	81.66	0.64	29.68	26967.92
HomeDep	217.84	-27.50	247.36	179.52	2.32	21.94	237626.63
Honywell	162.17	-17.71	184.06	150.38	2.10	18.28	115562.31
HumanaInc	319.68	-49.99	385.00	225.65	0.70	16.39	42231.8
IBM	130.15	-19.69	158.75	126.36	5.08	14.58	115626.3
IllinoisTool	167.78	-21.80	190.85	136.92	2.51	21.33	53499.04
Illumina	265.67	-30.27	380.76	253.74	-	39.19	39053.49
Intcntl Exch	89.22	-5.53	101.93	71.90	1.24	23.39	49378.82
Intel	55.52	-8.82	69.29	42.86	2.32	12.54	237459.04
Intuit	265.85	-31.72	306.89	236.03	0.72	45.04	69251.12
John&John♦	134.48	-15.45	154.50	126.10	2.85	24.71	354317.31
JohnsonCn	36.57	-5.88	44.65	34.74	2.95	28.00	27941.21
JPMrgnCh	116.11	-19.70	141.10	98.09	2.95	11.04	356919.42
Kimb-Clark	131.19	-10.16	149.23	114.62	3.23	21.71	44972.67
KinderM	19.17	-2.97	22.58	18.40	4.87	20.55	43421.27
Kraft Heinz	24.77	-2.49	33.78	24.02	7.64	-2.69	30254.07
Kroger	28.13	-2.18	30.73	20.70	2.04	14.47	22520.52
L Brands	21.66	-2.41	29.02	15.80	6.84	16.75	5988.44
LasVegasSd	58.31	-7.29	74.29	51.17	5.44	22.78	44530.47
LibertyGbl	19.52	-1.75	28.62	19.03	-	-29.43	3544.21
Lilly (E)♦	126.13	-15.91	147.87	101.36	2.05	27.04	120628.49
Lockheed	369.87	-57.93	442.53	292.53	2.47	16.96	104280.17
Lowes	106.57	-18.74	126.73	91.60	1.91	28.34	81683.29
Lyondell	71.46	-11.45	98.91	68.52	5.95	7.20	23835.83
Marathon Ptl	47.42	-11.71	69.65	43.96	4.48	9.86	30790.84
Marsh&M	104.56	-11.79	119.88	88.86	1.69	34.31	52687.56
MasterCard	290.25	-49.45	347.25	215.93	0.35	41.55	288590.15
McDonald's	194.17	-21.70	221.93	178.27	2.48	24.58	144743.38
McKesson	139.86	-31.10	172.18	110.52	1.17	-41.52	24745.49
Medtronic	100.67	-12.61	122.15	82.77	2.04	29.56	134935.8
Merck	76.56	-5.78	92.64	72.23	2.98	20.63	194176.74
Metlife♦	42.72	-8.51	53.28	41.41	4.17	5.53	39124.18
Microsoft♦	162.01	-16.58	190.70	108.80	1.18	29.49	1232255.68
Mnstr Bvrg	62.41	-7.33	70.52	52.23	-	30.26	33556.71
MondelezInt	52.80	-5.95	59.96	46.37	2.09	18.80	75659.39
Monsanto	127.95	-	127.97	114.19	1.64	23.62	56462.29
MorganStly	45.03	-7.39	57.57	38.76	2.88	9.26	72885.46
MylanNV	17.19	-3.96	29.30	16.57	-	184.28	8872.32
Netflix	369.03	-11.04	392.95	252.28	-	114.11	161932.82
NextEraE	252.76	-24.83	283.35	186.06	1.99	36.61	123591.02
Nike	89.38	-10.87	105.62	77.07	1.00	31.65	111041.74
NorfolkS	182.35	-25.70	219.88	166.57	1.97	17.15	47017.89
Northrop	328.84	-36.17	385.01	263.29	1.59	17.93	55125.79
NXP	113.69	-16.81	139.59	85.38	1.03	74.11	31779.43
Occid Pet	32.74	-9.38	68.83	29.65	9.91	22.40	29247.21
Oracle	49.46	-5.22	60.50	47.90	1.82	16.11	158650.32
Pepsico	132.03	-13.82	147.20	114.21	2.96	14.56	183461.58
Perrigo	50.69	-9.17	63.86	40.68	1.64	27.17	6899.4
Pfizer♦	33.42	-2.30	44.56	32.53	4.40	11.27	184950.37
Phillips66	74.86	-14.39	119.92	71.40	4.71	7.30	32896.92
PhilMorris	81.87	-7.77	92.74	69.27	5.81	16.46	127382.51
PNCFin	126.40	-27.40	161.79	118.70	3.28	10.92	56280.47
PPG Inds	104.45	-14.46	134.36	100.31	1.94	19.92	24624.71
Praxair	164.50	-0.44	169.75	140.00	2.21	14.16	47306.22
Priceline	1905.64	20.64	2067.99	1612.41	-	17.15	92937.2
ProctGmbl	113.23	-13.47	128.09	97.75	2.68	69.58	279616.15
Prudntl	75.45	-17.15	106.40	73.19	5.36	7.79	29953.65
PublStor	209.12	-16.65	266.76	202.84	3.97	23.85	36545.53
Qualcomm	78.30	-8.73	96.17	52.71	3.28	21.04	89500.25
Raytheon	188.56	-33.62	233.48	169.64	1.99	15.56	52502.83
Regen Pharm	444.57	41.42	470.00	271.37	-	22.95	48089.51
S&P Global	265.91	-27.34	312.94	194.95	0.86	30.43	64828.86
Salesforce	170.40	-19.10	195.72	137.87	-	189.70	151144.8
Schlmbrg	27.09	-6.30	48.88	25.46	7.65	-4.33	37506.52
Sempra Energy	139.78	-18.65	161.87	119.27	2.82	16.02	39403.41
Shrwin-Will	516.75	-56.59	599.95	410.35	0.85	33.46	47658.67
SimonProp	123.08	-19.17	186.40	119.92	6.91	15.94	37768.45
SouthCpr	33.65	-4.20	44.82	29.39	4.93	17.00	26013.43
Starbucks	78.43	-8.93	99.72	69.03	1.90	25.91	92053.29
StateSt	68.11	-9.02	85.89	48.62	2.94	12.99	24134.26
Stryker	190.59	-33.71	226.30	174.84	1.13	20.39	71390.28
Sychrony Fin	29.10	-4.23	38.18	28.08	3.03	5.12	17852.18
T-MobileUS	90.16	-8.41	101.35	68.16	-	22.36	77261.07
Target♦	103.00	-14.01	130.24	70.03	2.47	16.75	52193.92
TE Connect	82.87	-8.86	101.00	78.93	2.25	13.98	27690.36
Tesla Mtrs	667.99	-233.01	968.99	176.99	-	-137.12	121134.37
TexasInstr	114.14	-14.38	135.70	101.57	2.80	20.43	106603.98
TheTrvelers	119.81	-15.35	155.09	117.38	2.75	12.99	30555.25
ThrmoFshr	290.80	-44.14	342.26	246.67	0.26	31.56	115979.3
TimeWrnr	98.77	-	103.89	85.88	1.54	15.09	77269.69
TJX Cos♦	59.80	-3.51	64.95	49.05	1.40	23.85	71950.39
UnionPac	159.81	-21.91	188.96	149.09	2.29	18.18	110310.69
UPS B	90.49	-12.45	125.31	87.70	4.34	15.18	63531.94
USBancorp	46.44	-8.11	61.11	44.91	3.41	10.30	70704.65
UtdHlthcre	254.96	-46.47	306.72	208.07	1.61	17.89	241848.27
UtdTech	130.59	-20.93	158.44	121.48	2.33	21.46	113000.7
ValeroEngy	66.25	-16.65	101.99	62.42	5.48	11.58	27118.58
Verizon	54.16	-4.04	62.22	52.18	4.64	13.43	223998.38
VertexPharm	224.03	-22.26	249.85	163.68	-	26.17	58083.94
VF Cp	72.00	-11.72	100.25	70.00	2.82	20.80	28419.86
ViacomCBS	24.61	-3.65	53.71	23.07	3.03	3.08	13817.81
Visa Inc	181.76	-27.05	214.17	144.50	0.57	32.96	310087
Walgreen	45.76	-5.69	71.88	44.61	3.87	11.36	40537.03
WalMartSto	107.68	-10.90	125.38	96.53	1.93	21.86	305507
WellsFargo	40.85	-6.85	54.75	39.75	4.67	8.49	172769.32
Williams Cos	19.05	-2.47	29.55	18.25	8.05	-612.75	23098.03
Yum!Brnds	89.25	-14.26	119.72	87.56	1.88	23.79	26848.39
Venezuela (VEF)							
Bco de Vnzla	2100	-387.00	2590	250.00	737.11	-	104.13
Bco Provncl	149000	-39000.00	210000	10890	-	9.13	218.41
Mrcntl Srvcs	180000	-18000.00	210000	21000	0.01	3.73	148.97

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 %
Regen Pharm	444.57	431.61	12.96	3.00	41.42	10.3	29.21
BOE Tech	0.70	0.66	0.04	6.06	0.04	6.1	-10.77
Pwr Cons Corp	4.25	4.21	0.04	0.95	0.21	5.2	4.42
Ch Rail Cons	8.92	8.93	-0.01	-0.11	0.22	2.5	9.57
Ch Coms Cons	5.81	5.94	-0.13	-2.19	0.00	0.0	-1.53
ShenwanHong	0.07	0.07	0.00	5.97	0.00	0.0	-5.33
GileadSci	69.36	72.66	-3.30	-4.54	-0.34	-0.5	7.71
ChStConEng	5.37	5.39	-0.02	-0.37	-0.06	-1.1	-1.83
HangSeng	162.50	163.40	-0.90	-0.55	-1.90	-1.2	-2.05
Chunghwa Telecom	108.00	108.00	0.00	0.00	-1.50	-1.4	-1.37
MTR	43.85	44.05	-0.20	-0.45	-0.80	-1.8	-5.53
Chna Utd Coms	5.48	5.75	-0.27	-4.70	-0.10	-1.8	-3.01
Canon	2733.50	2793.50	-60.00	-2.15	-54.00	-1.9	-10.06
AgricBkCh	3.12	3.18	-0.06	-1.89	-0.07	-2.2	-2.50
Sinopec Oil	2.16	2.17	-0.01	-0.46	-0.05	-2.3	-7.69
SHK Props	110.80	113.10	-2.30	-2.03	-2.90	-2.6	-4.49
Netflix	369.03	371.71	-2.68	-0.72	-11.04	-2.9	6.02
China Vanke	30.00	30.50	-0.50	-1.64	-0.90	-2.9	-0.50
TaiwanSem	316.00	318.50	-2.50	-0.78	-9.50	-2.9	-5.11
CK Hutchison	67.85	68.80	-0.95	-1.38	-2.10	-3.0	-9.21

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 %
AmerAir	19.05	20.60	-1.55	-7.52	-8.77	-31.5	-28.48
Tesla Mtrs	667.99	679.00	-11.01	-1.62	-233.01	-25.9	18.68
Altice	4.84	5.21	-0.37	-7.04	-1.54	-24.2	-18.55
AnBshInBv	50.73	55.10	-4.37	-7.93	-15.42	-23.3	-26.79
Devon Energy	16.24	15.67	0.57	3.64	-4.73	-22.6	-29.67
Occid Pet	32.74	31.81	0.93	2.92	-9.38	-22.3	-20.51
WPP	752.80	761.60	-8.80	-1.16	-215.40	-22.2	-99.26
Delta	46.13	48.19	-2.06	-4.27	-11.74	-20.3	-18.63
Halliburton	16.96	17.39	-0.43	-2.47	-4.30	-20.2	-21.20
ValeroEngy	66.25	66.19	0.06	0.09	-16.65	-20.1	-22.64
Marathon Ptl	47.42	47.93	-0.51	-1.06	-11.71	-19.8	-9.73
Carnival	33.46	31.85	1.61	5.05	-8.23	-19.7	-28.17
CredSuisse	10.81	11.39	-0.58	-5.09	-2.58	-19.3	-14.93
Schlmbrg	27.09	26.84	0.25	0.93	-6.30	-18.9	-20.23
MylanNV	17.19	18.68	-1.49	-7.98	-3.96	-18.7	-21.29
Prudntl	75.45	77.52	-2.07	-2.67	-17.15	-18.5	-17.99
AmerExpr	109.93	112.81	-2.88	-2.55	-24.97	-18.5	-17.00
McKesson	139.86	147.30	-7.44	-5.05	-31.10	-18.2	-8.06
KoreaElePwr	21300.00	23100.00	-1800.00	-7.79	-4700.00	-18.1	-19.32
PNCFin	126.40	130.62	-4.22	-3.23	-27.40	-17.8	-15.56

Based on the FT Global 500 companies in local currency

BONDS: HIGH YIELD & EMERGING MARKET

Feb 28	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	120.50	3.03	-0.01	-0.04	1.85
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
Brazil	01/22	12.50	BB-	Ba2	BB-	113.44	4.78	-0.15	-0.47	3.67
Brazil	01/23	2.63	BB-	Ba2	BB-	95.75	3.80	-0.01	-0.40	1.29
Poland	03/23	3.00	A-	A2	A-	100.62	2.83	0.01	-0.21	0.58
Turkey	03/23	3.25	-	Ba3	BB	88.50	6.59	-0.30	0.91	4.34
Mexico	01/25	3.60	BBB+	A3	BBB	106.70	2.16	-0.02	-0.30	0.88
Colombia	01/26	4.50	BBB-	Baa2	BBB	110.32	2.53	0.03	-0.16	1.35
Turkey	03/27	6.00	-	Ba2	BB+	101.26	5.82	0.00	0.17	3.07
Peru	08/27	4.13	BBB+	A3	BBB+	103.50	3.66	0.01	-0.02	0.80
Russia	06/28	12.75	BBB-	Baa3	BBB	173.33	2.80	0.09	-0.14	-
Emerging Euro										
Brazil	04/21	2.88	BB-	Ba2	BB-	103.09	0.05	0.01	-0.09	-1.19
Mexico	02/22	1.88	BBB+	A3	BBB	103.57	0.07	0.01	-0.08	-1.04
Mexico	04/23	2.75	BBB+	A3	BBB+	107.76	0.76	0.00	-0.07	-1.56
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

Feb 28	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$										
Barclays plc	01/28	4.34	BBB	Baa2	A	109.44	2.81	0.14	-0.15	-
FleetBoston Financial Corp.	01/28	6.88	BBB+	Baa1	A	127.19	2.97	0.05	-0.22	-
NationsBank Corp.	03/28	6.80	BBB+	Baa1	A	126.67	3.04	0.05	-0.19	-
GTE LLC	04/28	6.94	BBB+	Baa2	A-	127.99	3.03	-0.02	-0.32	-
United Utilities PLC	08/28	6.88	BBB	Baa1	A-	126.53	3.26	-0.01	-0.28	-
Barclays Bank plc	01/29	4.50	A	A1	A+	112.03	2.95	-0.01	-0.30	-
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+	111.00	-0.23	-0.03	-0.14	-
Yen										
Mexico	06/26	1.09	BBB+	A3	BBB	102.00	0.76	-0.03	-0.12	-
£ 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

Feb 28	Rate	Current	Since	Last	Mnth Ago	Year Ago
US	Fed Funds	1.50-1.75	27-09-2018	1.00	1.75-2.00	1.25-1.50
US	Prime	4.75	27-09-2018	4.75	5.00	4.25
US	Discount	2.25	27-09-2018	0.75	2.50	1.75
Euro	Repo	0.00	16-03-2016	0.00	0.00	0.00
UK	Repo	0.75	02-08-2018	0.75	0.50	0.25
Japan	O'night Call	0.00-0.10	01-02-2016	0.00	0.00--0.10	0.00--0.10
Switzerland	Libor Target	-1.25-0.25	15-01-2015	-0.75--0.25	-1.25--0.25	-1.25--0.25

INTEREST RATES: MARKET

Feb 28 (Libor: Feb 27)	Over night	Change Day	Change Week	Change Month	One month	Three month	Six month	One year
US$ Libor	1.57400	0.003	-0.003	-0.022	1.58113	1.58038	1.53325	1.53725
Euro Libor	-0.56714	0.000	-0.001	-0.006	-0.52857	-0.45957	-0.42157	-0.34271
£ Libor	0.66875	-0.016	-0.011	-0.005	0.70738	0.71788	0.73975	0.79800
Swiss Fr Libor				-0.001	-0.80220	-0.73200	-0.69640	-0.58480
Yen Libor				-0.008	-0.10200	-0.06633	-0.03417	0.05917
Euro Euribor				-0.009	-0.48800	-0.42500	-0.37500	-0.30300
Sterling CDs				0.000	0.75000	0.83000	0.89500	
US$ CDs				0.000	2.45000	2.56000	2.65000	
Euro CDs				-	-	-	-	

Feb 28	Short term		7 Days notice		One month		Three month		Six month		One year	
Euro	-0.76	-0.46	-0.75	-0.45	-0.66	-0.36	-0.57	-0.27	-0.57	-0.27	-0.54	-0.24
Sterling			0.45	0.55	0.70	0.80	0.78	0.88	0.82	0.97	0.89	1.04
Swiss Franc	-	-	-	-	-	-	-	-	-	-	-	-
Canadian Dollar	-	-	-	-	-	-	-	-	-	-	-	-
US Dollar	1.48	1.78	1.49	1.79	1.47	1.77	1.44	1.74	1.38	1.68	1.37	1.67
Japanese Yen	-0.50	-0.25	-0.30	-0.10	-0.30	-0.10	-0.25	-0.05	-0.20	0.00	-0.10	0.10

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	208.47	0.22	-0.02	0.43	-0.25	6.51
Corporates(£)	384.06	-0.52	-0.77	2.05	-0.65	10.81
Corporates($)	320.92	-0.34	0.74	3.00	0.74	3.00
Corporates(€)	239.54	-0.32	-0.39	0.79	-0.05	5.21
Eurozone Sov(€)	258.36	0.26	0.44	2.96	1.14	9.11
Gilts(£)	366.90	0.21	1.38	5.30	1.62	12.62
Global Inflation-Lkd	286.99	0.15	0.38	2.66	0.71	9.27
Markit iBoxx £ Non-Gilts	375.24	-0.34	-0.29	2.42	-0.17	10.16
Overall ($)	271.78	-0.07	1.28	3.73	1.28	3.73
Overall(£)	365.90	0.03	0.85	4.38	1.05	11.87
Overall(€)	249.77	0.11	0.32	2.35	0.88	7.52
Treasuries ($)	252.77	0.12	1.68	4.37	1.68	4.37
FTSE						
Sterling Corporate (£)	-	-	-	-	-	-
Euro Corporate (€)	104.47	-0.05	-	-	0.54	-1.73
Euro Emerging Mkts (€)	522.38	-34.60	-	-	-7.11	26.37
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	302.69	27.85	83.13	80.56	302.69	202.10
Europe 5Y	64.10	7.03	21.13	19.39	64.10	41.09
Japan 5Y	60.97	9.34	17.97	16.00	64.12	41.89
Senior Financials 5Y	75.44	8.16	26.56	22.58	76.13	46.28
Markit CDX						
Emerging Markets 5Y	232.45	17.99	36.96	39.12	232.45	173.62
Nth Amer High Yld 5Y	372.67	28.71	83.93	75.00	372.67	274.89
Nth Amer Inv Grade 5Y	64.47	6.92	19.13	16.81	64.47	43.81

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

VOLATILITY INDICES

	Feb 28	Day Chng	Prev	52 wk high	52 wk low
VIX	40.11	0.95	39.16	49.48	11.03
VXD	42.67	5.02	37.65	54.16	2.47
VXN	43.13	2.13	41.00	49.16	13.58
VDAX	40.11	7.41	32.70	-	-

† 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		-	-	-	-	-	-	-
	12/21	2.00	102.49	0.61	-0.04	-0.11	-0.16	-1.04
Austria	10/25	1.20	109.96	-0.54	-0.02	-0.06	-0.10	-0.60
	02/47	1.50	132.82	0.24	-0.03	-0.06	-0.15	-1.02
Belgium	06/22	1.40	104.63	-0.63	-0.01	-0.06	-0.08	-0.31
	06/47	1.60	129.60	0.45	-0.02	-0.05	-0.16	-1.16
Canada	03/22	0.50	98.49	1.27	-0.05	-0.19	-0.17	-0.52
	06/30	1.25	100.71	1.18	0.00	-0.14	-0.14	-
Denmark		-	-	-	-	-	-	-
	11/21	3.00	106.49	-0.77	-0.04	-0.09	-0.10	-0.27
Finland	04/21	3.50	104.72	-0.68	-0.01	-0.06	-0.08	-0.26
	09/29	0.50	107.79	-0.30	-0.02	-0.05	-0.12	-
France	04/22	3.00	107.97	-0.67	-0.01	-0.04	-0.07	-0.33
	05/25	0.50	105.56	-0.54	-0.02	-0.04	-0.09	-0.62
	05/48	2.00	141.22	0.44	-0.03	-0.06	-0.18	-1.10
Germany	07/22	1.75	105.90	-0.74	-0.04	-0.10	-0.10	-0.27
	02/26	0.50	107.46	-0.72	-0.04	-0.10	-0.14	-0.57
	08/29	0.00	105.62	-0.58	-0.05	-0.11	-0.16	-
	08/50	0.00	101.93	-0.06	-0.06	-0.12	-0.19	-
Greece	02/26	3.65	117.08	1.21	0.05	0.17	0.05	-2.75
	02/26	3.65	117.08	1.21	0.05	0.17	0.05	-2.75
Ireland	03/22	0.80	102.72	-0.52	0.00	-0.02	-0.03	-0.27
	05/30	2.40	125.41	-0.08	0.03	0.03	-0.02	-0.99
Italy	08/22	0.90	102.12	0.02	0.08	0.13	0.05	-1.27
	02/25	0.35	99.40	0.47	0.10	0.18	0.04	-
	05/30	0.40	99.30	0.47	0.12	0.25	0.17	-
	03/48	3.45	130.44	2.02	0.09	0.18	-0.01	-1.70
Japan		-	-	-	-	-	-	-
		-	-	-	-	-	-	-
	06/22	0.10	100.72	-0.21	-0.01	-0.05	-0.06	-0.05
	09/47	0.80	112.63	0.32	0.01	-0.01	-0.02	-0.27
Netherlands	07/22	2.25	107.07	-0.70	-0.02	-0.06	-0.06	-0.28
	07/25	0.25	104.76	-0.62	-0.03	-0.07	-0.11	-0.56
New Zealand		-	-	-	-	-	-	-
	05/21	6.00	105.75	1.17	-0.04	-0.12	-0.24	-0.85
Norway	05/21	3.75	102.94	1.31	-0.06	-0.09	-0.01	0.15
	02/26	1.50	102.15	1.13	-0.12	-0.22	-0.13	-0.44
Portugal	04/21	3.85	104.89	-0.49	0.06	0.06	0.07	-0.24
	02/26	3.30	119.38	0.06	0.10	0.14	0.08	-0.83
Spain	04/22	0.40	101.76	-0.41	0.04	0.04	-0.03	-0.34
	10/29	0.60	103.11	0.27	0.07	0.09	-0.01	-
Sweden		-	-	-	-	-	-	-
	06/22	3.50	108.97	-0.46	-0.03	-0.06	-0.14	-0.21
Switzerland	05/22	2.00	106.41	-0.83	0.00	-0.01	-0.04	-0.13
	06/29	0.00	108.25	-0.85	-0.02	-0.07	-0.07	-0.57
United Kingdom		-	-	-	-	-	-	-
	07/22	0.50	100.43	0.32	-0.05	-0.13	-0.02	-0.56
	09/25	2.00	109.44	0.28	-0.05	-0.13	-0.03	-0.76
	07/47	1.50	113.61	0.94	-0.03	-0.12	-0.07	-0.88
United States		-	-	-	-	-	-	-
	08/22	1.63	101.28	1.11	-0.03	-0.27	-0.31	-1.38
	02/26	1.63	102.55	1.18	-0.02	-0.24	-0.32	-1.42
	11/47	2.75	120.93	1.79	-0.01	-0.19	-0.27	-1.29

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

GILTS: UK CASH MARKET

Feb 28	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 4.75pc '20	100.00	4.75	0.00	608.96	653.97	479.27	103.99	100.00	33.70
Tr 1.5pc '21	100.91	0.48	-5.88	-21.31	-17.24	-41.46	101.58	100.78	32.84
Tr 4pc '22	107.38	0.32	-8.57	-30.43	-28.89	-61.90	109.86	107.11	38.39
Tr 5pc '25	123.34	0.31	-6.06	-29.55	-24.39	-69.90	126.04	122.14	35.49
Tr 1.25pc '27	106.87	0.31	-8.82	-31.11	-27.91	-74.17	107.75	100.42	23.73
Tr 4.25pc '32	143.88	0.55	-3.51	-19.12	-17.91	-63.82	146.36	132.90	35.86
Tr 4.25pc '36	153.08	0.73	-2.67	-10.98	-14.12	-56.55	155.71	138.20	30.11
Tr 4.5pc '42	173.97	0.90	-1.10	-6.25	-10.89	-49.72	176.63	152.62	26.95
Tr 3.75pc '52	180.14	0.89	-2.20	-5.32	-11.00	-49.43	182.25	150.66	23.87
Tr 4pc '60	207.04	0.84	-1.18	-3.45	-11.58	-50.88	209.19	167.83	23.89

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	Feb 28	Day's chg %	Total Return	Return 1 month	Return 1 year	Yield
1 Up to 5 Years	90.00	0.05	2468.69	0.18	1.68	0.33
2 5 - 10 Years	186.12	0.18	3752.15	0.72	6.42	0.33
3 10 - 15 Years	225.50	0.29	4807.02	1.39	11.12	0.55
4 5 - 15 Years	195.05	0.22	4010.42	0.95	7.71	0.43
5 Over 15 Years	390.56	0.27	6332.07	2.57	21.02	0.87
7 All stocks	191.61	0.20	4045.28	1.50	11.88	0.77

Index Linked	Feb 28	Day's chg %	Month chg %	Year's chg %	Total Return	Return 1 month	Return 1 year
1 Up to 5 Years	306.37	-0.15	-0.17	-0.60	2498.26	-0.17	0.78
2 Over 5 years	806.64	-1.51	1.52	13.82	6080.65	1.53	14.29
3 5-15 years	510.33	-0.50	0.20	5.92	4042.78	0.20	6.75
4 Over 15 years	1055.98	-1.87	2.02	16.52	7757.89	2.03	16.86
5 All stocks	719.74	-1.34	1.32	12.42	5520.15	1.32	13.02

Yield Indices	Feb 28	Feb 27	Yr ago		Feb 28	Feb 27	Yr ago
5 Yrs	0.19	0.22	0.90	20 Yrs	0.91	0.93	1.80
10 Yrs	0.46	0.48	1.35	45 Yrs	0.82	0.83	1.71
15 Yrs	0.77	0.79	1.67				

Real yield	inflation 0% Feb 28	inflation 0% Dur yrs	inflation 0% Previous	inflation 0% Yr ago	inflation 5% Feb 28	inflation 5% Dur yrs	inflation 5% Previous	inflation 5% Yr ago
Up to 5 yrs	-2.41	2.73	-2.45	-2.30	-2.96	2.75	-3.02	-2.90
Over 5 yrs	-2.11	24.80	-2.17	-1.59	-2.13	24.85	-2.19	-1.62
5-15 yrs	-2.52	10.28	-2.57	-1.90	-2.62	10.29	-2.67	-2.02
Over 15 yrs	-2.06	29.83	-2.12	-1.56	-2.07	29.85	-2.14	-1.58
All stocks	-2.12	22.16	-2.18	-1.60	-2.15	22.25	-2.21	-1.63

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.

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

COMMODITIES

www.ft.com/commodities

Energy		Price*	Change	Agricultural & Cattle Futures		Price*	Change
Crude Oil†	Mar	45.20	-1.17	Corn♦	Mar	366.50	2.75
Brent Crude Oil‡		50.04	-1.00	Wheat♦	Mar	528.75	-0.50
RBOB Gasoline†	Mar	1.49	-0.01	Soybeans♦	Mar	884.50	-2.50
Heating Oil†		-	-	Soybeans Meal♦	Mar	298.00	0.80
Natural Gas†	Mar	1.70	-0.04	Cocoa (ICE Liffe)✠	Mar	1931.00	-27.00
Ethanol♦		-	-	Cocoa (ICE US)♥	Mar	2830.00	0.00
Uranium†	Mar	24.85	0.00	Coffee(Robusta)✠	Mar	1255.00	-17.00
Carbon Emissions‡		-	-	Coffee (Arabica)♥	Mar	109.95	2.15
Diesel†		-	-	White Sugar✠		398.40	-0.40
Base Metals (♠ LME 3 Months)				Sugar 11♥		14.20	-0.03
Aluminium		1693.50	3.00	Cotton♥	May	61.78	-2.60
Aluminium Alloy		1400.00	20.00	Orange Juice♥	Mar	95.30	-4.20
Copper		5605.50	-50.50	Palm Oil♣		-	-
Lead		1848.50	32.50	Live Cattle♣	Apr	107.48	-2.55
Nickel		12235.00	-145.00	Feeder Cattle♣	Mar	130.70	-1.68
Tin		16280.00	-45.00	Lean Hogs♣	Apr	61.83	-0.45
Zinc		2025.50	0.00				
Precious Metals (PM London Fix)							
Gold		1652.00	17.10				
Silver (US cents)		1805.00	-2.50				
Platinum		912.00	-7.00				
Palladium		2755.00	45.00				
Bulk Commodities							
Iron Ore		83.90	-1.50				
GlobalCOAL RB Index		73.50	-2.50				
Baltic Dry Index		535.00	6.00				

	Feb 27	% Chg Month	% Chg Year
S&P GSCI Spt	358.44	-10.37	-
DJ UBS Spot	70.98	-6.91	-
TR/CC CRB TR	169.18	-8.13	-11.01
M Lynch MLCX Ex. Rtn	231.14	-9.84	-33.05
UBS Bberg CMCI TR	13.07	-7.17	-12.35
LEBA EUA Carbon	23.51	-4.62	5.43
LEBA CER Carbon	0.24	26.32	0.00
LEBA UK Power	3376.00	81.02	23.98

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

BONDS: INDEX-LINKED

	Price Feb 27	Yield Feb 27	Yield Prev	Month return	Value stock	Market	No of stocks
Can 4.25%' 21	107.43	0.014	0.030	0.33	5.18	87342.62	8
Fr 0.10%' 21	101.20	-1.084	-1.142	-0.14	7.57	247435.59	15
Swe 0.25%' 22	111.95	-1.155	-1.167	-0.79	31.92	195500.98	6
UK 1.875%' 22	112.48	-2.511	-2.492	0.18	15.74	760560.73	28
UK 2.5%' 24	362.77	-2.453	-2.416	0.36	6.82	760560.73	28
UK 2%' 35	298.22	-2.421	-2.409	1.56	9.08	760560.73	28
US 0.625%' 21	101.41	-0.392	-0.389	0.34	35.84	1491183.11	41
US 3.625%' 28	131.16	-0.179	-0.178	0.64	16.78	1491183.11	41

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	-	-	-	Italy	0.47	1.05	-
Austria	-0.54	-	-	Japan	-	-	-
Belgium	0.45	-	-	Netherlands	-0.62	-	-
Canada	1.18	1.76	-	Norway	1.13	-	-
Denmark	-	-	-	Portugal	0.06	-	-
Finland	-0.30	0.27	-	Spain	0.27	0.85	-
France	0.44	-	-	Switzerland	-0.85	-0.27	-
Germany	-0.58	0.00	-	United Kingdom	-	-	-
Greece	1.21	-	-	United States	-	-	-

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

Everything Morningstar

With Morningstar Direct,™ you'll have everything you need—data, analytics and research—to develop your investing strategy all in one platform.

Are you an investment professional? Watch a video at everything.morningstar.com or call +44 20 3107 0020.

MORNINGSTAR®

©2016 Morningstar. All Rights Reserved.

Volkswagen is right to hire the devil and not his advocate

Andrew Hill
On management

When the Vatican was wondering whether to beatify Mother Teresa of Calcutta in 2003, it called some unlikely witnesses: writers Aroup Chatterjee and Christopher Hitchens, arch-critics of the Catholic missionary.

Another reputationally challenged, cultish global institution, Volkswagen, heralded something similar last week when Herbert Diess, its chief executive, told the Financial Times he planned to recruit a young climate activist to spar with him and other senior executives about its environmental policies.

VW already has a sustainability council, populated by "renowned experts" such as the former EU commissioner for climate action and the founding director of the UN Global Compact. This group has "extensive rights of information, consultation and initiative" and wide access to senior managers. What would a single young grumbling Green add?

Actually, quite a lot, according to research that takes me back to the Vatican, initiator of the centuries-old idea of the "devil's advocate".

The hiring of a Greta Thunberg figure, despite its superficial attractions — no need to set aside a parking space at headquarters in Wolfsburg, for instance — faces some potential bumps in the road, though.

"Aggressive" internal challenge could speed up the VW hierarchy, Mr Diess believes, as he tries to steer a €33bn drive towards battery-powered vehicles. Yet a campaigner could also throw a spanner into the process if he or she took every opportunity to clog VW's decision-making with single-issue objections.

At the other extreme, the climate activist could turn passive and sink comfortably into the VW bureaucracy. The carmaker still bears the wounds of the scandals of the early 2000s after the cosy working relationship between VW managers and workers — part of Germany's famed co-determination system — went rotten. That episode raised questions about VW corporate culture that prefigured the later Dieselgate emissions cheating crisis, from which it is still recovering.

The most recent precedents for inviting critics into a German boardroom are also ill-omened. In January, Mr Diess's counterpart at Siemens, Joe Kaeser, offered activist Luisa Neubauer a seat on the supervisory board, as he faced protests about the group's involvement in the development of an Australian coal mine. Ms Neubauer, a leading figure in Ms Thunberg's Fridays for Future movement, took the free publicity but unsurprisingly rejected the chance to spend days of her young life discussing compensation, succession, and the internet of things with her elders.

Appointing a spokesperson for the opposing view — or, in the modish "red teaming" approach, a whole squad of opponents — is often suggested as a way of mitigating bias and groupthink. The Catholic Church used it from the 16th century to sharpen its discussions on candidates for sainthood, and the technique does work, but only compared with no challenge at all.

Over nearly four centuries, devil's advocacy has turned into a sort of protest cosplay, with sober consensual directors dressing up as dissenters, in part to make their colleagues feel better about decisions they are likely to take anyway. (In these febrile times, "just to play devil's advocate for a moment" has also, incidentally, become a signal that someone round the table is about to advance their honestly held but potentially unpopular opinion, without really risking their reputation.)

Berkeley psychologist Charlan Nemeth has long been suspicious of "role-playing" dissent. She is convinced well-meaning attempts to avoid confrontation undermine the quality of problem-solving.

> 'Study after study shows that dissent, even when it's wrong, stimulates that kind of thinking where the mind opens'

Her research adds some weight to Mr Diess's idea of bringing in an "authentic dissenter" to juice up discussion of VW's eco-initiatives. Dissent, she told me, "hits you in the face and it annoys you and it will make you mad — and it's rough on the person doing the dissenting — but study after study shows that dissent, even when it's wrong, stimulates that kind of thinking where the mind opens".

As she writes in *No! The Power of Disagreement in a World That Wants to Get Along*, "it is when you face a dissenter who believes his position, has the courage to say so, and does so persistently that you confront the possibility that you may be wrong".

Prof Nemeth has a few qualms about the VW plan. Employing and paying the activist may compromise his or her willingness to speak truth to power, for instance. The principle, though, is sound. It also comes with the tacit endorsement of the Vatican. The church ditched its devil's advocate approach in time for Mother, now Saint, Teresa's beatification — hence the invitation to critics to testify about the nun's work — just as businesses were rolling it out everywhere.

andrew.hill@ft.com
Twitter: @andrewtghill

Working lives

Are free mindfulness apps really the answer to help stressed staff?

The corporate market for meditation apps is booming, but there is still no quick fix for wellbeing. By *Emma Jacobs*

Mindfulness may bring calm to staff but don't expect them to be dramatically more productive
Getty/FT montage

Insomnia blighted Richard Sharp's life. He might sleep for a restful six hours — or just two. Sometimes he would stay awake all night.

That changed two years ago when he downloaded Headspace, a meditation app that promises to increase focus and productivity, as well as sleep. It was provided free by his employer, Aviva, the insurer. "I hadn't heard of it before. I've always been quite cynical about stuff like this. When you're younger you think, 'I don't need all this to make myself feel better.'"

The app's sleepcast, a guided meditation, was "more effective" than he expected. Mr Sharp is almost always asleep before it finishes. Out of a UK workforce of 16,000, about 2,000 Aviva employees use the app regularly (three to four times a week), predominantly to wind down and to help them sleep.

With the swipe of a mobile phone, employees can access a digital version of the kind of mindfulness courses that have been offered at big companies including General Mills and Google.

Mindfulness is based on Buddhist principles, helping people to clear their minds of unwanted thoughts and feelings, encouraging awareness of breathing and focus. As the consumer market for mindfulness and meditation apps has grown increasingly competitive, so they are pursuing the corporate market.

Meanwhile, companies' interest in meditation tech has risen in tandem with growing awareness of the importance of mental health and its impact on the bottom line. Research by Deloitte in January estimated that for every £1 spent on supporting employees' mental health, companies claw back £5 by cutting absenteeism, presenteeism and staff turnover. Yet critics charge that these are relatively cheap ways for companies to look good, rather than address systemic workforce issues.

According to App Annie, consumers across the world last year spent 130 per cent more money on health and fitness apps than in 2017, with Calm and Headspace taking the number one and two spots in the top ten mindfulness apps, which also included Reflectly, Meditopia and Breethe.

More than 600 companies offer free or subsidised Headspace to their workforce, including Adobe, General Electric and Unilever. Calm, named Apple's app of the year in 2017, has become the first mental health "unicorn".

Alex Will, Calm's chief strategy officer, says that employers' interest is "absolutely heating up [and it is] not impossible" that the business market could overtake the consumer side. In response, Calm has created content around business topics, such as difficult conversations with colleagues, prioritising time, or meditation in work.

Headspace, co-founded by Andy Puddicombe, a Buddhist monk, declined to share the proportion of revenues from corporate subscriptions except to say Headspace for Work, its employer programme, is its "fastest growing opportunity". The bulk of that business is in white collar sectors, typically tech and financial services, but it is starting to be bought by employers in retail and manufacturing.

Megan Jones Bell, chief science officer at Headspace, says that staff who get the app through their employer use it as much as consumers who pay up to $70 a year to access it — about 30 per cent of users use the app regularly every month.

Ravi Kudesia, assistant professor of human resource management, Fox School of Business at Temple University in Philadelphia, says that apps might have some benefits over workplace meditation sessions: they are relatively cheap to disseminate across the workforce and thereby democratic. Apps may also offer some guarantee of quality and consistency. "As interest in mindfulness has grown, every two-bit management consultant is now offering mindfulness services — despite many lacking the deep practice necessary to really have any expertise in mindfulness."

On the flipside, the group nature of classes has merit. "In the modern workplace, we seldom do anything even remotely intimate with co-workers, and especially people above or below us in terms of hierarchical position. To sit in a room with others, close your eyes, wrestle with distraction and unruly and uncomfortable thoughts and feelings, these are all things that can bring people in a room closer."

The context of such benefits is key. David D'Souza, membership director at the Chartered Institute of Personnel and Development, says that not enough organisations take a rounded approach to wellbeing. "The temptation for many organisations is to buy something to fix the problem but human beings are more complicated than that."

Michael Whitmore, research leader at the Rand corporation, points out that many organisations buy products and services in a piecemeal way. "They don't know the target needs of their workplace. They just buy things because they liked it themselves without understanding what their staff need."

The intrinsic motivation for people to use self development tools for wellbeing or health is key, says Corina Sas, professor of human-computer interaction and digital health at Lancaster University. "So people who experience discomfort usually become motivated to explore ways to address it, mindfulness being one of them. Once the benefits of the practice are experienced, they are committed to continue."

> 'The temptation is to buy something to fix the problem, but humans are more complicated'

All the benefits in the world will not change a toxic workplace. Mr Sharp reflects that when he was in a high-pressure sales role, if an employer had offered an app it might have just made him cynical. "It's not a magical fix for people," he says.

At worst, apps can be public relations tools to make the company look good. Jeffrey Pfeffer, author of *Dying for a Paycheck*, which highlights the toxicity and stress of modern workplaces, has pointed out that "job control and social support" are more influential on employee health than wellness programmes.

Ronald Purser, author of *McMindfulness*, is sceptical about the wellness industry, pointing out "you can never be too well, that's why it's a massive growth industry". He says that the appeal of apps is that they offer "a quick recharge for employees so they can jump back into business as usual. Mindfulness is not a DIY endeavour. [Companies] are outsourcing the burden on to employees. They are a superficial commercial fix to structural issues."

Ms Jones Bell agrees that meditation apps are not cure-alls, but says they can provide some respite, citing trials that found using Headpsace for 10 days led to an 11 per cent decrease in stress and a 16 per cent increase in happiness.

While using apps regularly can help with stress, Kathleen Vohs, professor of marketing at the University of Minnesota, who has looked into mindfulness, would not recommend that employers encourage it as a productivity tool. "If they want their employees not to be so stressed, then mindfulness can help — but that doesn't mean that they will be more productive as a result. When you focus on the present, that's inconsistent with working toward a goal, goals being future states of the world that you want to bring about." Nonetheless, she says mindfulness can help people regain mental focus, which should help them with work tasks.

Prof Kudesia says that mindfulness can be difficult to apply to work situations. "A lot of the meditation instructions emphasise 'non-judgment' of the things that you see, think, and feel. But organisations pay people precisely for their judgment. So we get people trying to apply meditation instructions to post-meditation life: not a great recipe for success."

For Mr Sharp, the benefits have been compelling. "I look back to the time when I didn't sleep and wonder how I functioned."

Work Tribes

'Try a battery-chicken-chunk, hand-steeped in chlorine'

ANDREW HILL AND EMMA JACOBS

Marcus, the canteen chef
Welcome to The Thrust's ice-breaking launch party! May I interest you in a snack? A spiced haggis ball? Or a full-English breakfast micro-bun, perhaps?

Yes, sir — they are a little like canapés. Or tapas. But as part of the building's ongoing Sovereignty Celebrations, we're reclaiming good, British fingerfood for the nation — while warmly welcoming other cultures and paying full regard to dietary diversity. Hence the toad-in-the-hole balti-bites and the flexitarian shepherd's pielets.

Soft drink, Madam? Of course. The Devonshire sweet sparkling *grand cru* — or as we prefer to call it, "huge growth" — isn't to everyone's taste. We have chilled Irn Bru with a sprig of heather, or our Lilt-Cresta Fusion Fizz mocktail? Oops, my apologies — I frothed a bit over you there. You may need to get that specially dry-cleaned — Cresta stains are a bit of a devil to get out.

Sir, some uncooked fish? We're not calling it sushi, no. Or would you prefer a Never Mind the Pollocks line-caught battered fish finger? Yes, it's all sourced locally. Those are the battery chicken-chunks, hand-steeped in chlorine electrolysed from British brine. Sure, take a handful! It's the future! No problem — this evening is all about experimentation. Just regurgitate it straight into the Union Jack spittoon.

Perhaps the desserts are more your thing. Angel Delight mini-mivvi? Or Eton Mess, served in a thimble-sized bucket?

Katherine, the worried worker
I don't mind if I do. Brownies? I've got a terrible sweet tooth — oh, it's black pudding. Wasn't expecting that. You don't have a vegan version, do you?

Actually, don't go. I don't know many people here really, apart from my big boss who's over there. Can you just chat to me a bit longer and look like I'm really funny. How do you do that? Laugh at me! Tip your head back. Not that far! Did you see him looking over? Yes, you're quite right. I suppose he might wonder why I'm hanging out with the waiters instead of networking. OK, I'll go forth — thrusting onwards, upwards, or most likely downwards.

Please — just one more drink before I go. You've run out of the Devonshire? Yes, I guess I'll go for the Arsenal ale then. It will take me over my two-drink rule, but I need a bit of Dutch — sorry British — courage. I'm going. In a minute.

You can't be sacked for not networking, can you?

Amy, the PR whizz
Pippa, right, let's run through your speech before you get up. Don't crack any jokes. No. Not one. Legal are already worried about starchitect Sir Harry's opening gag about our Chinese tenants and the *feng shui* fiasco.

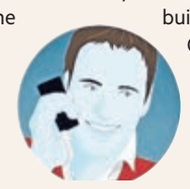
"Hello, ladies and gentlemen." Stick to "Hello" — more inclusive. Yes, you can say your name, of course. Talk about the speed-mating events and Thrusting Upwards Together Networks that you're organising as the building's Vibe-master. OK. You're going to finish with the offer of a hug? Do you think that's a good idea? The building just moved from mauve to fuchsia alert because of coronavirus. We don't want anyone to misinterpret it, either.

OK, if that's what people know you for — hugging — go for it. It's more authentic than an elbow bump. I'll tip off the diary columns in case it's a slow day.

Right. A final run-through. And . . . you're on. Go, go, go!

Great job! Sorry about the mic fail. Don't worry: nobody was listening anyway.

Pippa, Vibe-master
Jason, lovely to meet you. About that cheeky email to the whole building — fret not: we've all done it. Let me give you a hug! Ooh, you are muscly: do you work out?



Meet the tribes
Read the series
ft.com/work-tribes

Follow the goings-on of our Work Tribes on Twitter @ThrustLondon

WORK & CAREERS

Coronavirus may mean lasting change in the office

Business leaders are thinking flexibly to protect staff and supply chains. By *Andrew Hill* and *Emma Jacobs*

From Sars to tsunamis, companies are used to preparing for business interruptions. The coronavirus outbreak is the test for which they have been planning for years.

Like any crisis, though, this one has new elements. They may yet bring about lasting changes in how companies manage their workers, and how those people work.

The template for short-term action is standard across large companies: reconsideration of business travel, up to and including total bans, and self-quarantine for people arriving from higher-risk zones; encouragement of remote working; regular communication of public health advice. Among more innovative approaches, international banks in Japan are operating split teams to prevent intra-company contamination.

At the same time, despite the existence of business continuity plans, coronavirus has exposed gaps.

Even though the assumption is that it is better to communicate more frequently with staff — in part to drown out misinformation on social media — Brian Kropp, chief of research in Gartner's human resources practice, says companies are "struggling with drawing that line" between preparation and fear, as they did 18 years ago during the Sars epidemic.

Then, "a lot of companies went out and bought flu shots and encouraged employees to get flu jabs," he says. "A lot [of employees had] had them already; a lot felt they were being forced to do something they didn't want to do. It created anxiety for a problem that wasn't there. One of the problems is how to prepare without creating anxiety. You don't want to create a panic."

Johnny Taylor, chief executive of the US Society for Human Resource Management, says its members have been asking about the fever tests that some Asian offices are now applying to all building visitors. "It makes people feel better, but the reality is if you're carrying [the virus], you may not show the symptoms" and the fever could be down to a more common virus. His organisation is instead reinforcing recommendations that staff do not come to work while sick. At SHRM itself, this is backed by an "open leave" policy that ensures sick leave is paid.

A nearly empty tram in Milan as workers are advised to stay at home
Marco Di Lauro/Getty

Mr Taylor says a pandemic might well bring about improvements to US practice on paid sick leave — which can encourage staff to hoard their allowance and attend work while ill. In the UK, SHRM's counterpart, the Chartered Institute of Personnel and Development, recommends employers "should treat any time off taken by employees who have been advised to self-isolate, even if they have no symptoms, as paid sick leave or agree for the time to be taken as holiday," although there is no statutory right to pay.

If schools or nurseries close, staff concerns about how to pay for childcare, or how to take time off to look after children, will increase. "Some employers might agree with staff that they should take time off as holiday out of existing annual leave if they want to be paid in these circumstances," says Ben Willmott, CIPD's head of public policy. "We would recommend that employers should be as flexible and generous as they can be in supporting employees."

The most obvious development since the Sars outbreak of 2002-03, is the increase in remote working, fuelled both by more flexible and decentralised management practice and more widely available technology.

Manufacturing companies face more of a challenge in instituting remote working or emergency shift working than their service industry peers. SHRM's Mr Taylor believes it would stretch most companies to institute remote working widely for more than a few weeks. "If you really could get away with that, perhaps you could consider having a remote workforce always," he says.

"The tech is better than it was in the last pandemic. People are more used to it," says Gartner's Mr Kropp. "Some managers make it hard, however. We are telling employers to communicate with their managers to encourage people to work from home. Some are saying that the employee can work remotely and it's up to the manager to explain why they can't."

A sustained period of home working could raise questions both about the adaptability of managers and practicality of encouraging more remote work. Mr Willmott says companies should "identify managers who have transferable skills [which] might mean providing training for staff to fill in other jobs. Quite often you'll have managers who have been promoted as they have a particular technical skill but you might have to utilise their core technical skills."

> 'One of the problems is how to prepare without creating anxiety'

Other management challenges include the risk that requests by ex-pats to return home from infected areas will have an effect on local employees, says Sarah Henchoz, employment partner at law firm Allen & Overy. "If employers agree to this, there is a risk that local employees will feel very isolated and it creates a real 'them and us' culture, which is very unhelpful and could even give rise to claims of discrimination."

Mixed messages might also be a problem for companies such as consultancies, where employees spend much of their time at clients' workplaces. If a company tells its employee to work from home but the client wants them to be on-site, it might prove "inconsistent and create a feeling of unfairness", says Mr Kropp.

In general, companies say best practice is spreading alongside the virus itself. Collaboration across supply chains and even between rivals could be one legacy of the outbreak. Companies have activated established networks of human resources managers, or joined informal discussions to reach a consensus about how to react to the threat of coronavirus.

It is inevitable, though, that this crisis will also expose some basic deficiencies, just as previous emergencies did. Peter Cappelli, director of the Wharton business school's Center for Human Resources, recalls that after Sars, a surprising number of companies reported that "they literally did not know how many employees they had [or] where they were distributed across locations". The silver lining was that disaster planning "moved them toward better accounting on those simple matters, which then made it easier to do all kinds of things like planning".

The Institute for Law and Finance at Goethe University in Frankfurt am Main offers a unique one-year graduate program in English, leading to a Master of Laws in Finance.

The program is aimed at students with a prior degree in law or business/economics and who have an interest in combining theoretical knowledge with practical training in law and international finance. The program builds on the important role of Frankfurt as a leading banking, central banking and financial center of the European Union.

OUR INTERNATIONAL FACULTY

You will be taught by over 60 leading academic experts and experienced practitioners worldwide, coming from international law firms, banks, auditing and consulting firms and regulatory bodies, in particular, the European Central Bank and the Deutsche Bundesbank.

OPTIMAL TEACHER-STUDENT RATIO

About 50 highly qualified graduates are admitted for study annually. Our international student body comprises graduates from over 20 countries each year. Students are fully enrolled members of Goethe University which confers the LL.M. Finance degree.

OUR INTERDISCIPLINARY CURRICULUM WITH A PRACTICAL APPROACH

You will study international financial law from all aspects of current legal practice, with emphasis on the EU and the US, along with parallel developments in international finance. There is also the valuable opportunity to take part in an internship at one of the ILF's sponsors from the financial, regulatory, central banking, international law and accounting sectors.

Contact:
Institute for Law and Finance
Attn: Ms. Jennifer Schmid
Phone: +49 (0) 69 798-33624
Email: LLM@ilf.uni-frankfurt.de

The ILF invites applications for admission to its LL.M. Finance Program 2020/2021 which commences in October 2020.

Earn an LL.M. Finance in Frankfurt, Germany!

ILF

Advance your career to the next level! Upgrade your knowledge!

INSTITUTE FOR LAW AND FINANCE
Goethe-Universität Frankfurt am Main
www.ilf-frankfurt.de

ARTS

‘Every auction still excites me’

As chairman of Sotheby’s Asia, Patti Wong has witnessed huge changes in markets and tastes. She talks to Melanie Gerlis

China and the hub of Hong Kong have contributed considerably to the growth of the art market for the past 10 years. Now, as the Covid-2019 coronavirus outbreak takes its toll on the luxury goods industry, demand for fine art is expected to suffer too.

Patti Wong, chairman of Sotheby’s Asia and Sotheby’s Diamonds, is more than conscious that Hong Kong is a tough place to do business right now. When we meet in Sotheby’s London offices, it is soon after the virus has forced the cancellation of the Art Basel Hong Kong art fair and its satellite event, Art Central. Two weeks later, Sotheby’s had to cancel its Hong Kong series of 14 live sales, due to run April 3-8. The traditional Asian art, wine and watch sales have been postponed to July, while the international Modern and contemporary auctions have moved to New York on April 16. Among the relocated fare is David Hockney’s bright “30 Sunflowers” (1996), estimated to sell for at least US$10m.

But Wong remains confident that China, and its art market, will bounce back. She likens the situation to a devastating typhoon that hit the territory in 1974. “It was just one year after Sotheby’s had its first auction ever in Hong Kong,” Wong says. “The airports were closed, the saleroom was empty, but by 1975 buyers were back again. We are experiencing a minor downturn, but I’m not too worried, cycles come and go.”

If anyone knows, then it is the whip-smart, Hong Kong-born Wong, whose 29-year career has exclusively been at Sotheby’s. She has worked across its Chinese art, private sales and jewellery departments internationally and became chairman of Sotheby’s Asia in 2004. She is now responsible for many of the auction house’s top clients in the region, often manning the phone lines for winning bidders around the world.

Armed with a degree in monetary economics from the London School of Economics and a postgraduate diploma in Asian arts, Wong started out in 1991 as an intern at Sotheby’s in Hong Kong and then in its Chinese art department in New York. “That was another downturn, I seemed to be interning forever,” she says. Her workload included opening the post and replying to all that came in. “It’s hard to imagine now just how much came through the mail, including boxes of objects for valuation,” Wong says. It was at this early point, she says, that she realised “to get the real stuff, you have to go out and get it.” So began a consummate career of relationship building.

Main picture: Patti Wong in action at a Sotheby’s auction. Left: Sotheby’s sale of works including David Hockney’s ‘30 Sunflowers’ (1996) has been relocated from Hong Kong to New York

Her speciality at the time was Chinese paintings, cultivating buyers in the US, China and then for nearly 15 years in London. Genuine enthusiasm went a long way, Wong says, something that she hasn’t lost through the years. “Every auction still excites me, whether clients are buying things for $20,000 or $20m,” she says.

Wong sees Sotheby’s as an “endless learning experience” — I am told by specialists in other departments that she grills them intensely during internal briefings for their major lots. She is blessed with a good memory and has a passion for reading about art, which, she says, happily fills her many long-haul flights from her base in Hong Kong.

Wong has seen demand from Asia’s buyers grow significantly — most notably in the run-up to 2011, when the art economist Clare McAndrew found that China overtook the US as the largest international art market worldwide, with a 30 per cent share. Wong notes that repeat sales flattered the numbers. “The same pieces were being sold over and over again, it was highly speculative,” she says. Such activity has slowed down and while auction has long been the preferred route for buyers in Asia, there is now an increasing appreciation for private sales (including at the growing number of commercial galleries now in Hong Kong).

> ‘We are experiencing a minor downturn, but I’m not too worried, cycles come and go’

Taste has also changed, Wong says, notably towards western Modern and contemporary art. She points out that at Sotheby’s last year, Asian clients bid on 15 of its top 20 paintings (by price) and bought nine. Five of these works were by western artists, including the top lot at its contemporary art evening sale in New York in November, Willem de Kooning’s “Untitled XXII” (1977), which sold for $30.1m.

Wong saw it coming and has been behind the expansion of Sotheby’s offerings in Hong Kong. Since 2017, the twice-yearly auction schedule in the region has included significant pieces of Modern and contemporary art from the west — this season’s relocation is expected to be a one-off.

Within the western art canon, taste has also developed quickly, Wong says. At the auction house’s first mixed contemporary art sale, the top lot was rather predictably an Andy Warhol 1973 portrait of Chairman Mao, which sold to an Asian buyer for HK$98.5m (US$12.7m). Two years later, an Asian private collector bought “Black Ground (deep light)” (2006) by the edgy, Ethiopian-born Julie Mehretu for HK$44m (US$5.6m), a record for the artist. The work sold for far ahead of its estimate, another sign of growing confidence from buyers, who are “now happy to think for themselves and set records”, Wong says.

Sotheby’s has partly been behind the education process to help broaden taste. “You can easily show the influence of Chaïm Soutine or Francis Bacon on Zhang Xiaogang [a well-known Chinese Modern painter]”, Wong says.

Helping to grow demand are the areas beyond Greater China — before Sotheby’s unexpectedly successful October sale season (held during an intense period of protests in Hong Kong), key works toured to Japan, South Korea, Thailand, Singapore and Indonesia. All are now regular stops for the major auction houses before their high-end sales.

Time will tell if Asia’s collectors will still bid and buy from next month’s relocated sales in New York, though the Sotheby’s team expects them still to be in the mix. The outlook for the protests is also uncertain, but Wong is able to think longer term.

She is particularly encouraged by the relatively young demographic of Asia’s collectors — Sotheby’s reports that, in 2019, 25 per cent of its buyers in Asia were under 40, compared to 18 per cent of all its buyers globally. “There are billionaires in their late thirties and early forties, so they have a lifetime of collecting ahead,” she says.

ART MARKET REPORT

The annual Art Basel/UBS art market report, compiled by Clare McAndrew (right), is published this week. See Friday’s FT or, from Thursday lunchtime, go to **ft.com/arts**

REPUBLIC OF ALBANIA

MINISTRY OF INFRASTRUCTURE AND ENERGY

MINISTRY OF FINANCE AND ECONOMY

NOTICE ON THE COMPETITIVE PROCEDURE FOR THE SELECTION OF PARTICIPANTS IN THE MARKET OPERATOR SHARE CAPITAL

1. Name and address of the Special Commission

Name	Special Commission
Address	Ministry of Infrastructure and Energy, Str. “Abdi Toptani”, No.1, Tirana, Albania
Tel/Fax	+355 4 2222245
Website	www.infrastruktura.gov.al
Contact person:	Kledia Ngjela - Kledia.Ngjela@infrastruktura.gov.al

2. Short Description of the Object of the Selection Procedure: Pursuant to Article 57 of Law no. 43/2015, “On power sector”, as amended, DCM no. 322, dated 15.05.2019 and DCM No. 609, dated 11.09.2019, it is decided to establish the Market Operator (Albanian Power Exchange), as the responsible structure for the management and administration of the organized market, through the market platform, which will operate in the field of electricity exchange in Albania, in the form of a joint stock company, financially and legally separated from Transmission System Operator (“Operatori i Sistemit të Transmetimit” sh.a.).

The selection of other legal entities that will become part of the ownership structure of the Market Operator (excluding the Transmission System Operator - “Operatori i Sistemit të Transmetimit” sh.a. - OST sh.a.) will be selected, through the competitive selection procedure, by the Special Commission set up by the Minister of MIE and Minister of MFE.

The initial share capital of the company shall be 250.000.000,00 (two hundred and fifty million) ALL and is divided 250.000,00 (two hundred and fifty thousand) shares with a nominal value of 1,000.00 (one thousand) ALL. Every share has equal value.

The number of shares available to entities/subjects that may be part of the Market Operator’s share capital ownership structure shall be:

a) Electricity Transmission System Operators - TSOs (excluding OST sh.a.) - **51.250,00** (fifty one thousand two hundred and fifty) shares (equivalent to **20,5%** of the share capital)

b) Experienced International Operators - EIOs – **61.250,00** (sixty-one thousand two hundred and fifty) shares (equivalent to **24,5%** of the share capital);

c) Electricity Market Participants - EMPs – **25.000,00** (twenty-five thousand) shares (equivalent to **10%** of share capital);

d) International Financial Institutions - IFIs – **25.000,00** (twenty-five thousand) shares (equivalent to **10%** of the share capital).

Each participant must submit only one proposal for one of the aforementioned categories.

Number of shares reserved for the Transmission System Operator (OST sh.a.). - OST sh.a. - 87.500,00 (eighty-seven thousand five hundred) equivalent to 35% of the capital of the Market Operator company. Subject to the development of a competitive selection procedure for participants in the Market Operator’s capital, this percentage shall be increased in accordance with the provisions of these Documents of the Competitive Selection Procedure and DCM No. 609, dated 11.09.2019.

3. The deadline for the **submission of proposals** by the parties interested to participate in the procedure: Date **27/04/2020**, for each participant according to the categories they participate in, the schedule will be as follows:

International Financial Institutions - IFIs	**12:00 p.m.**
Experienced International Operators - EIOs	**12:30 p.m.**
Electricity Transmission System Operators - TSOs	**13:00**
Participants in the Electricity Market - PEMs	**13:30**

4. Deadline for the **opening of proposals** by the parties interested to participate in the procedure: Date **27/04/2020**, for each participant according to the categories they participate in, the schedule will be as follows:

International Financial Institutions - IFIs	**12:00 p.m.**
Experienced International Operators - EIOs	**12:30 p.m.**
Electricity Transmission System Operators - TSOs	**13:00**
Participants in the Electricity Market - PEMs	**13:30**

5. Payment of the participation fee in the competitive procedure: Participants in the procedure wishing to participate in the Competitive Selection Procedure shall pay in advance a Participation Fee (the “Participation Fee”) and shall provide the Special Commission with the details of a contact person (“The Contact Person of the Participant in the Procedure”) and the e-mail address of this Contact person, this address will be used by the Special Commission in all and any correspondence with the Participant in the procedure and related notices, for the period up to the submission of the proposal. Participants in the procedure will be required to prove payment of the Participation Fee in the Competitive Selection Procedure, stating the name of the Participant in the procedure on whose behalf this fee is paid. This Participation Fee is not refundable for any reason. If the interested person/entity acts as an authorized representative of a company, they must submit a written authorization representing the company.

The Special Commission shall make available to entities that have paid the participation fee a copy of the Competitive Process Documents in Albanian or English upon their written request. The fee to participate in the competitive process is 1 000 EURO (one thousand EURO). The payment will be made to the Transmission System Operator’s account, in the following details:

Name of Beneficiary Institution:	Operatori i Sistemit të Transmetimit (Transmission System Operator)
Account Name:	IBAN: AL63212110160000000000142152
Bank:	Credins Bank
SWIFT:	CDISALTR

Purchase of documents for the procedure: Selection of other legal entities that will become part of the ownership structure of the Market Operator, according to the shareholder structure defined in DCM no. 322, dated 15.5.2019 “On the establishment and definition of the legal form and of the ownership structure of the market operator’s share capital” and DCM no. 609, dated 11.9.2019 “On defining the criteria and procedures for the selection of participants in the market operator’s share capital”

With the description: Payment of the Participation Fee in the Competitive Selection Procedure for the Selection of Other Legal Entities that will become part of the Market Operator’s Share Capital Ownership Structure

The fee for participation in the competitive process is non-refundable.

Only participants that have paid the Participation Fee will be eligible to receive copies of the Competitive Selection Documents and will be eligible to participate in the Procedure.

6. The competitive process documents may be withdrawn from the above mentioned entities/subjects starting from 03.03.2020 from 9:00 to 14:00, any day of the week, except Saturdays and Sundays, at the Protocol Office at the headquarters of the Transmission System Operator OST sh.a., at the below address: Autostrada Tirane –Durrës, km 9, Yrshek –Kashar, Tirana, Albania.

There’s life yet in the murder story

PODCASTS

Fiona Sturges

We are five years into the podcast boom, and the thirst for tales of real-life murder remains seemingly unquenched. Hardly a week goes by without a new series offering up old corpses and fresh leads. The newly launched *The Nobody Zone* — a joint operation between Irish network RTÉ and Denmark’s Third Ear Productions, and available in five languages — isn’t a whodunnit in the traditional sense, though there are bodies aplenty and it does unearth new evidence in the form of recorded interviews.

Presented by Tim Hinman, host of Denmark’s popular *Third Ear* podcast, and featuring the journalist and documentary-maker Robert Mulhern, it tells the story of Kieran Kelly, a homeless man from Ireland who was arrested in 1983 after robbing a man on London’s Clapham Common. While in custody, Kelly proceeded to strangle his cellmate using a pair of socks. On being interviewed the following day, Kelly confessed to a string of murders perpetrated over 30 years — he claimed the first killing took place in 1953 when he got into an altercation with a man at Baker Street Underground station and pushed him in front of a train.

It’s a fascinating story, partly because the deaths seemed to go unnoticed but also due to the challenges of separating reality from make-believe. Kelly, an alcoholic with a taste for red wine mixed with methylated spirits, was prone to telling tall tales, though he is outdone here by an ex-police officer and author who says he was closely involved in the case but whose imagination spectacularly runs away with him in an interview with Mulhern.

The series has its problems, however.

Confession: Kieran Kelly

Hinman’s narration is distractingly mannered and repetitive. He also adopts an uncomfortably prurient tone as he imagines, not once but twice, how the Baker Street victim met his end. On the second occasion, he puts us directly in the victim’s shoes: “A sudden gut-wrenching shove in the middle of your back sends you flying out on to the tracks,” intones Hinman, grimly. “The last thing you see is the train driver covering his eyes.”

Similarly aggravating is the production, which, not trusting the listeners’ capacity to picture a scene, goes clumsily over the top. As Hinman recounts Kelly’s movements on Clapham Common, we are assailed by the sounds of birds flapping their wings; later, as he describes the goings-on at the police station, keys clank, doors slam, phones ring and typewriters clatter. It’s all very silly, and ends up draining the suspense from an otherwise compelling tale.

The superior American podcast *Conviction*, from Gimlet Media, has just returned for a second series, this time examining the “satanic panic” of the 1980s. Hosted by Sharon Shattuck and Julia Marchesi, it asks if satanic cults really were performing horrific rituals on children, as was claimed, or whether other forces were at work deliberately stoking mass hysteria.

DANCE

Justin Peck and Nico Muhly: Rotunda

Lincoln Center, New York

★★★★☆

Apollinaire Scherr

Nico Muhly is not an obvious choice as a composer for dance, despite a steady stream of assignments. Though his gorgeous instrumentation and playful if rigorous structures provide fine fodder for the choreographic imagination, the music lacks the usual dance requirement: rhythmic drive. But for *Rotunda* — Justin Peck’s 19th ballet for New York City Ballet since 2012 — the composer amps up the failure of forward propulsion until it takes on a fascinating rhythm of its own.

Typical of Muhly, the score combines bursts of tootling arpeggio from the winds with a low sustained arc of notes from the brass. Imagine sardines eddying around a whale. Fizzled notes resemble the “second thought” that gets you to swallow the first. Muhly disallows easy translation from note to step: pure enticement for someone with Peck’s keen musicality and ingenuity at architecture.

At first, the half-hour *Rotunda* seems only to acknowledge at a meta level these dips into silence. Before the start of each of the eight sections, the dancing stops for the next crew to assemble, whether for a solo, a duet, a trio or for the full 12. *Rotunda*, the ballet self-consciously reminds us, is not a make-believe, low-key encounter among millennial friends, as with other Peck ballets. It is mostly only dance. Costume design duo Reid & Harriet’s practice-wear in hip pastels reinforces this assertion of dance as dance.

Rotunda’s formalist air nicely offsets its improvisatory style. Peck’s previous attempts at casualness have tended to backfire. Like his idol Jerome Robbins, he would exaggerate the off-the-cuff until it looked mannered. *Rotunda*, though, feels genuinely immediate.

The anticlimactic silences eventually show up in the choreography’s phrasing. In a riveting duet between principal Sara Mearns and the wonderfully unfettered corps member Gilbert Bolden III, the push-pull partnering syncs perfectly with the musical stops and starts to allow phrases to unspool indefinitely.

Peck can turn the screws on his neat constructions until your head aches. Here, via these knots of conflict Muhly has inserted, he has discovered a leavening spaciousness. This *Rotunda* lets in the light.

‘Rotunda’ returns for the spring season nycb.org

Miriam Miller and Adrian Danchig-Waring in Justin Peck’s ‘Rotunda’

FT BIG READ. UKRAINE

Rudy Giuliani, Donald Trump's lawyer, backed a rabbi's scheme to resettle refugees from eastern Ukraine. But cash for the project is drying up over fallout from the president's impeachment case.

By Joshua Chaffin and Roman Olearchyk

The rabbi, Giuliani and a US scandal

The rabbi gazes out of the window at a half-finished worksite, drums his fingers against his desk, and then bursts into song. "If I were a rich man!" he sings in a deep baritone fit for a grand synagogue — or the Broadway stage. "Ya-da Dee-dee Ya-da Dee-dee Da-da-dumb! I'd build a big tall house . . . Right in the middle of a . . . field!"

The site, in a 15-acre pasture about an hour's drive from Kyiv, is where Moshe Reuven Azman, one of Ukraine's most prominent rabbis, has been building his dream: Anatevka, a modern village built to house Jewish refugees displaced by fighting in the eastern part of the country between government forces and Russia-backed separatists.

Anatevka has come a long way in five years. It features a school, a dormitory, apartments for about 150 residents, a rustic synagogue built from pine logs, a woodworking shop, a football pitch and a nearly completed rehabilitation centre for the infirm. Yellow American school buses, donated from Brooklyn, are parked on the grounds.

Mr Azman, the chief rabbi for Kyiv — and possibly Ukraine, depending on who you ask — borrowed Anatevka's name from the nearby *shtetl*, or village, depicted a century ago by Yiddish writer Sholem Aleichem in his stories about the trials of Tevye, a Jewish dairyman in the Pale of Settlement. These were the basis for the musical *Fiddler on the Roof*. The Ukrainian village, Hnativka, is just across the road.

"It's my dream! We are in a dream!" Rabbi Azman says, showing off the half-finished Anatevka, which features a logo borrowed from *Fiddler on the Roof*.

But the dream of Anatevka has lately turned into a nightmare, thanks to Rabbi Azman's close ties to Rudy Giuliani and what he calls "the American scandal". That is, the recent US presidential impeachment proceedings in which Mr Giuliani, in his capacity as President Donald Trump's personal lawyer, was shown to be criss-crossing Ukraine in search of possible evidence of corruption involving a political rival, former vice-president Joe Biden.

Mr Giuliani has not faced any charges but has drawn intense scrutiny for conduct that Democratic lawmakers argue was part of a plan to improperly leverage US foreign policy to benefit the president's political fortunes.

The 53-year-old rabbi met Mr Giuliani years earlier, on his first visit to Ukraine. He later made him Anatevka's honorary mayor, even presenting him with a symbolic key the size of a tennis racket. The two Soviet émigrés, Lev Parnas and Igor Fruman, who served as Mr Giuliani's fixers in Ukraine — and have since been indicted on US campaign finance violations — are listed as board members for the American Friends of Anatevka charity. Its registered address is an accountant's storefront in Brooklyn.

Digging deep: Rabbi Moshe Reuven Azman walks away from a tomb to an 18th century Hasidic holy man in Anatevka. The community was created to house Jewish people who fled fighting in eastern Ukraine. Below: the rabbi with Rudy Giuliani, Donald Trump's personal lawyer, and the honorary mayor of Anatevka
Sergey Korovayny/FT

Their familiarity with the rabbi was captured in a video that emerged at the height of the impeachment saga and has since gone viral. It shows Mr Giuliani and his friends in the lobby of the Trump International Hotel in Washington, DC, in 2018. Mr Fruman, holding out a phone, urges Mr Giuliani, to wish his friend "Moshe" a happy birthday. "Moshe, how are ya, baby?" Mr Giuliani asks in his Brooklyn twang.

Then, last May, when Mr Giuliani was pushing — unsuccessfully — for a meeting with Volodymyr Zelensky, Ukraine's newly elected president, he met Rabbi Azman for two hours in Paris.

Mr Azman insists the men enjoy a genuine friendship, and suggests that he courted Mr Giuliani because he thought it would boost fundraising. But, even with fresh donations of $1.5m — that the rabbi touted on Facebook — the flow of cash he has relied on to build Anatevka has been constrained as wealthy philanthropists, particularly in the US, have become more fearful of being drawn into the controversy.

"They're afraid," Rabbi Azman complains. "If you have a big company — it doesn't matter if you're a Democrat or a Republican — you don't want to be involved in scandal."

> 'I'd never built from scratch before. I gave the downpayment to the contractor and I said: "Build!" And I prayed'

To some degree, the rabbi believes he is also being punished for his unabashed support for Mr Trump. "There were no presidents who helped and loved Israel as Donald Trump does," he told an Israeli publication in August. "I pray for him every Saturday."

Bitter history

The Anatevka saga is a reminder of the powerful but fraught role that a handful of rabbis have come to play in Ukraine, a place that was one of the bloodiest killing fields of the Holocaust but is now undergoing a Jewish revival.

Its territory contains some 5,000 mass graves from the second world war. One is Babyn Yar, a ravine in Kyiv where some 34,000 Jews were massacred by the Nazis and their local helpers in just two days in September 1941 in one of the most horrific events of the so-called "Holocaust of bullets". Later, the Nazis would switch to the gas chamber, a more industrial method of murder.

Improbably, Jewish life has returned to Ukraine, with thriving communities boasting tens of thousands of members in cities such as Kyiv, the capital, and the central city of Dnipro. The country briefly boasted both a Jewish head of state and head of government after Mr Zelensky, a comic and actor, was last year elected president with 73 per cent support while Volodymyr Groysman was prime minister. "I think God wanted a laugh!" Rabbi Azman quips.

The community has been rebuilt, in part, with the largesse of a select group of Jewish businessmen, or oligarchs, who took control of Ukraine's industry after the collapse of the Soviet Union. Their patronage and political connections have aided the work of rabbis such as Mr Azman but also present risks in a country caught up in a swirl of political intrigue with a reputation for corruption and money laundering.

A chief donor to Menorah, a stunning Jewish cultural and community centre in Dnipro that is one of the world's largest, is Igor Kolomoisky, an oligarch whose PrivatBank was taken over by the state in 2016 after regulators found a $5.5bn hole in its balance sheet. Mr Kolomoisky and his aides have denied wrongdoing. Nonetheless, this complicates life for a rabbi in search of funding.

"A rabbi who needs to fundraise is a little bit [of a] zombie," says one Jewish official in Ukraine who, like others, describes Rabbi Azman as big-hearted and charismatic but also a bit naive.

Further confusing matters, the community itself is riven with factions and rivalries and sometimes competing interests, according to a longtime observer of Ukrainian politics.

"What you have to understand about the Ukrainian Jewish community is [that the power struggles within it] are vicious," this person says. "You have five different people at any time claiming to speak for the community."

Rabbi Azman has a playful manner that belies the hardship of his youth. He grew up in the Soviet Union and studied Torah at an underground religious school whose older members at first suspected he might be a KGB informant. That experience makes him scoff at speculation that he might somehow harbour sympathy for Russia's authoritarian government or be serving as a go-between for the Trump administration.

He left Leningrad for Israel in 1987 and then spent time in Toronto before moving to Kyiv in 1995. One of his greatest achievements was the reconstruction of the historic Brodsky Synagogue in the city centre. It was shut down by the Soviets in 1926, ransacked by the Nazis and then turned into a puppet theatre until it was reborn as a synagogue in 2000. Much of the funding came from Vadim Rabinovich, an oligarch with political ambitions who hosted Mr Giuliani's first trip to Ukraine in 2003.

> '[No] big company — it doesn't matter if you're a Democrat or Republican — wants to be involved in scandal'

During that visit, Mr Giuliani commemorated a Kyiv memorial to terrorism victims, sponsored by Mr Rabinovich, who had built strong links to New York's Orthodox Jewish community during his two terms as mayor of the city visited the synagogue.

"He was young and I was young," Rabbi Azman says, "I blessed him."

He declined to say much more about the relationship, but adds that visitors across the political spectrum have paid their respects at Brodsky, including Chelsea Clinton, the daughter of the former US president. A thank-you note she penned to Rabbi Azman is one of several framed on his wall.

US fundraising

The Anatevka project began in 2014 as the fighting tore through eastern Ukraine, a region with about 20,000 Jews. Many fled the violence. "One day the rabbi in [the city of] Lugansk called me and said: 'A few buses are coming to you'," Rabbi Azman recalls.

He managed to resettle some in Israel and others in Kyiv. A further 300, were housed at a Jewish summer camp in the town of Shpola. "I didn't know what to do with them — it was the middle of the forest," Rabbi Azman says.

He wanted something more permanent. Searching on the internet, he found an empty parcel of land that happened to be near the actual *shtetl* that inspired Sholem Aleichem. It also featured a destroyed Jewish cemetery, whose gravestones had been used as building materials in a nearby town, and a tomb to a renowned Hasidic rabbi, the *Chornobyl tzadik*.

"I'd renovated the [Brodsky] temple but I'd never built from scratch before," Rabbi Azman says. "I gave the downpayment to the contractor and I said: 'Build!' And I prayed."

First came a dormitory, and then a school and eventually a synagogue, whose Torah crowns — a decorative piece that adorns the scroll — were provided by Marcy Kaptur, an Ohio Congresswoman. "She's a Democrat!" the rabbi jokes. "I checked!"

He declined to discuss Anatevka's financials or disclose its donors — except to say it had been easy before the scandal to find people to support the cause of Ukrainian refugees.

One benefactor was Mr Fruman, whose name graces a plaque outside one of Anatevka's buildings. Before becoming caught up in the impeachment scandal, he was regarded in Ukraine as a businessman of moderate prominence — the owner of a car dealership and the Buddha Bar, a Kyiv club.

Some suggest that Rabbi Azman may have viewed Mr Fruman, who also lived in Florida, as a way to raise money in the US — while for Mr Fruman, his association with the rabbi was another means to try to enhance his business and political connections.

Whatever the source of Anatevka's funding, it appears to have been put to good use. On a recent afternoon, dozens of students filed in and out of bright and well-equipped classrooms, each decorated in a different theme — nature, Great Britain and so forth.

"I found it on Ukrainian Monster.com," says Noah Lloyd, a former Peace Corps member from Los Angeles, who took a job at Anatevka in September teaching English. Far from shunning Anatevka, some non-Jews in the surrounding area have sent their children to its school, according to the rabbi.

Stepping outside, the rabbi points out a half-built music school and the foundations that have been poured for three additional apartment buildings. "This will be an orphanage," he declares, amid a whirring of buzz-saws, adding: "I'd like to buy all the land around here . . . If I were a rich man!"

The plan is for Anatevka to one day become self-sufficient as a tourism destination and producer of artisanal crafts. Its wood shop is manned by two craftsmen who in 2014 fled the shelling in eastern Ukraine. "It's hard to understand how frightening it is," Sergey Yarelchenko, 56, recalls, explaining how his religious faith has been rekindled since he arrived in Anatevka — and how he had no intention of going back.

In addition to working on Anatevka's synagogue, Mr Yarelchenko also helped turn out the oversized "key to the city" that Rabbi Azman presented to Mr Giuliani. "We didn't know that we'd be making the key that led to an international scandal," his colleague, Slava, 52, adds with a smile.

Rabbi Azman says the recent fundraising will only help to cover school costs for the next year. Then he declares: "We need to finish Anatevka . . . We need millions of dollars. We have to build!" For now Anatevkans will have to do so with their rabbi — but no mayor.

FINANCIAL TIMES
'Without fear and without favour'
MONDAY 2 MARCH 2020

Coronavirus unmasks vulnerability of bull run

Policymakers must beware the market rout becoming a credit crunch

After spending much of the last decade in abeyance, fear has returned with a vengeance to the markets. Rattled traders returning to their desks on Monday will be braced for more volatility after last week's sell-off in global equities, the largest since the depths of the financial crisis in 2008. Mounting concerns at the rapid spread of the coronavirus caused one of the quickest market corrections in the benchmark US S&P 500 since the Great Depression in the 1930s.

The speed of the decline in equities suggests there may be reasons for a bounce in the coming days but it also highlights that markets had been riding for a fall. Investors, used to an environment of persistently low interest rates and cheap money from central banks, had grown complacent and were ignoring the mounting signs of an economic slowdown. Equities, in particular US technology stocks, had begun to look overvalued. A revision was overdue even before the outbreak of the coronavirus. The market rout has been amplified by the increasing dominance of passive index funds as well as algorithmic trading.

Previous sell-offs in response to a global health epidemic provide only so much insight into where markets are headed. A recent assessment of the market impact of past outbreaks by JPMorgan, including Sars and swine flu, found that a sharp initial stock market decline quickly gave way to a recovery. There is no certainty that a similar rebound will happen this time. There are fresh concerns that the risks of a global recession are mounting. The yield on the US 10-year Treasury note dropped below 1.2 per cent on Friday for the first time to hit 1.167 per cent as investors sought safe havens. Goldman Sachs has warned that profits at US companies will stagnate this year.

The coronavirus outbreak — and the world's policy response to it — are creating a negative shock to both supply and demand that will reduce growth. Strong consumer activity has underpinned the US and eurozone economies. Restricting travel, closing schools and isolating whole communities will have an inevitable effect on spending.

Given already low borrowing rates, monetary policy is limited in what it can do to sustain weakening demand and to prevent liquidity problems. Christine Lagarde last week played down the chances of the European Central Bank providing an imminent response to the virus. Mark Carney, outgoing governor of the Bank of England, meanwhile said Britain should prepare for a downgrade in economic growth. The Federal Reserve on Friday signalled it was prepared to act.

Despite the constraints, policymakers may need to deploy non-standard monetary policy tools. South Korea's central bank last week decided not to cut its benchmark interest rate but noted that a more effective response at this stage was targeted support for sectors and companies most affected by the virus.

An area of focus should be the credit markets and upcoming debt rollovers. Corporate debt has soared over the past decade. A first test could come as soon as the start of June when some $200bn worth of debt is due to mature in the sectors most exposed to a slowdown. Airlines and travel groups in particular are worried about losing business during the summer season.

The longer-term economic fallout remains the big unknown. The number of new cases in China appears to have dropped but in Europe and elsewhere they have kept rising. The worry is that the market rout will turn into a credit crunch. If that looks likely, policymakers need to show they are ready to take decisive action.

There is a landing zone for a UK-EU trade deal

Britain's negotiating paper is not as hardline as the rhetoric suggests

Theodore Roosevelt summed up his foreign policy with the motto, "Speak softly and carry a big stick." The British approach to negotiations on a post-Brexit trade deal with the EU, published last week, reverses that: the substance of the document is much more conciliatory than the often aggressive rhetoric that framed it. As talks begin in Brussels today, there are substantial areas of agreement between the two sides and an outline of a "landing zone" — if there is willingness to compromise.

That is no reason to be complacent. Prime Minister Boris Johnson's government believes brinkmanship and threats unlocked the compromise over the withdrawal agreement last year. His cabinet is comprised of Brexit true believers. The EU and business should take seriously his threat to walk away from the talks. An acceptable agreement is possible, but not inevitable.

Partly that is due to the Canada-style trade agreement the UK is seeking, which will mean there is friction on the borders. Even with no tariffs or quotas there will be administrative and regulatory checks. For many sectors of the British economy that rely on just-in-time supply chains this will feel very similar to having no deal at all. The difference in overall cost to the economy between walking away or securing an agreement is lower than it would be if the UK was seeking more alignment.

A deal is still a big prize. Trading with the EU only on World Trade Organization terms would deeply damage both sides' economies purely through the imposition of tariffs — as high as 10 per cent on cars and 22 per cent on food. The wider agenda of co-operation on regulation, security and services trade makes a deal even more valuable. A breakdown in trade relations between such close allies would be a geopolitical as well as an economic blunder.

Headlines suggesting Mr Johnson would "tear up" the political declaration, the non-binding agreement from the first stage of Brexit talks that set out the rough shape of the future trading relationship, were not borne out by the text of its negotiating approach. Rather than rejecting outright a "level playing field", the paper accepts the principle of non-regression, saying that a trade deal should include commitments not to scale back competition laws or environmental and labour protection.

Neither does the EU's negotiating mandate go as far on a level playing field as some suggest. It only calls for EU law to be used a "reference point" for worker and environmental protections, rather than be directly implemented in the UK. State aid, however — where Brussels wants Britain to continue to follow EU law — is a notable exception. London and Brussels also have very different views on the governance of the new agreement, and the role the European Court of Justice will play. Movement will probably be needed on both sides.

Bellicose language now may be a tactic to ensure any deal can later be "sold" to a UK domestic audience as a success, but does not help build trust. The government's threats to leave the negotiating table unless there is sufficient progress by June aim to raise the stakes for the EU from a breakdown. Not only could the bloc face tariffs but a recalcitrant UK, unwilling to enforce the protocol designed to prevent a hard border in Ireland and blocking EU boats from British fishing waters.

UK evasiveness over the protocol has already eroded trust. Mr Johnson says there will be no regulatory checks in the Irish Sea, though these are required by the withdrawal agreement, but never spells out how. All this is grounds for caution. A deal is there to be done — but there is no guarantee that it will be.

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

Collective action on climate is now pressing

Jeremy Oppenheim's excellent letter (February 27) calls for "a wholesale effort to protect and restore the natural world, on land as well as in the ocean", to accompany the required global transition away from fossil fuels to clean sources of energy.

He is right to stress the complementary nature of these two lines of activity. Preserving the world's tropical rainforests will, indeed, prevent the release of millions of tonnes of stored carbon and help absorb millions more from the atmosphere, as well as ensure that we have sufficient oxygen to breathe.

The matter is pressing, and the younger generation want to see collective action today to halt the deforestation and the overfishing of the world's oceans. Currently, this joint human effort is entirely absent. What is needed is the establishment of UN protection forces for these two domains under the blue beret in order to police them properly. On land these multinational forces would act in support of national troops in the implementation of agreed plans for the sustainable development of the relevant regions, strengthening the latter's resolve and acting as a deterrent to transgressors.

Only in this way will we bring the relentless degradation of our inherited natural environment to a complete stop, allowing us to hand over a conserved ecosystem of precious plant and animal life to the generations that come after us.

Dr John Law
London W2, UK

Capacity case for third Heathrow runway has been overstated

You endorse the Court of Appeal's decision that the UK government's backing of Heathrow expansion was inconsistent with climate change commitments ("Time has run out for Heathrow expansion", editorial, February 28). The capacity case for a third runway has been overstated. Most air travel is for leisure purposes. Even at Heathrow, only 25 per cent of passengers are travelling for business. There is ample scope for this segment to grow, displacing leisure travellers to other airports, as will happen naturally in the market since those on business trips will pay a premium for the advantages of Heathrow. Ultimately, the cost of leisure travel will rise as capacity constraints bite generally.

Hubbub, an environmental NGO, recently reported the results of a survey of UK young adults, finding that half the flights by men aged 20-45 in 2019 were for stag parties and a third of flights by women were for hen parties. Some increase in the cost of leisure air travel would increase the attractions of domestic destinations, with rather little loss of enjoyment.

David Metz
Honorary Professor,
Centre for Transport Studies,
University College London, UK

Cost of leisure air travel will ultimately rise — Universal Pictures/Suzanne Hanover/Kobal/Shutterstock

Europeans have social benefits Americans lack

I read with interest that "Democrats are targeting the riches of the 1 per cent" (Janan Ganesh, February 27), in order to "give Americans universal healthcare, statutory paid leave and other staples of the developed world".

Mr Ganesh dismisses this tax policy, calling it "social democracy as understood by Robin Hood", and points out that it is not similar to European social democratic policy of taxing "more citizens more heavily". Democrats lack the political will, he says. It is all logic, but makes no sense.

The truth is that more Europeans can afford to pay more taxes because they have these social benefits that the middle-class and poor Americans lack. Egg or chicken, you tell me. Successive Republican administrations have successfully raided the Treasury to pay for tax cuts for the richest, while simultaneously attacking the safety nets of the poor, leaving them eking out a living with their meagre incomes.

Yes, I concede, it is now a class struggle, as David Jodrey (Letters, February 27) points out.

R Vijayaraghavan
San Jose, CA, US

No 10's thermostat is on the wrong setting

The UK government's approach that you describe in "Johnson should handle Whitehall with care" (editorial, February 27) will be self-defeating because of an inherent contradiction: the aspiration to inject countercultural thinking coupled with the desire to control and show no tolerance for deviation. Successful change is more likely to come from a climate of discussion, challenge and respect, overlaid by a well-articulated unifying purpose with which adherents can easily identify. However, this approach takes more skill and is therefore side-stepped.

For change to be successful, the knack is to turn up the heat sufficiently to cause discomfort but not burn down the house. I would therefore add that the prime minister's leadership team has No 10's thermostat on the wrong setting.

Simon Holden
Edinburgh, UK

Quick wins for AI in non-clinical healthcare

Brooke Masters compares the challenges ahead for artificial intelligence in medicine to those faced by the designers of driverless cars ("The AI doctor will see you now", February 27).

A lot of hype surrounds AI and its alleged ability to make better clinical decisions than humans. The quick wins for the National Health Service and other providers are non-clinical, such as planning capacity, scheduling appointments and improving efficiencies. These will help overcome the trust barriers and complexities articulated by Ms Masters.

For example, the automation of mundane paper-based processes generates large quantities of data. We use machine learning against these data to predict where bottlenecks might occur and identify better ways of delivering services. This frees doctors and nurses to focus on what they do best, which is providing care with compassion and humanity.

Bryn Sage
Chief Executive,
Inhealthcare,
Harrogate, N Yorks, UK

Help the public learn to trust AI with their health

Was it by design or coincidence that Brooke Masters' excellent article "The AI doctor will see you now" (February 27), on health data monitoring driven by artificial intelligence, should sit next to Prabhat Jha's op-ed "WHO must learn from the IMF to stop pandemics"?

Whereas the Chinese are using facial recognition to track the movements of coronavirus suspects, the future logic of an "at risk" population wearing a BioSticker-type product is compelling. And you can guarantee that, as well as streaming yet more data, they will be made smaller and cheaper.

Looking at the disruption and costs of the current hit and miss approach, we must ensure that society is sufficiently informed and appreciative of why AI-monitored devices will have an essential role, not just in the current virus avoidance, but also general healthcare.

Vivian Bush
Beverley, E Yorks, UK

It's time UK taxpayers stopped funding fossil fuel projects abroad

In an extraordinary 24 hours last week, Teck Resources cancelled a C$20bn project to develop Canadian tar sands, the Anglo-Pacific investment group ruled out investment in new coal mining operations, and Equinor became the third major oil company to abandon plans to drill for oil and gas in the Great Australian Bight marine park. These decisions all reflect the same basic truth: the economics, and ethics, of new fossil fuel projects simply don't make sense in today's world.

So if investors do not see the profit, then why are taxpayers still having to shell out? The UK government continues to use taxpayer money to fund new fossil fuel projects abroad, with backing for a new gas drilling project in Mozambique currently under consideration. The project would be an ecological disaster, destroy the livelihoods of many local people, and produce enormous quantities of climate-wrecking greenhouse gases.

The government should follow businesses' lead and withdraw — and then end all costly and hypocritical fossil fuel funding abroad once and for all.

Aaron Kiely
Friends of the Earth,
London SW9, UK

Scale is not the only factor in online banking success

Further to Revolut's $5.5bn funding round (report, February 25): it is evident that the race for scale in the online banking sector is on. But with fickle customers (see the Ogury research you mentioned in "Fintech users just can't get enough of traditional banks", FT Alphaville, January 7), how many profitable and independent digital banks can Europe realistically stomach?

One should rejoice at the hyper-competition in this sector in the UK, which, in theory, can only be beneficial to consumers. However, what's in it for investors? Not all digital banks will survive (see N26 pulling out of the UK as a potential sign of weakness). And not all of them will be able to do an initial public offering. In this context, it is surprising that trade sales do not seem to be a priority, when there is a multitude of potential acquirers: from retail banks, which have already started buying online banks, to investment banks (think Goldman Sachs becoming a consumer brand) and digital giants (Apple, Alibaba, Google, Tencent) to name but a few.

An IPO is a logical and efficient goal for investors. But in digital tech at large, entry barriers can collapse rapidly. One could argue that the future of an online bank should be more secure if it is part of a large company than if it remains "on its own", listed on a stock market.

The jury is out, but scale is not the only success factor. The timing and nature of an exit might count more.

Christophe Cauvy
Partner,
Intersection M&A,
Oxford, UK

COMMENT ON FT.COM
Nick Butler
European oil majors' climate change steps are good but celebration now is misplaced
www.ft.com/nick-butler

How extremists find solace and identity online

Book review
Siddharth Venkataramakrishnan

Going Dark: The Secret Social Lives of Extremists
by Julia Ebner
Bloomsbury, 368pp, £16.99

Extremists were among the first to grasp the power of the internet as a medium for radicalisation. Stormfront, a white nationalist online forum, was started nearly a decade before Facebook was founded. Encrypted apps such as Telegram have become favoured ways of communication for Isis and affiliates.

The use of the internet by terrorists and their sympathisers has generated a significant number of books in recent years. Julia Ebner, a researcher at the Institute for Strategic Dialogue, makes a compelling attempt to understand how these groups work. *Going Dark* is based around her infiltration of several extremist communities, where she poses as an adherent to get others to open up.

Ebner's comparative work across groups including Isis-aligned hackers, far-right QAnon conspiracy theorists and proud neo-Nazis shows the same sense of community that they offer beyond their ideological differences. It is easy to dismiss extremists' thinking as irrational or inexplicable to moderate society. The reality is both more mundane and more concerning. These groups offer a chance to belong, a chance to have fun and an "antidote to loneliness".

The resulting narrative is more engaging and visceral than many other works on the topic. At times, Ebner's undercover work reads like a thriller. While embedded with European far-right "identitarians", she is nearly discovered when her credit card is picked up by the partner of an Austrian far-right leader with ties to the Christchurch shooter. Later, while waiting to enter a neo-Nazi festival in Germany, Ebner worries that a police background check will lead to her identity being revealed.

In one case, she is not so lucky. After an article she wrote on white supremacists mentioned English Defence League founder Tommy Robinson, the far-right activist arrived at Ebner's office along with a camera crew. The video, which went out to Robinson's thousands of followers, led to threats of violence and death towards Ebner and her colleagues.

Going Dark pulls back the facade of invulnerability and remorselessness that extremists promote with glossy propaganda, to understand those they recruit. Europe's identitarians may look to educated, well-dressed members as their vanguard, she says, but "a recurring theme . . . is identity — a troubled self-image, a broken self-esteem". Similar "profound identity crises" play out on a white nationalist chat group on the gaming app Discord. Ebner finds multiple far-right extremists there who are struggling with non-white ancestry disclosed by DNA tests.

It might be expected that members would be pushed out for failing racial purity tests, and that this might change their world view. Instead, extremists often turn to mental gymnastics, including "even more absurd conspiracy theories". One member of the Discord chat who calls himself "Mr White" claims that the DNA tests are simply a tool of the "Zionist Occupied Government", a classic anti-Semitic canard. "Distrust is one of the key constants that brings individuals to extreme-right channels," says Ebner. She finds similar patterns in Islamist groups: recruiters encourage "situational estrangement" in order to win over would-be supporters.

"Subversion over confrontation", a phrase taken from an identitarian book, is another recurring theme. its implications are clearest when Ebner talks to "trad wives", a group that sits at the intersection between male supremacist and white nationalist ideologies. The language it adopts — attacking feminism and "modernity" — has a certain allure even to Ebner. "It was far too easy to get drawn into this strange place," she admits.

Despite the bleakness of *Going Dark*, Ebner does offer solutions for the problems. Those range from finding ways to "immunise" activists against intimidation attempts to improving algorithmic transparency. Her final recommendation, "education against extremism", is perhaps the most important. Ebner is right to argue that these issues deserve a "human-centred approach" rather than treating them as primarily technological flaws. "Questions around identity, trust, friendship in the online world must be raised if we want to break through the 'us and them' thinking that all extremist movements have in common."

The reviewer is an FT leader writer

Opinion

UK threats to walk away from a trade deal are real

EUROPE

Wolfgang Münchau

Here's an astute observation from a former senior British official in the EU, which came during a conversation about political misjudgments: in the corridors of Brussels, one no longer bumps into Brits to talk about how the politics is shaping up back home. There is nobody around any more at the heart of the EU machine to tell you what the UK government is really thinking.

This decline in informal contact set in long before the UK officially left the EU at the end of January. It was part of the reason why EU politicians and journalists ended up underestimating support for Brexit in the UK at the 2016 referendum and afterwards. And now they may be misreading the UK's implicit threat to end the trade talks in June.

The fundamental assumption in Brussels is that this will not happen. But can it be right? In the absence of perfect foresight, the best we can do when weighing up the possible success of the trade talks is to rely on revealed preferences — and from both sides.

The EU said loud and clear last month that it would not grant a Canada-style free trade agreement to the UK. The council of ministers has since hardened its position. I do not think the EU can easily climb down.

On the UK side, the signs are also clear. Boris Johnson began his premiership last summer by proroguing parliament. He went on to fight and win a general election.

The Conservative manifesto on which he has gained his mandate was explicit not only about going through with Brexit, but about establishing a distant future relationship with the EU.

After his election victory, Mr Johnson ruled out an extension of the negotiating deadline for a trade deal at the end of this calendar year. The UK parliament even passed legislation to that effect. He is, what's more, backtracking on the level playing field commitment in the political declaration attached to the Brexit withdrawal agreement. He seems to be backtracking on the customs border in the Irish Sea as well. He got rid of a chancellor of the exchequer in Sajid Javid who would have constrained some of his fiscal plans to increase investment in pro-Brexit areas and support new high-tech industries.

> London and Brussels have turned these negotiations into a zero-sum game

Both plans could easily run into conflict with EU rules on state aid.

Whatever you might think of Mr Johnson, this is a remarkably consistent story. So why would anyone think that he is bluffing?

Classic trade negotiations are win-win games. The negotiations that start today will be different. Both sides have framed their objectives in terms of regulation, not of trade. The UK seeks maximum regulatory independence. The EU wants to prevent it on grounds of competition. If you take the politics out, it is not hard to construct a technical compromise. But there is no deal imaginable that would allow both sides to declare victory in terms of their stated goals. They have turned it into a zero-sum game.

Also consider another unusual aspect of this negotiation. The UK may be the smaller country, but it can secure its chief negotiating goal of regulatory independence unilaterally by walking out. The EU cannot do the same.

The political reality in the UK is that Mr Johnson has a House of Commons majority of 80, and many of these MPs owe their political careers to him. There will be no rebellion. The worst to expect from the business lobby would be a raised eyebrow. British businesses are not going to stop Mr Johnson just as the German carmakers will not stop the EU.

Maybe we should start looking at second-best options: a no-deal outcome followed by a trade agreement a year or two later. This would clearly not be economically efficient. Both sides would incur the costs of no-deal first, the UK more than the EU. But at least we would find ourselves in a scenario where both sides stand to regain trade flows that had been lost in the rupture. The problem today is that the losses are hypothetical. In two years, they will have materialised. That could make it easier for the UK and the EU to calculate gains from a zero-tariff, zero-quota agreement.

This means that Europe as a whole, the UK included, should prepare for two foreseeable material economic shocks this year: a spread in the coronavirus and a WTO Brexit. I agree with Mark Carney, governor of the Bank of England, that the economic impact of Brexit on the UK is genuinely uncertain. Success or failure will depend on what the UK does with its new freedom.

The EU faces all these shocks, plus perhaps US tariffs on cars: the perfect storm for an economy dependent on exports and global supply chains. The EU cares deeply about institutions and laws, but lacks strategic thinking in virtually all policy areas. Brexit is not the biggest crisis for the EU, but it could end up as the wrong one at the wrong time.

munchau@eurointelligence.com

Margins are going to be squeezed

BUSINESS

Rana Foroohar

If there is a simple lesson to be drawn from last week's market rout, it is that there is fragility in complexity. The coronavirus outbreak has, like the 2011 Japanese tsunami and Thai floods that disrupted auto and electronics businesses, or the 1999 earthquake in Taiwan that brought the semiconductor industry to a halt, shown us the vulnerabilities of our highly interconnected economy and global supply chains.

This time around, the trigger is an outbreak spreading outwards from China, still the factory of the world as well as its second-largest economy. It comes at a time when US politics are in flux, and we are in the midst of what Ray Dalio, founder of the Bridgewater hedge fund, recently called a "paradigm shift" for both markets and economies. This is a new era in which few of the old rules will apply.

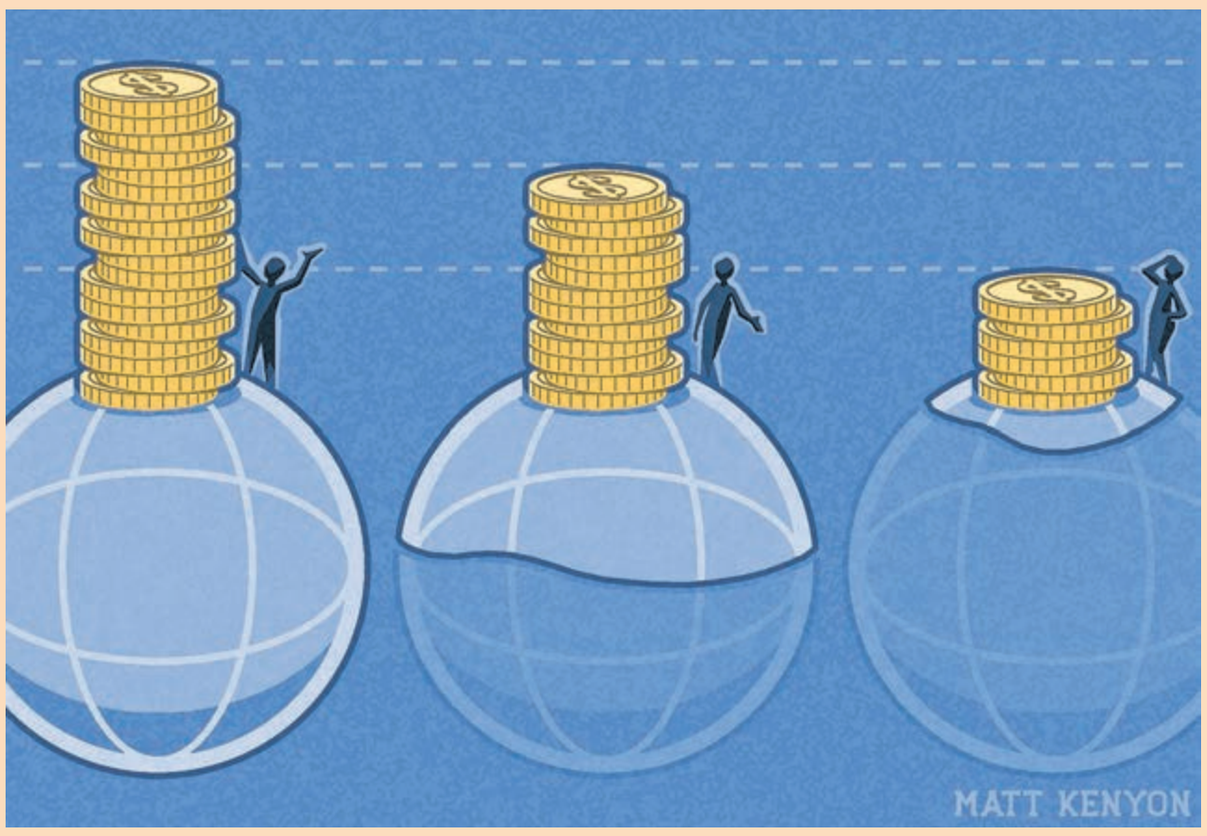
Goldman Sachs last week warned investors to expect zero profit growth from US companies this year, mainly because of the growing impact of the virus. But I wonder how much profit growth big corporations will be able to expect even after the infections play out and the results of the November US presidential elections come in.

In this new and unsettled era, the main forces that have propelled profit margins over the past 40 years or so — globalisation, increasing corporate concentration, a lower tax burden for corporations versus workers, and a larger share of wealth going to companies versus workers — are all facing headwinds.

The healthy margins of today's highly optimised, extremely complex multinational corporations have largely depended on their ability to manufacture in China, sell in the US and Europe, and stash wealth wherever it makes most sense — particularly in favourable tax destinations like Hong Kong, Dublin or the Cayman Islands.

As Gavekal founding partner Charles Gave put in a client note last week, these companies have become as optimised, fast paced and high performing as English rugby player Manu Tuilagi. "Yet, as England fans know, the problem with Tuilagi is that injuries mean he is seldom available to put on the white shirt. The more optimised a system is, the more fragile it potentially becomes."

I've wondered for years when the fragility inherent in complex global multinationals would force them to shift their business models, and I think we've reached that moment. I believe coronavirus will speed the decoupling of the US and Chinese economic ecosystems, increasing regionalisation and localisation of production. That may result in "supply chains that are less efficient but more resilient", says Mike Pyle, BlackRock's chief global investment strategist. He also believes the trend towards decoupling and deglobalisation will speed up in the wake of the virus.



A pullback from no holds barred globalisation may come with some upsides (see Raghuram Rajan's book *The Third Pillar* for more on that). However, it will cost companies more in the short to midterm. There is only so much production slack that countries like Vietnam can quickly pick up from China.

If decoupling continues, multinationals will have to make costly choices around labour, productivity and transport in order to manage a shift away from China. That's something that many investors are counting on, given that the two most likely winners of the 2020 US presidential elections, Donald Trump or Bernie Sanders (now seen as the Democratic favourite by many) both believe that greater economic nationalism is a good thing.

> I find it hard to imagine corporate taxes or labour's share of income going any direction but up

Mr Sanders and many other Democrats would also like to curb corporate concentration, which has helped boost margins but reduced government tax revenues, labour's share of revenue and competition. Many on both sides of the US aisle (not to mention in Europe) would be happy to curb the power of Big Tech, which is responsible for the single largest chunk of the S&P 500 for varying political reasons, from national security and competition concerns to privacy and tax justice.

Beggar thy neighbour tax politics (to which the US capitulated in 2017 with Mr Trump's tax cuts and rule changes) have bolstered corporate margins for decades. But that looks to be shifting, too, with some European countries taxing tech giants, the OECD putting pressure on member states to work together on new digital tax rules, and states including California considering things like a digital dividend tax. In a world where populists are gaining influence, I find it hard to imagine corporate taxes or the labour share of income going in any direction but up.

Meanwhile, the spectre of slower growth or even recession by November, makes a Sanders presidency more likely. Even if Mr Trump were reelected or the US Federal Reserve approved more quantitative easing, I doubt that US corporate profit margins will return to levels anywhere near where they have been in the past several years.

Mr Trump is, predictably, urging investors to buy equities. But the right response to that advice depends on whether you think we're going back to business as normal for the longer haul. I don't. We may well see the market begin to come back. It would respond positively to additional monetary stimulus from the world's central bankers or a slowing of the spread of coronavirus, or both. But I doubt that shape of the share price graph will be a perfect V. The other big V — the virus — has exposed too much vulnerability.

rana.foroohar@ft.com

The EU should regulate Big Tech as 'attention utilities'

Tristan Harris

The European Commission's new digital strategy missed a momentous opportunity to better shape our global future. While it may create marginal advantages for the bloc in the race to control data and artificial intelligence, it fails to address the way digital technology platforms are degrading democracies. That will undermine the EU's ability to accomplish its agenda.

When I was working as a design ethicist at Google, I saw how the emergence of the "attention extraction" business model led to vast individual and societal harms. The social media platforms now intermediate the way we construct shared truths and social relationships.

This business model sells advertisers and political actors highly sophisticated techniques to manipulate individuals and the public sphere. Children and teens are especially vulnerable.

The commission has earned a reputation as the world's foremost online watchdog. Brussels' General Data Protection Regulation has become the gold standard for data protection — about 120 countries have adopted privacy laws — and its proposal to create a shared data pool has merit. But the new EU strategy, despite its attempts to lay down rules for artificial intelligence and data use, fails to grapple with the underlying crisis.

Signs include rampant polarisation, extremism, fake news and toxic tribalism, which are amplified by today's major digital platforms. Tech companies are distracting, dividing and outraging citizens to the point where there is little basis for common ground. This is a direct threat to democracy

For example, the EU wants a Green Deal — but how can it achieve that if a majority of YouTube climate change videos oppose the scientific consensus, as one 2019 study showed? How can the bloc promote unity and democracy if tech platforms amplify extremism and spread conspiracies that inspire mass shootings and divide society?

While nations protect their physical borders, tech platforms leave digital borders wide open. In more than 70 countries, disinformation campaigns have been used to undermine elections, swing referendums and elect quasi-dictators. If Russia tried to fly a fighter jet into EU airspace, they would be met by Nato. But if Russia launches content intended to sow division and fracture the EU, Facebook and Google's powerful automated microtargeting algorithms are there to help. We must not ignore the lessons from the Cambridge Analytica scandal.

> Commission has a chance to convert online lawlessness into humane, regenerative technology

This crisis gives the commission a chance to convert online lawlessness into humane and regenerative technology that will lead the world. Platforms such as Google, Facebook and YouTube are creating the public infrastructure of the digital age; we should treat it as we do telephones, trains or power grids.

First, the EU should create a new corporate classification for large, dominant social platform businesses that have created vital public digital infrastructure. These "attention utilities" should be required to operate in the public interest, according to rules and licences that guide their business models.

Traditional companies have been subject to licensing for many years. Attention utilities should be required to obey limits on data extraction and message amplification practices that drive polarisation, and should be required to protect children. We should ban or limit microtargeting of advertising, recommendations and other behavioural nudges.

Second, instead of relying on revenue based on advertising, attention utilities should be required to convert to a monthly licence fee model a bit like the BBC or a subscription like Netflix. They must adhere to the terms of an operating licence framed by a duty of care. Margrethe Vestager, the EU antitrust commissioner, has suggested Facebook should use a subscription model.

Third, attention utilities should be subject to a "social impact assessment", in which their new products are evaluated for their potential impact on mental health, social isolation, fake news, polarisation and democracy. This preclearance would be akin to an environmental impact assessment or safety protocols used for medical devices.

Finally, the EU should create a new directorate to regulate and oversee an industry that is increasingly central to every aspect of our lives. It should identify key research needs, require platforms to be interoperable and help other EU agencies to apply existing law to online companies.

The EU can lead the world toward more humane technology. But doing so requires thinking more broadly about reining in social media platforms to prevent them from degrading our democracies.

The writer is president and co-founder of the Center for Humane Technology

Beware 'badwill' in European bank mergers and acquisitions

Simon Samuels

Europe's largest banks are undergoing the biggest chief executive shake-up since the financial crisis. As these new leaders inevitably come up with updated strategic plans at their new institutions, dealmaking is bound to form part of them.

Andrea Enria, who chairs the European Central Bank's supervisory board, signalled earlier this year that the body is actively looking at ways to make bank mergers and acquisitions easier. But the ECB is deploying more than just warm words. It is also smiling favourably on an accounting manoeuvre that will make deals more possible — the creation of negative goodwill or, as it is more widely referred to, "badwill".

Indeed, leaders of Italy's second-largest bank, Intesa Sanpaolo, specifically cited the generation of several billion euros of badwill as an important rationale for their recent unsolicited €4.9bn bid for smaller rival UBI Banca. That is because, in the sometimes topsy-turvy world of bank accounting, badwill is good and goodwill is bad.

When one company buys another, it normally pays a premium above the undisturbed share price that reflects the price for taking control. That is also usually higher than the so-called book value of the company, which is the sum of all its assets less all of its liabilities. This gap is called goodwill.

However, valuations are upside down today for most European banks: most of them have a market capitalisation that is below their book value. In the case of UBI Banca, despite Intesa's offer price of €4.9bn being 30 per cent higher than its current share price, it is below UBI Banca's book value of nearly €8bn. Intesa is paying less than the accountants say UBI Banca is worth. This gap between the price paid and the book value is badwill.

> In the topsy-turvy world of bank accounting, badwill is good and goodwill is bad

For banks, this badwill could have enormous value. The ECB has been hinting that banks will be able to boost their capital ratios, by generating a one-time paper "profit" that counts as capital. Mr Enria alluded to this possibility last summer when commenting on potential badwill arising from the aborted Deutsche Bank-Commerzbank merger.

Intesa is so certain that this badwill will be available that it has already outlined to investors how it would use it. And with most European banks currently trading well below their book value — thus creating the possibility for badwill — the ECB's generous treatment could encourage bank-sector M&A.

But is this sensible? It is widely accepted that paying €100 for assets valued at €50 creates a negative charge that needs be written off. But does paying €50 for assets valued at €100 really create a windfall that can then be spent? The answer depends on whose valuation we should trust. Is UBI Banca worth the €3.8bn the stock market awarded it before the bid, the €4.9bn Intesa is offering, or the €8bn the accounting book says its assets are worth?

Back in 2011 Andy Haldane, now chief economist at the Bank of England, tried to address this issue by comparing banks' published capital ratios, which are based on book values, with "market based" capital ratios, where the book value was replaced with the stock market value. When he applied this to pre-2008 capital ratios, the results were emphatic. The accounting-based ratios completely failed to identify banks that would subsequently collapse, but the market-based ratios proved unerringly accurate. The collective wisdom of the stock market crowd knew more than accountants or regulators.

This conclusion has important implications for European bank M&A. Rather than presuming that a lender's book value is accurate and considering adjustments during the sale process, perhaps regulators and investors should assume the stock market valuation is correct and acquirers should be forced to justify a higher offer. After all, it's just possible that badwill really is bad.

The writer is a banking consultant at Veritum Partners

Fantasy football
US soccer teams attract frothy valuations despite losses
COMPANIES & MARKETS

Stuff the inspiring types, find me an anti-role model

Emma Jacobs
Business Life

What not to do: Meryl Streep in 'The Devil Wears Prada' — Fox 2000 Pictures/Moviestore/Shutterstock

I am tired. Not just from being at my desk too long and staying up too late (though both are true). It's something altogether different: inspiration fatigue.

I discovered my malaise after receiving an email offering to introduce me to inspirational women. I hit delete. This is a difficult time of year. Ahead of International Women's Day, inspiring women come out in droves. But, in fact, inspirational men and women are with us all year — at conferences, as after-dinner speakers and in books, urging us to take control of our careers and reach for the top.

"Inspirational", as applied to business figures, sums up many of the things that are wrong with the modern ideology which frames work as a quasi-religious experience.

The inspiration market is booming; there is a publishing industry devoted to cataloguing inspirational figures.

On my desk is a motivational book by Ben Williams, a former drug addict who became a marine. In his book, *Commando Mindset*, he writes that inspiration can "be fun and make you feel good. An inspiration can make you punch the air with excitement. But it can also be sobering." In other words, inspiration is whatever you want it to be.

Recently, Hillary and Chelsea Clinton wrote *The Book of Gutsy Women*, in which they describe heroic figures "with the courage to stand up to the status quo, ask hard questions, and get the job done".

I can see that Hillary is gutsy and even (whispers), inspirational. But I fail to see what I could learn from her daughter, aside from the realisation that being born to American political royalty gives you a huge advantage.

It is inspirational women that I find particularly irksome. With the emphasis on success, they put a gloss on difficult workplace issues — like the gender pay gap. As Shani Orgad, author of *Heading Home: Motherhood, Work, and the Failed Promise of Equality*, puts it: "The trouble with role models is that they individualise and personalise issues." It's all about the plucky individual, rather than focusing on changing the structures of the workplace.

This is a difficult time of year. Ahead of International Women's Day, uplifting women come out in droves

An inspirational label puts pressure on the role models, too. Inevitably they are inundated by requests for mentoring, to speak at events, to do work beyond their actual jobs.

Elisabeth Kelan, a professor of leadership and organisation at the University of Essex, warns her students against seeking for inspirational women. "I normally encourage women to pick more specific behaviours to emulate, like the way they lead meetings, mentor their team or have dinner with their children. These composite role models are more concrete and realistic."

May I suggest an alternative? An anti-role model. These are un-spirational people who show you the path to avoid. There are those who teach the perils of perfectionism, or not to be vile to colleagues. A friend has learnt from their manager never to belittle their team and hold them back. "Their progress doesn't detract from your own," she says, but the reverse.

Another friend told me that she left her company and thanked her boss, who she couldn't wait to escape. "What did I do?" the boss asked, fishing for compliments.

As my friend looked at her boss, she realised he was her anti-role model. She never wanted to become like him: exhausted, overworked and trapped by their job. In that moment, she felt vindicated by her decision to leave and grateful for the unspiring lesson.

When I look back to the people who have made a difference to my career, it's not inspirational figures kicking ass and all the other slick empowerment mantras but ones who spotted potential in me, gave me opportunities, or, better still, a pay rise.

One only needs to listen to former Arsenal footballer Ian Wright's interview on BBC radio's Desert Island Discs to be reminded of the importance of such people.

It was moving to hear him talk about the teacher who took him under his wing. "I don't know why he chose me but he did," Wright said. "He gave me responsibility . . . It was really good, I just felt important. He just gave me a sense of feeling like I had some use."

emma.jacobs@ft.com
Twitter: @emmavj

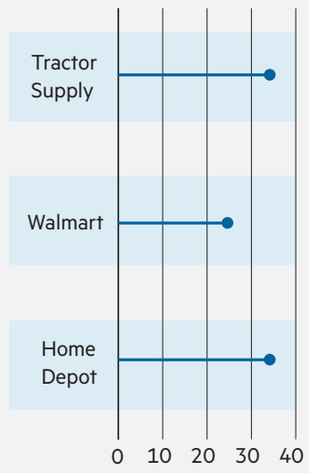
Lex.

Tractor Supply/hobby farms: field of dreams

Many farms are not businesses
US, % of total in 2018

Source: US Department of Agriculture

Tractor Supply has healthy margins
Gross (%) 2019



Source: S&P Capital

Retirees. Dirt-loving hipsters. Modern homesteaders. Whatever the moniker, more Americans seek the pastoral life these days and the number of "hobby" farms across the country has risen. That is good news for those retailers that cater to their needs.

Almost 820,000 farms were run by people who had other primary jobs in 2018, according to the Department of Agriculture. Recreational farms accounted for more than 40 per cent of the total, up from 38 per cent in 2012. Equally as telling: in 2012-17 only the smallest (less than 10 acres, or 4 hectares) and the largest (2,000 acres, 800ha, or bigger) rose in number, the agency noted.

All this has yielded good business for Tractor Supply. Founded in 1938, the Tennessee-based retailer's sales have grown by more than half over the past five years to $8.3bn. That is no small feat. Other department stores such as Macy's have shed billions in revenue and market value over the same period.

Some of Tractor Supply's new-store openings have been on sites abandoned by struggling chains such as Kmart and Bed Bath & Beyond.

Despite its name, Tractor Supply does not actually sell tractors at any of its 1,844 small-box stores. But it does have everything else that small-time farmers need to run their farms and look after their pets and livestock. Shoppers can buy chicken coops, cattle gates, work overalls, snow ploughs and gardening and power tools.

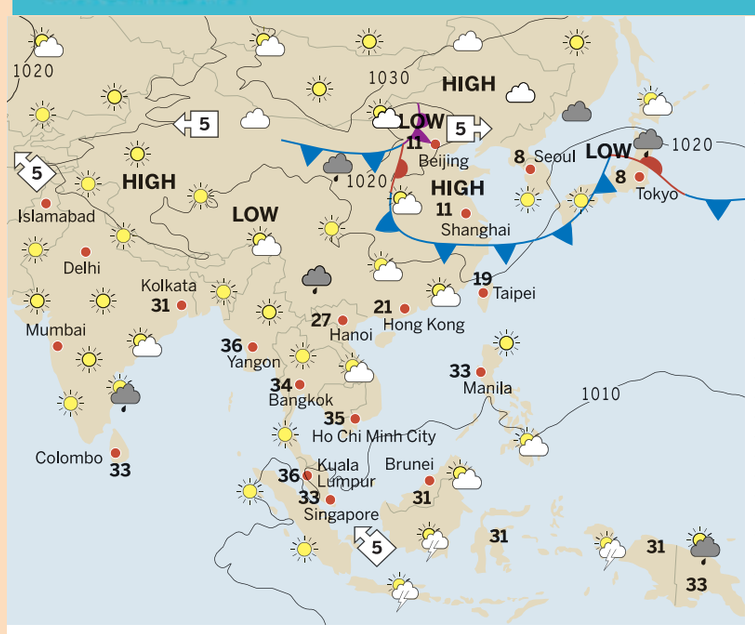
Its specialised focus and merchandise mix (one-third of its sales are from its own private labels) have helped shield it from online competitors. Try to buy 40lb (18kg) bales of chopped hay from Amazon. Tractor Supply also has very respectable gross and operating margins (9 per cent) compared with Home Depot, and better than Walmart.

Clever marketing helps. It woos followers with blog posts devoted to horses, chicken raising and beekeeping. Recent topics include raising therapy goats, chainsaw-sharpening tips and hotspots for ice-fishing.

Selling to rural communities does pose unique challenges. There is a lack of broadband in farm areas — 80 per cent of those without reliable, low-cost connections in America reside there, says the USDA. Tractor Supply thus focuses on shopping via smartphones.

Tractor Supply prefers its customers in plaid flannel shirts. No need to target label-conscious, young millennial professionals. It has done well from harvesting dollars in the countryside.

WEATHER



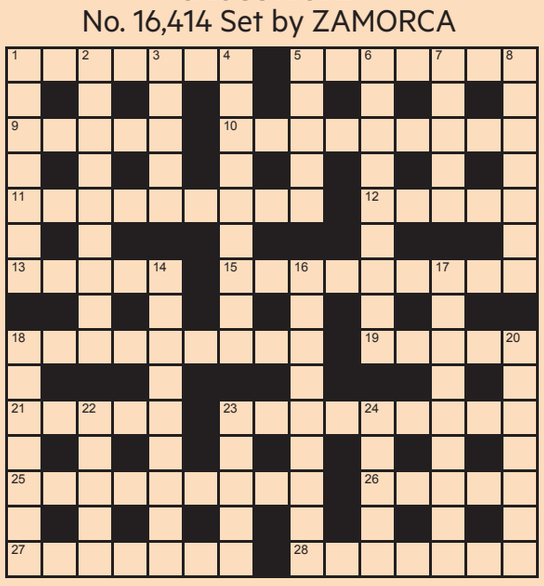
Forecasts by MeteoGroup
Warm front Cold front Occluded front Wind speed in KPH

Today's temperatures Maximum for day °C

Amsterdam	Rain	7	Malta	Sun	20
Athens	Fair	19	Manila	Sun	33
Bangkok	Sun	34	Melbourne	Cloudy	17
Barcelona	Fair	19	Mexico City	Sun	28
Beijing	Cloudy	11	Montreal	Rain	3
Berlin	Drizzle	10	Moscow	Drizzle	6
Brussels	Shower	9	Mumbai	Sun	30
Budapest	Fair	14	Munich	Fair	9
Buenos Aires	Sun	34	Nairobi	Rain	26
Chicago	Fair	7	New York	Fair	12
Copenhagen	Shower	7	Oslo	Shower	5
Dallas	Fair	22	Paris	Rain	9
Delhi	Sun	27	Perth	Sun	28
Doha	Sun	25	Prague	Fair	9
Dubai	Sun	29	Rio	Thunder	25
Dublin	Hail	7	Rome	Shower	17
Edinburgh	Shower	6	San Francisco	Sun	20
Frankfurt	Shower	10	Seoul	Sun	8
Geneva	Rain	7	Shanghai	Fair	11
Hamburg	Cloudy	9	Singapore	Fair	33
Hong Kong	Fair	21	Stockholm	Cloudy	7
Istanbul	Sun	16	Sydney	Fair	33
Jakarta	Fair	31	Taipei	Cloudy	19
Johannesburg	Shower	19	Tokyo	Rain	8
Karachi	Sun	32	Toronto	Rain	7
Kuala Lumpur	Sun	36	Vancouver	Rain	8
Kuwait	Sun	23	Venice	Shower	11
Lisbon	Fair	17	Vienna	Fair	13
London	Sleet	9	Washington	Fair	17
Los Angeles	Sun	21	Wellington	Cloudy	21
Luxembourg	Rain	7	Yangon	Sun	36
Madrid	Shower	14	Zurich	Shower	7

Join the champions of better business
Subscribe now at ft.com
FT Weekend FINANCIAL TIMES

CROSSWORD
No. 16,414 Set by ZAMORCA

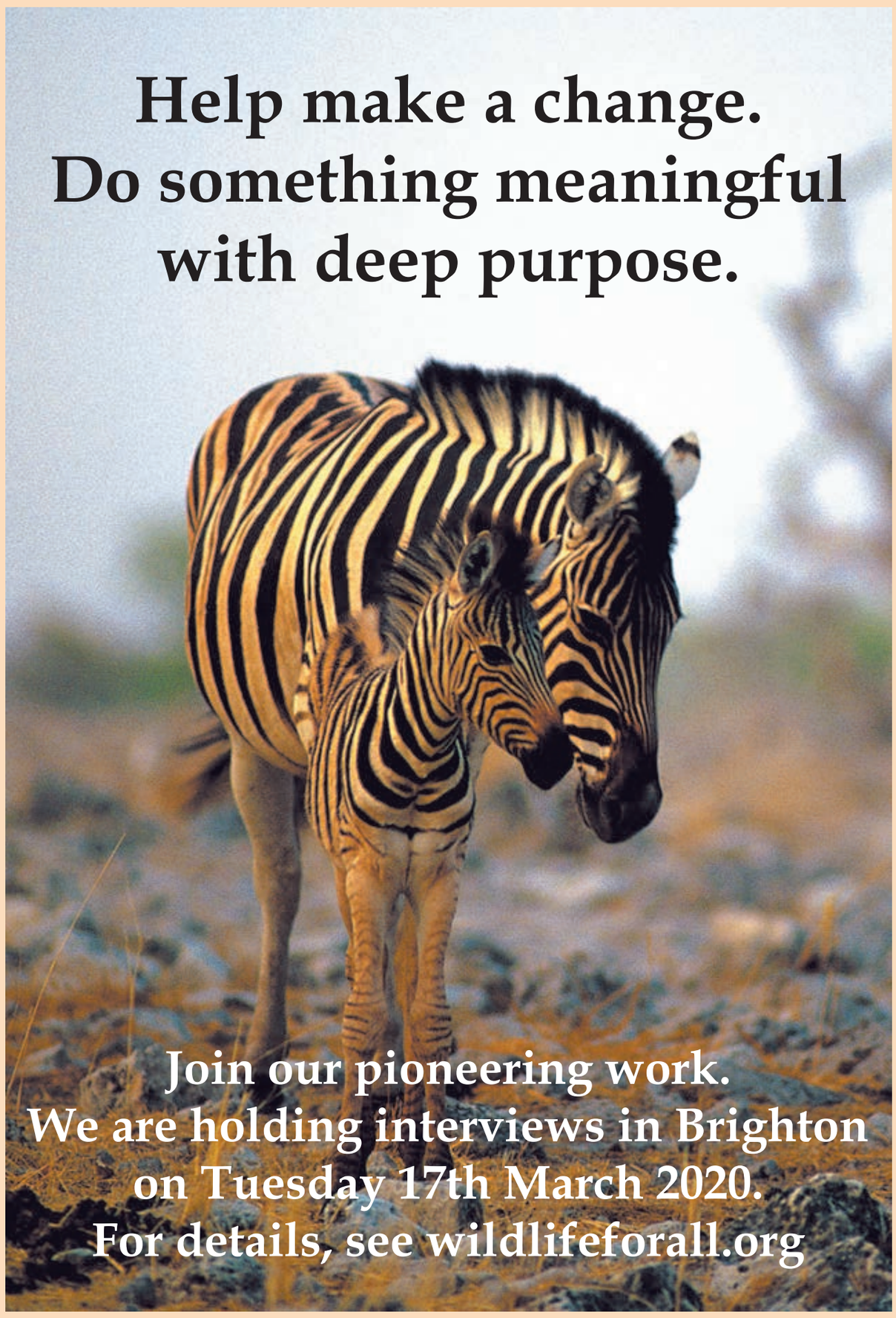


ACROSS
1 Soldiers left two pints unfinished before argument (7)
5 Racket during bash spoiled holy day (7)
9 Jack in drugs to get court discharge (5)
10 Introducing discussion of fish in Crosby (9)
11 Translate Pinter play first in Russian and French (9)
12 Heard angry calls for alcohol (5)
13 Cause contamination of dressing (5)
15 Rude old fellow swamps me with very extreme language (9)
18 A maths geek's no good when forced to hurry (4,5)
19 Predatory animal has female bird protecting young one (5)
21 Get rid of wasteland (5)
23 Thought company nervous having lost leader (9)
25 Eager for mischievous child to get a connection with books (9)
26 Dismantle canape and remove a nut (5)
27 Times without number, regret being unfaithful (3,4)
28 Decide to do puzzle again (7)

DOWN
1 Challenges point in risqué production (7)
2 Amazed to pronounce rower beaten (3-6)
3 Device going round either way (5)
4 Wearisome debts after childbirth in America (9)
5 Way to take away fat (5)
6 Form of support for ordinary members? (4,5)
7 Morning turn around island with Spanish friend (5)
8 Cleaning routine picked up important bit of DNA (7)
14 Artist displaying work in old house's keeping one section restricted to Americans (9)
16 Fine crew bringing in King and Queen's vessel (9)
17 Duplicate papers briefly tempt top grade student (9)
18 Fail to get on satellite-bearing space flight (7)
20 Worker in high mountains reduced to a slow tempo (7)
22 Regularly reed grass is put in a new container (5)
23 Vocal group from town in Cheshire (5)
24 Spelling mistakes found in community posters (5)

JOTTER PAD

Help make a change.
Do something meaningful
with deep purpose.



Join our pioneering work.
We are holding interviews in Brighton
on Tuesday 17th March 2020.
For details, see wildlifeforall.org

Business Education

Online Learning

Monday March 2 2020

www.ft.com/reports | @ftreports

An accessible option — but not always a cheaper one

As demand for online MBAs surges, providers are adopting different strategies. By *Jonathan Moules*

The future of the MBA is digital. While the number of applications for places on campus-based courses has declined globally for the past two years, demand is up for most online MBAs.

Online MBAs outgrew all other professional MBA programme types in the US in 2019, according to the applications data gathered each year by entrance test administrator the Graduate Management Admission Council (GMAC).

"The shift is from all forms of physical study to online," Sangeet Chowfla, GMAC president, says. "Online gives new options for people who used to go for the part-time evening or weekend programmes as well as the new generation who have grown up digital."

There is some evidence that online MBAs are cannibalising campus-taught courses. The MBA.com Prospective Students Survey last year found that 42 per cent of those considering part-time study were also considering an online MBA, up from 32 per cent in 2015.

However, it is also true that online programmes are drawing in people who would never previously have considered a business education, either because of the flexibility offered by being able to study wherever and whenever you like or because of the lower cost of such courses.

"The demographic of the typical online student is older and more experienced than campus-based students," Mr Chowfla says. "Therefore it cannot be just a case of online courses taking away demand from campus-based courses."

Business schools are reacting by increasing their online MBA offerings. Five years ago just 20 per cent of the 862 institutions accredited by the Association to Advance Collegiate Schools of Business (AACSB) said they offered an online MBA. At the end of the last academic year, this had grown to 35 per cent.

"Learners demand more options, which is why we have also seen a growth in specialist, accelerated and part-time masters programmes," says Juliane Iannarelli, AACSB chief knowledge officer.

Schools, she adds, have become better at delivering online education,

Continued on page 2

Inside

The Financial Times online MBA ranking
The top 10 courses from around the world
Page 3

Tech ventures reshape business education
New disrupters want to profit from a world that's hungry to learn
Page 2

Online or on-campus?
Students need to weigh the benefits of flexibility versus networking
Page 2

The perfect blend
How an MBA helped one student build her career in coffee
Page 4

Masterclass
Insights into strategy, luck and irrational bias from this year's top-ranked school
Page 4

Digital degrees open doors to broader student demographic

Diversity

Business schools want a more varied student intake. Technology may offer a solution, writes *Seb Murray*

Lizette Melendez grew up in El Paso, one of the poorest cities in Texas, and was the first in her family to go to university. Now the American, who is Latina, is studying for an MBA at a top US business school.

She is not doing so in the conventional way. Ms Melendez is part of the first cohort in the MBA@Rice, launched by Houston's Jones Graduate School of Business at Rice University in 2018 on the 2U online learning platform.

Most of the course is delivered digitally. Flexibility was important for Ms Melendez, who could not afford to quit her job as policy adviser to a member of the Austin, Texas, city council because of undergraduate loan debt.

Experiencing financial hardship has inspired Ms Melendez to explore launching a social enterprise, possibly to raise financial literacy in public schools. She is therefore keen to hone her business skills.

Peter Rodriguez, dean of the school, claims that the MBA@Rice is a step towards democratising business education. The lowest and highest student incomes in the online cohort are below those in the executive MBA class, which is similar in age and experience, he says.

"It is not such a significant difference that they have blue-collar jobs. But online education helps combat the geographical and cost challenges of getting an MBA," says Prof Rodriguez.

Enrolling a diverse intake is a priority for most business schools, including students from less affluent backgrounds. Diversity of thought improves classroom discussion, the schools argue.

Technology can lower the financial barriers to a full-time MBA, such as quitting a paid job and funding steep tuition and living fees. It can also improve access for people from poorer areas who do not live near top schools.

The most elite residential MBAs cost upwards of $200,000 — not including the lost earnings from full-time study. With schools incurring smaller costs for classroom facilities, digital degrees are often a fraction of the price.

MBA on the way: Lizette Melendez

The $22,000 iMBA from the Gies College of Business at the University of Illinois at Urbana-Champaign is about $61,000 cheaper than the campus version, which is being phased out, though Illinois residents get a hefty discount.

Jeffrey Brown, dean of Urbana-Champaign, says that larger online class sizes offset the substantial cost of paying faculty to teach. "Online learning is an economies-of-scale game."

He adds: "We are making a high-quality MBA accessible to people who otherwise would not be able to afford it."

But there are no agreed definitions of socio-economic status, or consistent standards for measuring progress on financial diversity.

> 'It is a misconception that high-quality online education is easy and cheap to produce'

Evidence is hard to come by; complicating matters is the fact that online MBA students tend to have significant work experience and a correspondingly decent income. However, some students are the main breadwinners supporting their low-income families, says John Colley, associate dean at the UK's Warwick Business School.

Online MBA students also come from multiple countries with different income levels and purchasing power.

Some programmes are as expensive online as they are on campus, raising questions about their accessibility. North Carolina's Kenan-Flagler Business School charges $125,589 for its online MBA, just shy of the full-time fee ($133,252 for those who do not reside in the state).

Kenan-Flagler's dean, Douglas Shackelford, keeps online classes small to maintain interaction, which he argues is reduced in large groups and inflates the cost of faculty.

"It is a misconception that high-quality online education is easy and cheap to produce," says Prof Shackelford, adding that his business school offers a limited number of scholarships based in part on a student's financial need.

If costs are minimised, virtual study can be a vehicle for social mobility, according to Lisa Umenyiora, executive director of careers at Imperial College Business School.

Of the London school's online MBA cohort that graduated in 2019, 67 per cent changed roles within four months and many were promoted, Ms Umenyiora says. The average salary increase was 32 per cent.

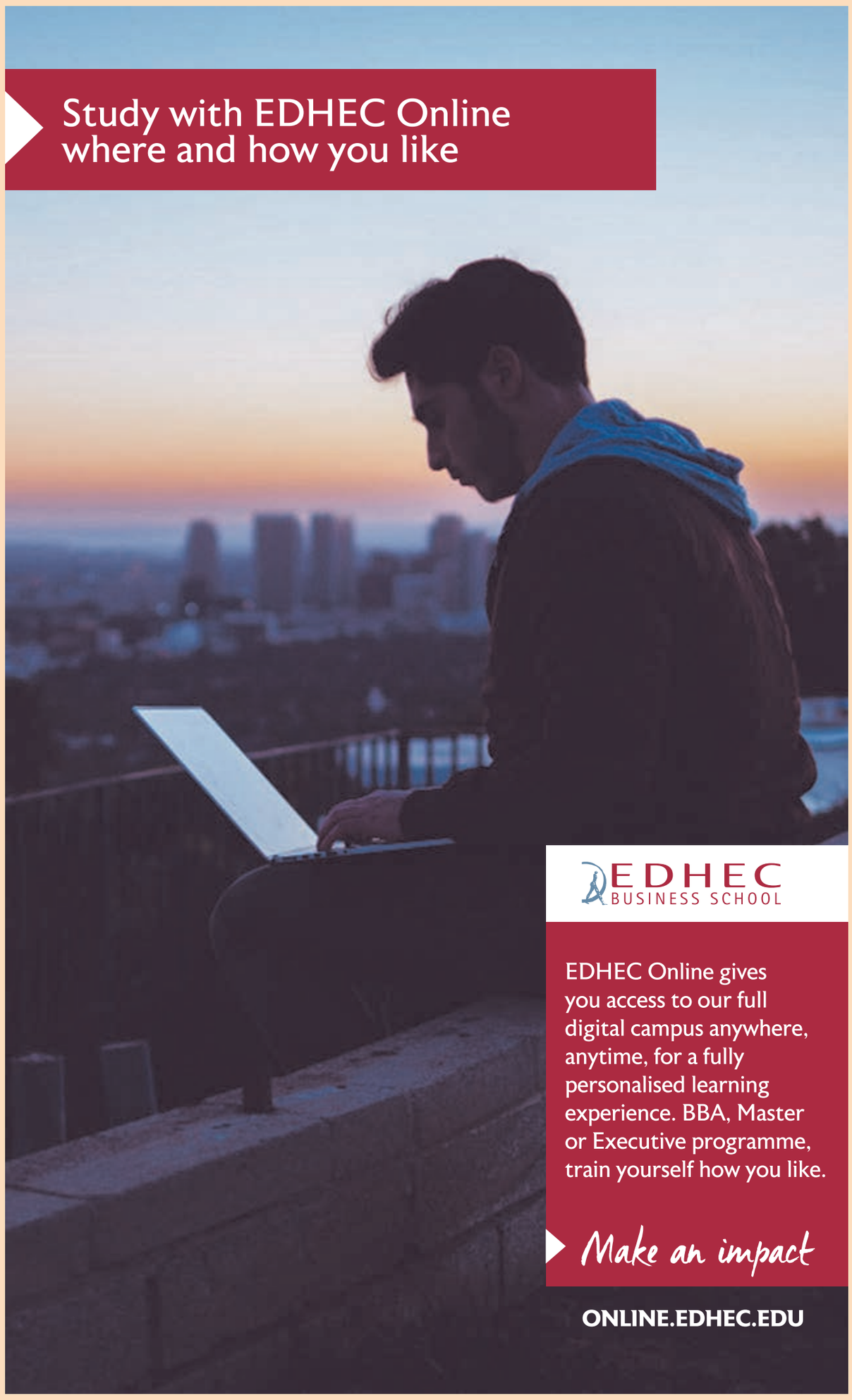
Ms Umenyiora adds that, unlike at some institutions, Imperial's online students have access to all of the school's career services, including individual appointments with careers consultants.

However, Prof Rodriguez at Rice: Jones says that online students may miss out on vital networking opportunities with students, professors, alumni and corporate recruiters.

While many business schools have built digital networking platforms, he says they require more effort and coordination to use. "Networking is more incidental and frequently available on campus."

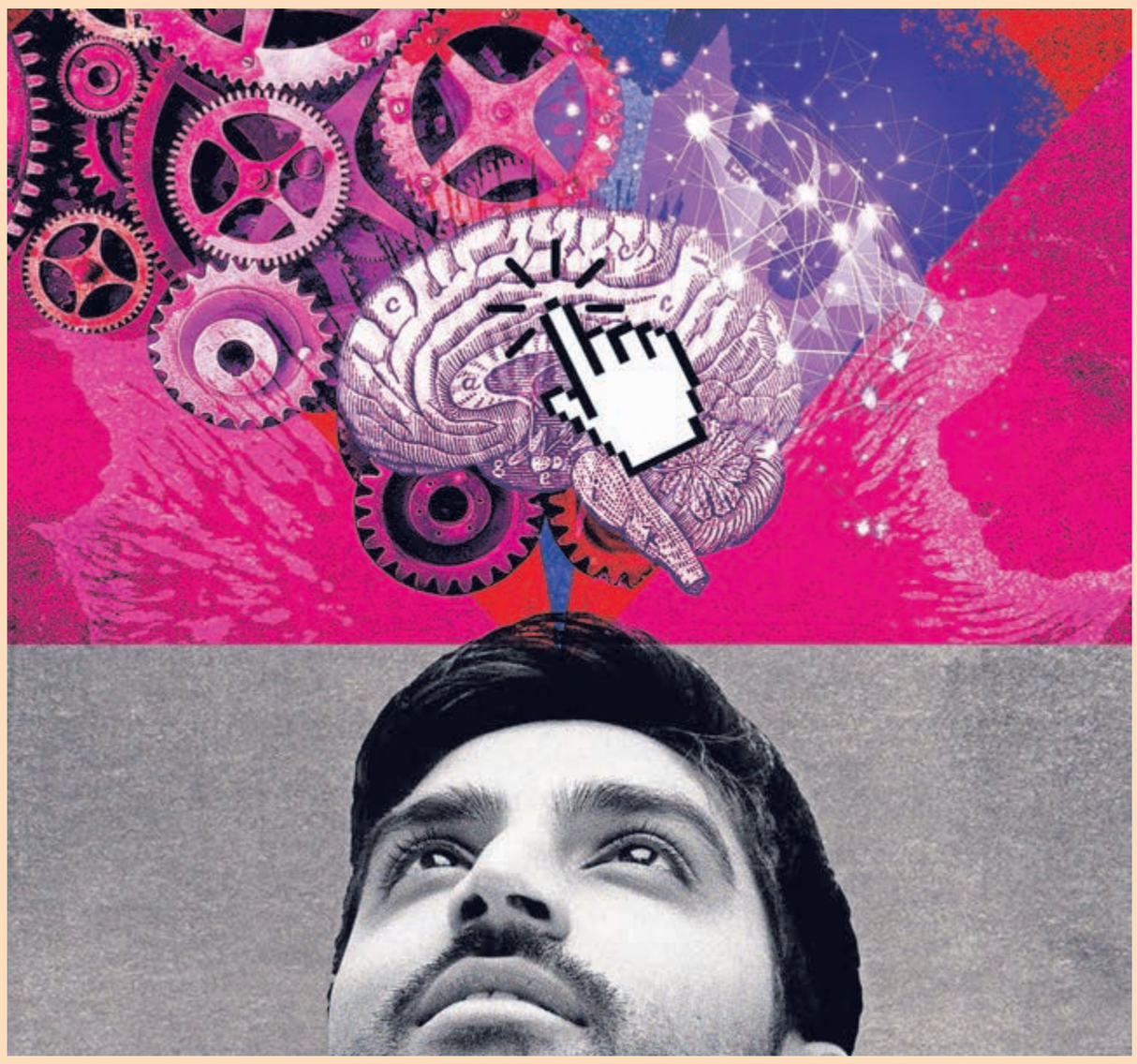
Ms Melendez concurs. She adds that recruiters remain wary of online learning. "There is still stigma that it is easy or fake. It sets off alarm bells," she says. However, the stigma fades away when she name-drops Rice, a respected institution. "Then, they view it like any other degree."

In order to recoup her tuition fees, Ms Melendez is interviewing for project management jobs in the public sector. "Before, I could only dream about these roles. Now I am getting calls back from recruiters."



Innovation A host of providers are reshaping the education marketplace, writes *Jonathan Moules*

Tech upstarts offer new suite of options for students



Higher education is one of the few big markets that technology entrepreneurs have yet to comprehensively disrupt. No start-up has grown to rewrite the rules and become, in the lexicon of venture capitalists, "an Uber for education".

The opportunity is great: the global higher education market will be worth $105.7bn by 2025 — double what it was in 2016 — according to market analyst Kenneth Research, partly due to technological advances in teaching.

While Moocs (massive open online courses) were much hyped early last decade, they failed to revolutionise education, with most students dropping out before completing their studies. However, business education entrepreneurs are now experimenting with a variety of approaches to exploit technology's educational possibilities.

James Wise, a partner at Balderton Capital, a London-based venture capital firm, says that the tech ventures most likely to be successful are those that spot niches, and will include many that cooperate rather than compete with business school brands.

"There is plenty of room for new entrants," says Mr Wise. "My sense is that there will be partnerships with business schools but also with businesses that need to retrain their staff."

Balderton has backed Jolt, an Israeli-based tech venture that provides bite-sized courses from purpose-built teaching rooms in flexible workspaces, where small groups of students are taught by on-screen tutors in real time.

Jolt has set itself apart from the traditional world of campus education, creating what it calls the Not An MBA (Namba) for customers completing a set group of its courses costing £4,500. It has about 2,000 registered students, more than the 1,415 who graduated from London Business School last year, where the MBA tuition fee is £87,900.

"We are not all autodidactic, we need human exposure to learn," says Mr Wise. "There is something important about having a live class with small groups."

Technology is also enabling entrepreneurship to disrupt the business school world from within, as established business school professors distribute their teaching online to extend their brand presence.

Mark Ritson describes himself as an "ex-marketing professor gone rogue". For 23 years he taught the marketing tracks of MBA programmes, moving from the University of Minnesota, via London Business School and MIT Sloan School of Management to an associate professorship at Melbourne Business School.

In 2017, Mr Ritson founded a company to sell an online version of his teaching, branded as a "Mini MBA" and aimed at people in the marketing industry who want to develop their skills in that specific area. More than 8,000 people from 39 countries have taken one of the two courses he teaches.

Students pay £1,470 for the core 12-week Mini MBA in marketing, a fraction of the cost of a full-time degree at any of the schools where he once worked. Last September he quit full-time teaching in Melbourne to expand his role as an online professor. "It is very profitable," he notes.

Half of his revenues are from corporate clients that pay for senior executives to complete the programme, including Google, Adidas and Lloyds Banking Group. The cost makes sense for these clients because they get better-trained staff without losing them to full-time study, according to Mr Ritson.

"I don't believe the MBA is dead but I think there is a bigger market for the teaching that I now do," he says. "I am barely scraping 0.01 per cent of my target market."

Quantic School of Business takes a different approach. While it may sound like a campus-based institution, it is a tech start-up based in Washington DC, with a permanent staff of just 40 people. Its MBAs mirror the curriculums of full-time and executive programmes, last 12 months and set a high bar for entry in terms of tests and acceptance levels — but they are completed entirely online.

Quantic's classes are devised with the support of tenured faculty from leading business schools, but the teaching is completely automated, with students guided through the programme by clicking on tabs to answer questions. By minimising the need for human involvement, Quantic has been able to grow rapidly, with 2,000 students graduating since it launched in 2016.

"We teach in a manner that is much more interactive, creating a richer learning experience than traditional online programmes," says Tom Adams, Quantic's president. "Students describe it as sticky learning, as they retain what we teach, and they can apply it in their day to day."

Quantic is reaching new markets for the MBA, according to Mr Adams — mainly people with backgrounds in engineering. He contrasts this with the core audience for campus-based schools of people eager to accelerate their promotion in consulting and financial services jobs.

Yet the company is "not a disrupter", Mr Adams says. "Our students are high achievers academically and professionally, and they have similar GMAT [Graduate Management Admission Test] and quantitative aptitudes to students at the very top schools in the world. But they are three times more likely to have a product, R&D or engineering management background than typical MBAs."

An accessible option — but not always a cheaper one

Continued from page 1

sometimes with outside assistance. "[They] are investing in the technology to provide these programmes but there are also many more support providers to help them deliver content online through learning platforms such as Coursera and 2U."

Many of the new providers are experimenting with offering online MBAs at a lower cost than their campus-based courses. These lower price points mean that people who previously could not justify the expense of business school are enrolling (see the article on diversity on page 1).

However, online MBA providers do not compete on price alone. Many have deliberately kept their online MBAs at the same price as campus-based tuition.

Take, for example, Indiana University's Kelley School of Business, whose very successful online MBA was able to expand its intake from 276 in 2014/15 to 454 in the current cohort. Yet the tuition fee of $74,520 for the 54 credit hours required to complete the course is comparable with that for a residential MBA at a school such as the University of Wisconsin-Madison or Texas A&M.

What Kelley has discovered is that its online MBA is attracting both students who would only want to study online and those who might also consider a campus-based programme.

"More and more students are coming into the online space who would previously have studied full time," says Ash Soni, executive associate dean for academic programmes at Kelley.

"The reason for this is that the economy is doing very well. People are saying, 'I can get a great experience on an online MBA course. Why should I take two years out and forgo the salary for full-time study?'"

> The typical online student is older and more experienced than campus-based students

One of the reasons why Kelley has not reduced the cost of its online MBA is that building the programme and the delivery mechanisms has involved a significant investment. The school is spending $10m creating state-of-the-art studios and virtual classrooms for its online students, according to Mr Soni.

"The biggest challenge is to figure out how we can meet the needs of all our students," he says.

One characteristic of the online MBA students is that they give regular feedback to their teachers, perhaps more than for the full-time course, according to Mr Soni. "That is a challenge but also an opportunity," he says.

FT FINANCIAL TIMES

GET PRACTICAL HELP TO CREATE WINNING STRATEGIES

Read The Strategy Book: How to Think and Act Strategically to Deliver Outstanding Results by Max McKeown.

This must-read title focuses on how you can create powerful strategies to deliver success in a competitive world. Peppered with expert tips, easy to use sections and memorable examples from real leaders, this book shows you how to:

- Discover what a good creative strategy can do for your organisation
- Think and act strategically to create winning results
- Engage people with strategy and deal with challenges

Buy your copy at amazon.co.uk or you local bookshop

"This is one of the rare books to match lofty ideals with practical action, helping you understand whether your strategy works or not."

Manuel Hensmans, Professor of Strategic Management, Toulouse Business School

Online flexibility or real-life networking?

Online v on-campus

Or could you even get both with the right kind of MBA? *Hazel Sheffield* investigates

Ask Carla Priddon about the biggest achievement of her professional life and she will tell you it was when she became chief executive of The Way Youth Zone, a charity for young people in Wolverhampton, UK, at the age of 33. But after two years in the job, Ms Priddon was ready for a new challenge.

She found it in a distance-learning MBA at Warwick University. Since starting the course last year, Ms Priddon has been designing a new performance management framework for The Way, while keeping up the long hours needed to lead the organisation.

"[This is] something I wouldn't have known where to start with before my MBA," Ms Priddon says. "The flexibility of the online platform means I can work at any time, including on my mobile phone."

Digitally delivered MBAs have helped transform the business education landscape since the first one was introduced by Aspen University in Denver in 1987, when the course was sent to students on CDs. Pietro Micheli, course director of Warwick's distance learning MBA, thinks they have contributed to a more diverse student demographic.

"In the past, people doing MBAs might want to go from middle management in an oil and gas company to a more senior position," he says. "Now we get people from NGOs, people from the medical profession, and people with PhDs in science who work in pharma companies."

Online courses appeal to students who want to pursue a degree at their own pace, rather than in a pressured classroom environment, according to Professor Linda Enghagen, associate dean of graduate and professional programmes at the Isenberg School of Management at the University of Massachusetts. "There is no pressure to be the first to raise your hand in response to a professor's question," Prof Endhagen says. "Students can take their time to formulate their thoughts and responses."

But for many students, online courses have a major downside: limited networking. John Byrne, editor of the MBA news and ranking website Poets & Quants, says that students of online courses can miss out on the opportunities that come from campuses inviting employers in to speak to students, and the "real bonding" that occurs on a residential, full-time programme. "Students who have just graduated from an online programme believe they are getting a network out of it, but I sense that those connections will be more ephemeral," he says.

The relative weight students attach to flexibility and networking may depend on their time of life. Jon Burroughs had been an emergency physician in New Hampshire for 30 years by the time he decided to study for the online MBA at the University of Massachusetts in 2006. He graduated in 2008 and, four years later, started the Burroughs Healthcare Consulting Network at the age of 62.

"When you're a certain age in life, survival is more important than networking," he says. "I had three jobs [in healthcare] at the time [of my MBA] and I was putting my kids through college. I would see patients in the emergency department and come back and work on finance. It was the only way I could fit it into my life."

Some online courses offer face-to-face time. Dimitrios Dimitriou graduated from the online MBA at Durham University in 2019. "From first-hand experience, the online MBA offered by [Durham] presents candidates with the best of both worlds," he says.

> 'When you're a certain age in life, survival is more important than networking'
> **John Burroughs**

Warwick's distance learning course, which tops this year's FT ranking of online MBAs, uses a blended approach, in which 25 per cent of the course takes place in person. The online content is divided between material that can be picked up from the portal at any time, including videos and online tests, and components that are done with classmates in real time, including question and answer sessions and other exercises.

"The technology is evolving in dramatic steps," Prof Micheli says. "The big change will be when you can put [the technology] on and be in the room with others. We haven't got there yet, but we will."

Contributors

Amy Bell
FT journalist

Wai Kwen Chan
Communities editor

Leo Cremonezi
Business education rankings manager

Chengwei Liu
Associate professor, Warwick Business School and ESMT Berlin

Jonathan Moules
Business education correspondent

Seb Murray
Freelance journalist

Hazel Sheffield
Freelance journalist

Kate Hodge & Neville Hawcock
Commissioning editors

Steven Bird
Designer

Leonie Woods
Illustrator

Esan Swan
Picture editor

For advertising details, contact: **Gemma Taylor**, +44 (0)20 7873 3698, gemma.taylor@ft.com.

All editorial content in this report is produced by the FT. Our advertisers have no influence over or prior sight of the articles.

All FT Reports are available at: ft.com/reports

Follow us on Twitter @ftreports

Financial Times Online MBA 2020

The top 10 Online MBA programmes

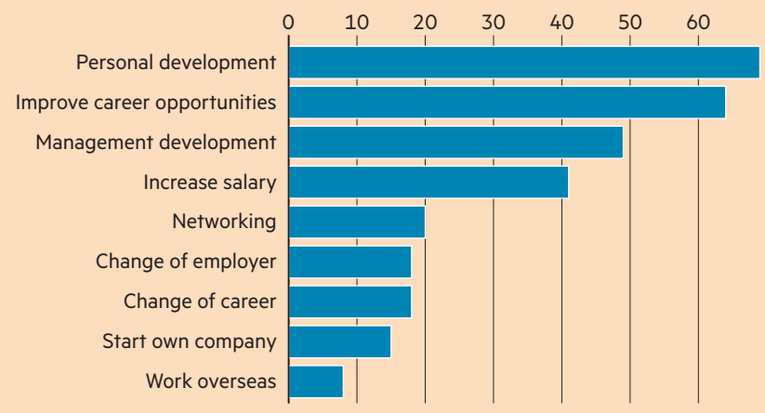
							Career progress						Online delivery		Programme diversity							CSR and idea generation			Additional notes*			
Rank in 2020	Rank in 2019	Rank in 2018	Three-year average rank	Business school	Country	Programme name	Salary today (US$)	Salary increase (%)	Value for money rank	Career progress rank	Aims achieved (%)	Careers service rank	Programme delivery rank	Online interaction rank	Female faculty (%)	Female students (%)	Women on board (%)	International faculty (%)	International students (%)	International board (%)	International mobility rank	Corporate social responsibility rank	Faculty with doctorates (%)	FT research rank	Course tuition and fees (local currency)**	Average completion time (years)	Online teaching materials (%)	Rank in 2020
1	1	1	1	Warwick Business School	UK	Warwick Distance Learning MBA	204,799	40	2	1	80	3	8	8	43	31	33	78	75	22	3	6	100	3	£32,681	3	100	1
2	2	2	2	IE Business School	Spain	Global Online MBA	163,788	36	6	6	76	9	5	4	40	38	50	70	91	96	2	1	100	6	€50,000	1.5	80	2
3	3	3	3	University of Massachusetts Amherst: Isenberg	US	Isenberg Online MBA	168,046	46	3	4	83	7	4	6	46	36	27	25	6	2	9	3	76	7	$35,191	3	100	3
4	5	-	-	University of North Carolina: Kenan-Flagler	US	MBA@UNC	171,665	26	10	7	79	2	6	5	33	30	23	38	3	4	6	10	84	2	$124,967	2.42	97	4
5	4	4	4	Indiana University: Kelley	US	Kelley Direct Online Programs	148,934	30	7	5	83	1	1	2	26	27	23	30	14	33	8	8	78	1	$74,520	3	97	5
6	6	7	6	University of Florida: Warrington	US	Online MBA	126,535	41	8	9	83	5	2	1	27	35	13	27	4	0	10	5	93	4	$55,340	2	100	6
7	7	5	6	Durham University Business School	UK	Online MBA	142,892	27	4	3	82	6	10	9	34	24	40	71	50	80	1	4	99	8	£23,000	2.57	100	7
8	8	12	9	Northeastern University: D'Amore-McKim	US	Online MBA	137,104	30	9	2	78	4	3	7	28	40	23	27	4	2	7	9	89	5	$82,000	2.97	100	8
9	-	-	-	Politecnico di Milano School of Management	Italy	International Flex MBA	144,316	40	5	8	70	8	7	3	39	18	47	10	32	65	5	2	82	9	€32,000	2	100	9
10	10	14	11	University of Bradford School of Management	UK	MBA Distance Learning	128,524	34	1	10	73	10	9	10	31	33	29	50	63	38	4	7	83	10	£17,425	3	100	10

* Data in these columns are for information only and are not used in the rankings. ** Average course tuition and fees (local currency)

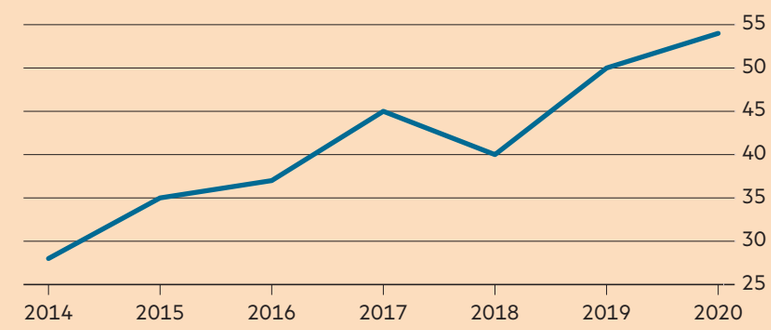
Analysis *Leo Cremonezi* on what a UK school does well, and what its rivals do better

Warwick takes top slot in FT ranking for third year in a row

Reasons for taking online MBA
2020 (%)



Online course-time interaction with fellow students is improving
Percentage of graduates that gave score of 10/10 for its effectiveness



Source: FT research

Warwick Business School is number one in the 2020 Financial Times ranking of online MBAs — the third consecutive year that it has taken the top slot. The main factor in Warwick's success is the salary that its alumni command: an average of $204,799 three years after graduation, a 40 per cent increase over that period. The school also ranks highest for career progression and for the percentage of international faculty — 78 per cent.

In second place, also for the third consecutive year, Spain's IE Business School (which is the FT's partner in Headspring, an executive development venture) has the highest percentage of international students at 91 per cent, as well as a 96 per cent international board. Students praise IE's international exposure, and the networking opportunities it provides. The school also has the highest score for corporate social responsibility.

Alumni of the University of Massachusetts have the highest salary increase three years after graduation — 46 per cent — and the school also comes top for female faculty: 46 per cent of full-timers are women.

Indiana University's Kelley scores highest for its careers service, programme delivery and research. Its alumni also highlight its strengths in teaching corporate strategy, entrepreneurship and ecommerce.

Newcomer Politecnico di Milano School of Management, ranked ninth overall, comes second for corporate social responsibility and third for online interaction.

"It was excellent to follow . . . lessons [at a distance] and to interact with participants from different countries," was one graduate's verdict.

Best of the rest
For a directory of online MBA programmes at 40 business schools, go to
ft.com/online-mba/list/2020

Schools seem to have become better in the past few years at encouraging online interaction among their students — or perhaps students have become more comfortable with the format. Meanwhile people's reasons for doing an online MBA have remained fairly constant: alumni cite personal development as the primary goal, followed by improved career opportunities and then management development.

This year's ranking is based on surveys both of schools and of alumni who completed their online MBA in 2016. Although 22 schools took part, the alumni response rate was too low in some cases to allow more than half the schools to qualify for the final ranking.

Key to the table

- Weighting percentages shown in brackets.
- For the three gender-related criteria, schools that have 50:50 (male: female) composition receive the highest score.

Salary today US$ (20): average alumnus salary three years after graduation, $ PPP equivalent (see methodology).†
Salary increase (10): percentage increase in alumnus salary in current job versus three years ago on graduation.†
Value for money (3): calculated according to alumnus salary, tuition, fees and other costs.†
Career progress (4): progression in alumni's level of seniority and the size of company they now work for, versus three years ago on graduation.†
Aims achieved (4): extent to which alumni fulfilled their goals for taking an online MBA.†
Careers service (4): effectiveness of school careers service in terms of career counselling, personal development, networking events and recruitment, as rated by alumni.†
Programme delivery (5): how alumni rate the online delivery of live teaching sessions, other teaching materials and online exams.†
Online interaction (10): how alumni rate the interaction between students, teamwork and the availability of faculty.†
Female faculty (3): percentage of female members of faculty.
Female students (3): percentage of female students on MBA programme.
Women on board (1): percentage of female members of school advisory board.
International faculty (4): percentage of faculty whose citizenship differs from their country of employment.
International students (4): percentage of current students whose citizenship differs from the country the school is located in.
International board (2): percentage of board whose citizenship differs from the country in which the business school is situated.
International mobility (5): based on alumni citizenship and the countries where they worked before their MBA, on graduation and three years after.†
Faculty with doctorates (5): percentage of full-time faculty with a doctoral degree.
Corporate social responsibility rank (3): proportion of credits from core courses dedicated to CSR, ethics, social and environmental issues.
FT research rank (10): calculated according to the number of articles published by a school's current full-time faculty members in 50 academic and practitioner journals between January 2017 and December 2019. The rank combines the absolute number of publications with the number weighted relative to the faculty's size.

Additional notes
The following data are for information only and are not used in the ranking calculations.
Course tuition and fees (local currency): Programme tuition and fees paid by the most recently enrolled class, in the currency of the country where the school is situated. Figure shows weighted average.
Average completion time (years): The average amount of time students take to complete the programme.
Online teaching materials (%): Percentage of programme teaching materials that are delivered online.

† Includes data for the class of 2016 and one or two preceding classes where available.

For the full methodology visit:
ft.com/online-mba-method/2020

How mini-courses are paving the way to a full MBA

Access

Online learning modules boost students' academic confidence and business knowhow, says *Seb Murray*

Matthew Rivers was a police officer in Urbana, a city in Illinois, for nearly a decade before he applied to do an online MBA in 2017. His ambition was one day to lead the police department and he did not want to pause his career to study on campus.

The nearby University of Illinois at Urbana-Champaign offered him a place on its iMBA — an online MBA — with the caveat that Mr Rivers master the fundamentals of business by passing two modules before the start of term in 2018. It was also a way for Mr Rivers, now 38, to prove he could handle academic rigour after years of employment.

He chose courses in corporate finance and investment, which are available for free via Coursera, a digital learning platform, and paid a fee for academic credit (approximately $1,200 per course today) towards the iMBA.

"Online learning is a gateway to an MBA," he says. Of the 2,882 iMBA students currently enrolled, 35 per cent took a course for credit before applying to the degree programme.

Jeffrey Brown, dean at Urbana-Champaign, likens the courses to Lego building blocks. "They are stackable," he says. "We are breaking down this traditional idea of one degree into finer pieces that fit around your schedule."

Business schools are unbundling the MBA to make it more flexible and accessible. Students who take four digital business courses on FutureLearn, an online learning website owned by the UK's Open University and the Seek Group of employment and education businesses, can earn degree credits for the OU's online MBA.

They get the credit if they buy a £62 certificate of achievement from FutureLearn for each course, then pay and pass a £540 OU assessment module.

Terry O'Sullivan, senior lecturer in management in the OU's faculty of business and law, says the initiative, launched in 2016, enables students to test-drive the MBA with minimal financial risk. "Online courses are like a shop window to see what the university offers," he says.

Other schools are introducing online courses for students with less business experience that act as a primer for an MBA. About 40 per cent of the MBA students who entered Harvard Business School in 2019 took at least one Credential of Readiness (CORe) course after being admitted. For most of them it was a requirement to start the MBA.

The CORe courses, online modules in economics, accounting and business analytics, are free for admitted students but otherwise collectively cost $2,250.

They help students contribute during case discussions in the MBA, when they work as a group to analyse a corporate challenge. "CORe makes discussion more fruitful," says Patrick Mullane, executive director of Harvard Business School Online.

Chioma Isiadinso: online is on the up

"It helps the person with no finance background talk intelligently and confidently about net present value alongside someone who worked at Goldman Sachs."

He adds that CORe can set applicants apart, but it does not guarantee them admission. "It shows intellectual curiosity, ambition, commitment."

Chioma Isiadinso, chief executive of Expartus, an admissions consultancy, says admissions teams once viewed online courses as inferior to in-person training. This perception is changing as technology improves the digital learning experience.

Ms Isiadinso says 5G mobile networks are a "game-changer", enabling more seamless interaction between online students with less delay.

At Imperial College Business School in London, admitted MBA students can take free online courses in maths, finance, data analysis and accounting.

Leila Guerra, associate dean, says the classes have broadened the range of backgrounds on the MBA, adding doctors and artists. "They would not otherwise meet the admissions criteria, as they have no business experience," she says. Their experience in other areas, though, benefits the course, with diverse perspectives enhancing group discussions.

The iMBA gave Mr Rivers the confidence to switch careers. He moved to Dallas in Texas, where he investigates collisions involving city-owned vehicles. Mr Rivers plans to apply for business administration jobs in the private sector when he graduates this year.

But some schools have struggled to convert students from online courses to degrees. In 2017, the Thunderbird School of Global Management, which is owned by Arizona State University, launched a "MicroMasters" in global business leadership, an online course on the edX platform.

It grants academic credit towards a digital masters degree in applied leadership and management at Thunderbird. Yet to date only about 5 per cent of the 553 people who enrolled for the MicroMasters have done so for the masters, despite a $9,000 discount on tuition fees through this route.

Sanjeev Khagram, dean at Thunderbird, is not concerned because the idea is to widen access through a relatively cheap taster course.

Some students are satisfied with the MicroMasters, he adds, and achieve their aims, whether a career switch, promotion or pay rise. For those who want to get ahead in business, online learning may be a win-win.

University of Cumbria

100% ONLINE MBA Artificial Intelligence
100% ONLINE MBA Digital Marketing
100% ONLINE MBA Information Technology
100% ONLINE MSc Data Analytics
100% ONLINE MSc Computer Science and International Business

University of Cumbria ranks 3rd out of northern universities, and 25th UK wide, for starting or managing a business*
* research commissioned by Hitachi Capital Invoice Finance

+41 844 007 007
cumbria@rkc.swiss
Robert Kennedy College Swiss Quality Education
WWW.RKC.SWISS

100% ONLINE MBAs and MSc in 1 Year
RECOGNISED WORLDWIDE

Fluent in English, Spanish and finance

Student profile

An online MBA helped Molly Laverty pursue a passion for sustainable coffee, writes *Amy Bell*

At harvest time in Nicaragua, trees are usually laden with coffee cherries at farms across the country, waiting to be picked. But these days, most of the coffee falls to the ground, wasted.

Coffee farmers have been hit so hard by low market prices in the past three years that it is no longer worth their while to harvest the crop. This, combined with political turmoil, means many coffee buyers are staying away.

"You just see coffee falling off the trees," says Molly Laverty, director of sustainability at Farmer Brothers, a Texas-based coffee company supplied by these farmers. "The market price is so low that they can't afford to hire seasonal workers to pick it."

The uncertainty farmers face each year is mostly driven by changing weather patterns and the volatility of the coffee market. Ms Laverty is working to address this, using the business skills she learnt in her online MBA degree to improve the sustainability of the coffee supply chain and build a stronger partnership between her company and the coffee growers.

"Through direct sourcing we can have longstanding buying arrangements with groups of farmers, and commit to a full year of production — letting them know how much we will need, what price we will pay, often with a premium on top of the regular rate, direct to the farmer, to incentivise selling," she says. The goal is to ensure the company has a reliable supply and that the farmers continue growing coffee.

Having built up expertise in different supply chain and sustainability roles at Farmer Brothers, Ms Laverty realised that an MBA would enable her to "get a grasp on the financial and supply chain concepts that drive our business, and help me perform my job better". In 2018 she enrolled in the online MBA at the University of North Carolina's Kenan-Flagler Business School.

Ask a busy woman: Molly Laverty says fitting her course around work and other commitments required 'a real lifestyle adjustment'
Cooper Neill

In January, a month after completing the two-year online course, Ms Laverty took on additional responsibility for the company's commodities hedging function. She now speaks directly with customers about the risks involved with the coffee market and hedges on their behalf, confident that she has gained the technical expertise and financial tools to back her knowledge of the market.

"I would not have been able to have those types of conversations with our financial partners about the details — how the hedging will work, how we track it, how it gets charged — without the MBA," she says.

Now aged 32, she joined Farmer Brothers in 2009 straight out of university, initially as a Spanish translator to help the company set up programmes with coffee farmers.

"It was a fun entrance into the coffee world," says Ms Laverty, whose undergraduate degree was in Spanish literature and anthropology.

Travelling to coffee farms, from central and south America to Africa and Indonesia, sparked an interest in sustainability. "I started seeing the real impact of environmental sustainability on coffee growing conditions and the volatility of the coffee market on a farming family's ability to predict what their income will be."

> 'It has given me the financial acumen to make my case to the board'

Finding an MBA course with a focus on sustainable business seemed a logical step. She already knew she wanted to keep working full-time while studying, rather than taking two years out, and Kenan-Flagler's course was the only one she came across that covered sustainable enterprises. "That really sealed it for me," she recalls.

"I liked that I could get the same degree as if I were on campus; it wasn't a special online degree, but just their regular MBA."

The finance, accounting and business modelling courses proved most valuable, though Ms Laverty had been nervous beforehand about taking these subjects. "What I do day-to-day is very open-ended and strategic, there's no right or wrong — so sitting and working through a problem in a finance class was an interesting mental exercise for me."

Getting to grips with business terminology — such as "how ebitda is calculated, or what discount rate we're using when we are making long-term capital decisions" — has already proved useful in her work.

"It has made me understand our business so much better," she says. "It has shown me how to approach the investments I want to make, and given me the financial acumen to make my case to senior leadership and the board."

Ms Laverty initially worried that it would be harder to build strong connections with her classmates on an online programme than on a campus course, but this was not the case. "The community at UNC feels really close, because we are all making more of an effort — we're not seeing each other every day."

Students in the online cohort had lectures to watch and assignments to complete each week, logging into live classes via video. LinkedIn and Facebook groups helped Ms Laverty to get to know her classmates, but the programme also required at least two in-person meetups. One of these took place in Helsinki and Tallinn, giving the students insights into Baltic business culture.

Ms Laverty says the course involved "a real lifestyle adjustment", with five to six hours per week of lectures and other work, plus two to three hours of live classes, all to be fitted in after work or during the weekend.

Meanwhile she bought a house with her partner and became stepmother to two girls. Other students faced similar challenges. "We had breastfeeding mothers, babies waking up during the night," she says. "All the professors understood that life was happening around the demands of the course."

Ms Laverty says the MBA has added an extra layer of credibility to her skills and experience. It has already opened up opportunities to expand into strategy, the supply chain and operations, but sustainability will remain at the heart of her work.

"It's a personal passion of mine, and it's becoming more and more relevant in the business environment," she says.

Sometimes the smartest strategy is a matter of luck

MASTERCLASS

Chengwei Liu

An MBA can boost your salary, your connections and your career prospects — but what will you actually learn? In an occasional series, we showcase the work of teachers at top-ranked business schools.

The lowdown: 'submarine pitcher' Chad Bradford was undervalued by talent-spotters
Getty

At one point in *Moneyball*, Michael Lewis' book on the improbable winning run of the Oakland A's in the early 2000s, Billy Beane, general manager of the underfunded baseball outfit, makes a surprising declaration. His statistical analysis doesn't work in the play-offs, he says — that's down to luck.

He uses more colourful language, but the point is that Beane is aware that, for all his ingenuity in identifying undervalued players, luck or randomness is an inescapable factor in baseball, as it is in all walks of life.

Yet luck played a part in the story in more ways than one. *Moneyball* is often portrayed as a triumph of data analysis, but that is not sufficient to explain the success of the A's, because data on players as well as the techniques for crunching it had been publicly available for decades. What helped swing things Beane's way was his rivals' tendency to reach too soon for luck as an explanation for performance.

Over many years, scouts and team managers had built up stereotypes about what good players looked like. Competent but counter-stereotypical players such as the "submarine pitcher" Chad Bradford were underestimated because managers concluded that their successes had to be down to mere luck. Such biases — and the consequent misattribution of luck — protected these "hidden gems" from discovery until Beane's statistical approach cut through to the facts.

The result was a team that could take on the giants of the sport and reach the play-offs four seasons running. Thanks to Lewis's book, Beane's strategy has become widespread across baseball and has filtered into other sports.

This contrarian approach can be used in business as well, where strategy and behavioural science can be combined to exploit irrational biases. I call this "analytical behavioural strategy": it consists in drawing on behavioural science to search for contrarian opportunities, and then using data analysis to formulate an exploitation strategy.

For instance, most people don't anticipate regression to the mean — that is, that the exceptional will probably be followed by the average. This, though, is the likeliest outcome whenever a business's performance — in terms of sales, say — is not entirely under the control of those in charge.

A great performance may suggest that managers are doing a great job, but it's more likely to arise from fortunate timing — luck. By definition, luck is not going to persist: the business's future performance will regress downward to the mean. A good contrarian strategist looks for evidence that rivals are not mindful of this.

Take "top CEOs", for example — specifically the annual top 30 list compiled by Barron's magazine. When I analysed the 2005-10 line-ups in terms of how the companies they led performed, a clear, inverted V-shape pattern emerged: the performance (as measured by factors such as sales growth, profitability and stock price) improved before the CEO made the list, but plummeted afterwards.

> A great performance may suggest that managers are doing a great job, but it's more likely to be luck

The usual explanations for such decline include complacency or hubris on the part of the CEO. A simpler explanation, however, is that the CEOs were never that special in the first place. It was luck that enabled them to attract unwarranted attention after successes. And it was (bad) luck that made many of them attract unwarranted blame after failures.

A contrarian strategist can profit from rivals' "luck biases" in at least two ways: short sell and buy low. A salient success is rarely sustainable but the market usually believes otherwise. Consider the 50 companies featured in three of the most popular business bestsellers of the past 40 years: *In Search of Excellence*, *Good to Great* and *Built to Last*. Of the 50, 16 failed within five years after the books in which they starred were published, and 23 became mediocre as they underperformed in the S&P 500 index.

Next time you browse the business bestsellers section, pay attention to the companies featured. Instead of trying to emulate them, as your rivals may do, you should make these "role models" your target for short selling.

On the other hand, opportunities also lurk in the "regression upward" that often follows a notable failure. A common reaction to failure is to find scapegoats and fire them — as many ex-CEOs and sports coaches can attest. Nevertheless, the more extreme the failure, the less we should attribute it to the person, and the more to the system. Otherwise we create an opportunity for the shrewd contrarian, who can step in and hire the scapegoat.

Businesses that are aware of these biases are better placed than those that aren't. Fortune favours the strategist with a clear-eyed view of luck.

Chengwei Liu is associate professor of strategy and behavioural science at Warwick Business School and ESMT Berlin and author of 'Luck, A Key Idea for Business and Society' (Routledge)

THE AUTHORITY ON GLOBAL FUND MANAGEMENT | FINANCIAL TIMES | Monday March 2 2020

FTfm

Margaret Franklin
CFA chief on the 'hardest exams' in the world

PAGE 4

Coronavirus puts funds to the test

Asset managers restrict business trips amid falling share prices and rising risk of recession

CHRIS FLOOD, ATTRACTA MOONEY, SIOBHAN RIDING AND PETER SMITH

Change since close on Friday 21 February
Getty Images

A violent correction across global markets battered investment managers last week as the rapid spread of coronavirus caused severe disruption to business activity worldwide.

Asset managers suffered accelerating fund outflows, hefty share price falls and operational challenges to their client-facing work as companies banned travel to the countries worst hit by the virus.

Share prices of asset management companies were hammered, with FTSE 100 group M&G down nearly a fifth over the past week, with Standard Life Aberdeen and Schroders off about 15 per cent.

In the US, BlackRock and Invesco each plunged 18 per cent in a week, with T Rowe Price and Franklin Resources falling 14 per cent.

"The risk of global recession is rising," said Michael Hartnett, chief investment strategist at Bank of America Merrill Lynch. The bank expects worldwide corporate earnings per share to shrink 3.5 per cent this year and global economic growth to slow to 2.8 per cent, the lowest since 2009.

Vanguard has banned business travel to nine countries including Italy, China, Hong Kong, Japan and Singapore. Staff who return from these locations must work remotely for 14 days.

Fidelity International banned all travel between countries, except for "business-critical meetings" and where possible has swapped external meetings for video or conference calls.

Schroders has restricted business trips to Italy, mainland China, Hong Kong, Macau, Singapore, Thailand, Japan, Malaysia, South Korea and Taiwan. Split working arrangements have been introduced into offices in Asia and Milan that allow remote working. "Schroders will be able to operate business as usual, should working remotely become a greater necessity," the FTSE 100 manager said. Standard Life Aberdeen has introduced "tag team" arrangements in Asia where groups of staff work in the office one week and from home the next. The Edinburgh-based manager said it had received frequent "self-declaration" requests to ask if its workers had visited an infected area for 14 days before meetings could be agreed with multiple organisations.

Italy's largest investment conference, which was scheduled for this month, has been postponed. More than 10,000 people usually attend the Salone del Risparmio in Milan, an event which brings financial advisers together with Italy's asset managers and international groups such as JPMorgan and Goldman Sachs. "The inconvenience involved in postponing is significant, but we have decided to adopt maximum prudence," said Fabio Galli from the Italian trade association Assogestioni.

Generali and Eurizon, the two largest Italian asset managers, have cancelled meetings, events and business trips, and asked staff to use video conferencing technology instead. Both companies are encouraging employees in the Italian cities and towns affected by the virus outbreak to work from home. Amundi, the Paris-based manager with a large Italian workforce, is allowing working from home and has asked employees to refrain from travelling for business either within Italy or internationally.

Atlanta-based Invesco has cancelled off-site events mainly in the Asia Pacific region. Staff in Singapore and Hong Kong have been working from home for more than month. Invesco's offices in Japan, Italy and Taiwan have not so far directed staff to work from home.

Janus Henderson and Columbia Threadneedle imposed bans on all travel to coronavirus hit areas in Europe and Asia.

FT
FINANCIAL TIMES

IS YOUR SHARE PRICE BEING NOTICED?

The Financial Times Share Service sections help you to reach and engage financially aware decision-makers and affluent shareholders from across the world in print and online.

To advertise contact daniel.fish@ft.com
or on +44 (0) 207 873 4571

Fund houses demand action on diversity

LEADERSHIP

Columbia Threadneedle and RBC GAM target lack of women at the top

ATTRACTA MOONEY

Columbia Threadneedle and RBC Global Asset Management are stepping up their efforts to improve gender diversity at public companies, pledging to vote against board directors of businesses that are failing to promote women to top jobs.

RBC GAM said it would vote against all members of the nominating or governance committees at the annual meetings of businesses where women did not make up a quarter of the board under new plans for the upcoming annual meeting season. The policy will apply in the US, Canada, the UK, Ireland, Australia and New Zealand.

This will pit the asset manager against businesses such as JPMorgan, where women make up 18 per cent of the board, and Warren Buffett's Berkshire Hathaway (21 per cent). Other big companies that fail to hit the 25 per cent hurdle include Comcast, PepsiCo and Pfizer, according to ISS ESG, a division of Institutional Shareholder Services.

Columbia Threadneedle, the $494bn asset manager, is planning to target companies with a lack of women in senior leadership, an extension of its policy against diversity laggards.

Iain Richards, head of responsible investment at Columbia Threadneedle, said it would vote against the chair of the nomination committee at FTSE 350 companies that it believes are too slow at addressing a lack of women in leadership. It is the first time a big asset manager has publicly taken such a tough stance.

"We are focusing on the laggards. These are the ones we need to send a wake-up call to," he said.

A report from the Hampton Alexander Review, an independent body, last year found that British companies including tobacco businesses Imperial Brands and British American Tobacco, Reckitt Benckiser, the consumer goods company behind Dettol, miners Glencore and Antofagasta, travel business Carnival and the beleaguered NMC Health were among the poorest performers in terms of women holding executive roles or reporting directly to the executive committee.

Clare Payn of the 30% Club Investor Group, which advocates for more women in business, said the research for diverse boards is compelling. A study last year by Credit Suisse found that companies with more women in senior management yield superior returns. "It's not just the right thing to do, it's also the best thing for a business," she said.

A separate report from the Hampton Alexander Review this year found that women now make up 33 per cent of all FTSE 100 board members, up from 12.5 per cent less than a decade ago. According to ISS ESG about a third of companies in the S&P 500 have less than 25 per cent women on their boards, down from nearly two-thirds in 2016.

Dick Weil's $8.4m pay, though down on the $9m he earned in 2018, came despite an 11 per cent plunge in the group's shares

Janus Henderson chief paid bumper $8m

SIOBHAN RIDING

Janus Henderson's chief executive earned $8.4m in total pay despite presiding over $27.4bn of investor outflows and an 11 per cent tumble in the fund group's share price last year.

The bumper reward for Dick Weil came after a brutal year for active asset managers, whose high fees and patchy performance has come under renewed scrutiny following the Neil Woodford investment group scandal.

Janus Henderson was one of hardest hit by the investor exodus from active funds last year, ranking as one of the worst-selling groups globally according to data provider Morningstar. The dual US-Australia-listed fund group awarded Mr Weil $7.4m in bonus payments on top of his $725,000 base salary and $49,000 in benefits and pension. He also received $223,421 in relocation benefits after he moved from Denver to London in 2017. Mr Weil had already taken home $612,670 in relocation benefits for the previous two years.

Janus Henderson said in its annual report that its financial results "fell short of expectations" in 2019, when operating income fell 13 per cent.

Buoyant equity markets helped to increase assets under management to $374.8bn, masking the impact of net withdrawals, which were up by half from the previous year.

Mr Weil's total pay was down from the $9m he received in 2018. However, his total package dwarfs the average pay packets awarded to his European asset management peers.

Amundi's Yves Perrier received $3.5m in total pay for 2018, while Mark Zinkula, until recently CEO of Legal & General Investment Management, took home $3.2m. The groups have not yet disclosed executive pay for 2019.

> [Dick Weil's] package dwarfs the average pay packets awarded to his asset management peers

The metrics Janus Henderson used to calculate Mr Weil's pay in 2019 were investment excellence, financial results and strategic progress.

The company pointed to the fact that 76 and 77 per cent of its assets under management outperformed their benchmarks over three and five years respectively. It said that it achieved "numerous strategic objectives", including recruiting talented professionals, building a "one firm" culture and delivering good service to investors.

Luke Hildyard, executive director of the High Pay Centre, said that in addition to raising moral questions, Mr Weil's $8.4m pointed to a lack of alignment between pay and performance.

Ex-Woodford fund shrivels by 12%

OWEN WALKER

The former Neil Woodford fund taken over by Standard Life Aberdeen has shrunk by more than a tenth in the fortnight since it reopened to trading.

The ASI Income Focus fund was suspended in October after Mr Woodford dramatically resigned as manager and closed his business.

SLA began managing the portfolio at the start of the year and the suspension was lifted on February 13. Since then the fund has reduced from £251m to £220m — a 12 per cent contraction — on the back of client withdrawals and share price falls.

The fund has been hit by the global market sell-off, sparked by fears over the spreading coronavirus.

"It is only two weeks since the fund reopened and we invest with a three to five-year view, so we should be careful not to draw too many conclusions on early performance," said Charles Luke, a co-manager of the fund. He added the scale of outflow had been relatively limited so far.

The fund has suffered £8.3m of net outflows since it reopened, while it has lost 7.3 per cent due to market moves over the same period, compared to an average 6.8 per cent fall for the rest of its peer group, according to Morningstar and FE Fundinfo. The figures are based on Thursday close prices and do not factor in market falls on Friday.

When Mr Luke and Thomas Moore, another SLA manager, took over the fund, they set about repositioning the portfolio with their favoured companies, focused on liquid UK income stocks. But among the fund's top ten holdings are several businesses that have been particularly badly hit by the roiling markets.

Shares of Tui, the Anglo-German travel group, have fallen more than 30 per cent in the past two weeks after a Tenerife hotel used by the agency was put on lockdown when an Italian doctor tested positive. Tui was the eighth largest holding in Income Focus when it reopened, making up 3.3 per cent of the portfolio.

Other top 10 holdings in the fund — including Babcock International, the engineering group, and Inchcape, a car distribution company, as well as lenders OneSavings Bank and Close Brothers — have suffered share price falls of 10-15 per cent over the past fortnight.

Mr Woodford launched Income Focus in 2017 and it initially grew to a high of £742m. But by the time Mr Woodford was forced to suspend his flagship Equity Income fund last June, Income Focus had shrunk to just over £500m.

FTfm

Editor Peter Smith
Tel: +44 (0) 20 7775 6382
email: peter.smith@ft.com

Deputy editor Owen Walker
Tel: +44 (0) 20 7873 4408
email: owen.walker@ft.com

Investment correspondent
Attracta Mooney
Tel: +44 (0) 20 7775 6237
email: attracta.mooney@ft.com

Reporter Chris Flood
Tel: +44 (0) 20 7873 3892
email: chris.flood@ft.com

Reporter Siobhan Riding
Tel: +44 (0) 20 7873 4469
email: siobhan.riding@ft.com

Production Elena Losavio
Tel: +44 (0) 20 7873 3877
email: elena.losavio@ft.com

Advertising Tom Da Costa
Tel: +44 (0) 20 7873 4569
email: tom.dacosta@ft.com

FINANCIAL TIMES
Bracken House, 1 Friday Street,
London EC4M 9BT
+44 (0) 20 7873 3000

© The Financial Times Limited 2020. Reproduction of the contents of FTfm in any manner is not permitted without the publisher's prior consent. "FINANCIAL TIMES" and "FT" are registered Trade Marks and Service Marks of the Financial Times Limited

ANALYSIS

Investors pressed on private jail holdings

Abuse issue has come back to the centre of political debate as US presidential election draws closer

LEKE OSO ALABI

Asset managers and pension funds are being confronted with tough questions about their investments in US private prison providers, as the issue re-emerges as a hot political topic in the race for the White House.

Human rights abuses in private prisons and migrant detention centres have galvanised campaign groups, which have called for asset managers such as Vanguard, BlackRock and Fidelity to divest from CoreCivic and Geo, the largest operators of US private prisons and migrant detention centres.

In the aftermath of the 2016 presidential elections, banks including Wells Fargo and JPMorgan Chase were criticised for the lines of credit they provided to private prisons. Both banks have now cut ties with the sector. The issue has come back to the fore in the Democratic party primaries for this year's US election, with candidates criticising Michael Bloomberg for his campaign's use of prison labour.

Democratic candidates Elizabeth Warren, Bernie Sanders, Pete Buttigieg and Joe Biden have all criticised the industry on the campaign trail. In October, California became the first state in America to ban private prisons.

New York became the first big US city pension fund to divest fully from private prison companies in 2017. The sector is "financially risky and morally bankrupt", according to Scott Stringer, New York City comptroller.

"This industry's business model is fundamentally premised on taking criminal justice backwards, and their reported human rights abuses pose enormous long-term financial and reputational risks to our pension fund portfolio," he says.

Last year the deaths of children at migrant detention centres drew attention to the racially charged issues of criminal justice reform and US immigration. Advocacy group SumOfUs started an online petition that asked investors to demand that Vanguard and Fidelity divest from the private prison groups.

SumOfUs says it focused its campaign on Fidelity and Vanguard because of their size and the influence that their actions could have on other asset managers.

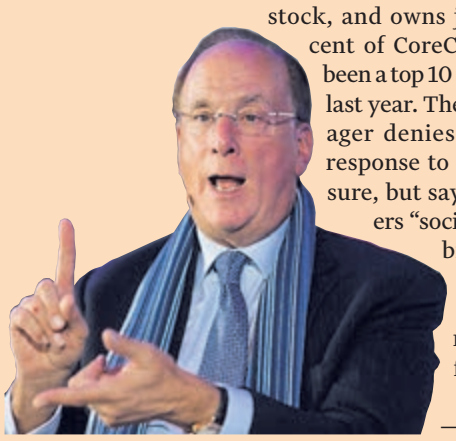
A previous campaign by SumOfUs and Leadnow, another advocacy group, which targeted the C$392bn ($295bn) Canada Pension Plan Investment Board, clocked up more than 55,000 signatures. Campaigners also spoke out against CPPIB's investments in private prisons at the pension board's public meetings in Vancouver and Toronto. The CPPIB subsequently divested from CoreCivic and Geo, but a spokesperson for the scheme says the decision was not in response to the campaign.

Human rights abuses in private prisons have galvanised activist groups, which carried out a campaign against BlackRock chief Larry Fink, below
Sue Ogroki/AP

BlackRock, the second-largest shareholder in both CoreCivic and Geo, has also been targeted by campaigners. Last year Art Space Sanctuary, an artist-driven initiative, carried out a campaign against New York's Museum of Modern Art focused on one of its trustees, Larry Fink, the chief executive of BlackRock.

The group sent a letter calling on MoMA to demand BlackRock divest from the private prison operators or for Mr Fink to step down as a trustee. It was signed by more than 220 artists, academics and curators, including art critic Hal Foster and artist Andrea Fraser.

The pressure from campaigners on asset managers already appears to be paying off. Fidelity has sold its Geo stock, and owns just 1.5 per cent of CoreCivic having been a top 10 shareholder last year. The fund manager denies this was a response to client pressure, but says it considers "social responsibility" when structuring its investment portfolios.



Vanguard — which is the largest shareholder in CoreCivic and Geo — describes the immigration crisis at the US-Mexico border as "deeply saddening", but adds that "this troubling issue needs to be solved by our elected officials".

Vanguard says private prisons make up a "very modest portion" of its funds' portfolios, which were largely held in index funds. The fund manager owns shares worth $306m in CoreCivic and $335m in Geo, according to S&P Capital IQ, the data provider.

Last year the California Public Employees' Retirement System, which manages $373bn on behalf of 2m members, divested from both private prison operators.

Calpers told FTfm the decision was made solely on investment grounds, following a comprehensive review of the plan's holdings, which resulted in 217 companies being ditched. Calpers said the review was based on considerations including materiality, liquidity, geography and governance rights.

Emily Goldman, founder and director of ESG Transparency Initiative, an advocacy group, says the decision taken by Calpers and others reflects a wider shift within the industry.

"I'm cautiously optimistic that we're seeing a couple interlinked trends: pension fund divestment from for-profit prisons; and a fundamental shift in the evolving standard of fiduciary duty based on greater — often implicit — recognition of the financial materiality of environmental, social and governance issues."

> This industry's business model is premised on taking criminal justice backwards

In January, the Rhode Island public pension fund announced that it would become the latest to divest from for-profit prisons. This followed similar moves in recent years by the Philadelphia Board of Pensions and Retirees, the New York State Common Retirement Fund, the Chicago Teachers' Pension Fund, the New Jersey Pension Fund and the California State Teachers' Retirement System.

The Oregon State Treasury, which manages the $81bn Oregon Public Employees Retirement Fund on behalf of nearly 375,000 current and former public employees, has retained small investments in CoreCivic and Geo. But it is showing its displeasure with the prison providers as a shareholder.

In January, Oregon state treasurer Tobias Read and attorney-general Ellen Rosenblum wrote to CoreCivic and Geo. They accused the directors of the companies of breaching their fiduciary duties by failing to provide "safe, humane detention centres".

Geo told FTfm that the letter was "clearly a politically motivated portrayal of our company based on a false narrative and deliberate mischaracterisation of our role as a longstanding government services provider".

CoreCivic says it appreciates the opportunity to engage with all of its stakeholders, "including those who own stock in the company".

FACE TO FACE MARGARET FRANKLIN

CFA chief on the 'hardest exams' in the world

Tony Healey/FT

INTERVIEW

Franklin says there is no easy solution to low rates and an ageing population

ATTRACTA MOONEY

Margaret Franklin, the new head of the CFA Institute, failed her first round of tests when studying to become a chartered financial analyst.

She sat the first part of the CFA exams in 1994 as a new mother of a one-month-old boy. "I fell asleep in the morning exam. I thought I'd put my head down for just a moment and woke up significantly later, and did not pass my first level," she says.

Although few will have made what she describes as an "insane" decision to take the test as a new mother, she is not alone when it comes to failing the CFA exams, which have been dubbed the world's hardest. Only about 40 per cent pass the first level of the exams, which are widely taken across the asset management industry. Fewer than one in five go on to receive the charter, which Ms Franklin was awarded in 1997.

It is a hard test, the chief of the association for investment professionals concedes. "For many programmes the difficult part is getting into the programme. The material and content, oftentimes, is not nearly as difficult as the entry.

"For us, anybody can take it, but the actual programme itself is difficult and rigorous."

The 54-year-old took the job as chief executive of the CFA Institute, whose research arm publishes the respected Financial Analysts Journal, last September. She is the first woman to hold the position in the body's 73-year history and she has spent much of the past six months flying around the world.

Over coffee at the Ned, London's hotspot for business meetings, Ms Franklin says she is worried about her carbon footprint. Small, lively and warm, she leans into the conversations in a way that gives the impression that she is taking the listener into her inner circle. As the conversation progresses she bats away requests for minute details, instead focusing on her overall argument.

Her appointment comes at a time of change for the CFA and the wider investment industry. The CFA's charter programme has been hugely successful, but a battle for talent between finance and technology and a changing investment landscape is driving a rethink at the Charlottesville-based non-profit.

"We're in really interesting times," the Canadian native says. "Nobody practising right now has any playbook for this. Forty years ago, we were dealing with extraordinary inflation, largely through the energy markets and, for a long period of time, you had declining inflation, declining interest rates, and growing GDP, and that is the perfect trifecta for all assets to do well.

"And whether we're at the end of it or the tailing end of it, this is going to be a very challenging time," she says. "People living for longer and lower-for-longer returns, that's a pretty interesting mathematical equation."

She cites an example from her own family of the challenge facing the industry. Her father-in-law started his teaching career aged 21 and retired at 50. Now aged 94, he has been drawing his pension from the Ontario Teachers' Pension Plan for more years than he worked. Pension funds were never set up to operate this way, she says.

"It's a maths problem for which there may not be an investment solution. And that's why the complexity of what we're dealing with requires really, really good people at the table. It requires deep thinking."

The CFA's job is to "capture those changing dynamics" and incorporate them into its flagship exams and into life-long learning, she says. As part of this, the organisation has been piling resources into developing post-charter education. It spent the past 18 months looking at the main jobs in the investment industry in order to develop a new competency-based further education framework, which will be launched this year.

The conversation turns to Ms Franklin's experience as a woman in fund management. A former competitive road cyclist, she worked at Barclays Global Investors when the chief executive was Patricia Dunn, one of the best-known female asset management bosses. "That, for me, is a normal ecosystem and it has had a lasting imprint on me."

Reflecting on almost three decades in the industry, however, she says there were times when being a woman meant missed promotions and pay discrepancies. She cites an example of where a male employee she managed was awarded a similar bonus to her, with the justification that "he has a family to support".

Now, she says, more and more businesses are thinking about diversity and tackling biases. As part of a CFA initiative, 20 asset managers are trialling various strategies to improve diversity and inclusion in their businesses.

Like the majority of the fund industry, the CFA is also looking to tap into growing demand for environmental, social and governance investing. The organisation launched a working group aimed at developing a taxonomy and standards for ESG investing, akin to the widely used global investment performance standards known as GIPS. More than 200 people applied to be on the working group.

She says the asset management industry is increasingly waking up to ESG risks, particularly when it comes to climate change, where there are growing fears that the shift to a lower carbon economy could hit the valuations of some assets.

"You can see that Minsky moment when the market turns and pays attention to it, and there's an immediate and material repricing of assets. And if your portfolio analysis and your due diligence and your research did not consider that, I think for most managers . . . that would create a problem."

The CFA's focus on ESG comes as younger people increasingly say they want to work in careers that make a difference. At the same time, the number of students sitting the upcoming CFA exams in June is expected to fall by more than 5 per cent, after a rapid rise during the past three years.

As well as ensuring clients' cash is not put at risk, the growing focus on the environment will play a role in helping ensure the finance industry is an attractive place to work for young people, says Ms Franklin.

"We have a part to play in restoring the nobility of what we're doing. At the end of the day, the financial system is not going away, asset management is not going away. It is a necessary activity, and done well can contribute so much to innovation, to financial security for citizens."

CV

Born *May 1965* Ottawa

Total pay not disclosed

Education
1987 BA in economics, McMaster University, Ontario
1997 CFA Charter

Career
1992-96 State Street Global Advisors, client relationship associate
1996-97 Mercer Investment Consulting, investment consultant
1997-00 Barclays Global Investors, principal (defined benefit)
2000-02 Altamira, managing director (institutional asset management)
2002-10 KJ Harrison & Partners, partner
2010-16 Marret Asset Management, president (Marret Private Wealth) and CFO
2016-19 BNY Mellon Wealth Management, head of North America, and president, Canada

CFA Institute

Established 1947

Assets n/a

Employees 658

Headquarters Charlottesville

Ownership member organisation

ADVERTISEMENT

PAIF
ABF Pan Asia Bond Index Fund

Coronavirus and the investment implications

While the full impact of the virus remains unclear, it will likely force China to maintain a degree of policy support into the second half of 2020 and possibly beyond.

The novel coronavirus COVID-19 is still in the early phase of accelerating infection rates and, sadly, increasing number of deaths. While much is still unknown, authorities have responded within China, across the globe and in international cooperation.

Although the virus outbreak will almost certainly knock China's quarterly economic output, the medium- and long-term view could be much less negative.

One risk going into 2020 was the possibility that the Chinese government would reverse course and cut, if not eliminate, its stimulus programs. It is now highly unlikely that we will see a sudden stop to the monetary, fiscal and regulatory stimulus that has helped drive the Chinese recovery since mid-2019.

The importance of public health in China has materially raised the bar for the central, provincial and local governments to effectively manage the acute effects of the epidemic. President Xi and the central government exercise centralised power and we expect them to mobilise government resources to limit the economic fallout.

In terms of economic impact, the epidemic will likely cause Chinese economic growth to drop significantly to below 6% during Q1 2020, requiring the Chinese authorities to revisit their plans for ending their stimulus actions. In 2019, fiscal easing was roughly equal to 2% of GDP, with another 0.5% slated for 2020. Along with the Chinese central bank's monetary policy actions — lowering lending rates and reserve requirements (down 2%) for banks — this combined fiscal-monetary stimulus has helped stabilise Chinese growth and the global recovery.

The phase one US-China trade deal was going to be the trigger to cut back on stimulus, but the epidemic makes that prospect unlikely. Instead, we can expect policy support continuing into the second half of 2020 and possibly beyond. Together with the cyclical recovery post epidemic, this means China could well be a growth driver over the whole year, compensating for its role as a source of slowdown in Q1 2020 (assuming the virus effect reverses within two to three months). In the long term, it reaffirms the "policy put" that has guided Chinese actions for the past decade.

The immediate impact of this novel coronavirus spread and development is a global one though it may be felt stronger in Asia given the geographic proximity to China (where this started) and the close trade and social links of Asian economies with China. This is also not helped by the timing of this happening around the holiday season at the end of 2019 and Lunar New Year in January where human traffic was high thus aiding the spread of the virus. We expect personal consumption and services sector in Asia to be the most affected part of the economy while some manufacturing companies may be affected by not having full staff strength. This would exert downward pressures on GDP and inflation in Asia.

Asian governments and central banks are expected to take counter measures to provide fiscal support as well as lowering interest rates, supplying ample liquidity into the system to prevent panic selling of financial assets. In this region, we have had Malaysia, Thailand and the Philippines cutting interest rates since late January 2020 and we expect other central banks to soon adopt looser monetary policy stance as well.

Asian local currency bond yields are expected to decline on expectations of growth slowdown, lower inflation and rate cut expectations. At the same time, the Asian authorities may allow Asian currencies to depreciate moderately in line with lower growth expectation and support exports growth. These measures are expected to help Asian economies weather this unexpected turbulence and keep growth stable.

Investment Implications

Continued, stimulative central bank activities around the world in the form of either policy rate moves or quantitative easing should reap benefits, including keeping GDP growth near its potential.

Expectation of lower rates will spark a renewed search for yield. Emerging markets are naturally at the fore with opportunities for both income and total returns.

Virus-induced asset price moves are likely to correct once the growth rate of infections slows down. Thereafter, Chinese policy support should provide a tailwind for global equities as well as the renminbi, with positive knock-on effects for other emerging market currencies. We expect Chinese bonds to be supported by policy easing. In addition, the country's bonds have the attraction of inclusion in global indices, pointing to an ongoing increase in foreign participation.

Kheng-Siang Ng
Asia Pacific Head of Fixed Income
State Street Global Advisors

Visit www.abf-paif.com* for our latest insights and investment ideas for Asian fixed income.

FOR USE WITH THE PUBLIC. All forms of investments carry risks, including the risk of losing all of the invested amount. Such activities may not be suitable for everyone. Past performance is not a guarantee of future results.The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor. All material has been obtained from sources believed to be reliable. There is no representation or warranty as to the accuracy of the information and State Street shall have no liability for decisions based on such information. The views expressed in this advertisement are the views of Kheng Siang Ng through the period ended 11 February 2020 and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected. The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without SSGA's express written consent.**Singapore**: State Street Global Advisors Singapore Limited, 168 Robinson Road, #33-01 Capital Tower, Singapore 068912 (Company Reg. No: 200002719D, regulated by the Monetary Authority of Singapore) • Telephone: +65 6826-7555 • Facsimile: +65 6826-7501 • Web: www.SSGA.com* This advertisement or publication has not been reviewed by the Monetary Authority of Singapore. **Hong Kong**: State Street Global Advisors Asia Limited, 68/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong • Telephone: +852 2103-0288 • Facsimile: +852 2103-0200 • Web: www.SSGA.com* This advertisement has not been reviewed by the Securities and Futures Commission of Hong Kong (the "SFC"). © 2020 State Street Corporation - All Rights Reserved. 2942677.1.1.APAC.RTL. Exp. Date: 02/28/2021 *This website has not been reviewed by the SFC.

STATE STREET GLOBAL ADVISORS

THE BIG PICTURE

Private debt frenzy reaches $800bn

Senior figures warn market looks frothy with too much capital chasing too few deals, write *Siobhan Riding* and *Robin Wigglesworth*

Private debt has become one of the hot topics for fund managers desperate to build a fee-rich asset class at a time when their traditional businesses are struggling. But even industry insiders are now warning that the boom in private debt is turning into a frenzy.

Once a niche area of the global asset management industry, assets invested in private debt — largely made up of non-bank loans to unlisted companies — reached a record $812bn in 2019, putting the market on track to break through the $1tn barrier within the next year.

The number of asset managers operating in the field also reached a new high last year, totalling 1,764, more than double the amount five years earlier, according to consultancy Preqin.

The main managers competing for assets were historically US private equity groups with credit arms, such as KKR and Blackstone. But more mainstream fund groups, including M&G, Schroders, Amundi and Standard Life Aberdeen, have made forays into the market in recent years, eager to take advantage of healthy investor appetite.

Private debt is moving into the mainstream as investors hunt for higher yield. Its growth has been spurred by banks quitting the market when they rationalised their loan books to meet tougher capital rules.

"Sovereign wealth funds and large state pensions were among the earliest adopters, but increasingly the rest of the institutional investor world has followed suit," says Ji-Eun Kim, head of private asset manager solutions at Schroders.

"Private debt's . . . enhanced cash yields are especially attractive in a low-return environment."

However, a growing chorus of senior figures are voicing fears that the market is looking frothy as too much capital chases too few deals.

"It would be crazy to start a private debt business right now," says a former senior private debt executive. Another senior private capital fund manager thinks the asset class is in bubble territory. "We see the same movie happen every time. When too much money goes into one place the outcome isn't great."

Vulnerabilities are being exposed. In February, Hadrian's Wall Secured Investments, a listed fund that lent money to UK small and medium-sized companies, said it was winding down its business after warning of "material" losses on investments in two biomass companies.

Preqin data show that over the past four years 327 direct lending funds, the most common type of private credit strategy, have been raised, with about $207bn flowing into the strategies.

At the same time, dry powder, the amount raised for direct lending but not invested, is at a record $112bn. Dry powder for all private credit, including strategies such as distressed and mezzanine debt in addition to direct lending, stands at $261bn, a figure which is down slightly on the year before but still represents the second-highest level on record.

The capital raising frenzy, combined with competition among lenders, is damaging returns and loan condition standards are suffering. Jaime Prieto of Kartesia, an asset manager that lends to SMEs, says that some managers are yielding to pressures by agreeing to weaker loan terms and looser covenants.

"The huge amount of capital floating around means that it is inevitable there will be some deterioration in credit quality," says the former senior executive. He says mounting leverage across private assets is evidence that problems are building up as they did in the run-up to the subprime mortgage market crisis.

Mariano Belinky, chief executive of Santander Asset Management, which set up a private debt unit last year, says that more problems are coming down the track. He highlights the spate of bumper fund launches as an area of concern. Last year a private debt fund managed by BlueBay Asset Management raised €6bn, while a vehicle from BNY Mellon subsidiary Alcentra closed at €5.5bn, nearly double its minimum target.

"How do you deploy that capital at scale?" he asks. "As the asset class keeps heating up, a lot of these managers will have a tougher time finding good deals."

Other industry executives warn that the cracks now on show will become much wider when the market cycle turns.

Nicholas Brooks, head of investment research at Intermediate Capital Group, the £42.6bn specialist credit manager, says rising markets over the past decade have masked problems lurking under the surface. "There are probably a number of newer players that are lending unwisely but we won't know until we get to the next downturn."

There are also concerns that some fund groups have jumped on the private debt bandwagon without the skills to fully understand the risks of the loans they provide.

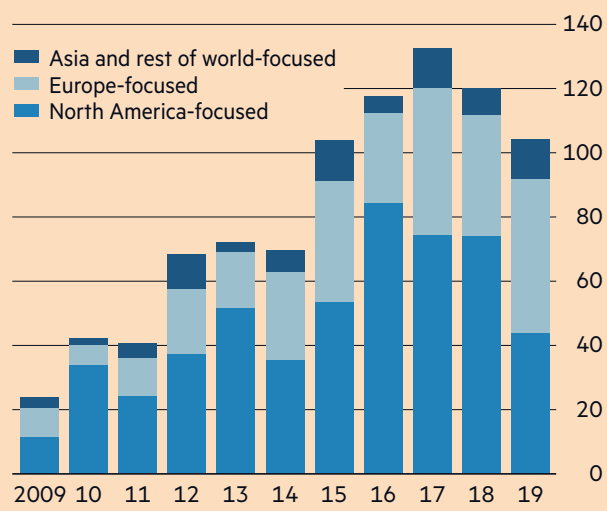
"As managers raise bigger funds, the question becomes can they originate big enough loans and do they have teams of experienced people to sort things out when problems arise," says Paul Shea, co-founder of specialist SME loan manager Beechbrook.

$112bn
Direct lending funds' level of dry powder, the amount raised but not invested

€6bn
Amount raised last year by a private debt fund managed by BlueBay

Private debt funds raise record sums

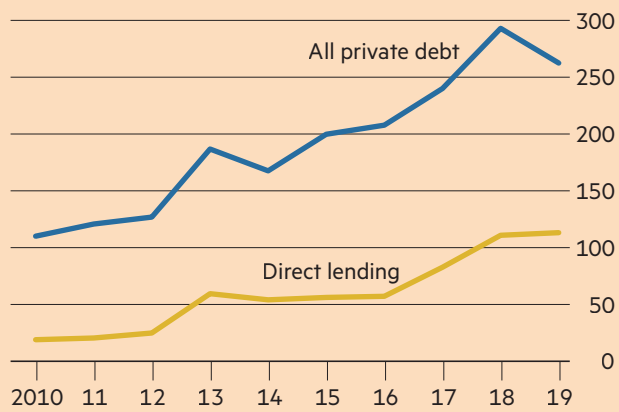
Aggregate capital raised by private debt funds ($bn)



Source: Preqin

Plenty of dry powder in the market

$bn



Source: Preqin

Mr Belinky says Santander AM's private debt unit, which benefits from access to its parent bank's origination pipeline, has been approached by groups that are struggling to find deals by themselves.

"Managers have come in and said 'Hey, we'll buy 50 per cent of whatever you originate'. That gives you a sense of how managers have limited access to good deals."

But Ken Kencel, chief executive of Churchill Asset Management, which examined 800 potential deals last year, takes a different view, arguing ample opportunities abound.

He says credit quality is holding up, particularly at the upper end of the market where fewer managers compete. Competition has been acute among those looking to arrange loans for small and midsized companies.

Mr Kencel says that the groups that are able to write bigger cheques to corporates are still in a minority and will flourish in the coming years.

But writing big cheques is also risky, making it even more important for fund managers to have large teams of professionals tasked with monitoring the loans they have made.

Established private debt managers that benefit from revenue streams from existing funds can afford to finance this. But newcomers may take years before they turn a profit considering the high costs of arranging private loans and the fact that many groups earn management fees based on the amount of money they have invested, rather than raised.

> 'As the asset class keeps heating up, a lot of these managers will have a tougher time finding good deals'

Many believe the market is set for a wave of consolidation in which smaller and less specialist groups will be squeezed out or merge with competitors. Investors are increasingly gravitating towards more established managers with larger funds; according to Preqin, the 10 biggest funds that closed last year accounted for 36 per cent of new capital raised.

Mr Belinky says that some managers are already conceding defeat. When his company was recruiting for a new private debt team last year, it received applications from professionals whose previous employer had been forced to close their private debt funds because they failed to find enough companies to lend to. "When we interviewed them, they said they had commitments from investors and were ready to go but just couldn't find enough assets to put the capital to work," he says.

In January, Swedish private equity firm EQT said it was considering offloading its €3.9bn credit arm to focus on its core business. M&A activity is already under way among specialist direct lending entities in the US known as business development companies or BDCs. Crescent Capital last year acquired Alcentra's BDC, taking its portfolio to $923m.

"In a more challenged credit environment, some of the smaller shops are going to find it hard to service their portfolio and have the resources needed to deal with restructuring their portfolios," says Mr Kencel. "Rather than spending significant time working through these problems, some are likely to opt to sell."

IGNITES ASIA

A Financial Times Service

Your daily asset management news source in Asia

Online coverage includes:

- The 12 largest fund markets in Asia
- Retail, high-net-worth and institutional markets
- Regulatory shifts and developments
- Industry trends
- Mandate listings

Call +44 (0) 207 775 6103 for a free trial subscription or email sales@IgnitesAsia.com

STAY CONNECTED

Available on:
iPad® | iPhone® | Android™

iPad and iPhone are registered trademarks of Apple Inc.
Android is a trademark of Google Inc.

FT FINANCIAL TIMES

CO-PRESENTER

MORAL MONEY
Your guide to better business and finance

FT INVESTING FOR GOOD EUROPE: MAINSTREAMING ESG

Mapping the next stage of the journey

Christina Olivecrona
Senior Sustainability Analyst, *AP2*

Carine Smith Ihenacho
Chief Corporate Governance Officer, *Norges Bank Investment Management*

Edward Mason
Head of Responsible Investment, *Church Commissioners for England*

Anne Simpson
Director, Board Governance and Strategy - Executive Office, *CalPERS*

Nico Aspinall
Chief Investment Officer, *B&CE, Provider of The People's Pension*

Magnus Billing
Chief Executive Officer, *Alecta*

20 May 2020 | London

Connecting asset owners and asset managers, policy makers and thought-leaders, data providers and analysts, to plan the next steps for ESG integration across the investment process. Join us and be part of the conversation on the future of sustainable investing.

For more information and to register please visit:

live.ft.com/IFGEurope

An event from FINANCIAL TIMES LIVE

STRATEGIC PARTNER

Federated Hermes

ASSOCIATE SPONSORS

GLG Linklaters SCB

FTfm

Guide to data

The fund prices quoted in FTfm are supplied by the operator of the relevant fund. Details of funds, including prices, are for informational purposes only. The Financial Times Limited makes no representation as to their accuracy or completeness, and they should not be relied upon when making an investment decision.
The sale of interests in the funds listed in FTfm in certain jurisdictions may be restricted by law and the funds will not necessarily be available to persons in all jurisdictions in which the publication circulates. Persons in any doubt should take appropriate professional advice.
Data collated by **Morningstar**. For all other queries, contact the FT at **reader.enquiries@ft.com**. The fund prices published in this edition along with additional information are also available on the Financial Times website at **www.ft.com/funds**. Charges for this advertising service are based on the number of lines published and the classification of the fund. Please contact data@ft.com or call +44 (0)20 7873 3132.
The funds published on these pages are grouped together by fund management company.
Prices are in pence unless otherwise indicated and those designated $ with no prefix refer to US dollars. Yields % allow for buying expenses. Prices of certain older insurance linked plans are subject to capital gains tax on sales. Some Property Unit Trusts are limited to investors who are UK tax exempt.
All dealings are subject to individual Trust Deed rules. The sale prices for these funds are estimates.
Guide to pricing of Authorised Investment Funds.
Compiled with the assistance of the IMA. The Investment Management Association, 65 Kingsway, London WC2B 6TD. +44 (0)20 7831 0898. All funds within this section, whether OEICs or unit trusts are authorised in the UK by the Financial Services Authority. The prices quoted should only be used as a guide.
OEIC: Open-Ended Investment Company. Similar to a unit trust but using a company rather than a trust structure.
Share Classes: Separate classes of share are denoted by a letter or number after the name of the fund. Different classes are issued to reflect a different currency, charging structure or type of holder.
Buying price: Also called offer price. The price at which units in a unit trust are bought by investors. Includes manager's initial charge.
Selling price: Also called bid price. The price at which units in a unit trust are sold by investors.
Single price: Based on a mid-market valuation of the underlying investments. The buying and selling price for shares of an OEIC and units of a single priced unit trust are the same.
Exit Charges: The letter E denotes that an exit charge may be made when you sell units, contact the manager/operator for full details.
Time: The time shown alongside the fund manager's/operator's name is the time of the unit trust's/OEIC's valuation point unless another time is indicated by the symbol alongside the individual unit trust/OEIC name.
The symbols are as follows: ✠ 0001 to 1100 hours; ♦ 1101 to 1400 hours; ▲ 1401 to 1700 hours; **#** 1701 to midnight. Daily dealing prices are set on the basis of the valuation point, a short period of time may elapse before prices become available.
Yield: Funds comprising mainly of bonds normally quote a gross redemption yield after all charges but before tax has been deducted. Funds mainly made up of equities normally quote a yield representing the estimated annual payout net of tax for basic rate taxpayer. For further information contact the management company.
Historic pricing: The letter H denotes that the managers/operators will normally deal on the price set at the most recent valuation.
The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis. The managers/operators must deal at a forward price on request, and may move to forward pricing at any time.
Forward pricing: The letter F denotes that that managers/operators deal at the price to be set at the next valuation. Investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the newspaper are the most recent provided by the managers/operators. Scheme particulars, prospectus, key features and reports: The most recent report, scheme particulars, prospectus and key features document may be obtained free of charge from fund managers/operators.
* Indicates funds which do not price on Fridays.
Other explanatory notes are contained in the last column of the FT Managed Funds Service.

Prospectus data, price histories, charges and risk analytics on the funds within these pages is available online at www.ft.com/funds.

Fund	Bid	Offer	D+/-	Yield
Aberdeen Standard Capital (JER)				
PO Box 189, St Helier, Jersey, JE4 9RU 01534 709130				
FCA Recognised				
Aberdeen Standard Capital Offshore Strategy Fund Limited				
Bridge Fund	£ 1.9300	-	-0.0683	2.07
Global Equity Fund	£ 2.5817	-	-0.1221	1.29
Global Fixed Interest Fund	£ 0.9895	-	-0.0061	3.89
Income Fund	£ 0.5752	-	-0.0219	-
Sterling Fixed Interest Fund	£ 0.9070	-	-0.0029	2.99
UK Equity Fund	£ 1.8906	-	-0.0887	4.02

Algebris INVESTMENTS

Fund	Bid	Offer	D+/-	Yield
Algebris Investments (IRL)				
Regulated				
Algebris Core Italy I EUR Acc	€ 108.85	-	1.12	-
Algebris Allocation Fund - Class I EUR	€ 103.34	-	-0.38	0.00
Algebris Core Italy Fund - Class R EUR	€ 102.30	-	1.06	0.00
Algebris Financial Credit Fund - Class I EUR	€ 172.68	-	-0.30	0.00
Algebris Financial Credit Fund - Class R EUR	€ 151.01	-	-0.27	0.00
Algebris Financial Credit Fund - Class Rd EUR	€ 105.67	-	-0.18	5.02
Algebris Financial Income Fund - Class I EUR	€ 148.69	-	-0.77	0.00
Algebris Financial Income Fund - Class R EUR	€ 138.73	-	-0.72	0.00
Algebris Financial Income Fund - Class Rd EUR	€ 94.65	-	-0.49	4.72
Algebris Financial Equity Fund - Class B EUR	€ 112.40	-	-1.06	0.00
Algebris Macro Credit Fund - Class I EUR	€ 117.75	-	-0.35	0.00
Algebris Macro Credit Fund - Class R EUR	€ 115.99	-	-0.34	0.00
Algebris Macro Credit Fund - Class Rd EUR	€ 115.99	-	-0.34	0.00
Algebris Quant Arbitrage Fund - Class EB EUR	€ 98.20	-	-1.15	0.00
Algebris IG Financial Credit R EUR Acc	€ 101.89	-	-0.21	-
Algebris IG Financial Credit B EUR Acc	€ 102.14	-	-0.21	-

Fund	Bid	Offer	D+/-	Yield
The Antares European Fund Limited				
Other International				
AEF Ltd Usd (Est)	$ 680.39	-	20.34	-
AEF Ltd Eur (Est)	€ 638.56	-	18.64	0.00
Arisaig Partners				
Other International Funds				
Arisaig Asia Consumer Fund Class A (Ex-Alcohol) shares	$ 96.76	-	0.33	-
Arisaig Asia Consumer Fund Limited	$ 95.95	-	0.37	-
Arisaig Global Emerging Markets Consumer Fund	$ 11.83	-	-0.13	-
Arisaig Global Emerging Markets Consumer UCITS	€ 14.25	-	-0.22	-
Arisaig Global Emerging Markets Consumer UCITS STG	£ 15.44	-	-0.01	-
Arisaig Latin America Consumer Fund	$ 25.66	-	-0.93	-
Artemis Fund Managers Ltd (1200)F (UK)				
57 St. James's Street, London SW1A 1LD 0800 092 2051				
Authorised Inv Funds				
Artemis Corporate Bond I Acc	£ 1.03	-	-0.01	-
Artemis Monthly Dist R Acc	91.95	-	-2.21	4.13
Artemis Target Return Bond I Acc	£ 1.01	-	0.00	-
Artemis US Smllr Cos I Hdg Acc	103.35	-	-3.64	-

Ashmore

Fund	Bid	Offer	D+/-	Yield
Ashmore Investment Management Limited (LUX)				
2 rue Albert Borschette L-1246 Luxembourg				
FCA Recognised				
Ashmore SICAV Emerging Market Debt Fund	$ 95.68	-	-1.22	-
Ashmore SICAV Emerging Market Frontier Equity Fund	$ 161.55	-	-1.66	1.36
Ashmore SICAV Emerging Market Total Return Fund	$ 82.98	-	-0.97	-
Ashmore SICAV Global Small Cap Equity Fund	$ 142.27	-	-5.23	0.03
EM Active Equity Fund Acc USD	$ 128.88	-	-3.30	-
EM Equity Fund Acc USD	$ 105.72	-	-2.59	-
EM Mkts Corp.Debt USD F	$ 93.10	-	-0.73	-
EM Mkts Loc.Ccy Bd USD F	$ 78.32	-	-0.90	-
EM Short Duration Fund Acc USD	$ 128.28	-	-1.36	-

Fund	Bid	Offer	D+/-	Yield
Atlantas Sicav (LUX)				
Regulated				
American Dynamic	$ 5471.27	5471.27	-113.69	-
American One	$ 5225.40	5225.40	-245.98	-
Bond Global	€ 1591.79	1591.79	0.04	-
Eurocroissance	€ 1194.12	1194.12	-57.22	-
Far East	$ 942.41	-	-31.64	-
Barclays Investment Funds (CI) Ltd (JER)				
39/41 Broad Street, St Helier, Jersey, JE2 3RR Channel Islands 01534 812800				
FCA Recognised				
Bond Funds				
Sterling Bond F	£ 0.50	-	0.00	2.34

Brown ADVISORY
Thoughtful Investing.

Fund	Bid	Offer	D+/-	Yield
Brown Advisory Funds plc (IRL)				
http://www.brownadvisory.com Tel: 020 3301 8130				
FCA Recognised				
Global Ldrs Sst C USD Acc	$ 9.69	-	-0.32	-
Brown Advisory US Equity Growth Fund USD B	$ 40.82	-	-1.56	0.00
Brown Advisory American Fund USD B	$ 23.60	-	-0.92	0.16
Brown Advisory US Smaller Companies Fund USD B	$ 28.50	-	-0.93	0.00
Brown Advisory US Small Cap Blend Fund USD B	$ 17.22	-	-0.58	0.00
Brown Advisory US Flexible Equity Fund USD B	$ 17.10	-	-0.68	0.00
Brown Advisory Global Leaders Fund USD C	$ 16.11	-	-0.51	0.00
Brown Advisory Latin American Fund USD B	$ 12.68	-	-0.41	0.78
Brown Advisory US Sustainable Growth Fund USD C	$ 16.37	-	-0.68	0.00
Brown Advisory US Mid-Cap Growth Fund USD C	$ 15.05	-	-0.55	0.00
CCLA Investment Management Ltd (UK)				
Senator House 85 Queen Victoria Street London EC4V 4ET				
Authorised Inv Funds				
Diversified Income 1 Units GBP Inc	£ 1.56	1.56	-0.03	-
Diversified Income 2 Units GBP Inc	£ 1.50	1.50	-0.03	-
Diversified Income 3 Units GBP Inc	£ 1.51	1.51	-0.03	-

Fund	Bid	Offer	D+/-	Yield
CG Asset Management Limited (IRL)				
25 Moorgate, London, EC2R 6AY				
Dealing: Tel. +353 1434 5098 Fax. +353 1542 2859				
FCA Recognised				
CG Portfolio Fund Plc				
Absolute Return Cls M Inc	£ 125.33	125.33	-0.92	-
Capital Gearing Portfolio GBP P	£ 34262.15	34262.15	-229.88	-
Capital Gearing Portfolio GBP V	£ 166.62	166.62	-1.12	-
Dollar Fund Cls D Inc	£ 166.80	166.80	0.68	1.96
Dollar Hedged GBP Inc	£ 101.60	101.60	0.06	1.88
Real Return Cls A Inc	£ 203.02	203.02	1.08	2.23

CANDRIAM
A NEW YORK LIFE INVESTMENTS COMPANY

Fund	Bid	Offer	D+/-	Yield
Candriam Investors Group (LUX)				
FCA Recognised				
Candriam Eqts L Australia Cap	A$ 1396.40	-	-44.98	0.00
Candriam Qt-Eqts Europe Cap	€ 2582.64	-	-95.26	0.00
Candriam Qt-Eqts USA Cap	$ 3177.88	-	-140.32	-
Candriam Investors Group				
Other International Funds				
Candriam Eqts L Emerging Mkts Cap	€ 837.62	-	-30.89	-
Candriam Bonds Credit Opportunities	€ 200.33	-	-0.22	0.00
Candriam Bds Euro High Yield Cap	€ 1198.67	-	-5.25	-
Candriam Bds Euro Sh.Term Cap	€ 2088.91	-	-1.09	0.00
Chartered Asset Management Pte Ltd				
Other International Funds				
CAM-GTF Limited	$ 288368.51	288368.51	810.28	-
CAM GTi Limited	$ 723.81	-	6.02	0.00
Raffles-Asia Investment Company	$ 1.40	1.40	-0.03	2.14

Fund	Bid	Offer	D+/-	Yield
Cheyne Capital Management (UK) LLP				
Other International Funds				
Cheyne European Event Driven Fund (M)	€ 144.16	-	-0.70	-

price updated (D) daily, (W) weekly, (M) monthly

CP Global Asset Management

Fund	Bid	Offer	D+/-	Yield
CP Global Asset Management Pte. Ltd.				
www.cpglobal.com.sg, Tel: +65 6466 6990				
International Mutual Funds				
CP Multi-Strategy Fund	$ 218.09	-	0.43	-
CP Capital Asset Management Limited				
www.cpgbl.com, email: fundservices@cpgbl.com				
International Mutual Funds				
CPS Master Private Fund	$ 291.57	-	0.18	-
CP Global Alpha Fund	$ 241.02	-	0.33	-

DWS

Fund	Bid	Offer	D+/-	Yield
DWS (LUX)				
Tel: +44 (0) 20 7541 8999 www.dws.com				
FCA Recognised				
DWS Invest Top Dividend	£ 140.27	140.27	-1.85	-
DWS Invest Top Euroland	£ 134.74	134.74	-3.25	-
DWS Invest Multi Opportunities	£ 105.49	105.49	-1.44	-
DWS Invest Global Bonds	£ 104.48	104.48	0.02	-

DODGE & COX®
WORLDWIDE FUNDS

Fund	Bid	Offer	D+/-	Yield
Dodge & Cox Worldwide Funds (IRL)				
6 Duke Street,St.James,London SW1Y 6BN				
www.dodgeandcox.worldwide.com 020 3713 7664				
FCA Recognised				
Dodge & Cox Worldwide Funds plc - Global Bond Fund				
EUR Accumulating Class	€ 15.16	-	-0.20	0.00
EUR Accumulating Class (H)	€ 10.85	-	-0.04	0.00
EUR Distributing Class	€ 12.22	-	-0.17	4.26
EUR Distributing Class (H)	€ 8.72	-	-0.03	4.57
GBP Distributing Class	£ 12.72	-	-0.03	4.14
GBP Distributing Class (H)	£ 9.17	-	-0.03	4.82
USD Accumulating Class	$ 12.02	-	-0.04	0.00
Dodge & Cox Worldwide Funds plc-Global Stock Fund				
USD Accumulating Share Class	$ 21.01	-	-0.78	0.00
GBP Accumulating Share Class	£ 26.82	-	-0.96	0.00
GBP Distributing Share class	£ 18.67	-	-0.67	1.28
EUR Accumulating Share Class	€ 28.70	-	-1.37	0.00
GBP Distributing Class (H)	£ 10.53	-	-0.39	1.43
Dodge & Cox Worldwide Funds plc-U.S. Stock Fund				
USD Accumulating Share Class	$ 25.98	-	-1.04	0.00
GBP Accumulating Share Class	£ 31.36	-	-1.22	0.00
GBP Distributing Share Class	£ 19.31	-	-0.75	0.91
EUR Accumulating Share Class	€ 30.65	-	-1.55	0.00
GBP Distributing Class (H)	£ 11.14	-	-0.45	1.02

DRAGON CAPITAL

Fund	Bid	Offer	D+/-	Yield
Dragon Capital Group				
1501 Me Linh Point, 2 Ngo Duc Ke, District 1, Ho Chi Minh City, Vietnam				
Fund information, dealing and administration: funds@dragoncapital.com				
Other International Funds				
Vietnam Equity (UCITS) Fund A USD	$ 20.22	-	-0.36	0.00
Ennismore Smaller Cos Plc (IRL)				
5 Kensington Church St, London W8 4LD 020 7368 4220				
FCA Recognised				
Ennismore European Smlr Cos NAV	£ 135.41	-	1.55	0.00
Ennismore European Smlr Cos NAV	€ 158.68	-	-0.45	0.00
Ennismore European Smlr Cos Hedge Fd				
Other International Funds				
NAV	€ 587.73	-	-9.37	0.00

FTfm

Fund	Bid	Offer	D+/-	Yield

Equinox Fund Mgmt (Guernsey) Limited (GSY)
Regulated

Equinox Russian Opportunities Fund Limited	$ 198.18	-	12.25	-

Euronova Asset Management UK LLP (CYM)
Regulated

Smaller Cos Cls One Shares	€ 49.67	-	0.07	0.00
Smaller Cos Cls Two Shares	€ 32.90	-	0.03	0.00
Smaller Cos Cls Three Shares	€ 16.57	-	0.02	0.00
Smaller Cos Cls Four Shares	€ 21.28	-	0.01	0.00

FIL Investment Services (UK) Limited (1200)F (UK)
130, Tonbridge Rd, Tonbridge TN11 9DZ
Callfree: Private Clients 0800 414161
Broker Dealings: 0800 414 181
OEIC Funds

American Special Sits W-ACC-GBP	£ 14.67	-	-0.60	-
Asian Dividend Fund W-ACC-GBP	£ 1.90	-	-0.06	-
China Consumer Fund W-ACC-GBP	£ 2.97	-	-0.09	-
Emerging Asia Fund W-ACC-GBP	£ 1.58	-	-0.05	-
Enhanced Income Fund W-INC-GBP	£ 0.86	-	-0.04	-
European Fund W-ACC-GBP	£ 17.34	-	-0.66	-
Fidelity American Fund W-ACC-GBP	£ 45.15	-	-1.67	-
Fidelity Asia Fund W-ACC-GBP	£ 14.26	-	-0.40	-
Fidelity Cash Fund Y-ACC-GBP	£ 1.02	-	0.00	-
FID Emerg Europe, Middle East and Africa Fund W-ACC-GBP	£ 2.06	-	-0.12	3.03
Fidelity Global Enhanced Income Fund W-ACC-GBP	£ 1.84	-	-0.08	-
Fidelity Global Focus Fund W-ACC-GBP	£ 24.91	-	-0.94	-
Fidelity Global High Yield Fund Y-ACC-GBP	£ 15.23	-	-0.18	-
Fidelity Japan Fund W-ACC-GBP	£ 3.85	-	-0.14	-
Fidelity Japan Smaller Companies Fund W-ACC-GBP	£ 3.12	-	-0.11	-
Fidelity Select 50 Balanced Fund PI-ACC-GBP	£ 1.06	-	-0.02	-
Fidelity Special Situations Fund W-ACC-GBP	£ 33.67	-	-1.39	-
Short Dated Corporate Bond Fund Y ACC GBP	£ 10.84	-	-0.02	-
Fidelity Sustainable Water & Waste W Acc	£ 0.99	-	-0.05	-
Fidelity UK Growth Fund W-ACC-GBP	£ 3.34	-	-0.05	-
Fidelity UK Select Fund W-ACC-GBP	£ 3.06	-	-0.13	-
Global Dividend Fund W-ACC-GBP	£ 2.33	-	-0.11	-
Global Property Fund W-ACC-GBP	£ 1.98	-	-0.10	-
Global Special Sits W-ACC-GBP	£ 40.36	-	-1.76	-
MoneyBuilder Balanced Y-ACC-GBP	£ 0.57	-	-0.02	-
MoneyBuilder Dividend Y-INC-GBP	£ 1.19	-	-0.05	-
Multi Asset Income Fund W-INC-GBP	£ 1.08	-	-0.01	4.13
Multi Asset Open Growth Fund W-ACC-GBP	£ 1.38	-	-0.03	0.00
Multi Asset Open Strategic Fund W-ACC-GBP	£ 1.36	-	-0.02	0.00
Open World Fund W-ACC-GBP	£ 1.71	-	-0.05	0.00
UK Smaller Companies W-ACC-GBP	£ 2.48	-	-0.12	-
Institutional OEIC Funds				
Europe (ex-UK) Fund ACC-GBP	£ 5.79	-	-0.22	-

Findlay Park Funds Plc (IRL)
30 Herbert Street, Dublin 2, Ireland Tel: 020 7968 4900
FCA Recognised

American Fund USD Class	$ 130.27	-	-4.34	-
American Fund GBP Hedged	£ 66.79	-	-2.23	0.00
American Fund GBP Unhedged	£ 101.18	-	-3.02	-

First State Investments (UK) (1200)F (UK)
23 St Andrew Square, Edinburgh, EH2 1BB
enquiries@firststate.co.uk
Client Services: 0800 587 4141 Dealing Line: 0800 587 3388
Authorised Funds

Asia-All Cap Acc GBP	£ 1.51	-	-0.04	-
Asia Focus Acc GBP	£ 1.90	-	-0.06	-
Diversified Growth B Acc	£ 1.18	-	-0.03	-
Japan Focus Acc GBP	£ 1.84	-	-0.05	-

Foord Asset Management
Website: www.foord.com - Email: info@foord.com
FCA Recognised - Luxembourg UCITS

Foord International Fund | R	$ 41.91	-	-0.42	-
Foord Global Equity Fund (Lux) | R	$ 13.10	-	-0.32	-
Regulated				
Foord Global Equity Fund (Sing) | B	$ 16.07	-	-0.40	-
Foord International Trust (Gsy)	$ 41.60	-	-0.43	-

Franklin Templeton International Services Sarl (IRL)
JPMorgan House - International Financial Services Centre,Dublin 1, Ireland
Other International Funds
Franklin Emerging Market Debt Opportunities Fund Plc

Franklin Emg Mkts Debt Opp CHFSFr	16.18	-	0.03	9.64
Franklin Emg Mkts Debt Opp GBP	£ 10.43	-	0.05	6.97
Franklin Emg Mkts Debt Opp SGD S$	22.63	-	0.20	5.13
Franklin Emg Mkts Debt Opp USD	$ 17.77	-	0.08	6.88

GAM
funds@gam.com, www.funds.gam.com
Regulated

LAPIS GBL TOP 50 DIV.YLD-Na-D	£ 103.32	-	-3.06	2.75
LAPIS GBL F OWD 50 DIV.YLD-Na-D	£ 95.97	-	-0.44	-

Genesis Investment Management LLP
Other International Funds

Emerging Mkts NAV	£ 7.21	-	-0.16	0.00

Global Investment House

Global GCC Islamic USD	$ 113.86	-	1.67	0.00
Global GCC Large Cap Fund	$ 177.93	-	3.46	0.00
Global Saudi Equity Fund	SR 276.30	-	4.60	0.00

HPB Assurance Ltd
Anglo Intl House, Bank Hill, Douglas, Isle of Man, IM1 4LN 01638 563490
International Insurances

Holiday Property Bond Ser 1	£ 0.51	-	-0.01	0.00
Holiday Property Bond Ser 2	£ 0.64	-	0.00	0.00

INDIA VALUE INVESTMENTS LIMITED (INVIL)
www.invil.mu
Other International Funds

NAV	£ 9.09	-	0.03	0.00

Intrinsic Value Investors (IVI) LLP (IRL)
1 Hat & Mitre Court, 88 St John Street, London EC1M 4EL +44 (0)20 7566 1210
FCA Recognised

IVI European Fund EUR	€ 22.88	-	-0.74	-
IVI European Fund GBP	£ 25.99	-	-0.47	-

Kames Capital ICVC (UK)
Kames House, 3 Lochside Crescent, Edinburgh, EH12 9SA
0800 358 3009 www.kamescapital.com
Authorised Funds

Kames Global Equity GBP B Acc	£ 2.33	-	-0.09	-

Kames Capital VCIC (IRL)
1 North Wall Quay, Dublin 1, Ireland +35 3162 24493
FCA Recognised

Absolute Return Bond B GBP Acc	1130.54	-	-0.46	1.70
High Yield Global Bond A GBP Inc	508.00	-	-6.53	3.65
High Yield Global Bond B GBP Inc	1081.48	-	-13.88	4.29
Kames Global Equity Income B GBP Acc	1797.44	-	-76.97	0.00
Kames Global Equity Income B GBP Inc	1455.44	-	-8.32	3.19
Kames Global Equity Market Neutral Fund - B Acc GBP	£ 10.26	-	-0.06	0.00
Kames Inv Grd Gbl Bond A Inc GBH	608.25	-	-0.11	1.74
Global Sustainable Equity B Acc GBP	£ 18.14	-	-0.58	-
Global Sustainable Equity C Acc GBP	£ 18.34	-	-0.60	-
Short Dated High Yld Bd B Acc GBP	£ 10.56	-	-0.06	-
Short Dated High Yld Bd C Acc GBP (Hdg)	£ 10.64	-	-0.06	-
Strategic Global Bond A GBP Inc	1189.97	-	-0.96	0.75
Strategic Global Bond B GBP Inc	675.28	-	-0.51	1.39

Lloyds Investment Fund Managers Limited (1000)F (JER)
PO Box 311, 11-12 Esplanade, St Helier, Jersey, JE4 8ZU 01534 845555
Other International Funds
Lloyds Investment Funds Limited

Euro High Income	€ 1.5780	-	-0.0030	2.44
High Income	£ 0.8849	-	-0.0020	3.70
Sterling Bond	£ 1.6060	-	-0.0020	2.02
Lloyds Multi Strategy Fund Limited				
Conservative Strategy	£ 1.3040	-	-0.0130	0.00
Growth Strategy	£ 1.8370	-	-0.0390	0.00
Aggressive Strategy	£ 2.4600	-	-0.0660	0.00
Global USD Growth Strategy	$ 1.6620	-	-0.0410	0.00

Dealing Daily

Lothbury Property Trust (UK)
155 Bishopsgate, London EC2M 3TQ +44(0) 20 3551 4900
Property & Other UK Unit Trusts

Lothbury Property Trust GBP	£ 1932.80	2090.58	-1.78	-

M&L Capital Management Limited
Link Fund Administrators (Ireland) Limited
Tel:+353 1 400 5300
FCA Recognised

M&L Global Digital & Technology Class A USD Accumulation	$ 1.54	-	-0.01	0.00
M&L Global Digital & Technology Class B GBP Accumulation	£ 1.76	-	0.00	-
M&L Global Digital & Technology Class F GBP Income	£ 1.56	-	-0.01	-

MMIP Investment Management Limited (GSY)
Regulated
Multi-Manager Investment Programmes PCC Limited

UK Equity Fd Cl A Series 01	£ 2969.89	3004.75	-146.00	0.00
Diversified Absolute Rtn Fd USD Cl AF2	$ 1653.22	-	-8.59	0.00
Diversified Absolute Return Stlg Cell AF2	£ 1577.80	-	-9.47	0.00
Global Equity Fund A Lead Series	£ 1575.74	1580.91	-25.05	0.00

Marwyn Asset Management Limited (CYM)
Regulated

Marwyn Value Investors	£ 340.40	-	-14.66	0.00

Milltrust International Managed Investments ICAV (IRL)
mimi@milltrust.com, +44(0)20 8123 8369 www.milltrust.com
Regulated

British Innovation Fund	£ 100.02	-	3.18	0.00
MAI - Buy & Lease (Australia)	A$ 102.52	-	2.25	0.00
MAI - Buy & Lease (New Zealand)	NZ$ 97.29	-	0.06	0.00
Milltrust Global Emerging Markets Fund - Class A	$ 92.58	-	-0.82	-
The Climate Impact Asia Fund (Class A)	$ 95.42	-	-4.58	-

Mirabaud Asset Management (LUX)
www.mirabaud.com, marketing@mirabaud-am.com
Conviction based investment vehicles details available here www.mirabaud-am.com
Regulated

Mir. - Glb Strat. Bd I USD	$ 116.38	-	-0.39	-
Mir. - DiscEur D Cap GBP	£ 143.93	-	-2.47	0.00
Mirabaud - UK Equity High Alpha	£ 126.93	-	-4.76	-

Morgens Waterfall Vintiadis.co Inc
Other International Funds

Phaeton Intl (BVI) Ltd (Est)	$ 603.38	-	-1.00	0.00

New Capital UCITS Fund PLC (IRL)
Leconfield House, Curzon Street, London, W1J 5JB
www.newcapitalfunds.com
FCA Recognised
New Capital UCITS Funds

New Capital China Equity Fund	$ 178.74	-	1.61	-
New Capital Dynamic European Equity Fund	€ 125.96	-	-4.64	0.00
New Capital Dynamic UK Equity Fund	£ 115.36	-	-3.74	-
New Capital Global Alpha Fund	£ 108.84	-	-1.33	0.00
New Capital Global Equity Conviction Fund	$ 142.02	-	-3.88	-
New Capital Global Value Credit Fund	$ 152.10	-	-0.75	-
New Capital Japan Equity Fund	¥ 1174.97	-	-33.03	0.00
New Capital US Growth Fund	$ 294.32	-	-14.13	0.00
New Capital US Small Cap Growth Fund	$ 139.59	-	-4.68	0.00
New Capital Wealthy Nations Bond Fund	$ 146.81	-	-0.75	-

Northwest Investment Management (HK) Ltd
11th Floor, Kinwick Centre, 32, Hollywood Road, Central Hong Kong +852 9331 9220
Other International Funds

Northwest China Opps Class T $	$ 2830.65	-	17.76	0.00
Northwest Feilong Class T $	$ 2005.18	-	24.03	0.00
Northwest Fund Class T $	$ 2615.42	-	18.91	0.00
Northwest Warrant Class A $	$ 1330.60	-	12.11	0.00

Oasis Crescent Management Company Ltd
Other International Funds

Oasis Crescent Equity Fund	R 10.26	-	-0.27	1.03

Oasis Global Mgmt Co (Ireland) Ltd (IRL)
Regulated
Oasis Crescent Global Investment Fund (Ireland) plc

Oasis Crescent Global Short Term Income Fund I - Class A Dist	$ 0.99	-	0.00	-
Oasis Crescent Global Equity Fund	$ 30.23	-	-0.98	-
Oasis Crescent Variable Balanced Fund	£ 9.37	-	-0.23	0.11
OasisCresGl Income Class A	$ 10.96	-	-0.01	-
OasisCresGl LowBal D ($) Dist	$ 11.91	-	-0.23	0.97
OasisCresGl Med Eq Bal A ($) Dist	$ 12.67	-	-0.27	0.40
Oasis Crescent Gbl Property Eqty	$ 8.51	-	-0.35	1.46

Omnia Fund Ltd
Other International Funds

Estimated NAV	$ 701.46	-	-46.05	0.00

Oryx International Growth Fund Ltd
Other International Funds

NAV (Fully Diluted)	£ 9.10	-	-0.52	-

Orbis Investments (U.K.) Limited (GBR)
28 Dorset Square, London, NW1 6QG
www.orbis.com 0800 358 2030
Regulated

Orbis OEIC Global Cautious Standard	£ 10.01	-	-0.09	-
Orbis OEIC Global Balanced Standard	£ 13.93	-	-0.28	-
Orbis OEIC Global Equity Standard	£ 16.33	-	-0.50	-
Orbis OEIC UK Equity Standard	£ 7.81	-	-0.19	0.00

Pictet Asset Management (Europe) SA (LUX)
15, Avenue J.F. Kennedy L-1855 Luxembourg
Tel: 0041 58 323 3000
FCA Recognised

Pictet-Absl Rtn Fix Inc-HI EUR	€ 112.03	-	-0.09	0.00
Pictet-Asian Equities Ex Japan-I USD F	$ 314.94	-	-5.29	0.00

FTfm

Fund	Bid	Offer	D+/-	Yield
Pictet-Asian Local Currency Debt-I USD F	$ 179.81	-	-0.19	0.00
Pictet-Biotech-I USD F	$ 890.91	-	-26.27	0.00
Pictet-CHF Bonds I CHF	SFr 523.60	-	0.20	0.00
Pictet-China Index I USD	$ 157.72	-	-0.17	0.00
Pictet-Clean Energy-I USD F	$ 110.45	-	-3.44	0.00
Pictet-Digital-I USD F	$ 447.58	-	-13.92	0.00
Pictet-Em Lcl Ccy Dbt-I USD F	$ 182.86	-	-1.86	0.00
Pictet-Emerging Europe-I EUR F	€ 457.97	-	-21.93	0.00
Pictet-Emerging Markets-I USD F	$ 671.98	-	-16.02	0.00
Pictet-Emerging Markets Index-I USD F	$ 291.12	-	-3.57	0.00
Pictet-Emerging Corporate Bonds I USD	$ 139.79	-	-0.87	0.00
Pictet-Emerging Markets High Dividend I USD	$ 133.26	-	-3.33	0.00
Pictet-Emerging Markets Sust Eq I USD	$ 101.74	-	-1.55	0.00
Pictet-EUR Bonds-I F	€ 648.36	-	-1.35	0.00
Pictet-EUR Corporate Bonds-I F	€ 222.42	-	-0.28	0.00
Pictet-EUR Government Bonds I EUR	€ 179.78	-	-0.17	0.00
Pictet-EUR High Yield-I F	€ 286.34	-	-0.93	0.00
Pictet-EUR Short Mid-Term Bonds-I F	€ 137.54	-	-0.10	0.00
Pictet-EUR Short Term HY I EUR	€ 129.16	-	-0.49	0.00
Pictet-EUR Sov.Sht.Mon.Mkt EUR I	€ 100.36	-	-0.01	0.00
Pictet-Euroland Index IS EUR	€ 160.49	-	-5.60	0.00
Pictet-Europe Index-I EUR F	€ 202.86	-	-7.63	0.00
Pictet-European Equity Selection-I EUR F	€ 716.13	-	-32.61	0.00
Pictet-European Sust Eq-I EUR F	€ 299.36	-	-9.56	0.00
Pictet-Global Bds Fundamental I USD	$ 131.50	-	0.64	0.00
Pictet-Global Bonds-I EUR	€ 196.88	-	-0.99	0.00
Pictet-Global Defensive Equities I USD	$ 193.91	-	-4.88	0.00
Pictet-Global Emerging Debt-I USD F	$ 454.14	-	-4.26	0.00
Pictet-Global Env.Opport-I EUR	€ 245.62	-	-9.34	0.00
Pictet-Global Megatrend Selection-I USD F	$ 319.71	-	-10.42	0.00
Pictet-Global Sust.Credit HI EUR	€ 161.47	-	-0.51	0.00
Pictet-Greater China-I USD F	$ 699.98	-	-8.38	0.00
Pictet-Health-I USD	$ 328.40	-	-9.65	0.00
Pictet-SmartCity-I EUR	€ 209.72	-	-8.06	0.00
Pictet-India Index I USD	$ 124.94	-	-0.27	0.00
Pictet-Indian Equities-I USD F	$ 618.19	-	-5.66	0.00
Pictet-Japan Index-I JPY F	¥ 17184.64	-	-641.02	0.00
Pictet-Japanese Equities Opp-I JPY F	¥ 10964.68	-	-417.75	0.00
Pictet-Japanese Equity Selection-I JPY F	¥ 16123.97	-	-613.02	0.00
Pictet-LATAM Lc Ccy Dbt-I USD F	$ 140.50	-	-2.95	0.00
Pictet-Multi Asset Global Opportunities-I EUR	€ 128.04	-	-0.30	0.00
Pictet-Nutrition-I EUR	€ 238.98	-	-9.30	0.00
Pictet-Pacific Ex Japan Index-I USD F	$ 444.88	-	-0.30	0.00
Pictet-Premium Brands-I EUR F	€ 198.41	-	-9.61	0.00
Pictet-Russia Index I USD	$ 96.44	-	-5.00	0.00
Pictet-Russian Equities-I USD F	$ 89.91	-	-3.42	0.00
Pictet-Security-I USD F	$ 296.77	-	-9.62	0.00
Pictet-Small Cap Europe-I EUR F	€ 1394.23	-	-55.73	0.00
Pictet-ST Emerg Local Currency Debt-I USD F	$ 105.30	-	-0.80	0.00
Pictet-ST.MoneyMkt-I	€ 138.17	-	-0.01	0.00
Pictet-ST.MoneyMkt JPY I USD	¥ 100754.81	-	-1.39	0.00
Pictet-ST.MoneyMkt-ICHF	SFr 120.03	-	0.00	0.00
Pictet-ST.MoneyMkt-IUSD	$ 145.41	-	0.02	0.00
Pictet-Timber-I USD F	$ 176.62	-	-7.20	0.00
Pictet-US High Yield-I USD F	$ 176.87	-	-2.03	0.00
Pictet-USA Index-I USD F	$ 276.58	-	-12.73	0.00
Pictet-USD Government Bonds-I F	$ 735.81	-	0.66	0.00
Pictet-USD Short Mid-Term Bonds-I F	$ 139.66	-	0.10	0.00
Pictet-USD Sov.ST.Mon.Mkt-I	$ 109.31	-	0.02	0.00
Pictet-Water-I EUR F	€ 425.47	-	-15.23	0.00

PLATINUM CAPITAL MANAGEMENT

Platinum Capital Management Ltd

Other International Funds				
Platinum All Star Fund - A	$ 135.19	-	-	-
Platinum Global Growth UCITS Fund	$ 11.09	-	0.01	-
Platinum Essential Resources UCITS Fund SICAV USD Class E	$ 8.39	-	-0.09	0.00
Platinum Global Dividend UCITS Fund	$ 57.01	-	-0.45	-

POLAR CAPITAL

Polar Capital Funds Plc (IRL)

Regulated				
Automation & Artificial Intelligence CL I USD Acc	$ 11.94	11.94	-0.44	0.00
Asian Financials I USD	$ 377.67	377.67	-9.57	0.00
Biotechnology I USD	$ 26.00	26.00	-0.74	0.00
Emerging Market Stars I USD Acc	$ 10.69	-	-0.15	0.00
European Ex UK Inc EUR Acc	€ 11.77	11.77	-0.42	0.00
Financial Opps I USD	$ 12.77	-	-0.41	2.33
GEM Income I USD	$ 12.13	-	-0.12	0.00
Global Convertible I USD	$ 13.49	13.49	-0.16	0.00
Global Insurance I GBP	£ 7.38	-	-0.27	0.00
Global Technology I USD	$ 54.70	-	-1.86	0.00
Healthcare Blue Chip Fund I USD Acc	$ 13.77	13.77	-0.39	0.00
Healthcare Opps I USD	$ 50.74	-	-1.41	0.00
Income Opportunities B2 I GBP Acc	£ 2.35	2.35	-0.05	0.00
Japan Value I JPY	¥ 109.28	109.28	-3.97	0.00
North American I USD	$ 25.09	25.09	-1.04	0.00
UK Absolute Equity I GBP	£ 21.58	21.58	-0.79	0.00
UK Val Opp I GBP Acc	£ 11.76	11.76	-0.55	0.00

Polar Capital LLP (CYM)

Regulated				
European Forager A EUR	€ 208.73	-	-0.14	0.00

Private Fund Mgrs (Guernsey) Ltd (GSY)

Regulated				
Monument Growth 25/02/2020	£ 514.23	519.35	-15.47	-

Prusik Investment Management LLP (IRL)
Enquiries - 0207 493 1331

Regulated				
Prusik Asian Equity Income B Dist	$ 175.07	-	-4.85	4.59
Prusik Asia Emerging Opportunities Fund A Acc	$ 146.26	-	-3.45	0.00
Prusik Asia Fund U Dist.	£ 170.15	-	-5.86	0.00

Purisima Investment Fds (CI) Ltd (JER)

Regulated				
PCG B ✲	235.39	-	-0.01	0.00
PCG C ✲	230.35	-	-0.01	0.00

ram ACTIVE INVESTMENTS

Ram Active Investments SA
www.ram-ai.com

Other International Funds				
RAM Systematic Emerg Markets Core Eq	$ 102.86	-	0.52	-
RAM Systematic Emerg Markets Eq	$ 171.13	-	-2.35	-
RAM Systematic European Eq	€ 446.08	-	-17.98	-
RAM Systematic Funds Global Sustainable Income Eq	$ 120.55	-	-3.19	0.00
RAM Systematic Long/Short Emerg Markets Eq	$ 112.27	-	-0.24	-
RAM Systematic Long/Short European Eq	€ 144.42	-	-1.59	-
RAM Systematic North American Eq	$ 297.80	-	-12.11	-
RAM Tactical Global Bond Total Return	€ 149.43	-	-0.36	-
RAM Tactical II Asia Bond Total Return	$ 154.67	-	0.09	-

Ruffer LLP (1000)F (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 601 9610

Authorised Inv Funds				
Authorised Corporate Director - Link Fund Solutions				
LF Ruffer European C Acc	598.64	-	-28.75	0.68
LF Ruffer European C Inc	109.35	-	-5.26	-
LF Ruffer European O Acc	585.20	-	-28.11	0.36
LF Ruffer Equity & General C Acc	454.42	-	-7.31	0.50
LF Ruffer Equity & General C Inc	416.42	-	-6.70	0.51
LF Ruffer Equity & General O Acc	444.25	-	-7.16	0.20
LF Ruffer Equity & General O Inc	411.30	-	-6.63	0.21
LF Ruffer Gold C Acc	192.60	-	-17.98	0.00
LF Ruffer Gold C Inc	116.57	-	-10.88	-
LF Ruffer Gold O Acc	188.22	-	-17.57	0.00
LF Ruffer Japanese C Inc	121.38	-	-6.09	-
LF Ruffer Japanese C Acc	260.57	-	-13.09	0.54
LF Ruffer Pacific & Emerging Markets C Acc	350.72	-	-11.17	1.31
LF Ruffer Pacific & Emerging Markets C Inc	96.40	-	-3.07	-
LF Ruffer Pacific & Emerging Markets O Acc	342.55	-	-10.91	1.03
LF Ruffer Total Return C Acc	433.09	-	-8.97	1.59
LF Ruffer Total Return C Inc	282.92	-	-5.86	1.61
LF Ruffer Total Return O Acc	423.36	-	-8.77	1.59
LF Ruffer Total Return O Inc	276.41	-	-5.73	1.61

ROBECOSAM
We are Sustainability Investing.

RobecoSAM (LUX)
Tel. +41 44 653 10 10 http://www.robecosam.com/

Regulated				
RobecoSAM Sm.Energy/A	£ 18.70	-	-0.62	1.53
RobecoSAM Sm.Energy/N	€ 18.20	-	-0.88	0.00
RobecoSAM Sm.Materials/A	£ 179.35	-	-5.88	1.68
RobecoSAM Sm.Materials/N	€ 197.98	-	-9.44	0.00
RobecoSAM Sm.Materials/Na	€ 129.07	-	-6.15	1.57
RobecoSAM Gl.Small Cap Eq/A	£ 120.01	-	-0.17	1.35
RobecoSAM Gl.Small Cap Eq/N	€ 227.56	-	-0.16	0.00
RobecoSAM S.HealthyLiv/B	€ 224.59	-	-8.62	-
RobecoSAM S.HealthyLiv/N	€ 215.98	-	-8.29	-
RobecoSAM S.HealthyLiv/Na	£ 152.48	-	-3.59	-
RobecoSAM S.Water/A	£ 258.53	-	-5.72	1.57
RobecoSAM S.Water/N	€ 238.91	-	-8.82	0.00

RUBRICS

Rubrics Global UCITS Funds Plc (IRL)
www.rubricsam.com

Regulated				
Rubrics Emerging Markets Fixed Income UCITS Fund	$ 139.18	-	-0.24	-
Rubrics Global Credit UCITS Fund	$ 17.29	-	-0.04	0.00
Rubrics Global Fixed Income UCITS Fund	$ 177.10	-	0.12	-
Q Rubrics India Fixed Income UCITS Fund	$ 11.40	-	0.00	0.00
Rubrics India Fixed Income UCITS Fund	$ 99.88	-	0.07	0.00

Slater Investments

Slater Investments Ltd (UK)
www.slaterinvestments.com; Tel: 0207 220 9460

FCA Recognised				
Slater Growth	558.59	558.59	-25.31	0.00
Slater Income A Inc	136.44	136.44	-6.48	0.00
Slater Recovery	260.88	260.88	-10.52	0.00
Slater Artorius	238.68	238.68	-18.65	-

STONEHAGE FLEMING
GLOBAL BEST IDEAS EQUITY FUND

Stonehage Fleming Investment Management Ltd (IRL)
www.stonehagefleming.com/gbi
enquiries@stonehagefleming.com

Regulated				
SF Global Best Ideas Eq B USD ACC	$ 185.22	-	-6.36	-
SF Global Best Ideas Eq D GBP INC	£ 218.28	-	-6.74	-

TOSCAFUND

Toscafund Asset Management LLP (UK)
www.toscafund.com

Authorised Funds				
Aptus Global Financials B Acc	£ 3.85	-	-0.11	4.12
Aptus Global Financials B Inc	£ 2.74	-	-0.08	7.16

Toscafund Asset Management LLP
www.toscafund.com

Tosca A USD	$ 343.18	-	7.11	-
Tosca Mid Cap GBP	£ 314.48	-	-12.05	-
Tosca Opportunity B USD	$ 476.15	-	-16.98	-
Pegasus Fund Ltd A-1 GBP	£ 75.49	-	-4.15	0.00

WA Fixed Income Fund Plc (IRL)

Regulated				
European Multi-Sector	€ 126.70	-	-0.48	-

yuki

Yuki International Limited (IRL)
Tel +44-20-7269-0207 www.yukifunds.com

Regulated				
Yuki Mizuho Umbrella Fund				
Yuki Mizuho Japan Dynamic Growth	¥ 5487.00	-	-235.00	-
Yuki Japan Low Price	¥ 32391.00	-	-2200.00	-
Yuki Asia Umbrella Fund				
Yuki Japan Rebounding Growth Fund JPY Class	¥ 23950.00	-	-1133.00	-
Yuki Japan Rebounding Growth Fund USD Hedged Class	$ 980.40	-	-46.85	0.00

Zadig Gestion (Memnon Fund) (LUX)

FCA Recognised				
Memnon European Fund - Class U2 GBP	£ 176.52	-	-2.56	0.00

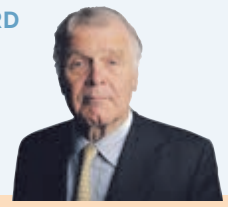
Data Provided by
MORNINGSTAR®
www.morningstar.co.uk
Data as shown is for information purposes only. No offer is made by Morningstar or this publication.

OPINION

US 'energy dominance' is not based on reality

LAST WORD

John Dizard



We can all relax now. Anyone who has a stake in US energy and climate policy no longer needs to follow the primaries, or even the final returns. The political debate is not connected to the material reality. So ignore it, like the brief waking memory of a bad dream.

Start with one of the pillars of the Trump administration's re-election campaign, the assertion of US "energy dominance" of the world. Forget the baroque psychosexual undertones of the slogan. Just consider what is happening to the prospects for US liquefied natural gas exports. None of those exports, by the way, are going through terminals that started construction under this administration.

Thanks in part to the economic impact of the coronavirus, Asian LNG prices have collapsed much faster than US prices. That means it no longer pays to chill American natural gas, load it on to LNG tankers, ship it across the Pacific, and re-gasify it. So US LNG exports are ex-growth.

Far from feeling "dominant", US exploration and production companies are feeling the spike heel of bondholders' demands for capital spending discipline grind into the once-brave face they presented to Wall Street. They are tied up by contractual commitments to fill pipelines and processing plants and by their lenders' austerity.

It no longer pays to ship US natural gas across the Pacific — Bloomberg

I think the Trump campaign and its allies can forget about bigger pledges from grateful E&P friends. They should be thankful not to be hit up for a refund on earlier cheques.

> US coal plants will shut down, whatever the Trump administration thinks or does

On the Democratic side, the promises (of varying intensity) to "ban fracking" will be turned into toxic waste water after the fall elections, that is, if they survive the Pennsylvania and Texas primaries. The US signed its fracked-gas-generation deal back in the Bush and Obama administrations.

Given the high rates of depletion of shale gas wells, any significant restrictions on hydraulic fracturing would lead to the current gas surplus turning in to a shortage in less than an election cycle. Power prices would rise sharply.

Put a cap on those, using executive magic, and you are back in the 2001 California blackouts. You could re-bankrupt PG&E, again, and do the same for many other utilities. Then who could use renewable energy contracts with the utilities to finance wind or solar projects? Oh, federal guarantees?

OK, so the guarantees would cover the engineering and planning costs for anyone proposing renewables projects. Does everyone get their own engineers? From where? And who would select the winners? Green New Deal enthusiasts who co-ordinated balloon releases at campaign rallies?

The enthusiasts are correct that the unit costs of power produced by wind turbines and solar panels have continued to decline. US coal plants will keep shutting down, whatever the Trump administration thinks or does.

The problem, though, is that renewables developers around the world are coming up against cost and planning barriers to connecting their generation to power grids. Those are more or less prohibitive depending on how well the energy transition has been planned, and the quality of the grid's connections with flexible neighbouring generation.

Denmark expects to have a completely green grid by 2026. But then it is connected to hydro and nuclear power in Sweden and Norway.

On flimsier grids, or grids in the developing world, connectivity becomes expensive or administratively difficult when renewables take as little as 20 or 25 per cent of market share. Transmission operators or national power authorities can insist that renewables projects pay not only for their direct connections, but to whatever upgrades are desired in the rest of the system. This can kill the economics.

In Argentina, low cost wind resources in Patagonia lack the high voltage lines to bring power north. The country does not have the foreign exchange to build them.

In Mexico, Cenace, the national grid operator, has decided to interrupt solar energy from Europe-financed projects rather than reduce output from dirty fossil power from government-owned turbines. The president's appointee prefers the controllability of the legacy power's product. The Europeans can sue Mexico, in Mexico, under Mexican law.

In California, solar projects are having record amounts of power "curtailed", because the grid cannot make use of their output in the middle of the day.

Wind turbine and solar manufacturers, and cash-challenged advocates, believe needed transmission system upgrades should be paid for by "black molecule" generation, or, alternatively, the tax system. Most politicians would rather not choose sides.

US voters will not hear that debate this year. Instead "energy dominance" and "Green New Deal 2030". Pathetic performance. Tune out. Stop worrying.

Fund houses face increasing regulation in cyber security battle

VIEWPOINT

Ben Watford

An arms race — unseen, digital and all too little understood — is raging. The UK's chief of the defence staff, Nick Carter, recently stated that "the risk of cyber warfare with Russia is now a greater threat than terrorism".

Companies are fighting to adapt to a reality where "hacktivists", organised crime syndicates and state-sponsored groups attack IT infrastructure, raid databases and meddle in democratic elections. The internet was never designed to be secure, it was designed to be open. And while this open exchange has brought huge benefits, it has also increased the attack surface. The hedge fund industry is particularly vulnerable. It is no secret that there is money in asset management and corresponding incentives for those willing to test an institution's cyber defences. This fact is not lost on the industry's participants, including traders who paid for access to a hacked Bank of England audio feed, hoping it would give them an edge in the moments before a press conference on interest rates.

What is more, while cyber attacks have historically been associated with the theft of sensitive data, high-profile digital heists — like the theft of $81m from the Bank of Bangladesh — should alarm anyone feeling complacent about our digitised economy.

A new generation of attacks is anticipated to have a fundamental and systemic impact on financial markets and their infrastructure. Leaving aside the risk of financial loss or system failure, fund managers can ill-afford the press coverage that comes with a breach of their control systems. Managers trade on their reputation for competence and an ability to inspire trust — poor cyber security calls both into question.

These risks have been apparent for some time, but as financial institutions struggle to keep up, regulators are stepping in. In the UK, the Financial Conduct Authority covers its requirements in its principles for businesses, with further information set out in the Senior Management Arrangements, Systems and Controls Sourcebook.

The key takeaway from these documents is that basic cyber security measures are in the rule book. There has been a particular focus on fundamental controls, because while the figures making attacks are increasingly sophisticated, many of their methods are not. Phishing emails requesting sensitive data remain one of the most effective means of breaching systems, with hacking software widely available online.

Not every manager needs to be a software engineer, but good digital hygiene is a necessity: employ practical systems, make sure they are understood by their users and regularly review controls. These steps should become habitual, like brushing your teeth (or flossing).

The same close attention is vital for those outsourcing key functions. In May 2019, a UK retail bank was fined nearly £2m owing to perceived lax oversight of its outsourcing arrangements. There is no reason to expect that investment managers won't be liable for the same harsh treatment.

Of course, risk cannot be eliminated and, when preventive measures fail, a real-time response is essential. In the UK the recurrence of IT failures and perceived risk to consumers triggered a joint review by the FCA, the Prudential Regulation Authority and Bank of England in 2018. The signals coming from these bodies is clear: firms are expected to continue operating even if they become the target of a cyber attack.

Force majeure clauses make clients feel safer, but when it comes to cyber security, it is not enough to say that the attack was unanticipated. Cyber attacks are part of the furniture and the fund's policies must reflect that.

Cyber security is not something that can be fixed once, and continual improvement is fast evolving from best practice to minimum requirement. Fund managers have long been fighting to keep pace with the cyber attackers. They now need to do so under an increasingly watchful regulatory eye.

The writer is a partner of Eversheds Sutherland, the law firm

For the latest news and views on the global investment management industry head to ft.com/ftfm