FINANCIAL TIMES

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Multinationals pay less tax despite curb on avoidance

- Effective rate drops 9% in a decade
- State cuts make up only half of fall

ROCHELLE TOPLENSKY — BRUSSELS

Multinationals are now paying significantly lower tax rates than before the 2008 financial crisis, according to Financial Times analysis showing that a decade of government efforts to cut deficits and reform taxes has left the corporate world largely unscathed.

Companies' effective tax rates — the proportion of profits they expect to pay, as stated in their accounts — have fallen 9 per cent since the global financial crisis. This is in spite of a concerted political push to tackle aggressive avoidance.

Government cuts to headline corporate tax rates only explain about half the overall fall, suggesting that multinationals are still outpacing attempts to tighten tax collection.

Drawing on 25 years of financial statements, the FT examined the tax rates paid by the world's 10 biggest public companies by market value in each of nine sectors. The tax rates reported by the 10 multinationals with the largest offshore cash piles were also examined.

The results show the corporate contribution to public finances has fallen since 2008 as a proportion of profits. The longer-term trend is even more striking, with effective reported corporate tax rates falling nearly one-third since 2000, from 34 per cent to 24 per cent.

"There has been a lot of action and gestures that are very visible but the reality is different. Rate cuts and patent boxes [tax breaks for intellectual property] have been the dominant forces on corporate tax — and that reflects the continued dynamics of tax competition," said Mihir Desai, professor of finance and law at Harvard university. "Call it a great irony or hypocrisy, but it's one of the two."

Since the financial crisis, average reported effective tax rates have fallen about 13 per cent for the largest technology and industrial companies, according to the FT's research. They have been broadly flat in the health, consumer staples and materials sectors.

The results highlight how the long downward trend continued in corporate tax rates set by the countries that make up the OECD, while taxes on consumers and workers were rising.

Since 2008, countries have cut headline corporate taxes by 5 per cent, while governments on average have increased personal taxes by 6 per cent, according to figures from accountants KPMG.

"That's the process of competition [between governments] and I can't really ever see it stopping," said Michael Devereux, professor of business tax at Oxford university. He said the recent US cut to its headline rate was likely to spur more tax competition globally.

The US's overhauled tax rules hit companies' offshore cash with a 15.5 per cent one-off levy. It also lowered the corporate tax rate from 35 per cent to 21 per cent. The one-off levy could net Washington about $400bn in tax revenues but will also save companies up to $500bn compared with the headline corporate tax rate that applied when the profits were earned, the FT estimates.

Tax contributions dip page 3

Self-selecting China votes to amend constitution allowing Xi lifetime rule

Wang Zhao/AFP/Getty

Chinese leader Xi Jinping casts his vote during yesterday's National People's Congress session at Beijing's Great Hall of the People, where the rubber-stamp parliament voted to abolish the two-term limit for the country's president.

The change to the Chinese constitution, which was approved by 99.8 per cent of the 2,964 votes cast, will allow Mr Xi, already China's most powerful leader in three decades, to rule for life.

Although some liberal intellectuals and members of China's growing middle class have opposed the move, saying it could allow a return to the excesses of Mao Zedong's rule, analysts said the overwhelming vote showed how cowed official government bodies had become to Mr Xi's will.

"It suggests that people are concerned about openly opposing Xi," said Steve Tsang, director of the China Institute at the School of Oriental and African Studies. "That is very serious because if no one is able to articulate an alternative view, then there is a real risk that policy debates could be narrowed, and the risk of policy mistakes will increase."

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The Trump administration wants China to import more US cars, aircraft, soyabeans and natural gas in support of its aim of cutting the bilateral trade deficit by $100bn.— PAGE 2

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Italy's business leaders are seeking a return of political stability amid fears a surge in support for populists could undermine market confidence in its ability to service its vast debt.— PAGE 3

▸ Bono's One issues South Africa apology
The One Campaign group founded by rock star Bono has apologised after revelations that it avoided tax in South Africa and tolerated abuse of staff in the country.— PAGE 4

▸ Equistone raises €2.8bn for new fund
Private equity group Equistone Partners has raised €2.8bn from investors in just four months, in the latest sign of how yield-hungry investors are looking for new ways to deploy their cash.— PAGE 14

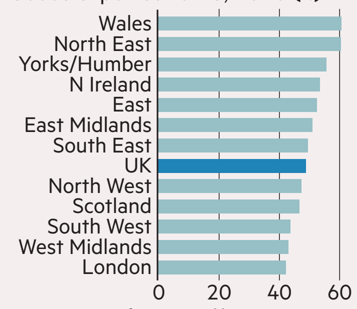
▸ Eon to acquire Innogy in €43bn deal
Eon, the German utility, has unveiled both a complex €43bn deal to acquire Innogy, the renewable energy business, from RWE, and plans to remake the country's energy sector.— PAGE 13

▸ Seoul steps up diplomatic efforts
South Korea will dispatch top envoys to Japan and China this week as Seoul steps up its efforts to prepare the groundwork for a potentially historic summit between North Korea and the US.— PAGE 2

▸ Chile re-elects Piñera as president
Sebastián Piñera ended his four-year term in 2014, and polled as the most unpopular president that Chile has had since the restoration of democracy. Yesterday, he was re-elected.— PAGE 4

Datawatch

UK regions' trade with EU
Goods exported to EU, 2016 (%)



Source: House of Commons library

The UK regions that depend most on exporting to the EU are Wales, the North East and Yorkshire. The majority in these areas voted to leave the EU. Northern Ireland is also reliant on EU trade but most people there voted to remain.

Slums caught in crossfire as Brazil declares war on crime

Analysis ▸ PAGE 4

Saudi Aramco public offering delayed until next year, UK government is told

ANJLI RAVAL, HENRY MANCE AND PATRICK JENKINS — LONDON

Saudi Aramco's stock market listing is unlikely to go ahead this year, according to British officials who have been warned by their Saudi counterparts that the world's biggest ever flotation is expected to be delayed.

Several people briefed on the talks said London still had a good chance of securing the listing, which Riyadh said could value the state energy company at $2tn, but any foreign flotation was likely to happen in 2019 at the earliest.

Saudi Arabia wants to sell 5 per cent of the world's largest oil producing company as part of an economic reform programme driven by Crown Prince Mohammed bin Salman, who visited the UK last week.

The kingdom had targeted a late 2018 listing, with shares to be sold on Saudi Arabia's Tadawul exchange. But preparedness for the offering and willingness for a flotation on a foreign exchange has been questioned.

UK officials said if Riyadh decided to list they expected a domestic and foreign listing at the same time. One person close to the talks said this could take place early in 2019.

London, New York and Hong Kong are among those competing for the listing. A private sale to strategic investors is another option under consideration.

Saudi officials have been split on where to list. Prince Mohammed, ultimate head of the kingdom's oil affairs, has ambitions to list in New York and is hoping US officials will make regulatory concessions to pave the way for a deal there when he visits this month. But senior ministers and Saudi Aramco executives have said privately that London might be a better fit.

Delays on IPO decision-making come as advisers have struggled to achieve the $2tn valuation Prince Mohammed wants. Saudi Aramco's finances and internal operations have been shrouded in secrecy for decades and its close relationship with the state has raised financial, legal and regulatory challenges.

Khalid al-Falih, energy minister, told news channel CNN last week: "I would say litigation and liability are a big concern in the US . . . Saudi Aramco is too big and too important to be subjected to that kind of risk."

Amin Nasser, Saudi Aramco's CEO, told business leaders in London last week that all preparatory work would be completed in the latter half of 2018.

Saudi Aramco declined to comment on the timing of a listing.

Austria	€3.70	Macedonia	Den220
Bahrain	Din1.8	Malta	€3.60
Belgium	€3.70	Morocco	Dh45
Bulgaria	Lev7.50	Netherlands	€3.70
Croatia	Kn29	Norway	NKr35
Cyprus	€3.60	Oman	OR1.60
Czech Rep	Kc105	Pakistan	Rupee320
Denmark	DKr35	Poland	Zl 20
Egypt	E£35	Portugal	€3.60
Finland	€4.50	Qatar	QR15
France	€3.70	Romania	Ron17
Germany	€3.70	Russia	€5.00
Gibraltar	£2.70	Serbia	NewD420
Greece	€3.60	Slovak Rep	€3.60
Hungary	Ft1090	Slovenia	€3.50
India	Rup210	Spain	€3.60
Italy	€3.60	Sweden	SKr39
Latvia	€6.99	Switzerland	SFr6.00
Lebanon	LBP7500	Tunisia	Din7.50
Lithuania	€4.30	Turkey	TL12.50
Luxembourg	€3.70	UAE	Dh17.00

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World Markets

STOCK MARKETS

	Mar 9	Mar 2	%Week
S&P 500	2786.57	2691.25	3.54
Nasdaq Composite	7560.81	7257.87	4.17
Dow Jones Ind	25335.74	24538.06	3.25
FTSEurofirst 300	1479.38	1437.14	2.94
Euro Stoxx 50	3420.54	3324.75	2.88
FTSE 100	7224.51	7069.90	2.19
FTSE All-Share	3993.45	3899.70	2.40
CAC 40	5274.40	5136.58	2.68
Xetra Dax	12346.68	11913.71	3.63
Nikkei	21469.20	21724.47	-1.18
Hang Seng	30996.21	31044.25	-0.15
MSCI World $	2125.28	-	
MSCI EM $	1195.24	-	
MSCI ACWI $	519.65	-	

CURRENCIES

	Mar 9	Mar 2		Mar 9	Mar 2
$ per €	1.232	1.231	€ per $	0.812	0.812
$ per £	1.387	1.377	£ per $	0.721	0.726
£ per €	0.888	0.894	€ per £	1.126	1.119
¥ per $	106.955	105.475	¥ per €	131.763	129.846
¥ per £	148.314	145.250	£ index	78.498	78.613
€ index	96.260	95.406	$ index	96.943	97.221
SFr per €	1.171	1.155	SFr per £	1.318	1.292

COMMODITIES

	Mar 9	Mar 2	%Week
Oil WTI $	62.06	61.53	0.86
Oil Brent $	65.57	64.60	1.50
Gold $	1320.60	1322.30	-0.13

INTEREST RATES

	price	yield	chg
US Gov 10 yr	94.52	2.90	0.00
UK Gov 10 yr	97.62	1.52	-0.02
Ger Gov 10 yr	99.03	0.61	-0.02
Jpn Gov 10 yr	100.67	0.03	0.00
US Gov 30 yr	92.18	3.16	0.02
Ger Gov 2 yr	101.37	-0.60	0.01

	price	prev	chg
Fed Funds Eff	1.42	1.35	0.07
US 3m Bills	1.67	1.68	-0.01
Euro Libor 3m	-0.38	-0.38	0.00
UK 3m	0.60	0.60	0.00

Prices are latest for edition — Data provided by Morningstar

Presidency

China's parliament sets up Xi to rule for life

Two-term limit scrapped as National People's Congress votes to amend constitution

TOM HANCOCK — BEIJING

China has amended its constitution to abolish the two-term limit for the country's president, allowing Xi Jinping to lead for life and underlining a move towards one-man rule.

China's parliament, the National People's Congress, overwhelmingly approved the constitutional change. The NPC said 2,958 — 99.8 per cent of the 2,964 votes cast — were in favour, with two opposition votes, three abstentions and one spoiled ballot paper.

The vote lets Mr Xi remain as president beyond 2023 after the completion of two terms. It brings the role, which includes meetings with foreign heads of state, into line with his more important positions as head of the ruling Communist party and of a party commission in charge of the military, which do not have term limits.

The constitutional revision was widely anticipated, with Mr Xi having concentrated power since becoming party leader in 2012.

But it was opposed by liberal intellectuals and some of China's middle class as harking back to the capricious rule of Mao Zedong — after the more consensus-driven system advocated by his successor, Deng Xiaoping, under which the economy has flourished.

> 'If no one is able to articulate an alternative view . . . the risk of policy mistakes will increase'

The NPC, a lawmaking body comprising government officials and citizens including several billionaires, is controlled by the party, so that passing the change was guaranteed after the party's Central Committee agreed to it this year.

The vote took place in the Great Hall of the People in Beijing, with delegates placing salmon-coloured electronic ballot slips inside red voting boxes. Mr Xi, who is also an NPC delegate, appeared relaxed as he watched the process, and was applauded as he placed his vote.

The tiny proportion of opposition votes "confirms that Xi is more feared than loved and admired, as we know the amendment was controversial", said Steve Tsang, of the China Institute at the School of Oriental and African Studies.

"It suggests that people are concerned about openly opposing Xi. That is very serious because if no one is able to articulate an alternative view, then there is a real risk that policy debates could be narrowed, and the risk of policy mistakes will increase."

The voting was described as anonymous, but the delegates "are selected very strictly . . . effectively in order to pass the constitutional amendment", said Wu Qiang, a political commentator in Beijing. The two opposition votes were probably the result of "personal conscience", he said.

Advocates say the change will give Mr Xi more clout to take on vested interests in inefficient state-owned enterprises and debt-ridden local governments, and to push on with reforms to ensure continued growth. So far reforms overseen by him have tended to favour more state involvement in the economy.

A portrait of Mao Zedong looms over a guard near the NPC meeting

China has censored criticism of the change since it was made public last month, with terms ranging from "I disagree" to the name of President Xi himself blocked on social media services.

Resistance in China has been limited to a few petitions by intellectuals. But, in private, many Chinese grumble that the reform is a backwards step after 40 years of reforms following Mao's rule. Posters denouncing Mr Xi have also popped up on university campuses in Europe and North America as small groups of Chinese students studying abroad protest.

"The most important driving force behind China's growth in the past 30 years has been the check on the party leader's power on the institutional level," said a student from southern China who organised a campaign.

Additional reporting by Emily Feng and Xinning Liu and Edward White in Taipei

North Korea

Seoul in race against time ahead of Trump-Kim summit

BRYAN HARRIS — SEOUL
COURTNEY WEAVER — WASHINGTON

Top US officials have hailed a planned summit with Kim Jong Un, North Korea's leader, as a victory for President Donald Trump, as South Korea begins a race against time to prepare for the potentially historic meeting.

Despite being slated for late April, the proposed summit does not yet have a venue or even a basic outline of what issues can be negotiated or what concessions could be made.

Yesterday, Mr Trump's administration — some members of which appeared taken aback by the summit's announcement last week — sought to depict the planned meeting as a sign of the success of US-led sanctions against Pyongyang's nuclear and missile programmes.

"We've done more sanctions this year than the entire last 10 years," Steven Mnuchin, US Treasury secretary, told NBC. "There's no question these sanctions are working and that's what brought him to the table."

Mike Pompeo, CIA director, added on Fox News: "President Trump isn't doing this for theatre . . . He's going to solve a problem."

But, amid mixed messages from Washington and no public statement about the summit from Pyongyang, South Korean president Moon Jae-in is seeking to keep both sides on track for a meeting that many people thought would never happen.

"Getting the US and North Korea to sit down together has been his goal since taking office," said Ben Forney a research associate at the Asan Institute for Policy Studies. "He can't let this opportunity go to waste, and by publicly leading the push for the summit, Moon is making it harder for either side to back out."

Mr Moon's administration said yesterday it was dispatching Chung Eui-yong, South Korea's national security adviser, to Beijing and Moscow to brief top officials, while Suh Hoon, another top envoy, will travel to Tokyo.

A man in Seoul reads a copy of the Munhwa Ilbo newspaper featuring US president Donald Trump and North Korean leader Kim Jong Un
Jean Chung/Bloomberg

The flurry of activity underlines how much work may be needed for a successful summit — the first between a sitting US president and a North Korean leader.

Mr Chung noted the meeting was announced late on Thursday after meeting Mr Trump. Days earlier the South Korean national security adviser had been hosted by Mr Kim in Pyongyang.

According to Mr Chung, the North Korean leader said he would halt his ballistic missile testing programme and meet Mr Trump to discuss abandoning nuclear weapons — an invitation the US leader quickly accepted. US officials then scrambled to get on message.

Initially, Sarah Huckabee Sanders, White House press secretary, said North Korea had to take "concrete actions" towards de-nuclearisation before the meeting — remarks that appeared to suggest that unless Pyongyang took such steps Mr Trump might not attend.

On Twitter on Saturday, Mr Trump gave no indication that his attendance was conditional on North Korea scaling back its nuclear programme beforehand. He noted of Pyongyang's reported promise not to carry out further missile tests ahead of the meeting: "I believe they will honour that commitment."

Bong Youngshik, a North Korea expert at Yonsei University, argues that Mr Moon will need to work to achieve a "clear commitment" from North Korea that de-nuclearisation means the abandonment of its nuclear weapons and not — as Pyongyang sometimes demands — the de-nuclearisation of the entire peninsula and the removal of US forces from South Korea.

> 'We've done more sanctions this year than the entire last 10 years'

There are also simmering concerns about Washington's lack of negotiating expertise following the recent departure of Joseph Yun, the state department's point man on North Korea, and others.

"The Trump team needs to decide who is going to be involved in the talks and what the parameters will be. Despite Kim's insinuation that de-nuclearisation will be on the table, things will not just suddenly fall into place," said Mr Forney.

Prof Bong adds that Pyongyang was probably surprised by Mr Trump's quick acceptance of the offer for talks. "It will be all hands on deck."

Trump's diplomatic turn page 9

US

White House asks Beijing to buy more in $100bn trade deficit plan

LUCY HORNBY — BEIJING
SHAWN DONNAN — AUSTIN

The Trump administration wants China to import more US cars, aircraft, soyabeans and natural gas to meet its aim of cutting the bilateral trade deficit by $100bn, people familiar with talks between the countries have said.

Reducing the trade gap through higher US exports could ease demands for curbs on Chinese imports — and so help spare goods made by US companies in China from new tariffs.

Chinese envoy Liu He was asked for a written plan to reduce the US deficit during a meeting this month with Steven Mnuchin, Treasury secretary, Robert Lighthizer, US trade representative, and Gary Cohn, Mr Trump's outgoing chief economic adviser, according to people briefed on the talks.

The $100bn demand would account for more than a quarter of last year's $375bn deficit in the trade in goods.

The White House set its demand high so that Beijing — which has offered to liberalise financial services and drop some foreign shareholding limits — would struggle to meet it.

The Chinese delegation's initial response was that a demand to cut the deficit by fiat was not a market-orientated way of doing business.

The most obvious option for both sides to reach the target is to raise exports to China sharply, probably by increasing soyabean, aircraft, cars and natural gas shipments.

The target could also be reached with sharp cuts in Chinese imports of manufactured goods such as machinery and electrical products, or a combination of higher US exports and lower imports.

The target is 100 times the size of a deficit reduction goal President Donald Trump referred to last week, when he tweeted that China had been asked for a "One Billion Dollar reduction in their massive Trade Deficit with the US".

"I heard he got the number wrong," said Li Yong, at the China Association of International Trade. Mr Li added that setting a number could help produce a "pragmatic attitude" towards the issue, but would not work as a "rigid target".

Chinese and US calculations of the trade gap differ by up to 20 per cent, said Zhong Shan, commerce minister, yesterday. "The imbalance is partly due to American export restrictions," he added, referring to high-tech and military-use items that the US blocks for export to China. "If those were relaxed, the deficit would be cut by one-third.

"No one wins from a trade war."

Mr Trump hinted at the talks last week during an announcement of tariffs on steel and aluminium imports. "We're negotiating now with China. I don't know that anything's going to come of it. They have been very helpful," he said.

But the parties are on different pages, one person close to the talks said. The White House wants long-term changes in the trade balance through structural reforms to China's intellectual property regime and the lifting of tariffs on motor and other US exports to China.

"The sides are almost talking past each other," the person said.

Additional reporting by Archie Zhang in Beijing

Rana Foroohar page 9

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Energy

Africa eats lion's share of Chinese lending for power projects

JAMES KYNGE — LONDON

Africa attracted more Chinese state lending for energy infrastructure than any other region last year, highlighting Beijing's view of the continent's economic and strategic importance.

A study by Boston University academics shows that nearly one-third, or $6.8bn, of the $25.6bn that China's state-owned development banks lent last year to energy projects worldwide went to African countries. This was ahead of south Asia, with $5.84bn.

The loans bring total Chinese energy finance in Africa since 2000 to $34.8bn. While this is well behind the $69bn lent in Europe and Central Asia, the $62bn in Latin America and the $60bn in Asia over the same period, the 2017 data illustrate Africa's growing importance.

"China is trying to replicate its model of development in Africa to show the world that the Chinese economic model really works," said Yu Jie of LSE Ideas, a think-tank based at London School of Economics.

The strong lending follows a 2015 promise by Xi Jinping, China's leader, for a total of $60bn in Chinese investments to Africa by the end of this year to demonstrate what he called a "common future". Statistics on how close Beijing is to realising the overall $60bn target are not yet available, analysts said.

Some soundings suggest a growing affinity. A 2016 Afrobarometer survey of 36 African countries found that 63 per cent of Africans found China's influence "somewhat" or "very" positive. Asked which countries provided the best development model for Africa, China placed second only to the US with 24 per cent and 30 per cent respectively.

Financing energy projects is one of the main strands in China's push to win market share and diplomatic friends in developing counties by building much-needed infrastructure.

Power generation and transmission were the largest lending segment, accounting for $22.3bn of the total, with the rest going to oil and gas exploration and extraction, according to Boston University's Global Development Policy Centre. All the $6.8bn in 2017 lending to Africa was for power projects.

Geographically, the lending has been concentrated in six countries, with Angola, Nigeria, Zambia, Uganda, South Africa and Sudan getting $23.8bn of the total $34.8bn since 2000. The Boston University data tracks loans from the China Development Bank and Export-Import Bank of China, the world's two largest development banks.

The door to Chinese lenders has been left open by a comparative lack of action from the western-backed multilateral lenders.

"Traditional multilateral development banks have not been forthcoming in big energy and China has been more than willing to fill the void," said Kevin Gallagher, professor of global development policy at Boston University. In addition, Prof Gallagher said, Africa's demographic explosion, which is likely to lead to 1.3bn more people on the continent by 2050, underscored the demand for power generation and transmission for decades to come.

China has invested $34.8bn in African energy schemes since 2000

Further momentum behind China's engagement with Africa has come from the Belt and Road Initiative (BRI), a signature programme of Mr Xi to finance and build infrastructure in more than 80 countries in Asia, Africa, the Middle East and Europe.

In Asia and Europe, Beijing has met some resistance to the BRI, largely because of the size of debt incurred by some recipient countries and criticism over a perceived lack of contracts being awarded to local contractors. In Africa, so far, the BRI rollout has been comparatively smooth, analysts said.

However, Rex Tillerson, the US secretary of state who is on a five-nation tour of Africa, warned on Thursday that the continent should be careful when accepting Chinese investment, saying countries should "not forfeit any elements of your sovereignty as you enter into such arrangements with China".

Corporate Italy fears populist surge will trigger instability

Incoming government must tackle country's large debt and anti-EU sentiment

RACHEL SANDERSON — MILAN

Italy's business leaders, grappling with the outcome of inconclusive national elections, are urging moderation and a return of political stability amid fears a surge in support for populists could undermine market confidence in the country's ability to service its vast debt.

Italy last week delivered an upset to centrist politics, handing big gains to the Five Star Movement and the anti-immigrant League. But both Five Star and the rightwing coalition, including the League, fell short of the majority needed to build a government.

While market reaction was muted, for Italy's business leaders the emergence of Eurosceptic forces has brought back concerns about stability that have lain dormant since the European sovereign debt crisis, when Italian debt yields rose as investors took fright.

Italy's debt relative to its gross domestic product remains at more than 130 per cent, the largest in the eurozone after Greece. "A new government needs to avoid any reference to an exit from the euro, because any suggestion risks putting the country at risk vis-à-vis international financial markets," says Carlo Messina, chief executive of Intesa Sanpaolo, Italy's largest bank. "Beyond that, the public debt needs to be dealt [with] and job creation."

Marco Tronchetti Provera, chief executive of Pirelli, says: "Any leader will be careful to avoid the 'troika' coming to our country" — a reference to the role of international authorities in Greece's economic meltdown.

"Eight years of Greece in continuous crisis has taught us a lesson that cannot be forgotten. Dreams are fascinating but real life has to be built day by day, with vision, but also realistically," he adds.

Italy's vote came against a backdrop of the recovering Italian economy finally pulling clear of a devastating triple-dip recession and a banking crisis that shattered confidence. But few expect a coalition led by the League and Five Star to happen.

Instead, expectations among Milan's elite remain high that Italy's president Sergio Mattarella, who will play a crucial role in post-election talks, will put in place a broad coalition including moderate establishment voices or even a technocratic government. Mr Mattarella last Thursday called for a government of "responsibility", which some executives read as shorthand for a cross-party coalition to keep reforms on track.

"What I would hope for — and I don't really care where it comes from — is that Italy keeps going down the path of structural reforms," says Rodolfo De Benedetti, chairman of the holding CIR Group, which owns Italy's national daily La Repubblica. "We have asked for these for years but very little was done."

But Italy's business establishment cannot ignore the vote. The centre-left party of former premier Matteo Renzi won in central Milan, the hub of corporate Italy — but in the poor south Five Star dominated while the rest of the north voted heavily for the League.

"The message of the vote is clear. The cosy world of Italy's establishment is finished!" says one exasperated former senior executive of an Italian blue-chip. "They need to understand it's over!"

Business executives are taking solace from Italy's having had a period of almost five years of relatively stable government, during which reforms to jobs and pensions were made — and hoping that as a result the country will get a grace period from international markets for a few months of instability.

"I am not stressed by it taking six months . . . to form a government. We have seen Germany and Spain take months. Belgium took years. But by the end of the year we need to be in another stable government," says Andrea Guerra, executive chairman of food emporium Eataly.

Privately, executives fear political instability and anti-EU rhetoric by the League or Five Star means Italy risks being "left out of the table" in Europe where Germany and France are pushing for greater integration. Bankers say corporate dealmaking will take a hit, with executives waiting to hear the implications of having the League's Matteo Salvini and Five Star's Luigi Di Maio closer to power. Both have talked of renationalisation.

Others are taking comfort from the Treasury and the Bank of Italy, which have traditionally formed a bulwark against political upheaval. Nonetheless, several business leaders point out that the standing of both institutions was undermined by Italy's banking crisis.

But most of all, business leaders are drawing confidence from the historical resilience of Italy's corporate fabric.

"We have faced Red Brigades, the cold war at home, Mafia, bureaucracy, anti-capitalist movement, even Berlusconi jokes, and survived," says Luigi Consiglio, a food industry executive. "After this, Italian entrepreneurs are strong and capable of facing any difficulty, even political uncertainty."

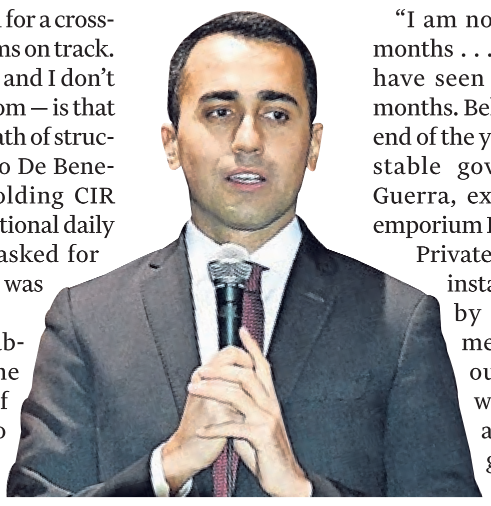
But a senior executive muses that Italy's problem may be that "we always say we will adjust to everything".

"But we have never had a situation where we have a parliament made up 50 per cent of populists, and debt amounting to 131.5 per cent of GDP. My fear is that markets will move before there is a government," he says.

Wolfgang Münchau page 9

Business hub: the Democratic party won in Milan, above, but lost out to the League in most of the north. Five Star, led by Luigi Di Maio, below, dominated the south

Alberto Pizzoli/AFP/Getty



'We have never had a parliament made up 50% of populists, and debt amounting to 131.5% of GDP'

National Front

Le Pen renames party in effort to broaden appeal

DAVID KEOHANE — LILLE

Marine Le Pen has rebranded her far-right National Front party, giving it a new name to try to broaden its appeal and shore up her leadership following defeat in last year's French presidential election.

"We have to make alliances because . . . to win without alliances is difficult," said the leader of the newly christened Rassemblement National at the party's conference yesterday in Lille.

The name means National Rally or Union and is part of a strategy to allow Ms Le Pen to seek political alliances with other rightwing parties.

"Originally, we were a protest party . . . There must be no doubt in the eyes of all that we are now a governing party," she told delegates.

Ms Le Pen is trying to stabilise the FN, whose fortunes have dipped since she lost to President Emmanuel Macron in May. She won through to the election's final round and received almost 11m votes, but her image as a viable leader suffered, partly due to a disastrous television debate against Mr Macron.

Almost three-quarters of those recently polled by Kantar-Sofres-onepoint said they did not think she would make a good national leader, and the party managed to secure only eight seats in June's parliamentary elections.

However, Ms Le Pen was re-elected unopposed as the FN's leader at the conference.

Jean-Yves Camus, a political scientist, suggested the far-right party was now "ready to get into an alliance with the conservative right". However "to get into an alliance you have to be two people and the mainstream conservative right doesn't seem to want anything to do with the Front National", he said.

At the conference Ms Le Pen hit out at globalisation and Mr Macron in a speech that touched on the party's core themes of immigration, security and identity.

"The speech seemed more tailored to reassure her own base than to increase the party's electoral appeal beyond the far-right . . . pretty much at odds with the idea of 'rassemblement'," said Antonio Barroso, an analyst at Teneo Intelligence.

Steve Bannon, former White House chief strategist, had closed the first day of the conference saying "history is on our side" and that attendees should wear terms such as "racist" as a "badge of honour". His presence surprised some, as Ms Le Pen has promised to "dedemonise" the party. Jean-Marie Le Pen, her father who was removed from his position as honorary president during the conference, said Mr Bannon was "not exactly the definition of 'de-demonisation'."

Aline Bertrand, a party member from the south of France, said: "I was surprised to see [Mr Bannon] here because he is not in line with what we are trying to show."

Ms Le Pen's push for alliances and a party revamp takes place against a backdrop of concerns from mainstream European politicians about a populist challenge, after Italy's voters rejected traditional parties in favour of Eurosceptic and populist newcomers.

'We have to make alliances because to win without alliances is difficult'

Marine Le Pen

Ms Le Pen has notably softened on threats to leave the EU and the euro.

Party members will vote on the new name in the coming weeks with some members wary of change: "If you open your arms too wide it becomes difficult to keep the party [intact]," said Catherine Fabre, a member from Paris.

Since the party's election defeat, Marion Maréchal-Le Pen, Ms Le Pen's niece and a rising star, and Florian Philippot, who was one of Ms Le Pen's main advisers, have left.

Legal issues have also continued to surface, most recently due to images of Islamic State violence Ms Le Pen posted on Twitter.

Marine Le Pen's speech attacked globalisation and Emmanuel Macron

Trade

Trump's tariffs proposal draws unlikely supporters

COURTNEY WEAVER — WASHINGTON
OLAF STORBECK — FRANKFURT

President Donald Trump's planned steel and aluminium tariffs have shaken up the US political establishment, drawing unexpected support from some Democrats while earning criticism from Republicans.

Hours after Mr Trump described the proposed measures as "my baby" at a Pennsylvania rally, referring to EU cars as "the big money item" when it came to tariffs, he was given a measure of support by Elizabeth Warren, the Democratic Senator for Massachusetts.

"I have to say, when President Trump says he's putting tariffs on the table, I think tariffs are one part of reworking our trade policy overall," Ms Warren, normally one of the president's fiercest critics, said yesterday.

But Jeff Flake, a Republican senator from Arizona, said he planned to introduce legislation that would nullify the planned tariffs, adding that Congress had used similar authority in the 1970s to block President Jimmy Carter's tariffs on oil.

Ron Johnson, a Republican senator from Wisconsin, said that he would support the type of legislation proposed by Mr Flake.

"I'm really concerned that this is counterproductive, [and the tariffs] could really result in retaliatory actions by our trade partners," Mr Johnson said.

The EU has warned it could impose penalties on €2.8bn of imported US goods, ranging from motorcycles to peanut butter, if Washington follows through with imposing the tariffs on European steel and aluminium.

"All these countries are calling up [and saying] 'we don't want the tariffs. What do we have to do?'" Mr Trump said scornfully at the Pennsylvania campaign rally on Saturday, ahead of an election for a seat in the House of Representatives.

"A lot of us come from the European Union . . . Sounds nice. They kill us on trade . . . They have trade barriers. We can't even sell our farming goods in there. They totally restrict us."

Mr Trump continued: "They say: 'We want those tariffs taken off.' I say: 'Good. Open up the barriers and get rid of your tariffs and if you don't do that we're going to tax Mercedes-Benz. We're going to tax BMW.' You wanna have money come into our country?"

Behind the scenes, EU representatives have been furiously working to push for exemptions to the tariffs, and have said they will continue their discussions next week.

On Saturday, EU and Japanese trade officials met their US counterparts in a discussion that was originally intended as a forum to discuss a joint approach to dealing with China, but evolved into a discussion about trade. The meeting failed to provide clarity on how countries can apply for carve-outs.

'This is counterproductive. It could really result in retaliatory actions by our trade partners'

Yesterday BMW and Daimler, Mercedes-Benz's parent company, declined to comment. But Bernhard Mattes, president of the German Association of the Automotive Industry, suggested that a retaliatory strike by Mr Trump against German carmakers would be unwise.

"The US president should consider that the mentioned German carmakers make a significant contribution to the US's automotive trade balance. German carmakers employ 36,500 people in the US, plus 80,000 jobs at German suppliers," he said.

"If the tariffs should really hit Europe, we will have countermeasures," Margrethe Vestager, the European commissioner for competition, told Bild am Sonntag.

"We will not stand idle if somebody puts free global trade at risk."

Additional reporting by Jim Brunsden in Brussels and Shawn Donnan in Austin, Texas

FT trends survey

How companies' tax payments have dipped since the crisis

ROCHELLE TOPLENSKY — BRUSSELS

Few corporate topics have been more contentious over the past decade than the contribution that companies make to society through taxes. Since the financial crisis, the amounts paid by corporations — and, given the global nature of many companies' operations, where they pay — have been subject to scrutiny from both cash-strapped governments and austerity-hit consumers.

In trying to analyse the trends that have driven corporate tax revenues over that time, the Financial Times identified the 10 largest companies by market capitalisation in each of nine standard industry sectors in the S&P Capital IQ database: consumer staples, discretionary consumer goods and services, energy, financial, health, information technology, industrials, materials and telecommunications.

Examining data drawn from 25 years of financial statements, the FT analysed the reported effective corporate tax rates for the companies. Any tax recoveries were excluded from the averages.

Reported effective tax rates for the 10 multinationals with the largest offshore cash balances, according to the Institute for Taxation and Economic Policy, were also analysed separately.

Overall, the companies' effective tax rates are down by nine per cent since 2008: in percentage point terms, they have fallen 2 points from 26 per cent to 24 per cent.

Rates have fallen about 13 per cent for the largest technology and industrial companies, whereas they have been broadly flat in the health, consumer staples and materials sectors.

The longer-term trend is more pronounced, with effective reported corporate tax rates falling by nearly one-third since 2000, from 34 to 24 per cent.

The FT also examined how average headline corporate and personal tax rates have changed over the past decade, using data from accountants KPMG. Since 2008, headline rates for companies have fallen while personal rates have increased.

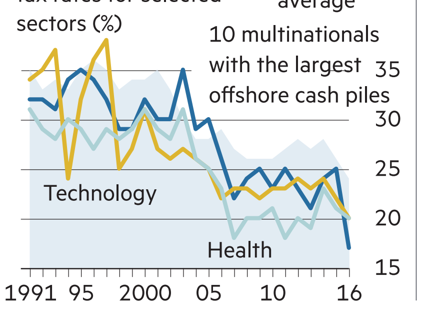
Effective tax rates reported in companies' financial statements were also compared with the amounts that companies actually paid out.

For all but one of 25 of the largest public companies examined, the three-year average reported effective tax rate is substantially higher than that which companies actually paid. The difference is often because taxes on a particular year's profits are not paid until future years — so called deferred taxes.

One way to defer taxes is to park foreign earnings offshore. US companies held almost $2.6tn offshore in 2016, according to ITEP.

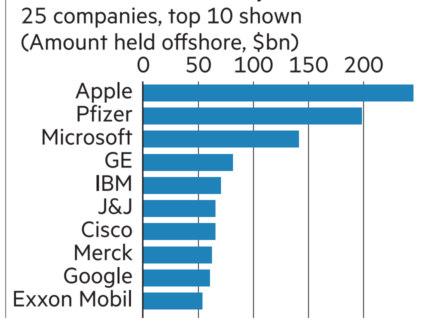
Companies are paying lower taxes

Effective corporate tax rates for selected sectors (%)



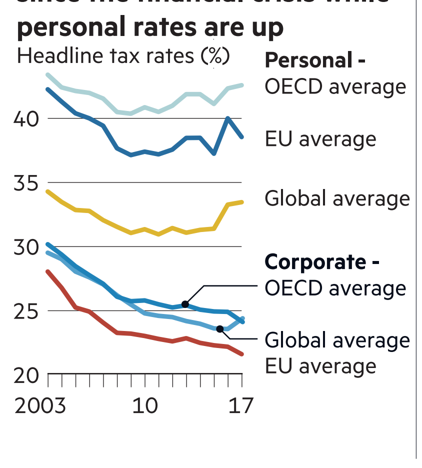
Fortune 500 US companies held $2.6tn cash offshore in 2016

With over half of that in just 25 companies, top 10 shown (Amount held offshore, $bn)



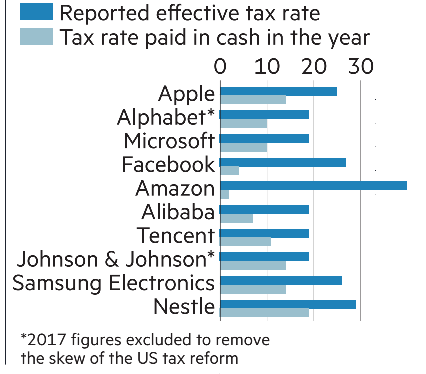
Corporate rates have fallen since the financial crisis while personal rates are up

Headline tax rates (%)



There is a big gap between the reported effective tax rate and what is paid in cash

3-year average effective tax rate at the 10 largest public companies (%)



*2017 figures excluded to remove the skew of the US tax reform

Sources: FT calculations; S&P Capital IQ; KPMG; Institute for Taxation and Economic Policy; UBS

US monetary policy

Fed official warns rate rises threaten recovery

St Louis president says four increases in 2018 would risk driving down inflation

SAM FLEMING — WASHINGTON

The Federal Reserve risks dragging down the US's recovery by increasing interest rates while cutting back its own multi-trillion dollar balance sheet, a top Fed official has warned.

James Bullard, the St Louis Fed president and one of a handful of doves in the Fed system, said lifting rates four times in 2018 could drive down inflation — especially when the central bank's programme of reducing its asset holdings is becoming "more and more forceful". The Fed began gradually unwinding its $4.5tn balance sheet in October last year.

"You would not have to go very high in this environment to be in a restrictive policy stance," Mr Bullard said. "If we went too far we'd start to put downward pressure on inflation in an environment where inflation is already below target."

But the balance of opinion in the Federal Open Market Committee is becoming more hawkish, largely because of the strength of the jobs market, which added 313,000 workers last month.

Lael Brainard, traditionally an FOMC dove, argued last week that gradual interest rate rises were likely to be appropriate, as headwinds to growth became tailwinds. Such comments echo the sentiments of Jay Powell, Fed chairman.

The Fed next meets on March 20-21. Recent comments from top policymakers indicate as many as four rate rises this year — more than the three forecast in December — amid signs that lower taxes and higher public spending will lift short-term growth and inflation.

Mr Powell told Congress last month that his outlook for the economy had firmed since December, a sign that he could favour four rate rises in 2018.

Eric Rosengren, the Boston Fed president, called for more than three interest rate rises this year, adding on Friday that annualised core inflation had hit the Fed's target in the latest three and six-month periods.

Friday's jobs data showed hiring ahead of Wall Street expectations, keeping unemployment at 4.1 per cent even as labour force participation grew.

The numbers also showed wage growth had failed to take off, with hourly earnings growing 2.6 per cent on a year ago, weaker than the previous month's increase. That will leave some Fed doves arguing there is enough slack in the jobs market to cloud the inflation outlook, arguing for caution.

But even Fed doves acknowledge the outlook could alter because of $1.5tn of tax cuts approved by Congress in December and a Congressional deal in February that lifted federal spending caps.

Neel Kashkari, Minneapolis Fed president, who opposed the last rate rise in December, said on March 1 he had seen signs of inflation expectations creeping up, and that he had been struck by the strength of consumer and business optimism. "It may well be these fiscal packages help the Fed achieve our 2 per cent inflation target. We'll see," he said.

He stressed he was not anticipating a burst of new investment, but added that rate-setters needed to be "open minded" about the impact of fiscal policy.

Mr Bullard said that he did not expect big effects from the fiscal policy changes, but signalled he was willing to back an increase in rates in March given the possibility of a lift to the economy.

"I know I have been dismissive of fiscal policy effects, but I am willing to hedge my bets a little bit and move a little bit in response to that," he said.

He insisted that the neutral rate of interest, the rate that neither restrains the economy nor propels it, remained so low there was limited scope to lift rates without bearing down on inflation.

Brazil. Favelas

Rio residents in crossfire as army battles gangs

Temer's military intervention backed by most citizens but those living in slums are divided

ANDRES SCHIPANI — RIO DE JANEIRO

On a quiet morning after a night of shoot-outs, 1,400 army personnel patrol the streets on foot, motorbikes and in trucks. Military engineers clear barricades erected by gang members. A man cuffed with a cable-tie for insulting a soldier is flanked by paratroopers caressing their assault rifles. Welcome to Rio's supercharged war on crime.

On the outskirts of a city renowned for its beaches and natural beauty, the slum of Vila Kennedy has already witnessed several military operations since the armed forces took control of security in the state last month in response to a surging crime wave. Soldiers say the favela is controlled by Comando Vermelho, one of Brazil's dominant criminal factions. The military intervention was the first of its kind since Brazil's return to democracy in 1985.

Maria Cristina dos Santos, sister of the arrested man, cries: "He is poor but doesn't have to be humiliated . . . They have nothing better to do. The state, instead of investing in schools, jobs, buses, sandals for children, [spend] money on rifles" for soldiers.

Her anger is directed at President Michel Temer, who said military intervention was justified because organised crime "is a metastasis that spreads around the country". Violence in the state of Rio de Janeiro has risen in tandem with fighting among drug gangs and a lack of adequate policing in the midst of an economic crisis.

Yet critics see the intervention as a ploy to lift Mr Temer's government and party in an election year.

Mr Temer said last month he would not run in the October 7 poll.

A survey by CNT/MDA shows 69 per cent of Brazilians back Mr Temer's decision. But the move divides the favelas. In Vila Kennedy, a woman whispers that she will be reprimanded by gang members if she speaks up, and dashes away: "We have nothing to do, we are trapped in the middle of all this."

Vinícius Rodrígues, a 28-year-old resident, says parts of the favela are "at war" and fears gang members could retaliate against locals when the military leaves.

War zone: a family walks past an armoured vehicle after the military intervention in Vila Kennedy. Residents of Nova Holanda favela are searched by soldiers, below
Mauro Pimentel/AFP/Getty Images

Reginaldo Lima, who has worked as a mediator between warring factions in several favelas, agrees: "Residents now have to live in a permanent face-off with drug traffickers on the one side and military men on the other side, and risk being caught in crossfire."

In another poor area, Jardim Catarina, soldiers hand out leaflets showing Sugarloaf Mountain with the caption: "It is not enough for it to be wonderful, it has to be secure."

In Vila Kennedy, some residents welcome the soldiers. "There's always been gangs, but not with the heavy weapons they carry now. There are shoot-outs all the time and you can't do anything without their permission," says a 53-year-old male resident. Motioning to patrolling soldiers, he adds: "Things are better with them here."

With a general election in October, opinion polls show security is a top priority for Brazilians. The intervention has also had the effect of blocking an unpopular pension reform that would have needed a change in the constitution, as such reforms are forbidden while such measures are in force.

Mr Temer said the intervention was a "master stroke, but not an electoral one", stressing that he was not a candidate.

But Robert Muggah, a Rio-based security expert, argues that Mr Temer's "tough-on-crime approach would play well with the public and bolster the credentials of like-minded presidential and state-level candidates".

The intervention "strengthens the government, exploits the fears of the population, thus gaining the support of people who want something done", says Renato Sérgio de Lima, head of the Brazilian Forum on Public Security. But it will not solve the security problem, which is not exclusive to Rio, he says.

> 'There's always been gangs, but not with the heavy weapons they carry now. There are shoot-outs all the time and you can't do anything without their permission'

Raúl Jungmann, Brazil's former defence minister and now head of the ministry of public security, said he would "fight hard against organised crime, without ever disregarding human rights".

But images of favela residents being subjected to random background checks by soldiers and of schoolchildren having their backpacks searched have sparked a furore.

Rio's public defender's office said in a note that "living in a poor community is not enough reason" for suspicion. For Isabel Lima at the Rio-based human rights group Justiça Global, the problem of violence cannot be handled with "a logic that is more appropriate for a war".

In Jardim Catarina, soldiers walk past gang graffiti reading "bullets to the government". José Trinidade, who has lived there for three decades, says: "This intervention will solve nothing here. This is just politicking. I just want everyone, the soldiers, the gangs, and the politicians to go away and leave us in peace."

Latin America

Piñera adopts inclusive tone as he returns to lead Chile a second time

BENEDICT MANDER — BUENOS AIRES

When Sebastián Piñera, the silver-haired billionaire who grandiosely claims to be a descendant of the last Inca emperor, ended his four-year term as Chile's president in 2014, he polled as the country's most unpopular president since democracy was reinstated.

Yesterday, he returned to power.

Mr Piñera's re-election in December was the latest swing from the left in Latin America and could usher in new pro-investment policies — if he has fixed the political tin ear that hampered his first term.

The man who built a business empire spanning the privatised national airline, a leading television station and Chile's top football team has mellowed with age, his advisers say. An aide promises that Mr Piñera will be a "more mature, more reflexive, more humble, more integrating" leader this time.

"He is much less obsessed this time with whether he is liked or not, much more sure of himself," says Eugenio Tironi, a sociologist who published a book about Mr Piñera in 2011 called *Why don't they like me?*

"That might make him more likeable, more authentic," he says, adding that Mr Piñera's team is more politically experienced than the one that took charge of the world's largest copper producing nation in 2010.

The president's agenda also now puts a greater focus on quality of life, a response to social demands that arose with the growth of the middle class during the 2000-14 commodities boom and which led his first term to be marred by protests over high levels of inequality.

Political savvy will be crucial given that the centre-right leader has a minority in congress and faces a more fractious opposition than during his first term.

This is the second occasion Mr Piñera has succeeded Michelle Bachelet, the former UN women's rights leader, whose last four years in office Mr Piñera called "a waste of time".

But last year's elections led to the emergence of a third political force on the left, the Frente Amplio or Broad Front, which was founded by the students who led the protests against him and went on to become popular heroes.

One of the new president's most important and potentially controversial reforms will be to Chile's private pension system, created by Mr Piñera's brother José when social security minister in 1980, but which today pays the average pensioner less than the minimum wage. Pension reform, likely to include more government involvement, plus higher contributions, already enjoys a big degree of political consensus and is expected to be approved by congress, but it could incite opposition from the Frente Amplio for not going far enough.

Other items include tax reform, improving public finances, cutting red tape and loosening approval processes for big investment projects, especially in the mining sector. These are aimed at recovering investor confidence after years of falling investment under Ms Bachelet. The OECD predicts growth of 2.9 per cent in 2018 and in 2019 thanks to a better global outlook, stronger world trade and rising commodities prices.

Internal probe

Bono apologises over abuse claims at charity

JOSEPH COTTERILL — JOHANNESBURG

The One Campaign group founded by rock star Bono has apologised after revelations that it did not pay local tax in South Africa for several years and tolerated abuse of staff in the country.

In a statement the anti-poverty charity, which is backed by the former UK prime minister David Cameron and Hollywood celebrities, admitted following an internal probe that it did not register to pay tax for five years after starting operations in South Africa.

The decision meant foreign employees in the country were not taxed on their salaries and were obliged to work under three-month tourist visas — which is illegal in South Africa — the UK's Mail on Sunday reported.

From 2010 to 2015, "One was acting as a non-resident taxpayer as it explored making Johannesburg its Africa hub," Gayle Smith, One's chief executive, said in her statement on the group's website. Since 2015 the group has employed staff through a local affiliate.

"The people working with us in Johannesburg were independent contractors of the One Campaign," a spokesperson for the campaign group said of the period before 2015. "Accordingly, we were advised by outside counsel that One would not have been responsible for remitting employee-related taxes during that period, and does not have any historical liability with the South African Revenue Service."

Ms Smith acknowledged that there was "bullying and belittling" of One staff in South Africa for many years, calling evidence of the organisation's refusal to act on concerns "deeply troubling".

Bono has used One as a platform to campaign against corruption and tax abuses in African countries

Bono, the singer with the U2 rock group, has used One as a platform to campaign against corruption and tax abuses in African countries. The group was founded in 2004 to tackle poverty in the developing world.

In a statement to the Mail on Sunday Bono apologised and said he and the organisation's board were "reeling and furious".

The singer said: "The head office failed to protect those employees and I need to take some responsibility for that."

Ms Smith, who took over as One's chief executive a year ago, said former staff members were preparing legal action against the group over experiences of abuse. One had alerted the UK's Charity Commission over the results of the internal investigation, Ms Smith added.

"I have personally extended my deepest apologies to the former employees who shared their stories with us," Ms Smith said in her statement.

"I believe that because organisations across the non-profit sector strive to make the world a better place, we have a special obligation to ensure that our institutions embody the values we champion."

Sipho Moyo, a Zimbabwean economist who was One's former Africa executive director from 2010 to 2015, allegedly humiliated and abused employees during her tenure. One said it had not been able to corroborate the claims.

Ms Moyo told the Mail on Sunday she vehemently denied the claims and said they were "a total fabrication".

State of emergency

Botched Ethiopia raid leaves nine dead

JOHN AGLIONBY
EAST AFRICA CORRESPONDENT

Ethiopian soldiers enforcing a state of emergency have killed at least nine civilians in what appears to have been a botched security operation, highlighting tension in the country as the ruling coalition meets to select a new prime minister.

The military said troops in the town of Moyale, in Oromia state close to the Kenyan border, acted on a "mistaken intelligence report" in an "anti-terrorist operation", according to state television. At least a dozen were injured, local authorities said.

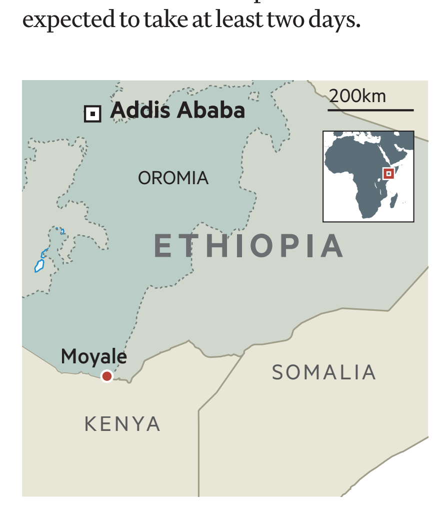
Ethiopia has been rocked by almost three years of deadly protests against the authoritarian Ethiopian People's Revolutionary Democratic Front (EPRDF), which has ruled for 26 years.

In January the government appeared to change from its traditionally repressive approach to handling dissent, announcing it would release thousands of political prisoners and begin a process of national reconciliation.

But after Hailemariam Desalegn resigned as prime minister last month, the government declared a state of emergency in what appeared to be an attempt by hardliners to reassert control.

About 1,000 have been killed in the unrest, which is motivated by demands for greater democracy and an end to the economic marginalisation of other groups by the Tigrayan ethnic group. Tigrayans dominate society but represent only 6 per cent of the country's 105m population.

The executive committee of the EPRDF, which comprises four regional-based parties, met yesterday to choose Mr Hailemariam's replacement. It is expected to take at least two days.



The EPRDF is dominated by the Tigrayan People's Liberation Front. But leaders of two of the parties that represent the Oromia and Amhara regions — the Oromo People's Democratic Organisation (OPDO) and the Amhara National Democratic Movement (ANDM) — have in recent weeks intensified demands for reform.

Analysts say this is because the state of emergency, the second since the protests began in 2015, shows no sign of quelling demands for greater democracy.

Yohannes Gedamu, an Ethiopian political scientist at Georgia Gwinnett College in the US, said the killings in Moyale "will further divide an already-fractured coalition".

"Some factions from ANDM and especially the OPDO might ask whether the state of emergency and measures by the [security forces] would even push the country to chaos," he said.

All four parties within the EPRDF have proposed candidates to replace Mr Hailemariam but there is no clear favourite. Analysts say that if the next prime minister is not from Oromia or Amhara the political crisis will be harder to resolve.


AIRLINE
OF THE YEAR
SKYTRAX
2017
QATAR
القطرية
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At Qatar Airways, we are continuously striving to elevate the expectations of your journey with an enhanced level of innovation. As the global launch customer of the Airbus A350-1000, we are proud to be the first to fly the world's newest and most technologically advanced aircraft in the skies. It is all part of our never-ending pursuit to deliver the most memorable flying experience around the globe.
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AIRWAYS القطرية
GOING PLACES TOGETHER

Theology and morality by the seaside

THEATRE

Brighton Rock
Theatre Royal, Brighton
★★★☆☆

Ian Shuttleworth

Bryony Lavery's play *Frozen* is currently enjoying a revival at the Haymarket in London's West End, but she is at least as well known for her adaptations. The latest of these — a version of Graham Greene's 1938 novel of love and crime, right and wrong — is on tour until May in a production by York-based Pilot Theatre Company and that city's Theatre Royal, but it seemed only fitting to visit it in situ, as it were. Designer Sara Perks' gantries and galleries are far more potently suggestive of Brighton's Palace Pier when on stage less than a quarter of mile from the real thing.

Lavery's long and diligent experience means that she can simultaneously be faithful to Greene's thematic preoccupations and yet also work some smart rebalancing. As small-time teenage gangster Pinkie Brown tries to cover up a murder by resorting to increasingly desperate and extreme measures, not least seducing and marrying innocent young waitress Rose whose testimony could hang him, Greene imbues each of this couple with a version of his own Roman Catholicism. Consequently, they embody dimensions of theology and of morality, which are shown to be sometimes radically different yet each informing the other.

Lavery sets a further plate spinning by emphasising the role of Ida, who becomes determined, on the basis of her personal moral code rather than any formal doctrine, to solve a matter which the police have already written off.

Gloria Onitiri's Ida takes the acting laurels, perhaps because she can make the character more fully her own rather than either Greene's or his God's. Sarah Middleton is an open and engaging Rose, and Jacob James Beswick's Pinkie keeps himself to himself a little too much. Hannah Peel's score alternates industrial keyboard buzzes with Pianet-and-Leslie-cabinet twinkling, adding an otherworldliness to the proceedings.

This is all about intangibles: at the climax, the gun which Pinkie offers for a fraudulent suicide pact is real but unused, the knife he wields to do his ultimate work is imaginary in Beswick's clasped hand. Esther Richardson's production, though solid, aims more at the head than the heart.

Touring to May 26, pilot-theatre.com

Aiming for the head: Marc Graham and Gloria Onitiri in 'Brighton Rock'. Right: Alexander Cobb in 'The Duchess of Malfi'
Karl Andre Photography
Helen Maybanks

THEATRE

The Duchess of Malfi
Swan Theatre, Stratford-upon-Avon
★★★☆☆

Sarah Hemming

Maria Aberg's new RSC production of John Webster's tragedy features "a lot of blood", warn the signs outside the Swan Theatre. They are not joking. By the end of this dark, glistening play everyone is coated in the stuff as they stagger towards the drama's bleak ending across a slick lake of gore that oozes across the stage, dripping steadily from a bull's carcass that has been lowered symbolically from the start. It's a stark, visceral ending to a punchy, stripped-down staging.

It also picks up on how often the word "blood" features in the text, particularly in the mouth of mad Duke Ferdinand, obsessed with his sister's "infected" blood. Aberg's modern-dress production doesn't reference recent scandals, but it does focus on toxic masculinity and the way it expresses itself through violence and coercion. In Naomi Dawson's design, it is played out on an indoor sports court and the courtiers become muscle-bound men who fill the space with testosterone-fuelled dance routines or lurk, ominously, in the dark.

It's an environment in which the Duchess, her waiting woman Cariola, her mild-mannered husband and children present a fragile oasis of warmth and intimacy. Joan Iyiola's Duchess is excellent: a strong, sexy, modern woman, her teasing seduction of her gentle steward Antonio (Paul Woodson) is mischievous, sweet and funny.

The question here is: why is this self-possessed woman and her domestic harmony such an affront to her brothers? With class and social issues blurred by the setting, the psychological elements come to the fore: we watch a weird masculine urge for control develop into nightmarish destruction. Alexander Cobb's Armani-suited, sex-obsessed Ferdinand is particularly discomfiting.

What is lost, however, is the play's social comment, with the Duke and Cardinal emblematic of corruption and misogyny in both secular and religious authority. It's hard too to understand the import of the Duchess's decision to wed beneath her station. Both the textual cuts and the modern setting undermine the plot's credibility as it shifts into persecution and incarceration. But this fleet, blood-soaked staging is both potent and unsettling.

To August 3, rsc.org.uk

CLASSICAL MUSIC

Insula Orchestra
Barbican, London
★★★★☆

Richard Fairman

It was a nice gesture to mark International Women's Day by having every musician wear a ribbon in the suffragettes' purple-white-and-green tricolour. How apt, too, that an orchestra devoted to authenticity should have had them made by the original manufacturer.

Among its artistic principles, the Insula Orchestra from Paris is committed to righting classical music's gender imbalance. For this concert it fielded not only its female music director, Laurence Equilbey, but also three female soloists and a symphony by a female composer.

The genial pomp of Beethoven's Triple Concerto rarely sounds as light-toned as this. Using an Erard piano (the leading French piano manufacturer of the early 1800s) made a huge difference, as pianist Elisabeth Brauss did not dominate the violin and cello, elegantly played by Alexandra Conunova and Natalie Clein. This was a performance with spontaneity, though the soloists were not always together.

It was not enough to divert attention from the main event of the evening. Louise Farrenc, a contemporary of Berlioz, is one of the unfairly forgotten female composers of the 19th century. She was highly rated by connoisseurs in her lifetime, especially for her piano and chamber music, and became professor of piano at the Paris Conservatoire, where she fought for nearly a decade to get equal pay with her male counterparts. Nothing in the arts news today is new.

Her Symphony No.3 (1847) is inventive, occasionally quirky, always interesting. There are clear lines back in its family tree to Schubert with its lyricism and Mendelssohn in the fairy-feet scampering of its Scherzo. It would be an exaggeration to say that the music speaks with a clearly recognisable voice, but the score is so well written that it deserves a prominent place in the history of the early Romantic symphony. Equilbey and the Insula Orchestra gave it a fiery performance. Their crusading spirit lived up to the day's billing.

barbican.org.uk

Portrait of a conman in denial

PODCASTS

Fiona Sturges

When Bernard Madoff, the former chairman of the Nasdaq stock exchange, came clean to his sons about his role in the biggest financial fraud in US history, the first thing they did was consult a lawyer. "The lawyer said, 'You've got to turn your father in'," Madoff recalls. "They did that and then I never saw them again."

In 2009 Madoff, whose Ponzi scheme lost in the region of $65bn, was found guilty of 11 charges including fraud, money laundering, perjury and theft, and was sentenced to 150 years in prison. A new Audible podcast, *Ponzi Supernova*, looks at how and why Madoff got away with the deception for so long and the repercussions of his crimes. It is a labour of love and the culmination of nearly 10 years' work for its host, the New York journalist Steve Fishman, who has sifted through thousands of documents and interviewed more than 100 people, among them Madoff's ex-colleagues, his fellow inmates as well as the investigators who painstakingly built a case against him.

This supporting cast yields some excellent material — the ex-FBI investigator Steve Garfinkel in particular is a hoot — though by far Fishman's biggest coup is in landing hours of interviews with Madoff himself. As well as writing to him in prison, Fishman had sent letters to other inmates asking them to put in a good word on his behalf. Eventually one of them did, prompting Madoff to call him out of the blue at his home.

Fishman initially warms to him; he could, he says, "be the uncle I run into at a bar mitzvah". But as they talk, the genial mask starts to slip and inconsistencies appear. On the one hand, Madoff talks as if he had been carrying the weight of his deception alone — it was, he says "a nightmare. It was a nightmare only for me" — but on the other he views himself as a victim of avaricious investors: "Everybody was greedy, everybody wanted to go on and I just went along with it," he says.

Bernard Madoff after a court hearing

Elsewhere we hear about Madoff's prison therapy sessions ("I asked her, 'Am I a sociopath?'"), his grief at the suicide of his eldest son, Mark, and his unwavering conviction that he is gravely misunderstood. Madoff's story is remarkable and Fishman's podcast, full of depth and detail, offers an electrifying portrait of a charismatic conman in denial. Ten years might seem a long time to assemble a story but this one has been worth the wait.

The Watergate podcast *Slow Burn*, which has reached the end of its first season, tells a similar tale of a self-serving and ultimately deluded man undone by power. But the storytelling here focuses less on former president Richard Nixon than the bit players and the forgotten subplots of the scandal, and makes fascinating connections to today's politic landscape.

OPERA

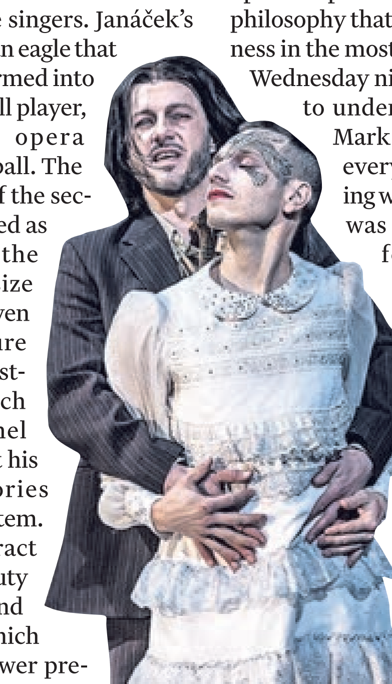
From the House of the Dead
Royal Opera House, London
★★☆☆☆

Hannah Nepil

So much about Janáček's last work conspires against it: the lack of plot, of leading character, of action. By conventional standards, *From the House of the Dead* has no place on the stage. But Janáček was a genius at finding potential in unlikely sources, having already based operas on a comic strip, a proto-feminist village play, and a convoluted sci-fi thriller. And in this adaptation of Dostoyevsky's 1862 memoir about life in a Siberian prison camp, he excelled himself. The result ranks as one of his most powerful statements — harrowing in its depiction of human brutality; uplifting in its attitude to redemption. Or at least it should be, in a production that reconciles its eccentricities with the demands of stagecraft.

So there was a lot of pressure riding on Krzysztof Warlikowski, the director behind its long-overdue Royal Opera House premiere. Perhaps that's why his new staging — updated, in Małgorzata Szczęśniak's stylish designs, to a contemporary setting — does its utmost to sing louder than the singers. Janáček's symbol of freedom, an eagle that flies away, is transformed into an aspiring basketball player, who spends the opera attempting to net a ball. The mimed theatricals of the second act are reinvented as cheap porn, with the help of three life-size dolls. Warlikowski even hijacks the overture with a film of the post-structuralist French philosopher Michel Foucault, setting out his conspiracy theories about the prison system. It all serves to distract from the rugged beauty of Janáček's music and from the libretto, which should derive its power precisely from what is not said.

Worse still, it misses the point. *From the House of the Dead* is not an indictment of the judicial system, as Warlikowski's ham-fisted Foucault reference would have us believe. What this opera explores is the Dostoyevskian philosophy that we can find some goodness in the most hardened of criminals.



Wednesday night's musicians seemed to understand that. In the pit, Mark Wigglesworth relished every moment of humanising warmth, as did the cast: it was easy to feel sympathy for Štefan Margita's Luka, Ladislav Elgr's Skuratov and Nicky Spence's Nikita — a neurotic tormented by remorse. (Pictured: Elgr, left, with Pascal Charbonneau.) All sang with flair and fluency. All would have fared better in a production that didn't thwart them at every turn.

To March 24
roh.org.uk

FT BIG READ. JAPAN

Seven years on from the Fukushima nuclear disaster, 30,000 people have yet to return home. Amid reports of suicide and depression, was the decision to remove residents more dangerous than the radiation itself?

By Robin Harding

The high cost of evacuation

The deserted streets of Namie, part of the exclusion zone, in 2016. Left, Satoru Yamauchi; below, a worker at the Tokyo Electric plant

Tokuyuki Matsubuchi; EPA; Reuters

Satoru Yamauchi was working in his soba noodle shop when the Tohoku earthquake struck on March 11 2011. He remembers escaping to high ground, then going home to rescue his dog, making it back in time to see a "white wall" — the tsunami — roaring in from the Pacific.

The destruction was beyond his imagination. But Mr Yamauchi, and his family, survived. Even their home in the town of Naraha was just high enough to escape the water. Then the next day, city hall ordered an evacuation: there was trouble at the Fukushima nuclear plant, and a friend at Tokyo Electric, the plant's operator, said it might be serious.

The family headed south and spent three days in an evacuation centre. It was desperately cold. Mr Yamauchi was pressed into duty as a cook, even as the rumours surrounding the condition of the reactors grew ever more terrifying. "My children were saying: 'We don't want to die from radiation. Let's go to Tokyo. Let's go to Tokyo.'"

So the family moved to the Japanese capital, 200km away, which is where their troubles really began. For the past seven years they have struggled with

cramped conditions, money troubles, bullying at school, depression, lack of purpose and the insidious fear of a death sentence from radiation exposure. "Psychologically we were wrecked," says Mr Yamauchi. "I'm still taking pills for high blood pressure."

As life slowly returns to normal in Fukushima — visitors to the plant no longer need radiation suits, a face mask is sufficient — it is becoming increasingly clear, say experts, that the evacuation, not the nuclear accident itself, was the most devastating part of the disaster. It reaped a terrible toll in depression, joblessness and alcoholism among the 63,000 people who were displaced beyond the prefecture; of those, only 29,000 have since returned.

There were 2,202 disaster-related deaths in Fukushima, according to the government's Reconstruction Agency, from evacuation stress, interruption to medical care and suicide; so far, there has not been a single case of cancer linked to radiation from the plant. That is prompting a reassessment among some scholars: that the evacuation was an error. The human cost would have been far smaller had people stayed where they were, they argue. The wider death toll from the quake was 15,895, according to the National Police Agency.

Zero evacuation may be implausible. At the height of the crisis there were fears of much worse contamination. The question is rather whether people should have been kept away for weeks, not years. "With hindsight, we can say the evacuation was a mistake," says Philip Thomas, a professor of risk management at the University of Bristol and leader of a recent research project on nuclear accidents. "We would have recommended that nobody be evacuated."

Lengthy exodus

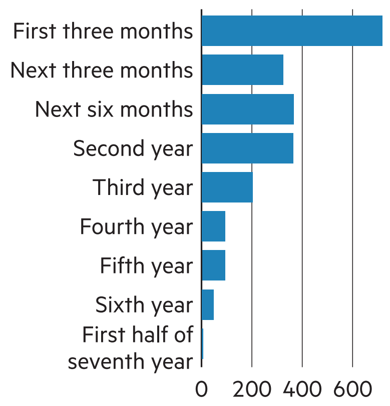
Fukushima prompted a global turn away from nuclear power and correspondingly higher carbon emissions in countries such as Germany and Japan. Yet if much of the suffering were proved to be avoidable, it might change that calculation. The future of nuclear energy, as well as the correct response to other catastrophes that cause evacuation, may rest on learning the right lessons from the disaster.

The nuclear accident, the worst since Chernobyl in 1986, unfolded after the tsunami knocked out power supplies at the Fukushima Daiichi plant. As workers fought desperately amid the rubble and water, three of the reactors lost cooling, leading to hydrogen explosions and the release of nuclear contaminants into the atmosphere. Ultimately, those three suffered meltdowns.

The first evacuation, of those within a 2km radius of the plant, was ordered on the evening of March 11, just hours after the tsunami. The following morning the exclusion zone was expanded to 10km, but with high radiation levels recorded at the site boundary after the first explosion that day, it was further extended to 20km around the plant, taking in the Yamauchis' home in Naraha.

Disaster-related deaths

Number



Source: Reconstruction Agency

Disaster-related deaths by age

2
died who were under 21 years of age

216
died who were aged 21 to 65

1,984
died who were over 65

Source: Reconstruction Agency

Evacuations took place in an atmosphere of panic and disorganisation. Large buses simply turned up at town halls and people got on with whatever they could carry. The sick and vulnerable suffered most.

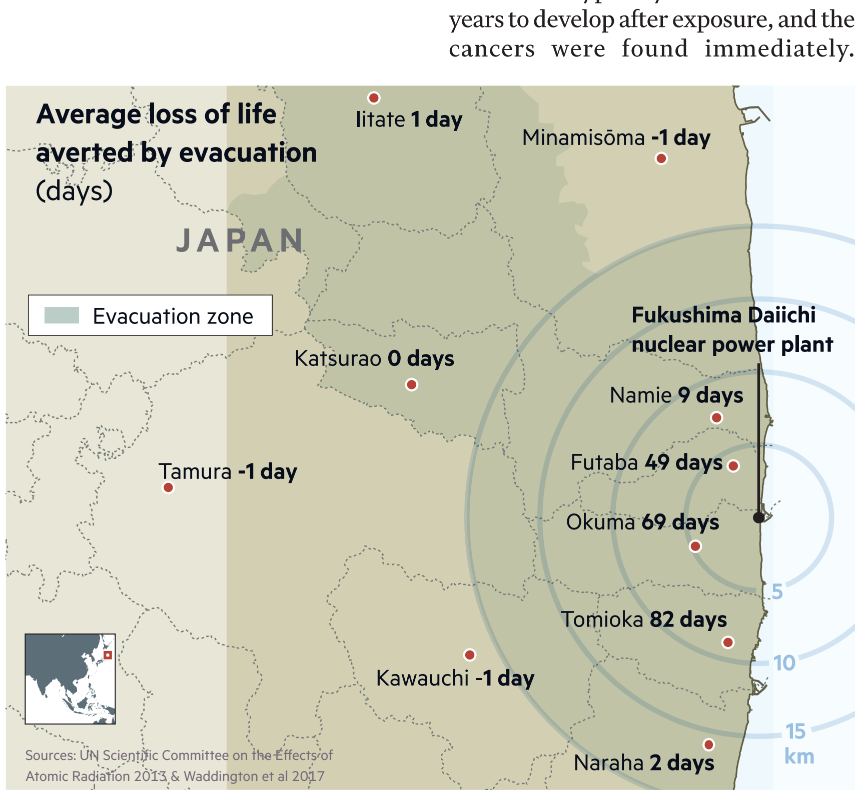
"If you compare nursing homes that evacuated with those that didn't, the death rate was three times higher among those who moved," says Sae Ochi, a doctor at the Japan agency for medical research and development who has worked in Fukushima. Of the disaster-related deaths, 1,984 were people over the age of 65.

The physical effects on evacuees living in temporary accommodation were acute. People who had previously walked had to drive. Farmers used to the outdoors were cooped up inside. Higher rates of liver dysfunction, diabetes and hypertension were recorded.

"The thing we worry about most is disaster-related suicides," says Koichi Tanigawa, a professor at Fukushima Medical University. The impact of the disaster on people's mental health got worse over time, with suicides peaking in 2013, when 23 Fukushima disaster victims took their own lives. "Initially, everyone was really determined, but they got tired and that's when depression started to increase," says Dr Ochi.

The result that did not materialise was sickness from radiation. "At present, there are no cases of cancer relating to radiation, and that includes workers at the plant," says Dr Tanigawa. Among 173 workers exposed to radiation above occupational safety limits, there may eventually be a handful of incidents of cancer, he says. But the maximum dose to Fukushima residents was below those levels. "Statistically speaking, there should be no detectable increase in cancer in the general public."

Anti-nuclear campaigners point to more than 100 diagnoses of thyroid cancer in Fukushima children. But doctors say radiation cannot be the cause, since the disease typically takes four or five years to develop after exposure, and the cancers were found immediately.



Sources: UN Scientific Committee on the Effects of Atomic Radiation 2013 & Waddington et al 2017

Rather, the thyroid cases were discovered after screening every child in the prefecture using ultrasensitive equipment. Detection rates in Fukushima were similar to those found using the same equipment in other Japanese prefectures. "If we go looking for thyroid cancer then we'll find it through a screening effect," Dr Tanigawa says.

Health consequences

Avoiding deaths from radiation was the whole point of the evacuation. The crucial question is how sick people would have been had they stayed. Prof Thomas has published calculations using UN radiation data from Fukushima and standard models of how it translates to disease. He found modest risks.

"The sort of dose for even the worst-affected villages was something that was accepted in the nuclear industry 30 years ago," he says. In the worst-affected towns of Tomioka, Okuma and Futaba he found that evacuees extended their

> 'If you look now simply at the amount of radiation then it would have been better not to evacuate. But people were scared'

lives by an average of 82, 69 and 49 days respectively, thanks to the radiation they avoided.

In Naraha, Mr Yamauchi's hometown, the fall in lifespan avoided through evacuation was just a couple of days. In a few places, the figure was negative because people evacuated to areas with higher levels of radiation. Evacuation makes relatively greater sense for the young, who are more sensitive to radiation, and have more length of life to lose.

But purely based on an economic calculation of cost and benefit, the evacuation was not worth it, says Prof Thomas. The expected compensation bill to evacuees is ¥7.9tn ($74bn). Add in the terrible health consequences of disrupting lives "and it becomes many more times not worth doing". The lifetime risk of death from a 100 millisievert dose of radiation — more than any resident actually received — is about 0.5 per cent.

In retrospect, the evacuation looks excessive. Less clear is whether those in charge at the time could have acted any other way. Naoto Kan, the prime minister who ordered the evacuations, says his decision was correct. In the terrifying days after the accident, he was presented with nightmare scenarios of massive radioactive contamination requiring an evacuation within a 250km radius of the plant.

"There were 50m people in that area, including the entire population of Tokyo. The capital would have been a ghost town," he says. "Given this scenario was possible, then basically we had to order an early evacuation."

Mr Kan was not alone in that decision. Based on its own independent understanding, the US told its citizens to evacuate an even wider area of 50 miles around the stricken plant. The one mistake Mr Kan identifies is not evacuating faster in villages along the fallout path north-west of the reactors. "That was inexcusable to the victims," he says.

Changing scenarios

Prof Thomas draws a distinction between evacuation while the disaster was continuing and relocation in its aftermath. He compares it to an evacuation last year below the Oroville Dam in California, where residents were swiftly returned to their homes once the dam was stabilised.

But Dr Ochi wonders if it was possible to keep people in place, even once the nightmare scenarios were averted. "If you look now simply at the amount of radiation then it would have been better not to evacuate," she says. "[But] people were scared, and it wouldn't have been possible to get food and fuel to them."

Instead of second-guessing the decisions taken in Fukushima, she says, it is more important to think about better ways to manage an evacuation in the future. Japan's new nuclear contingency plans include an evacuation within 5km and orders to shelter in a 30km radius in the event of a similar disaster.

"Perhaps the most crucial thing is to say — at the time of the evacuation — under what conditions you should return," she says. Safe radiation levels are a matter of dispute among scientists, but people are unlikely to trust a figure set after the accident. Ms Ochi also says it is safe to take time over evacuating the sick because only cumulative radiation exposure is dangerous.

Prof Thomas takes her arguments a step further. "The first thing to realise is that relocation is probably going to be a bad idea," he says, suggesting that nuclear companies start providing real-time health information on the risks of living around their plants. "This is what your loss of life expectancy is from the current level of contamination," he says. If people realise it would only be a few days, they can make an informed decision to stay.

"People understand temperature very well," says Dr Tanigawa. "They need that understanding of radiation."

What these approaches require is an understanding of risk and public willingness to act on it. It is indisputable that nuclear power means some risks. An accident such as Fukushima means some radioactive contamination, and staying in an that area means some long-term increase in the risk of cancer.

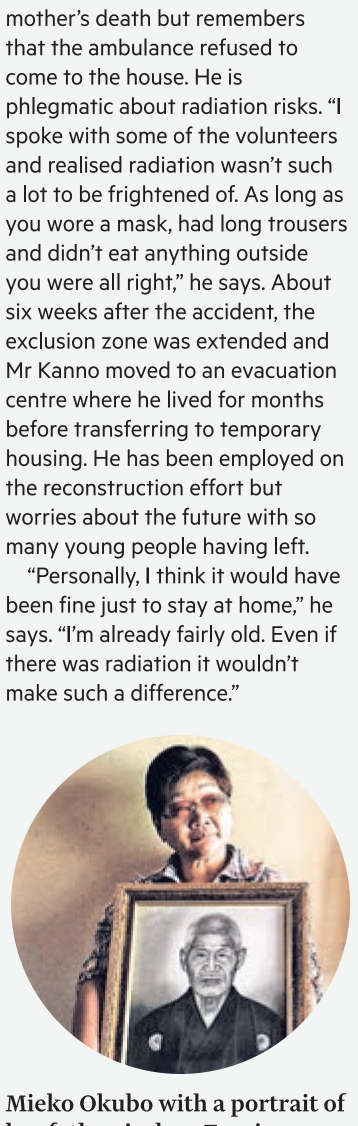
As for Mr Yamauchi, he is returning to Fukushima to reopen his noodle shop. "Will we be able to manage there? I don't know," he says. The evacuation order for Naraha was lifted in 2015, but the population is still a fraction of what it was. He remains worried about radiation and is distrustful of the plant's operator, Tokyo Electric, and any official suggestion that the health risks are under control. "There's absolutely no need for nuclear power," he says. "With just one mistake, terrible things happen."

Lives lost
The human cost of the Fukushima disaster

Seiichi Kanno was at home in the city of Minamisoma when the earthquake struck. He lived with his elderly mother, who died shortly after the disaster, and initially ignored the evacuation order.

He spent weeks in the deserted town, patrolling for looters and trying to help abandoned pets. "I could hear all the animals crying," he says. He doesn't know if the disaster contributed to his mother's death but remembers that the ambulance refused to come to the house. He is phlegmatic about radiation risks. "I spoke with some of the volunteers and realised radiation wasn't such a lot to be frightened of. As long as you wore a mask, had long trousers and didn't eat anything outside you were all right," he says. About six weeks after the accident, the exclusion zone was extended and Mr Kanno moved to an evacuation centre where he lived for months before transferring to temporary housing. He has been employed on the reconstruction effort but worries about the future with so many young people having left.

"Personally, I think it would have been fine just to stay at home," he says. "I'm already fairly old. Even if there was radiation it wouldn't make such a difference."



Mieko Okubo with a portrait of her father-in-law, Fumio

The case of **Fumio Okubo** is a stark example of how the evacuation affected the elderly. Aged 102, he lived 30km inland from the plant, in Iitate. As people began to leave the area, his day care service shut, trapping him at home. Then at lunchtime on April 11 he learnt that a complete evacuation of the village, which lay along the fallout path from the reactors, had been ordered. "I don't want to leave," his daughter-in-law recalled him saying, according to court filings. That night Mr Okubo hung himself. Plant operator Tokyo Electric was recently ordered to pay his relatives ¥15.2m ($142,000) in damages.

FINANCIAL TIMES
'Without fear and without favour'
MONDAY 12 MARCH 2018

Passive investment and ownerless companies

The great benefits of tracker funds come, inevitably, with costs

Passive investment funds, which aim to track market indices rather than outperform them, do not control the majority of investor capital — yet. But they are already dominating the top positions on shareholder registers at the world's biggest companies.

Of the 10 largest UK companies by market capitalisation, eight have BlackRock and Vanguard, huge US fund managers that focus on passive products, as their largest and second-largest shareholders, respectively. In the US, only tech founders' personal stakes interfere with passives investors' supremacy at big companies. At smaller ones, the passives are pushed out of pole position more often — but are almost always significant owners.

From one perspective, this is a very good thing indeed. Passive products offer a way for savers to get exposure to key asset classes at a very low cost. Most active managers, after all, fail to beat the indices after fees, and picking managers is not much easier than picking stocks themselves. If fewer smart people are paid to engage in the zero-sum game of security selection, good.

Yet the rise of passive investment is worrisome, too. It is the job of a corporate board to keep an eye on management. But who watches the watchers? The answer at one point was investors, who have skin in the game. The big passive investors, however, own shares in tens of thousands of companies. Keeping a close eye on all of them would be a massive task and their incentive for doing so is diluted. Passive funds more closely resemble pieces of market infrastructure than owners. They are not structured to supervise corporate governance. They are structured to keep costs low, and the two are at odds. BlackRock, Vanguard and State Street (another big passive manager) together have $14tn in assets under management. They have less than 100 people on their governance teams.

The tensions inherent to passive investing are rising to the surface. Passive funds companies came under pressure after the recent school shooting in Florida, for their ownership stakes in gun companies. Proxy advisers — to which passive funds delegate much of their governance responsibilities — are under increasing scrutiny. Two companies, ISS and Glass Lewis, dominate the business. Critics complain they have outsized influence and are insufficiently transparent.

The passive companies are aware they need to do more. They have committed to increasing their governance staff and pushing their governance standards. This is laudable. The sheer volume of companies they invest in means they will always, to a large extent, be box-ticking. But they need to box-tick as thoroughly and efficiently as possible, a job for which they are badly understaffed at present.

Consider, at the same time, implications of passive investors becoming more active on governance. There is always going to be a very small number of dominant passive fund companies. Scale is what keeps the costs low. Do we want a few fund companies casting the decisive votes over, for example, corporate social responsibility policies? When a board election is, in effect, a fight over strategy, do we trust the passive managers to make the call?

Probably not. The success of any individual company will always be of minor importance to them. At best, they can encourage the right structural policies for how board members are elected and how boards are run.

The rise of passive investment has done a great deal of good. In terms of the supervisory role of the investor — a key to strong markets — it comes with inevitable costs. It is up to other investors to fill the gaps it leaves behind.

Double agent's poisoning calls for tough action

Business ties between UK and Russia cannot be shielded from politics

A former Russian double agent who passed secrets to Britain is still fighting for his life alongside his daughter after being poisoned in the south-west of England with a nerve agent. In total, 21 people have been treated for exposure to the toxin. Once again, the finger of suspicion points towards Russia.

It is important not to rush to judgment. Though circumstantial evidence in terms of means and motive points strongly at Moscow, there is as yet no solid proof that Russians — still less the Kremlin itself — were behind the attempted assassination of Sergei Skripal. Other states possess nerve agents and could in theory be behind the attack, for unknown motives.

Elements in the Russian security services, which have increasing links to organised crime, might have procured and used the lethal poison without Kremlin orders or knowledge. Russian agents could have targeted Mr Skripal on their own account, or because they believed they would somehow please President Vladimir Putin.

If Russian involvement is demonstrated beyond reasonable doubt, the UK should not flinch from the "robust" response the government has promised. Britain's less than resolute reaction to the 2006 killing of Alexander Litvinenko with radioactive polonium-210 appears to have emboldened Russian agents. As home secretary, Theresa May was partly responsible for the tepid response, delaying a public inquiry into the murder for years. A speech given after she became prime minister suggested she had moved to a harder line towards Russia. She should show that conversion is not cosmetic.

The need for a stern response remains even if Kremlin involvement cannot be proved. Mr Putin, if he chose, could make it known throughout his security structures that he will not tolerate "freelance" killings abroad.

Diplomatic expulsions are one option, but should be more sweeping than after the Litvinenko case — especially if, as then, charges are brought against Russians whom Moscow refuses to extradite. But it is also time to end the effort to shield UK-Russian business ties from the deteriorating political relationship.

The authorities should impose tougher checks on the provenance of Russian money used to acquire UK property or assets, and on Russian listings on the London stock market. Senior Russian officials — some of them even in government — and Kremlin-linked businesspeople who own UK property should be subject to much greater scrutiny. In some cases, property could even be stripped by using the unexplained wealth orders created by last year's Criminal Finances Act, which empower UK law enforcement to seize proceeds of corruption.

The government should also make use of the so-called "Magnitsky amendment" to the same act — named after the late whistleblower on Russian corruption — to freeze assets of Moscow officials accused of human rights abuses. Senior Russians cannot expect to shelter wealth in London while being part of or actively supporting a Russian regime that dispatches killers to the UK to murder their compatriots.

Such measures would be far more powerful if Britain's allies took similar steps. The UK's vote to leave the EU might make some European partners less inclined to help. But, after annexing Crimea, fomenting war in eastern Ukraine, and almost certainly supplying the missile that downed Malaysia Airlines flight 17 in 2014, proof of attempted murder with a nerve toxin would suggest Russia is acting ever more like a rogue state. That is a threat to the whole Euro-Atlantic community — one it must unite to confront.

Letters

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Our problems have nothing to do with Brexit

Sir, Philip Stephens' article on John McDonnell illustrates perfectly the challenge facing the Financial Times and its readers who, like myself, are pro-markets and pro-EU ("Brexit Britain may hum a Marxist tune", March 9). It lists a whole set of valid reasons why people voted in a seemingly "irrational" way, gives a warning about snake oil, yet offers precisely nothing in its place.

Likewise there was the article by Martin Wolf on the eve of the Brexit vote which used option theory to suggest that it was rational to vote against Brexit on the grounds that even if "Remain" offered only a tiny upside, it was worth taking ("Why I believe Britain belongs in Europe", June 21 2016). The evidence, however, of the last 10 years is that for a large part of the population there has been no upside, so it is not even worth paying the price of the option.

Most of the problems facing the UK have nothing to do with Brexit — educational inequality, failing utility markets, poor infrastructure, low productivity, a non-functioning housing market. Fixing these with an economy weakened by being outside Europe will be even more difficult. The bet, however, that many people are innately taking is that only by delivering a huge shock to the establishment will anything be done about these problems. The challenge for the world of the FT is to find what answers can be given without resorting to the nationalisation favoured by Labour leader Jeremy Corbyn. Producing more articles on why Brexit is not a good idea will not work, as the message it sends out is: "Let us keep to the system that has produced the inequality we are witnessing today."

Nicholas Wigdahl
Newmarket, Suffolk, UK

The EU's approach to Brexit is fair and square

Sir, Gideon Rachman ("Europe's strategic Brexit choices", March 6) is right to point to the EU's capacity to be flexible when politically necessary. Surprisingly, he fails to acknowledge the UK as perhaps its greatest beneficiary.

In 1985, the UK was granted a special rebate from the EU budget, requiring all other EU members to increase their contribution to make up the difference. In 1992, it was granted an opt-out from the euro, Economic Monetary Union and the Social Chapter of the Maastricht treaty. In the 1997 Amsterdam Treaty, EU members agreed to give the UK a flexible opt-out from legislation adopted in the area of freedom, security and justice and to allow it to opt out of the Schengen agreement abolishing border controls within the EU. In 2007, the UK secured a specific agreement limiting the scope of application of the EU Charter of Fundamental Rights. In 2016, EU members agreed to provide the UK with further *sui generis* arrangements on the basis of which David Cameron called for a Remain vote in the June 2016 referendum.

As cherry-picking has been central to the UK approach to EU membership for decades, it is "*de bonne guerre*" that EU members be tempted to take a similar approach now that the UK government has triggered the process to exit the union, despite all efforts and considerable flexibility deployed to accommodate its "special needs".

Britain would indeed not be "any old third country"; nor for that matter is Russia that has been just as "crucial to the European balance of power for centuries". But recent events in Salisbury, Wiltshire, are a timely reminder of the dangers of drawing too many parallels between the two.

Anthony Gooch
Paris, France

Europe has accommodated Britain's 'special needs' for decades — Dreamstime

Equivalence does not meet either side's requirements

Sir, Your editorial "Hammond's blueprint for the City after Brexit" (March 8) sets out a case for Britain adopting a regulatory relationship that leaves our respective citizens worse off, damages the wider European financial and related professional services ecosystem, and leaves Britain as a rule taker. It succeeds, at best, in being an unambitious and unimaginative way to enter an unprecedented negotiation.

Our industry has endorsed the government's proposals on mutual recognition precisely because they are creative and forward thinking. They align with the industry's own work and priorities, maintain the sovereignty of both sides and minimise disruption for customers.

Equivalence does not meet the requirements of either side. It leaves the UK unambiguously as a long term rule taker from the EU. Critically, it makes no sense economically, reducing EU access to British finance, narrowing British access to a key market and fragmenting the European ecosystem. The only winners would be rival centres outside our continent.

Now is not the time to be desperately grasping for outdated structures designed at the end of the last century in the vague hope that they might be acceptable to European institutions. These are mechanisms that Michel Barnier himself rejected as not fit for purpose when negotiating the Transatlantic Trade and Investment Partnership. We owe it to the citizens of the UK and the EU and customers our industry serves across Europe to be pragmatic but also ambitious. Mutual recognition delivers that.

Miles Celic
Chief Executive,
TheCityUK

Office Christmas carols began in November

Sir, Further to Pilita Clark's column on music in the office (March 5): when I was a young accountant in the 1960s, working in clients' offices in Michigan, we were invariably regaled with carols for at least four weeks before Christmas.

James Macdonald
Ickleton, Cambs, UK

Draw the economic border down the Irish Sea

Sir, Britain may be able to achieve some of its currently challenging Brexit objectives by working them through Northern Ireland, if it can persuade Belfast to agree with Dublin to place the economic border down the Irish Sea. All sides would agree that the political border would remain untouched until the terms of the Good Friday Agreement dictate otherwise.

Dublin may be able to negotiate an arrangement with its 26 EU partners to maintain the current economic union for Ulstermen, after Britain leaves. This means the citizens of Northern Ireland would continue to be eligible for EU supports and grants in agriculture, infrastructure, research and development and other areas. They could be represented by Dublin at European Council level, and Dublin would work in close liaison with the Belfast Assembly on matters pertaining to the North. Such a scenario would guarantee Ulster's continued economic welfare — assuming prime minister Theresa May would guarantee continued economic transfers from London. Further, it would likely lead to a considerable economic boost to the province from British inward investment to avail of its single market with the EU.

Would the Democratic Unionist party — virulently opposed to staying in the EU — try to block this? Maybe. Best would be to put a vote on the matter, when details are clarified, to the people of Northern Ireland. The DUP would block their own people from voting on the opportunity.

Brian O'Doherty
Greencastle, Co Donegal, N Ireland

Governments made no such bet, and have dealt with the China that is

Sir, The usually excellent Edward Luce repeats a fashionable flagellatory myth when he claims that "we bet that China would consciously remake itself in our image" and that it would become a liberal democracy ("The west is doing its best to help China", March 8). How does he square this with the long-running US and EU refusal to grant China its coveted "market economy status" in the World Trade Organization? Or President Barack Obama's exclusion of China from the Trans-Pacific Partnership talks? Or the "pivot to Asia" by that same president as a containment strategy? And what would the alternative bet have looked like, anyway?

The truth is that plenty of pundits (myself included) have ruminated about a possible eventual Chinese embrace of democracy, usually qualified as a "Singapore-style" guided and not very liberal variety. But governments have made no such bet. They have done what governments have to do, namely deal with the China that is rather than the one they might like, while resisting granting it too many concessions until it actually deserves them.

In that, they made the right bet: China remains an authoritarian system with a substantially non-market economy. And yes, one that is benefiting from the west's weaknesses, even though it does have weaknesses itself.

Bill Emmott
All Souls College,
Oxford, UK

A student's comment that made a happy fossil of me

Sir, In response to Harvey Clark Greisman's charming letter (March 7), I offer another recollection by an academic dinosaur.

After my seminar "What a Poem Says", an anonymous student wrote: "What a book! But I love the way he reads poetry . . . "

I took it for praise, perhaps from a young woman, and was reassured by such an evaluation that I was a lively fossil.

Jascha Kessler
Santa Monica, CA, US
Emeritus Professor of Modern English American Literature, UCLA

If only the MIT scientists had read their Virgil

Sir, I refer to Clive Cookson's report "False news spreads wider and faster on Twitter, scientists find" (March 9). Scientists at Massachusetts Institute of Technology could have saved their energy in researching the speed of fake news by reading Book IV of the *Aeneid*, in which Virgil wrote, more than 2,000 years ago: "*Fama, malum qua non aliud velocius ullum.*"

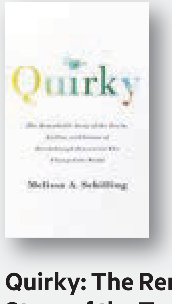
Loosely translated this means: "Rumour — no other evil travels more quickly."

Alun Evans
London SW6, UK

COMMENT ON FT.COM
Gavyn Davies
How the Republican tax cuts could have supply-side benefits for the US economy
www.ft.com/gavyn-davies

Limited lessons from the wizard geniuses

Book review
John Thornhill



Quirky: The Remarkable Story of the Traits, Foibles, and Genius of Breakthrough Innovators Who Changed the World
by Melissa A Schilling
Public Affairs, $28

Quirky is a business book that lives up to its title. In part, Melissa Schilling has produced an entertaining and enlightening romp through the lives of eight "breakthrough innovators", exploring their remarkable abilities, personalities and motives. The snag is that their very extraordinariness detracts from the second purpose of the book: to act as a guide for corporate managers. No matter how well the narrative is told, *Quirky* ends up as an odd and strangely unconvincing mix of biography and management theory.

No doubt much inspiration can be drawn from the lives of Ms Schilling's exceptional eight: Albert Einstein, Benjamin Franklin, Elon Musk, Dean Kamen, Nikola Tesla, Marie Curie, Thomas Edison, and Steve Jobs. Each is notable for near super-human powers of imagination and endurance and astonishing accomplishments across a range of fields. But it is also hard to imagine that a modern company would have hired any of them. One defining characteristic of such innovators is that almost all have been, in various ways, eccentrics, misfits, or crackpots. Their genius often lay in defying rules and norms, which does not take you very far in the corporate world.

The outstanding example is Tesla, born during a lightning storm in a Croatian village in 1856, who became a "wizard genius" credited with more than 200 innovations in the areas of radio, electric power distribution systems, lasers and guided torpedoes. Tesla, we learn, wrote at length about his love for a pigeon that he believed to be his soul mate, had a strong aversion to spherical objects, and an obsession with the number three. Towards the end of his life he would walk around a building three times before entering and abstain from eating food unless its cubic mass was divisible by three. He also took $150,000 from the banker JP Morgan to build a communications tower and spent it on something else.

"Tesla's story highlights the powerful interaction between genius and mania, two traits that are common among many breakthrough innovators," Ms Schilling notes drily.

The author deftly draws out some of the other quirky characteristics that these innovators shared. Perhaps the most significant was that, with the notable exception of Benjamin Franklin, they all had a sense of separateness, which created the space for original thinking.

This is one conclusion that may have a crossover lesson for corporate life. Citing recent psychological studies, Ms Schilling highlights the benefits of solitude for creativity and the drawbacks of brainstorming, which she says often reinforces groupthink. The innovators also tend to be intellectually omnivorous, even if they did not always excel in formal education. Einstein made many of his most startling contributions to theoretical physics while working at the Swiss Patent Office. They also tend to have remarkable memories, extraordinary resilience and little need for sleep.

Marie Curie, the first woman to win a Nobel Prize, and for many years the only laureate to win two awards in different fields, worked prodigiously hard. One of her second daughter's earliest memories is of her mother fainting from exhaustion. But Curie was sustained by high self-efficacy and an energising sense of purpose.

Such vision often enabled innovators to carry others with them, as was the case of Steve Jobs. As one of his colleagues at Apple recalled, Jobs succeeded in persuading the Macintosh development team that they were making history, not just a superior piece of office equipment.

Some of the lessons that Ms Schilling draws from these exemplary lives seem a little artificial. As she notes, most companies are concerned with incremental rather than disruptive innovation, and such progress normally requires effective teamwork rather than flash-in-the-pan inspiration.

The more intriguing point, with which Ms Schilling concludes, is that breakthrough innovation in science does not always come from people who have pursued a "typical" scientific path. That makes it all the more imperative to broaden educational opportunities, allow non-scientists to access scientific resources and expertise, and give free rein to the quirky.

The reviewer is the FT's innovation editor

Comment

Italy is storing up trouble for the eurozone

EUROPE

Wolfgang Münchau

Almost a year ago I was invited by the Five Star Movement to a conference in the Italian chamber of deputies in Rome. The discussion was about whether or not Italy should leave the eurozone, and how to do this. Most of the speakers, myself included, argued in favour of unconventional policies, but stopped short of advocacy of outright eurozone withdrawal.

In the front row of the audience sat Luigi Di Maio, the party's parliamentary leader. He followed the rather technical debate for an entire day. Not long after that conference, he dumped his party's rather silly proposal of a referendum on eurozone membership. I do not think it is silly to question the wisdom of Italy's eurozone membership as such. But a referendum is the wrong instrument. Any prime minister who called such a referendum would create an immediate financial crisis. The government would be forced to exit long before the country would exit the currency area.

After his party's success at the general election on March 4, Mr Di Maio has a good chance of ending up as the next Italian prime minister. He is now positioning himself as a centrist in search of a coalition partner. What is his euro strategy now?

The euro referendum is mercifully off the table. But it is possible, indeed likely, that the next Italian government could derail the Franco-German talks on eurozone reform.

We learnt this week that eight small northern European countries, led by the Netherlands, are opposing those reforms because their governments reject the idea of fiscal transfers. Italy, too, has reasons to resist them, albeit different ones. The reforms would strengthen the role of the European Stability Mechanism, the €500bn bailout fund created in 2012 at the height of the crisis in the eurozone. But as a quid-pro-quo, Germany and others insist on semi-automatic debt restructuring. No Italian government could sign up to this. There is now a clear risk that the reform package proposed by Emmanuel Macron, the French president, might fail or, at best, turn out to be rather modest. It used to be that Franco-German agreement was both necessary and sufficient for any EU reforms to get through. That is no longer the case.

Another risk is an Italian fiscal overshoot. This is a very probable scenario, no matter whether Mr Di Maio becomes prime minister, or the job goes to Matteo Salvini, the leader of the anti-immigrant and anti-euro League.

> It is likely the next Italian government will derail talks on reforming the single currency

The two parties were the big winners in the election. Five Star wants a universal basic income, one of the reasons for its electoral success among young people in particular. The League favours a flat tax. Since neither party advocates spending cuts to offset these measures, their fiscal proposals are not going to be consistent with the EU's deficit rules.

The fiscal overshoot could fuel debate about a parallel currency as a soft alternative to a euro exit. There is a lot of excitement among some Italian economists about "fiscal money", as it is also known. The idea is to use the tricks of modern finance to create something that performs functions resembling those of money, but that remains outside the control of the central bank.

Readers might recall that one of the more notorious instruments involved in the great financial crisis was the credit default swap, a tradable security that simulated insurance. An investor would typically buy a CDS to insure against the default of a corporate or a sovereign bond.

Fiscal money is technically different. But the idea of using one instrument to simulate another is similar: the Italian government would formally issue a credit note and transfer it to each citizen, say €1,000 per person. People could use it to pay their taxes or trade the notes at a discount. There would be a market because notes are eligible to settle tax debt.

I assume the rest of the eurozone, and the European Central Bank, would hate the idea because it undermines the notion of the euro as the single currency. Yanis Varoufakis, the former Greek finance minister, came up with the notion before the Greek debt crisis in 2015. Greece was not ready for it, and Alexis Tsipras, Greek prime minister, preferred a classic bailout programme. But the idea could see a comeback in Italy. Even Silvio Berlusconi, the former prime minister, came out in favour of a parallel currency before the elections.

So we are looking at three foreseeable outcomes for the eurozone: a string of vetoes on reform; an Italian fiscal overshoot; and a parallel currency as the harbinger of a future monetary fracture. This is in addition to the appointment of a hawkish successor to Mario Draghi as president of the ECB.

My conclusion, therefore, is that Italy will remain the principal source of risk for the eurozone for the foreseeable future.

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Beware a digital trade war

AMERICA

Rana Foroohar

National security is the new cover for US protectionism. President Donald Trump signed his steel and aluminium tariffs under that false guise. But metal bending is not the most worrisome new area for protectionism. Trade in physical goods and services has been flat for years, but digital flows of commerce and information have risen by 45-fold in the past decade, according to the McKinsey Global Institute. The trade war to fear is not in physical commodities, but in technology, which economic nationalists hope to ringfence in order to stave off competitive threats from countries such as China.

The US has already launched a so-called Section 301 investigation. The results are due this summer, but it will probably result in stricter barriers on Chinese investment in American data and IT. That could shut out companies such as, say, Tencent, or result in new tariffs on a wider variety of Chinese products — or even usher in new visa rules for Chinese immigrants.

Last week, the Committee on Foreign Investment in the US announced it had launched a review into Singapore-domiciled chipmaker Broadcom's bid to purchase Qualcomm, a leading US semiconductor business. The move followed pressure from Texas senator John Cornyn and California representative Duncan Hunter, who have each received more than $15,000 in donations from Qualcomm's political action committee, according to Federal Election Commission records. Treasury secretary Steve Mnunchin, who chairs Cfius, said last week that the US was "fully prepared" to use its powers to prevent the deal should it threaten national security.

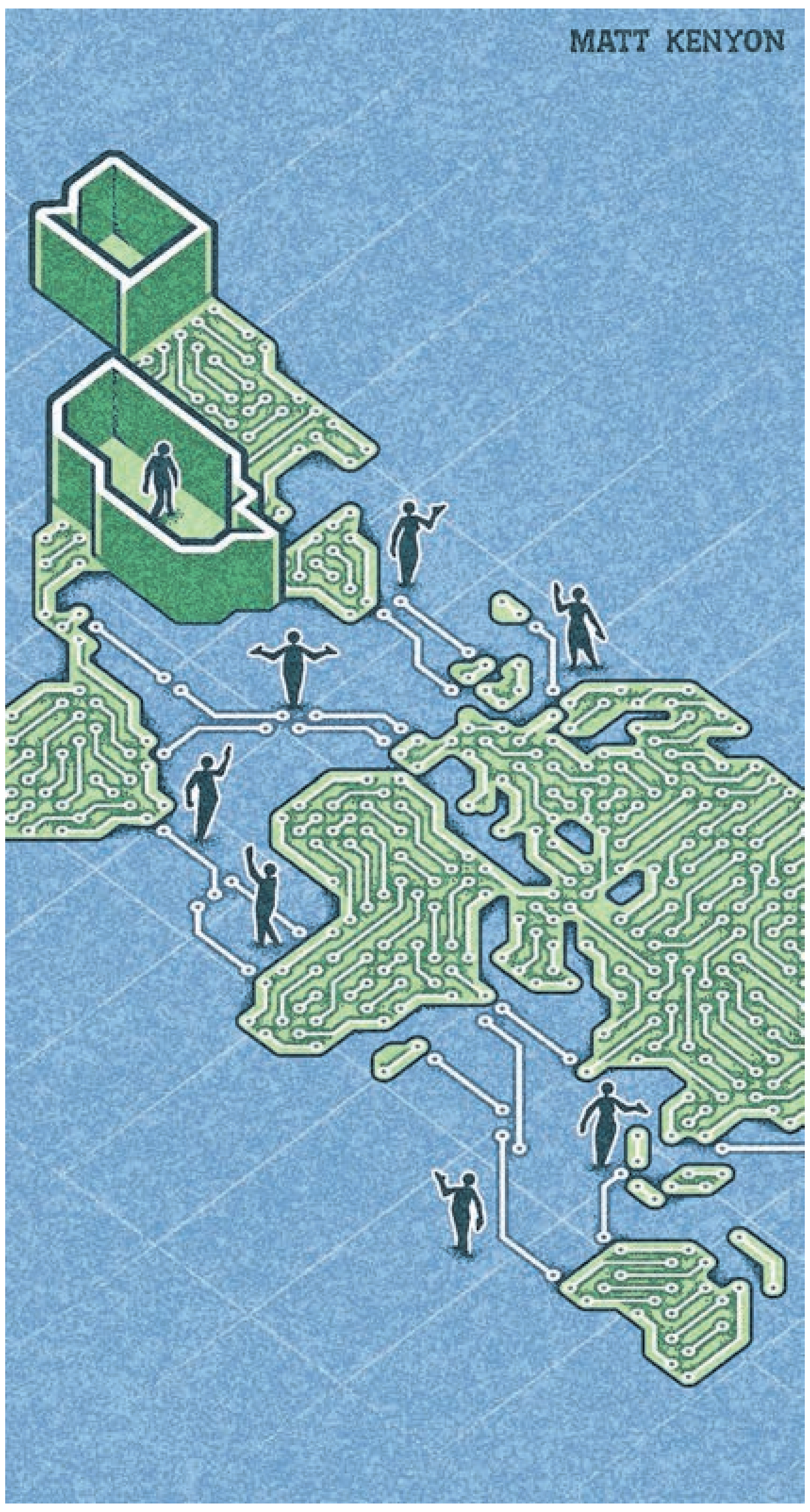
The arguments being made against the deal range from worries that Broadcom would shrink Qualcomm's investment in crucial areas such as 5G, to fears that the US cannot remain digitally competitive and secure if a Singaporean company owns Qualcomm. But that fails to take into account the way in which both the US tech industry and the administration itself currently operate.

Cfius frets that Broadcom, which has lined up $106bn in debt financing from private equity groups Silver Lake, KKR and CVC for the deal, will take a short-term profit approach and cut Qualcomm's rich research and development budget, which is 20 per cent of revenues. That is a legitimate worry: private equity has a history of reducing R&D when the debt is high. Cfius's theory is that if Qualcomm is starved of investment, the US will lose a "national champion" in the tech race against China.

Yet this ignores the fact that Qualcomm has "strategic collaborations and interests in China that dwarf those of Broadcom", according to Stacy Rasgon, a Bernstein semiconductor analyst. Many big US tech companies have substantial interests in China, even though some of them have been privately jumping on the nationalistic bandwagon in recent months. They have been using the "better us than China" argument when lobbying against the groundswell of enthusiasm for additional regulation of the technology sector on a variety of fronts, from antitrust to privacy.

> It is true China protects its own tech sector. But it is also true that the US has homegrown tech troubles

The problem is that neither the US tech industry nor the government can have it both ways. In the 1980s, under the Ronald Reagan administration, there was briefly a push for a more cohesive industrial policy around technology, but it was ditched as soon as George H W Bush took office. Then, in the late 1990s, the Department of Defense worried the Japanese were making 92 per cent of the flat panel displays used in military equipment. It launched an effort to create a homegrown industry for this technology. Billions of dollars and several years later, Japanese firms had a 96 per cent market share. Today's worry, of course, is we start with tariffs on aluminium and steel and end up in a digital trade war that cannot be won.



The government is right to want to look out for national security interests and to have a hand in how strategically important sectors are managed. But protectionism is not the way to do it.

The US government has a terrific record in terms of funding blue sky research that results in huge economic value for the private sector — touchscreen technology, GPS and the internet itself came out of the Pentagon. We should be bolstering rather than cutting funding for such research, and perhaps even allowing the public sector to take a greater cut of the profits if the research is commercialised, as Nordic countries and Israel do. That would help offset criticism that results when companies such as Apple or Google or Qualcomm, after benefiting greatly from publicly funded basic research, end up stashing much of their profits offshore.

It is true that China protects its own tech sector. But it is also true that America has homegrown tech troubles. Rather than slapping tariffs on foreign goods or swallowing the claim that companies doing business with economic adversaries are somehow national champions that will ensure state security, we should take a closer look at our own digital ecosystem. Large US incumbents are crushing innovation. Educational reform is desperately need to train workers for jobs where they will not be displaced by robots.

We can best bolster growth not by protecting US companies from overseas buyers, but by investing in infrastructure. Addressing those issues is the right way to protect national security.

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Universities risk their reputations by failing to value teaching staff

OPINION

Margaret Heffernan

Across the UK, university lecture halls and seminar rooms have been silent as academic staff continue a wave of strikes. Taken at face value, the industrial action is a textbook case of bad industrial relations.

Lecturers have accepted relatively low pay and pretty poor working conditions in exchange for significant autonomy and relatively secure jobs and pensions. But, over the past decade, without negotiation, every aspect of that deal has been eroded. Autonomy has given way to increased teaching responsibilities, larger classes, more time spent grading and heavier management duties. Job security has been reduced by eliminating departments and cutting research funding. Pensions are failing to deliver on their promise.

While university leaders have awarded themselves huge pay increases, they allowed academic pay and standards of living to decline steadily. Nobody should be surprised that trust has broken down.

But this strike reveals a management failure more powerful than these compounded sources of resentment. Under successive governments, students have been re-defined as customers. They are served, so to speak, by academic staff who work on the frontline of the main product: student experience. This has shifted strategic focus from the pursuit of knowledge to the pursuit of teaching scores and student survey results.

In no successful business do smart leaders deliberately alienate frontline workers — for the simple reason that they are where satisfaction or disgruntlement comes from. Marginalising and denigrating the very people in whose hands the reputation and future of the business lies is the very definition of bad leadership: dangerous, shortsighted, obtuse.

Who creates the university student's experience? Those lecturers, tutors and researchers — the names and faces of daily learning. These are the people we trust to inspire, encourage and motivate the next generation. Students and parents look to them to encourage ambition, rigour, determination, stamina and curiosity. Ministers go so far as to argue that the knowledge economy of the nation depends on the intellectual output of these students.

> In no successful business do smart leaders deliberately alienate frontline workers

US universities make the same mistake. Much teaching is devolved to dedicated adjuncts, part-timers who are trying to unionise to protest against such low pay they struggle with homelessness or depend on additional, often unsavoury, sources of extra income.

This is not just an academic issue. Worldwide, I see chief executives paying lip-service to consumers — the source of all their revenue — while entrusting their company's reputation to outsourced, casualised workers who are managed with a disdain they inevitably pass on to the paying public. Appreciative customers are made by appreciated workers. Serious management does not wants its customers served by angry, resentful individuals given no reason to love, or promote, the organisation they serve. Lousy service comes from workers ignored by lousy management. Is that what vice chancellors want?

Executives charged with innovation know that their best ideas routinely originate from the insights and observations of frontline staff. If you want to know what your customers value and will pay for, ask the people who talk to them. Cherish these people. That's what makes them creative and inspires their distinctive and exciting ideas. Management literature is awash with volumes on talent; none of it suggests that treating people as dispensable and cheap brings out their best work.

Occasionally, I teach in British business schools. I love it. Challenge and questioning from the rising generation is something to relish. But you could not run a business school with people like me. I do not know or empathise with my students in anything like the way my full-time colleagues do. I do not make the long-term investment in knowing and growing my students.

Students side with their lecturers in this dispute because they know where their education really comes from: not management, not figureheads, but their teachers.

The writer is the author of 'Wilful Blindness' and 'A Bigger Prize'

Trump's diplomatic turn to North Korea deserves acclaim

OPINION

Nicholas Burns

Donald Trump is right about North Korea, of course. It never made sense for the US to launch a "bloody nose" military strike against Kim Jong Un's isolated country without having tried diplomacy first.

America and North Korea were on a collision course to war. A unilateral US attack, which had been considered seriously in Washington for months, would have brought with it incalculable risks. The powerful North Korean military would probably have struck back. China might have intervened to defend its border, producing a potential stand-off between Beijing and Washington. US military leaders predicted such a clash would cause tens of thousands of casualties in both South and North Korea. It could have been catastrophic for Mr Trump to choose war before talks on a bitterly divided Korean peninsula.

Sitting US presidents and North Korean leaders have not spoken in seven decades. The only American known to have met Mr Kim is the retired basketball star Dennis Rodman, an athlete of considerable merit but decidedly not the person to negotiate the future of a nuclear crisis. However abruptly Mr Trump has cast aside decades of American policy and his own opposition to talks, he has chosen the wiser path for his country and the world. Better he meet Mr Kim in an extraordinary summit than march off blindly to war.

Still, the devil for Mr Trump will be in the detail. As he contemplates what could be the greatest challenge of his presidency, there is much to give him pause. He must first recognise Mr Kim's strong position. North Korea has a considerable nuclear arsenal and has made impressive progress in missile tests. Mr Kim will negotiate but continue working behind the scenes to achieve his goal of an intercontinental nuclear missile that can reach any target in America.

Mr Trump should also realise that the North Korean leader has no intention of trading his nuclear programme for peace. Mr Kim considers his nuclear force as the ultimate guarantor of his regime's security. Even if Mr Trump could convince him to denuclearise, verifying compliance would be difficult. Could Mr Kim be trusted to keep his word? His father forged but violated agreements with Bill Clinton and George W Bush. Mr Kim seeks legitimacy from the talks and ultimately world recognition as a nuclear power.

> In casting aside decades of American policy, he has chosen the wiser path for his country and the world

The US president's second challenge is to prepare for his daunting summit with a very thin bench of Korea and east Asia experts in Washington. This is a problem of his own making. He has yet to appoint a US ambassador to Seoul or an assistant secretary of state for east Asia. His draconian budget cuts at the Department of State and open disregard for diplomacy have produced an alarming exodus of senior career diplomats.

To counter Mr Kim's strengths, Mr Trump needs to commit to an aggressive diplomatic campaign. He should consider delaying the meeting until he has orchestrated a coalition with South Korea, Japan and China to intimidate Mr Kim. Global sanctions against Pyongyang must remain. China's president Xi Jinping should be asked to warn Mr Kim of the risk of a diplomatic failure. Mr Trump needs to cancel steel and aluminium sanctions against his most vital ally in the talks — South Korea. Rex Tillerson, secretary of state, should conduct preliminary discussions to confirm Mr Kim's seriousness. What Mr Trump does now to strengthen his position may be as important as what happens at the talks themselves.

The US president's surprising turn to diplomacy is a gamble. He will need to be uncharacteristically deliberate and serious in preparing for the summit. The probability of success is not high. In choosing a diplomatic path, however, Mr Trump keeps alive the prospect that discussions with Mr Kim might yet prevent a major conflagration in Asia. That alone will make these talks worthwhile.

The writer is a professor at Harvard and former under US secretary of state and ambassador to Nato

Managers are the guardians of companies' useful history

Andrew Hill

On management

Years ago, my parents decided to build a summerhouse in the garden and consulted a neighbour who had once been the property's housekeeper. The octogenarian sucked her remaining teeth. "Mark my words: it will blow down. The last one did," she said. "It stood for 50 years — but it blew down."

This is the problem with tapping institutional memory. Some of your colleagues are the only people who know about the organisation's strategic errors and successes. But like all autobiography, their recollections may be partial, and their instincts may tend to preservation rather than progress.

I was reminded of the summerhouse (still standing, by the way), when I read last week's interview with Konica Minolta's chief executive. Shoei Yamana found section heads, known as "bucho", resisted his reforms. Their attachment to the status quo was founded on the group's historical victories, but, as Mr Yamana put it, "We cannot live with past success".

Sweep away this layer of middle management, as new brooms are wont to do, and you will quickly hear the complaint that the organisation is losing institutional memory. This is invariably self-interested. Still, a little like taking a mallet to a retaining wall, it is best to understand what you are removing before you tear it out. Otherwise, you will find yourself in the position of those new chief executives who axe a group of old hands only to have to rehire them as "consultants" because they were the only people who knew how to fix an old piece of kit, read a defunct computer language, or even (in the case of the worldwide pilot shortage) fly a plane.

I unearthed a 1986 paper on preserving institutional memory, with the help of Omar El Sawy, one of its co-authors. The paper, written for the Academy of Management, points out that "when institutional memory is constituted largely of what is in the heads of organisational participants and a haphazard collection of records, it can deteriorate very quickly with the exit of the participants and the increasing difficulty of record access".

Artificial intelligence has improved since. Some memories that these scholars said were beyond computers' reach — stories, critical incidents, details of decisions — can now be recorded and analysed electronically.

But a vast quantity of material is still subject to "increasing difficulty of access". As technology companies and their products advance, history is being unwritten by the victors.

The FT just warned us that it plans to scrap its old Lotus Notes emails, for good reasons to do with privacy and security. The cache probably includes one I received in 1997 warning us not to use email for "essential business purposes", as the system was so unstable. But these messages are the digital stuff of institutional memory. They could tell a strategist of the future a lot about what once went wrong and what went right, and why, not to mention about the group's culture.

Buchismo, if I can coin a new expression from Japanese and Spanish, is at its worst a hindrance to progress. But at least some of the despised status quo middle managers guard will be critical to your company's survival.

Striking the balance between clinging to history and advancing into the future is not always a battle between intransigent old lags and impatient young thrusters, though. The turnover of staff is so great, and the rate of technological change so fast, you may as easily lose institutional memory when Google poaches your younger staff members, as when your middle managers shuffle off into early retirement.

Some organisations have a policy to ensure their "usable past" is not squandered. Intel has Intelpedia, a "wiki" with 90,000 pages of employee contributions (although the staffer I asked had not heard of it, after five years at the company). Nasa has a 10-page "knowledge policy" that lays stress on the need to capture "lessons learned" from successful and failed space missions.

> Balancing the past and progress is not always a battle between intransigent old lags and impatient young thrusters

Does any of this matter, as organisations turn into fluid networks of contractors and subcontractors working on strings of projects? If there is no institution, why do workers need memory at all? They can rely, instead, on the internet's openly available library of what works.

Yet this would be a desperately fragile foundation for growth. Copying best practice can lead to dangerous herd-like behaviour. Add short-term memory loss and you more or less have the recipe for the last financial crisis — and doubtless many future ones.

Established enterprises have found they sit on plenty of useful proprietary data. They should include in their big-data banks the harder to catalogue memories and experiences of staff. By all means ignore what is now anachronistic. But try not to delete it. The past could come in handy in the future.

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Working lives. How to cope

Do not take it personally: business leaders on working under pressure

Chief executives open up about how they coped with personal and professional setbacks. By Andrew Hill

Clockwise from top left: Bill McDermott, Ursula Burns, Cynthia Carroll and António Horta-Osório
FT montage; Getty Images; Anna Gordon

In November 2015, Ursula Burns was on her morning training walk around Central Park in New York when she learnt that Carl Icahn, one of the most notorious US corporate activists, had taken a 7.1 per cent stake in Xerox.

The next few days were a blur, says Ms Burns, who had worked her way up from engineering intern to chief executive of the venerable technology and services company. Mr Icahn's call for change at Xerox was a challenge not only to her strategy but to the organisation where she had spent more than half her life.

"I took it personally," she recalls. But the straight-talking chief executive also received some important advice about how to cope: do not take it personally. Without that wise counsel to treat the approach dispassionately, "everything would have turned out very differently," she says.

> 'Taking a moment and steadying yourself can make an enormous difference'

Lessons such as this — drawn from a new series of Financial Times films about how leaders handle pressure — echo the suggestions of executive coaches and academics.

The natural response to sudden external shocks is panic and concern, says Philip Goldman of Alexander, the coaching organisation: "Taking a moment and steadying yourself can make an enormous difference."

Bill McDermott, chief executive of SAP, the business software group, faced an acute moment of stress in summer 2015, when he fell down a flight of stairs in the night. When he came to, suffering concussion, the glass he had been carrying was embedded in his left eye.

"I knew I couldn't see because there was so much blood in the scene. And I was hurt, I knew I was badly hurt," he says. "[My mind] was basically saying, lay down . . . go to sleep, you've done enough." But at a certain point "your will has actually to supersede your mind, and mine did, and it said, 'You've got to find a way to get up, get out and get on with it'."

Mr McDermott crawled from the house, but even after repeated bouts of surgery, which involved 1,000 stitches, he still lost the eye. Once in hospital, though, he says he had "great confidence, and I never really thought about the downside".

Mr Goldman says confidence is another vital tool for surviving high-pressure situations, laying stress on the word's roots in the Latin for "faith". "You need to have faith in yourself, faith in people you work with," he says. Mr McDermott would add faith in God. "It was a very high power that got me out of there," he says.

Executives need an earthbound support network, too, however.

Cynthia Carroll, the first woman and first outsider to run Anglo American, the mining company, faced strong internal opposition to her plan to change the hierarchical culture after she became chief executive in 2007. She acted to improve efficiency and communication, stripping out a layer of senior managers. "I was very unpopular," she says. When a fatality at Anglo's South African platinum mine prompted her to order its closure early in her tenure, she appealed to shareholders, unions and government for backing, and relied on "tremendous support from the board".

Charo Garzón, a coach and co-founder of Paradox, a leadership development consultancy, notes that understanding of the type of pressure faced by business leaders, and how to mitigate it, has evolved over the past 15 years. The ability to use the latest science to assess and improve leaders' stress levels has also advanced dramatically. At the same time, more organisations have understood the need to provide a support structure for senior executives. But she adds that if leaders "don't have the trust and confidence to open up, then they won't be able to use it".

Stress-induced insomnia felled António Horta-Osório, Lloyds Banking Group's chief executive, in 2011. "As a CEO these positions are quite lonely, so sometimes there are several things you cannot share with your team, because you have to motivate them," he told the FT last year. "You don't want your employees to have doubts about your leadership."

"He realised he wasn't superman . . . He discovered he couldn't control everything," comments Mr Goldman.

Paradoxically, though, reasserting some measure of control is another important way to deal with outside shocks — an insight that also emerged from our first series of interviews with leaders under pressure in 2016.

Mr McDermott, a born salesman with a reputation for leading from the front, missed a board meeting while he was in hospital. The first thing he did after returning home was to call his chairman and board and commit to attending the next one, even though it would mean flying to Germany: "Mark it down — big crayon — I'll be there . . . It never even remotely entered my mind that I wasn't coming back."

> 'People can't do much [about] the external game, but [they] can deal with the inner game'

Executives can also learn to use setbacks and stressful situations to reinforce their performance. Ms Carroll says her unilateral closure of the platinum mine sent a message to the company and the industry — and, critically, improved safety and reduced fatalities — but it also "led to more decisions later on [and] gave me that much more confidence".

Tawfik Jelassi teaches executives at IMD business school, drawing on his personal experience of being drafted unexpectedly into Tunisia's technocratic government in 2014. He says "the single most critical factor that can make or break a leader" is how resilient they are. Mr Goldman uses a sporting analogy to describe the same need to handle uncontrollable outside shocks and reduce self-imposed pressure: "People can't do much [about] the external game, but [they] can deal with the inner game."

Resilience is a quality leaders have to draw on both during their executive career — Mr Horta-Osório has bounced back successfully at Lloyds — and after. Both Ms Carroll and Ms Burns ultimately stepped down as chief executive of their respective companies, having faced criticism for decisions they took.

Ms Burns, now chair of Veon, the telecoms operator, and on the boards of companies such as Nestlé and Uber, says chief executives have to move forward, even at the risk of failure, because "if all you did was babysit something, it would almost surely fail". She still seeks to apply the positive approach she learnt at Xerox. She urges boards and managers to take action "instead of hyperventilating about what we did wrong or what we could have done differently".

Mr McDermott, still at SAP, says he has used his disabling accident to galvanise his leadership, too. He has drawn on one particular insight that is both crucial, and humbling, for people used to being in command: "You realise there are some things about life that have never been in your control in the first place: there is an incredible power that comes with that."

FT

More online
Watch Andrew Hill's video interviews in the Leaders Under Pressure series at: ft.com/leaders

Work Tribes

A spotter's guide to the inhabitants of our workplaces

EMMA JACOBS AND ANDREW HILL

FT illustration; Dreamstime

In the latest instalment of our series, we hear from more people you'll meet in the office — and some you may want to avoid.

Robert, the involuntary gig worker

"Hi there. Can you hear me? This is Robert Rockbotham, of Rockbotham & Associates. Um, no — there aren't any associates. Yet. But you know, this freelance consulting business is all about branding and "Me Inc" was already taken.

Of course. Let's get on with the call. So — you got the slide-deck? You didn't? You got what? My tax return? Damn, I must get IT to take a look . . . putting you on mute a second.

Can I get a double espresso, and can you remind me of the WiFi code? Oh, and I'll have another flapjack.

OK, I'm back on. So to summarise the first slide — sorry, just a moment. *Thanks. £6.50? You're kidding, right?*

I'm back. To summarise the first slide, what you need is the kind of flexible, strategic support Rockbotham can offer. Yes, I'm flexible enough to work this weekend, and next weekend. Yes, and the one after that. If you insist. That is the kind of spirit Rockbotham is built on.

What's that? No, that must be static, there's no coffee machine here. No, no kids either. I missed that — come again? You don't think you'll be able to go through with it? Why not? But I'm sending the slide deck attachment right now!

Look — you know this is my livelihood, right? You know I used to work at McBainsey? Hello? Hello? *Hey! Cancel that flapjack.*"

William, the weekly commuter

"Hello Phoebe, what did you do today? Nothing? Oh, you must have done something. Phoebe, can you speak into the phone? French, did you say? Can't remember? Glad to hear the school fees are worthwhile. Oh, nothing, just Daddy talking to himself. Yes, you go now. Is Mummy there? Can you put her on?

Hello Jane! I can't hear you over the baby screaming. Yes, I know looking after four kids under six on your own is difficult. Jules was just saying that being a mum is the hardest job in the world. She doesn't know how you do it.

Jules? I'm sure I've mentioned her before. My PA. Yes. She is still here.

Anyway, I told her you are a natural mum. So much more fulfilling than boring old consultancy.

Look, we have been through this: we can't both be consultants and have a family. We decided I'd live in London in the week so I could work myself to death and finance our rural idyll. I miss out too. It's not easy, missing homework, the school run . . . What? Oh dear, is Teddy still having accidents? Yes, of course I know he's potty-training. I just forgot. Yes, you go. I should get back to the grind. Work, sleep, work, don't you worry about me. Kiss the kids goodnight.

Jules, 20 minutes. The table's in my name. Good, you got it? Look forward to seeing you in it later."

Read more
FT.com/work-careers

'Failure is an option'
Jeff Bezos's right-hand man Andy Jassy reflects on what drives Amazon's success and ambitions

Losing trust
Michael Skapinker on how investors ready to disrupt far-sighted strategies for short-term gain have eroded public support

Outmoded management
Why command-and-control systems fail to provide the flexibility needed in today's businesses

Personal tech
It can keep your beverage hot all day, but is Ember the 'intelligent cup' worth the $80 price tag?

How to secure a scholarship for business school

Grants and fellowships are a vital source of funding for MBAs. Students need to apply early, writes Jonathan Moules

Scholarships have decisively overtaken savings, loans and employer support as the largest funding source for all graduate business degree courses. For many aspiring students, gaining access to an award — many of which are linked to developing a more diverse student intake — represents the difference between attending business school, or not.

Grants, fellowships and scholarships account for 30 per cent of the average financial mix among full-time MBA students, while loans make up 24 per cent, according to the Graduate Management Admission Council.

Kelsey Lents would not have gone to business school if it had not been for MBA scholarships. She worked as an associate at a New York architecture practice, having studied English as an undergraduate followed by a masters in architecture. Most people in her workplace came from design backgrounds and few had any formal business training. Ms Lents saw an opportunity to build valuable business skills, but without the $80,000 award offered by Georgetown University's McDonough School of Business, she could not have justified the estimated $170,000 cost of the two-year course.

"I was interested in studying business, but receiving a scholarship made it possible," she says. The money provided her with both means to study and the financial freedom to try entrepreneurship after graduation.

Together with a co-founder she met in her MBA class, Ms Lents is preparing to launch a Washington DC-based combined co-working space and childcare service for new parents operating in the gig economy, called Hatch. The idea came to her after she had her first child midway through the MBA course and tried to fit her studies around motherhood. Hatch has itself won $30,000 from Georgetown University in a pitching competition.

'Increasing from $70,000 is much more difficult than from zero to something'

LAURA CHEN, WHO TRIED TO NEGOTIATE A LARGER SCHOLARSHIP

Melissa Golden/FT

Both the scholarship and this seed funding provide the freedom to pursue a dream, Ms Lents says. "I can be more focused on what I am passionate about rather than chasing a specific salary."

Although business schools often claim that scholarships are about broadening access to less well-represented groups, such as women and ethnic minorities, money also flows to candidates who can help an institution maintain a strong academic record.

Justin Atwood received a $60,000 scholarship offer from Babson College in Massachusetts, covering 80 per cent of the MBA course fees. He attributes his success to a good score in the GMAT entrance exam, a good pass at undergraduate degree level — and his previous work experience in finance.

Mr Atwood had already saved hard for five years from relatively well-paid jobs, first as a financial adviser for Morgan Stanley and then an associate at investment consultancy Cambridge Associates.

But the scholarship was a key part of his decision to return to full-time study. "I needed this extra money to have a roof over my head and food to eat," he says.

The most successful MBA applicants are often the most sophisticated and steadfast negotiators, according to Jessica Burlingame, a consultant at The MBA Exchange, an admissions adviser.

One of her clients, a student at Duke University's Fuqua School of Business, doubled an initial aid offer of $33,000 by going back to the school's admissions and asking whether any other factors would have helped her chances. After she sent in further details of her situation, Duke made the revised offer.

Ms Burlingame warns that "timing is a wild card in the pursuit of merit-based aid", noting that some schools send aid offers automatically with offers of places while others only make decisions about scholarships months after the course has been filled.

Another of Ms Burlingame's clients successfully applied for a $17,500 merit award linked to her place on the prestigious dual degree Lauder programme at the University of Pennsylvania's Wharton School. The course combines an MBA with a masters degree in international studies. Several months later, without having made any suggestion that the school increase her aid, the client received a letter offering her an additional $15,000.

'I can focus on what I am passionate about rather than chasing a salary'

If you do negotiate a higher scholarship level, success is never guaranteed — even if you have bargaining chips. Laura Chen received a $70,000 merit award offer from Northwestern University's Kellogg School of Management, enough to cover half the fees for her two-year MBA.

She also received promises of financial aid from two other US schools, including one that would have covered all the course fees.

Buoyed by these offers, Ms Chen called Kellogg's admissions office hoping to persuade it to increase the scholarship, but was turned down. "Increasing from $70,000 is much more difficult than from zero to something," she says.

Financing your MBA

Maximising a scholarship for an MBA place requires preparation and smart negotiation, says Caroline Diarte Edwards, director of Fortuna Admissions. "It is important that your motivation comes across as authentic, and that your request does not come across as too strident," she says. "Put the request in writing, with as much detail as possible, and follow up with a phone call about a week later if you have not received a reply."

Get it in early. "Financial aid officers will have a fixed budget for a given class and have more flexibility to be generous earlier on in the process."

Pilita Clark

Bring on my jetpack and invisibility shield

James Bond flies a jetpack in the film 'Thunderball' — Getty

Every so often I have lunch with a maths whizz who spent years in investment banking and is obsessed with the future of technology.

He is not a household name himself but he talks to a lot of people who are, and I always come away from our meal thinking about something to do with technology that I had not thought of much before.

This is not always cheering. My friend has long shared Elon Musk's fear that artificial intelligence poses an existential risk to human civilisation.

And that was before last week's news that Amazon's Alexa digital assistant had been cackling creepily at startled owners for no apparent reason.

But I am also struck by how much working life could change if even a fraction of the technologies that companies are working on ever take off.

Being whisked to the office in a vacuum tube train would be a serious advance on the rush-hour Tube. Reading email through a bionic contact lens could be useful, though not as good as having a personal avatar answering my phone, or an invisibility shield I could whip out to dodge the approach of unwanted humans.

Yet what is truly likely to become a reality in one's lifetime?

One of the UK's top universities has just had a stab at an answer. Imperial College London has an outfit called Tech Foresight that tries to help boardrooms understand what is happening in the lab and how it is likely to affect their company.

Bravely, it has ranked 99 technologies, from implantable phones to head transplants, according to how soon they could become ubiquitous.

The ranking is based on factors such as the number of companies working on a particular technology, the sums they are spending, whether people are likely to love or loathe the innovation and how disruptive it could be.

Number one on the list is something that is already here but will not shake the world: a smart nappy that promises to make the "sniff test" a thing of the past with a monitor that can alert

Imperial College has ranked 99 technologies according to how soon they could become ubiquitous

parents to the need for a change.

Disappointingly, life-long personal avatar assistants are deemed to be at least 10 to 20 years away and vacuum tube transport is an even more distant prospect.

Like male pregnancy, it is not expected to be widely available for 20 or more years.

The same goes for a lot of other things I would not mind seeing sooner, including invisibility shields and artificially intelligent board members, which presumably would be no worse than some human versions.

On the upside, we could be closer to some helpful stuff, including human organ printing and artificial blood.

Other technologies seem too close to Big Brother for comfort. Public mood monitoring could be upon us in 10 to 20 years, according to the list.

This includes technology that could remotely read facial expressions or detect heart rates accurately enough to predict whether a football crowd is about to riot, says Nik Pishavadia, Tech Foresight's director of corporate engagement.

I am not sure about that. As Mr Pishavadia says: "There are some things that will be more or less acceptable to people and that will affect the route they take to market."

That brings us to the most frightening of the lot: artificial consciousness.

Comfortingly, machines that are not just merely smart enough to beat us at chess but could decide to grind us to a pulp if they felt like it are ranked at number 99 on the list.

Along with human cloning and telepathy, they are classed as "fringe science", meaning the technology is highly improbable but not impossible — and important to watch.

The Tech Foresight list is not comprehensive. I was sad to see it does not include personal jetpacks, which James Bond was using as far back as the 1960s, or even flying cars.

The authors say they had to draw the line somewhere.

They also warn that their list is supposed to provoke as much as predict and I hope it will.

In the meantime, I have resigned myself to answering my own phone, using the Tube — and staying away from Alexa for quite a while to come.

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Discover more insights at ft.com/visualjournalism

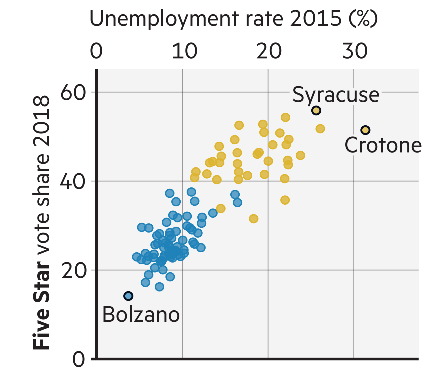
Graphical Insight What Italians voted for — and why

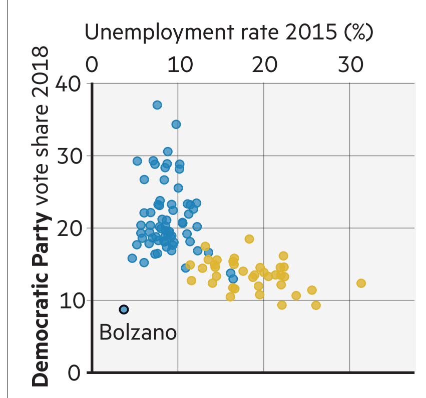
Points represent Italian provinces ● North and central ● South

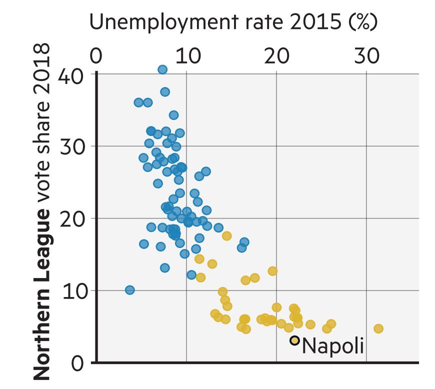
Unemployment

Five Star fared better in areas with higher unemployment. This was true between and within the north and south.

The Democratic Party and Northern League were strong in the richer north and weak in the south, but the linear relationship with economic performance was weaker.





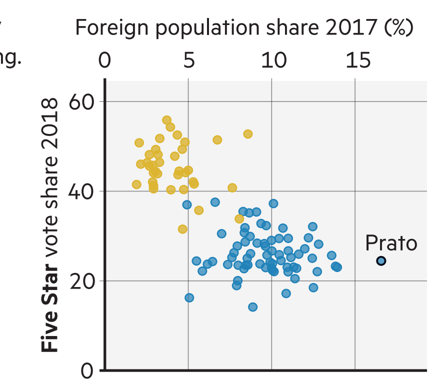


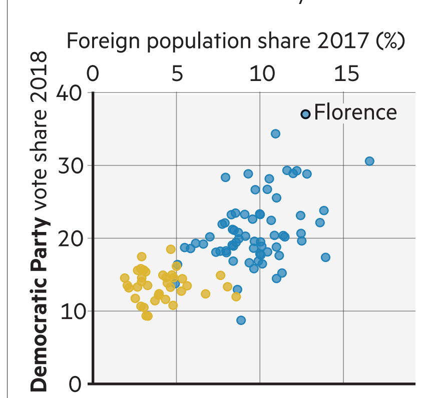
Immigration

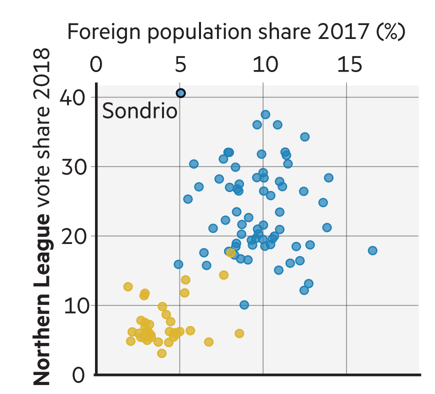
Geography makes immigration and party support seem linked, but this is misleading.

The anti-immigration Northern League fared best in the more diverse north, but within this region they did no better in high-immigration areas than low-immigration places.

The Democratic Party did better in areas with more immigrants, but this is largely down to the PD's better performance among wealthier groups — who tend to live in ethnically diverse cities.

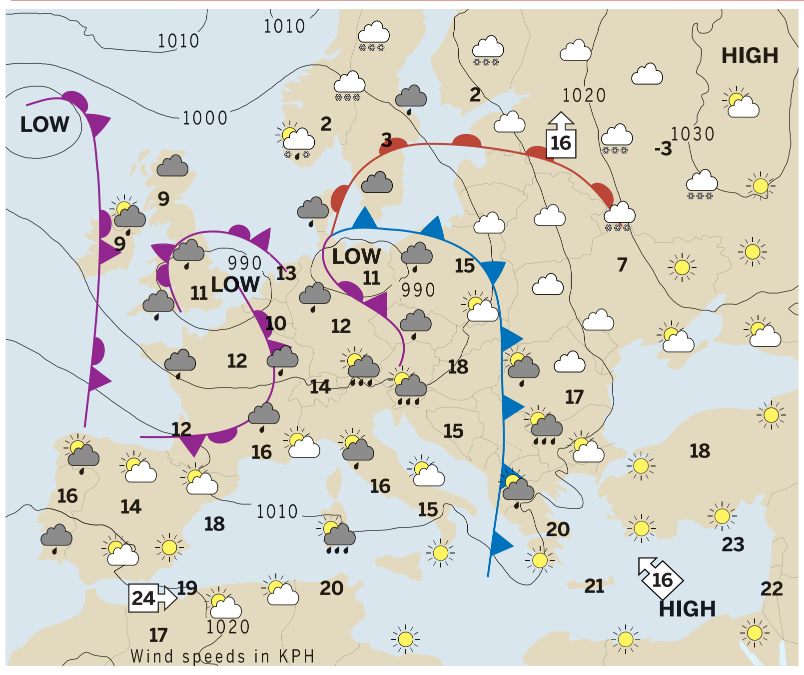






Source: Italy's Ministry of Interior, National Institute for Statistics
FT graphic: Valentina Romei, John Burn-Murdoch, Steven Bernard

WEATHER



Forecasts by MeteoGroup Warm front Cold front Occluded front Wind speed in KPH

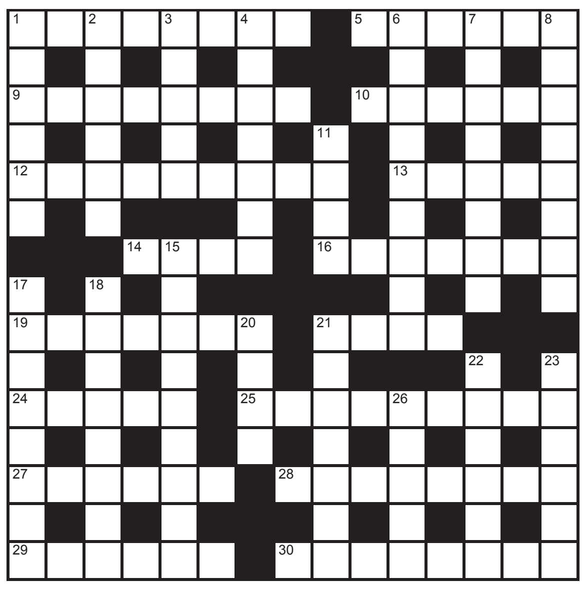
Today's temperatures

Maximum for day °C

Amsterdam	Cloudy	13	Malta	Sun	20
Ankara	Sun	17	Manila	Fair	31
Athens	Sun	20	Miami	Thunder	24
Bahrain	Sun	28	Milan	Cloudy	12
Barcelona	Sun	19	Montreal	Cloudy	3
Beijing	Fair	14	Moscow	Snow	-3
Belfast	Rain	9	Mumbai	Sun	35
Belgrade	Shower	18	Munich	Shower	13
Berlin	Shower	11	Naples	Shower	15
Brussels	Shower	12	New York	Sleet	5
Budapest	Fair	19	Nice	Sun	17
Cairo	Sun	24	Nicosia	Sun	23
Cardiff	Shower	10	Oslo	Snow	2
Chicago	Cloudy	5	Paris	Shower	12
Cologne	Rain	15	Prague	Shower	10
Copenhagen	Rain	7	Reykjavik	Sun	3
Delhi	Sun	33	Riga	Cloudy	10
Doha	Sun	29	Rio	Sun	33
Dubai	Sun	32	Rome	Shower	16
Dublin	Rain	9	San Francisco	Cloudy	19
Edinburgh	Cloudy	7	Singapore	Thunder	30
Frankfurt	Rain	15	Stockholm	Drizzle	5
Geneva	Shower	11	Strasbourg	Cloudy	15
Hamburg	Rain	10	Sydney	Drizzle	25
Helsinki	Rain	2	Tokyo	Sun	15
Hong Kong	Sun	23	Toronto	Cloudy	1
Istanbul	Sun	17	Vancouver	Sun	14
Lisbon	Rain	16	Vienna	Shower	16
London	Rain	11	Warsaw	Cloudy	15
Los Angeles	Fair	20	Washington	Sleet	5
Luxembourg	Shower	11	Zagreb	Sun	17
Madrid	Cloudy	14	Zurich	Shower	14

CROSSWORD

No. 15,804 Set by ARMONIE



JOTTER PAD

ACROSS
1 Manager protects a number showing emaciation (8)
5 Cleaner working for ferry operator (6)
9 Judge returned hand tool to prospector (8)
10 Catch out Tory leader and remove (4,2)
12 Edit novel about probe (5,4)
13 Fortune tellers scathing about Oscar (5)
14 A cat that's very small (4)
16 Fraudulent enterprises around game (7)
19 Promised to be occupied (7)
21 Charlie's full name (4)
24 Proofreader's mark shows concern with the letter "t" (5)
25 Winger in a last-minute switch (9)
27 Discharge from old drain cut (6)
28 Turning point for country evangelist (8)
29 Quiet about passion for case (6)
30 Smirk when taking in this month in Irish province (8)

DOWN
1 Girl's supporter about to expire (6)
2 Nobleman arrives in New York? Almost! (6)
3 The first person in the body of the church is unworldly (5)
4 Reckoning to eat fowl – part of the breast (7)
6 Claire, the doctor, is dissident (9)
7 Soldier gets drink for correspondent (8)
8 Partiality gets me in post improperly (8)
11 Fly high? Sounds painful! (4)
15 Hose gets Kitty in an awkward situation (5,4)
17 Drinks held dear in French coaches (8)
18 Give gear out? That'll cause distress! (8)
20 Wooden handle (4)
21 Bed to deteriorate after time in country home (7)
22 Type of pottery made with Barium compound (6)
23 Tumbler has cook taking drug (6)
26 Health hazard creates fuss among sailors (5)

Companies & Markets
FINANCIAL TIMES

Crisis cash Will Oslo raid Norway's $1tn oil fund in a market downturn? — REPORT, PAGE 15

True and fair Accountants must exercise greater judgment — JONATHAN FORD, PAGE 14

Eon to acquire Innogy in €43bn deal with RWE

- Sale will shake up energy sector
- Both groups back on the offensive

ARASH MASSOUDI — LONDON
TOBIAS BUCK — BERLIN

Eon, the German utility, has unveiled a complex €43bn deal to acquire Innogy, the renewable energy business, from its controlling shareholder RWE as well as a series of asset swaps that will dramatically remake Germany's energy sector.

Under the terms of a deal unveiled yesterday, Eon will become a company purely focused on providing energy networks and services to retail customers, while RWE will acquire Eon and Innogy's renewables businesses and take a 16.7 per cent stake in Eon.

The deal amounts to a transformation of some of Europe's most critical energy companies and a clear indication that Eon and RWE are back on the offensive after years of retrenchment and a series of regulatory blows. It is also the latest high-profile transaction in the German energy market in a matter of months, after Eon sold a minority stake in its former subsidiary Uniper to Finland's Fortum for €3.8bn in January.

Eon will acquire RWE's 76.8 per cent stake in Innogy by offering a combination of newly issued shares and assets. In addition to the renewables businesses, RWE will receive Eon's minority stakes in two RWE-operated nuclear plants, Innogy's gas storage business and its stakes in the Austrian energy supplier Kelag. In return, RWE will pay Eon €1.5bn in cash.

Eon will make a cash offer worth a total of €40 a share inclusive of future dividend payments to investors in Innogy, which was spun out of RWE in 2016, worth more than €5bn.

The deal values Innogy's equity at €22bn. Shares in Innogy closed last week at €34.53, giving it a market value of €19.1bn. The company has about €21bn of net debt.

The acquisition of Innogy comes after a difficult period for Eon management. Peter Terium resigned as chief executive in December, following a profit warning that sent the company's shares down 13 per cent. He was replaced on an interim basis by Uwe Tigges, who previously served as board member in charge of personnel. Last week, Bernhard Günther, chief financial officer, was revealed to have suffered an acid attack by unknown assailants. He remains in hospital.

The deal marks the biggest shift by Eon and RWE since they were hit hard by the so-called Energiewende, Germany's move away from fossil fuels towards renewables which put pressure on the two groups' core conventional power operations. Germany's leading power companies also suffered another severe setback in 2011, when the government in Berlin decided to accelerate the phase-out of nuclear power in response to the Fukushima disaster.

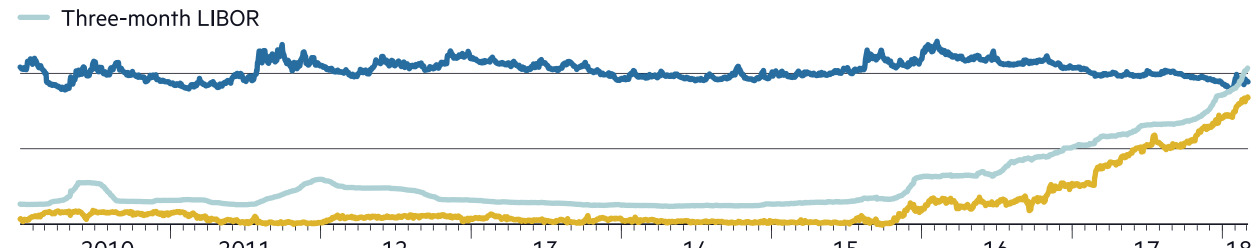
Both Eon and RWE responded with steep cost cuts, and by splitting themselves into two separate companies. Eon spun off its conventional power operations into Uniper, leaving the group with cleaner and more reliable businesses such as renewables, energy networks and customer solutions. RWE went in the opposite direction, keeping the conventional and nuclear power operations while spinning off its renewables business into Innogy.

Shares in Eon are up more than 20 per cent over the past year, giving it a market value of €18.6bn. RWE has climbed 23 per cent in the same period and is worth €11bn.

Fed effect Equities' lustre diminishes over bond yields

Cash returns gain ground on equity dividends

Yields on short-term safe debt instruments climb to match S&P 500's trailing dividend yield (%)



Source: Bloomberg

The lustre of the US equity market is fading, with the Federal Reserve's interest rate increases eroding the gap between the dividend yield of the S&P 500 and yields on short-term US debt to the narrowest in almost a decade.

For much of the post-crisis era, one of the mantras among investors has been "Tina" — "there is no alternative" to investing in equities as bond yields languished at historical lows and offered little in yield or income.

The S&P 500's trailing 12-month dividend yield has averaged about 2 per cent since 2010, while cash has returned almost nothing.

But the Fed's gradual interest rate increases since 2015 have slowly lifted the yields on US government debt — and especially short-term bills. The three-month Treasury bill yield now stands at 1.66 per cent, not far from the current trailing US equity dividend yield of 1.88 per cent. The three-month Libor rate last month rose above the dividend yield for the first time since late 2008.

While equities offer potential price appreciation in addition to the dividends they pay to investors, Abhay Deshpande, chief investment officer of Centerstone Investors, argues that the rise on short-term yields means that the era of "Tina" may now be over.

"It's not so easy to just say people should buy stocks now," Mr Deshpande said, pointing out that the market ructions in February coincided with three-month Libor going above the S&P 500's dividend yield. "There are alternatives."

The trailing dividend yield is a backward-looking measure, and US companies are expected to use the proceeds from the recent tax cuts to increase shareholder payouts this year. Although US equities suffered a series of reversals in February, most analysts expect the market to end the year higher. But the rise in short-term US government bond yields "marks a major shift away from the post-crisis era of near-zero yields on such instruments", says Richard Turnill at BlackRock. *Robin Wigglesworth*

Watchdog finds 'serious problems' at 40% of audits

MADISON MARRIAGE — LONDON

Global accounting watchdogs identified serious problems at 40 per cent of the audits they inspected last year, raising fresh concerns about the quality of work being carried out by the world's largest accounting firms.

According to the International Forum of Independent Audit Regulators, lapses were identified at two-fifths of the 918 audits of listed public interest entities they inspected last year.

The audit inspections focused on organisations in riskier or complex situations such as mergers or acquisitions, according to the IFIAR, whose members include 52 audit regulators around the world. The most common issue identified was a failure among auditors to "assess the reasonableness of assumptions". The second-biggest problem was a failure to "sufficiently test the accuracy and completeness of data or reports produced by management".

The findings have intensified concerns about weaknesses in the auditing process, an issue that has been thrust into the spotlight over the past 12 months following a string of high-profile accounting failures.

These include the collapses of BHS and Carillion in the UK, a corruption scandal involving oil company Petrobras in Brazil, and the share price collapse of South Africa's Steinhoff after the retail conglomerate admitted to a series of accounting irregularities last year.

Prem Sikka, an accounting expert and emeritus professor at Essex University, said the frequency of problems identified by the IFIAR was "terrible".

"There are a whole range of issues and there is no simple fix. There is a huge knowledge failure in the audit industry which is not being looked at. The whole industry is ripe for reform. The question is where is the political will for this?"

The IFIAR's research was based on feedback from 33 audit regulators who inspected the work of 120 audit firms.

Brian Hunt, chairman of the IFIAR, told the Financial Times: "We would like the firms to focus on getting better. The firms are making progress — we would like to see it happen a bit faster."

Deloitte, the audit firm, said: "We look forward to continuing our constructive engagement with our audit regulators."

China's Alibaba and Tencent reach for the skies

Alibaba and Tencent have muscled their way into the world's top 10 most valuable companies on the back of people shopping on the internet. Now the Chinese duo are leading the charge into data storage and software services on the cloud, where they are courting business and government clients.

Analysis ▶ PAGE 16

GKN to lay out higher valuation case as Melrose looks at raising £7bn offer

PEGGY HOLLINGER — INDUSTRY EDITOR

GKN will today launch its final attack on the hostile £7bn bid from Melrose Industries, arguing that the measures unveiled in its defence put its true value at closer to £5 a share, substantially higher than the 415p on offer from the industrial turnround group.

The claim comes as Melrose is expected to lift its cash-and-share offer this week by raising the proportion of the combined group that will be held by the FTSE 100 engineering company's investors from 57 per cent to more than 60 per cent.

Meanwhile, GKN's management has rejected attempts in the past few days by Melrose to hold a meeting, according to two people close to the situation.

Melrose on Friday said it had received acceptances for 5.76 per cent of its target's shares, an unusually high level for this stage of a hostile bid. GKN's shares closed at 435p, while Melrose was at nearly 225p.

The two-month battle for GKN, founded in 1759 as an ironworks in the Welsh valleys and today a supplier to the automotive and aerospace industries, is nearing its end after weeks of controversy that has led to calls for government intervention from opposition leaders, MPs and trade bodies.

Melrose has one week from today to increase its offer after which both sides will have two weeks to lobby shareholders, assuming no agreement is reached with GKN management for an improved recommended offer in the meantime.

Sandy Morris, analyst at Jefferies investment bank, estimated in a note to clients that the measures announced so far in GKN's defence amounted to a value of about 495p a share, although this required the group to fulfil its promises on improved margins and cash generation from a restructuring plan known as Project Boost.

Investors at the start of the battle, when Melrose appeared to have the upper hand, had indicated to the Financial Times that they were seeking a level of about 450p. However, the deal on Friday to sell GKN's Driveline business, which accounts for just over half of sales, to US vehicle drive supplier, Dana, may have changed that view, one investor said.

Today is the last day on which GKN can announce any new material information in its defence. Melrose then has one week to increase the value of its bid.

Companies / Sectors / People

Financial services

Amex seeks to win retailers with fee cut

New chief prepared to forgo margins in push to secure more outlets

ALISTAIR GRAY — NEW YORK

American Express is planning to cut the fees it charges retailers and other businesses by more than it has done in two decades, as its new chief executive pushes more outlets to accept its cards.

About 1.3m fewer locations in the US allow consumers to pay with Amex than Visa and MasterCard, mainly because it takes a bigger cut of customer payments. The gap is even wider overseas.

Meanwhile, authorities from Europe to Australia have taken a tougher line on card charges. In the US, the Supreme Court is considering an antitrust complaint. The company denies its practices breach antitrust rules.

At a presentation for investors in New York last week, the company said the global average of the fees it charges merchants — known as its discount rate — would decline five or six basis points this year, to about 2.37 per cent.

Each basis point is equivalent to about 11 cents of earnings per share, said Don Fandetti of Wells Fargo Securities.

A fall of six points this year would be the steepest since at least 1998, company filings show. The typical decline in previous years has been between one and three points.

Stephen Squeri, who became chief executive last month, is prepared to forgo as much as $585m in margins this year, according to Financial Times calculations based on analyst projections, as he pushes for higher revenues by opening up more venues at which customers can spend.

The fee cuts for 2018, which are about double previous guidance, are the latest sign of competitive and regulatory pressures on the biggest US consumer finance company by market value.

American Express is facing questions from Wall Street about competition from US banks, which use the rival payment networks Visa or MasterCard. Big-spending Americans have flocked to premium cards issued by banks.

While Amex's fee margins have eroded steadily for years, the more aggressive reductions suggest the group is breaking from the era of Kenneth Chenault, the company's 17-year veteran chief executive. Mr Squeri has told investors he is willing to make "conscious trade-offs" to encourage more businesses to take Amex.

> 'Any reduction in the fees help — but American Express, and all the major networks, have a long way to go'

Lower charges would be welcomed by consumer-facing businesses, but retailers remain sceptical. Smaller merchants that lacked bargaining clout were particularly reluctant to accept Amex, said Doug Kantor, partner at the law firm Steptoe & Johnson, who represents the Merchants Payments Coalition. "Any reduction in the fees help — but American Express, and all the major networks, have a long way to go," he said.

John Hecht, consumer finance analyst at the investment bank Jefferies, said: "Retailers have become really aggressive at pushing back."

Financials

Equistone flagship fund raises €2.8bn in four months

JAVIER ESPINOZA
PRIVATE CAPITAL CORRESPONDENT

Private equity group Equistone Partners has raised €2.8bn from investors in just four months, its largest ever fundraising and the latest sign of how yield-hungry investors are desperately looking for ways to deploy their cash.

The latest flagship fund of the London-based firm, which buys into European mid-sized companies, is close to 40 per cent larger than its predecessor and received demand of almost €4bn.

Investors in the new fund include US public pension funds the California State Teachers' Retirement System and the Pennsylvania Public School Employees' Retirement System, Germany's Allianz Capital Partners and Singapore's GIC, according to people familiar with the fundraising.

Equistone, which has made roughly 150 acquisitions since 2002 and was spun out of Barclays in 2011, invests in companies with a value of between €50m and €500m.

The group has led a series of deals including the €1bn sale of Global Blue — a provider of tourist sales tax refunds — to Silver Lake and Partners Group in 2012, and the €250m sale of Meilleurtaux — a French retail financial services broker — to Goldman Sachs in February 2017.

Equistone received commitments from 56 institutional investors, a 30 per cent increase from its previous fund, which raised €2bn in 2015, the people said.

Investors from western Europe and the Nordic region accounted for more than half of the capital raised, while North American investors represented a third. Existing investors provided roughly 75 per cent of the capital.

The record fundraising, which is expected to be announced as early as today, comes at a time when industry analysts worry the sector may have peaked with valuations for assets at their highest ever level.

Private equity managers have warned these dynamics are likely to result in historically lower returns.

But institutional investors are keen to deploy their cash in top-performing funds as they struggle to generate decent returns in a low interest rate environment.

"We simply have to put money to work somewhere," said an institutional investor in large funds, including Blackstone and CVC.

Buyout funds have rushed to take advantage of demand. Last year, Apollo Global Management raised $25bn and CVC's raised €16bn.

Utilities. Renewables

The deal marks a big shift for RWE, reversing its move to pull out of renewables
Martin Leissl/Bloomberg

Eon-RWE deal to transform Germany's energy landscape

Acquisition of Innogy upends country's two largest power groups and ends years of crisis

OLAF STORBECK — FRANKFURT

The deal that will fundamentally transform Germany's electricity sector was codenamed "Livewire".

The complex asset swap between Eon and longstanding rival RWE, devised by a small team of executives and investment bankers over the past six months, is certainly expected to send shockwaves across Europe's energy industry.

RWE was only approached shortly before Christmas, according to a person with knowledge of the discussions. But in less than three months, both sides agreed on a series of transactions that will upend Germany's two largest utilities and mark the end of years of crisis.

Both Eon and RWE were hit hard by Angela Merkel's decision to phase out nuclear power in 2011 following the Fukushima nuclear disaster. They were also affected by the rapid growth of renewable energy in Germany, which sent wholesale electricity prices plummeting and dented utilities' profits.

For Eon and RWE, the deal announced yesterday ends the era of integrated utilities that generated electricity, owned the supply grid and controlled the relationship with the customer. "The transaction shows that the industry has given up on the value of vertical integration," says one analyst, who adds that more deals of this nature are inevitable.

The transaction will involve two stages. First, Eon will buy RWE's 76.8 per cent stake in Innogy, the renewables energy business that was spun out in 2016, and table an all-cash offer worth €40 a share, a 15.6 per cent mark-up on Friday's closing price to Innogy's minority shareholders.

Next, Eon will hand back Innogy's renewable energy assets as well as its own to RWE. The deal will leave Eon as Europe's largest operator of electricity grids and retail, while RWE will be the continent's second-largest producer of green energy.

"The transaction will create two European leaders," says a person with knowledge of the discussions. The total value of both transactions stands at up to €60bn, with Eon's takeover of Innogy accounting for €43bn and the assets handed over to RWE in the second tranche valued at €17bn.

Yet little cash will change hands. Eon's buyout offer for Innogy's minority investors will cost around €5bn, and RWE will pay €1.5bn in cash to Eon. It will also receive new shares in Eon, representing 16.7 per cent in the enlarged rival. Due to the complexity of the transactions, the deal is not expected to close until the third quarter of 2019.

The asset swap — which still needs the approval of the each company's supervisory board — comes after three frantic years of dealmaking among German utilities. Starting in 2014, both Eon and RWE carved out companies to manage renewable, grids and retail separately from its coal and gas power plants: RWE created a green energy business with Innogy, and Eon listed its fossil fuel assets as Uniper. Finnish utility Fortum acquired Eon's 47 per cent stake in Uniper for just under €4bn earlier this year.

Over the past year, Europe's three biggest utilities — Enel, Iberdrola and Engie — were all reported to be considering a bid for Innogy, but pulled back.

The deal also marks a big strategic shift for RWE, reversing its move to pull out of renewables. "They are going to take back assets they carved out less than two years ago," according to a person familiar with the transaction.

"The asset swap will give RWE the opportunity to diversify its exposure from its fossil-fuel generation with a decent scale renewable division," wrote Deepa Venkateswaran, a utilities analyst at Bernstein, in a note. "Over a period of time, RWE should be able to replace its cash flows from conventional generation with renewables."

One uptick for Eon is that its regulated asset base will grow by about 50 per cent to more than €30bn and its number of retail clients will increase from 30m to 50m. The group's earnings before interest, taxes, depreciation and amortisation will grow from around €5bn to around €8bn.

INSIDE BUSINESS
ON MONDAY

Jonathan Ford

An auditing market that makes 'lemons' of us all has to change

When the American economist George Akerlof wrote his celebrated 1970 paper about "lemons", he described a dysfunctional world where inferior goods drove out better ones because suppliers could not attract a premium for higher quality products.

Customers might be prepared to pay $1,000 for a "peach", a well-kept used car, as against just $500 for a "lemon", in Mr Akerlof's example. But if the lemon owners concealed their cars' faults and passed them off as peaches, buyers would rationally lower the price they would offer to reflect the higher possibility of ending up with a duff vehicle. That way, through a process of adverse selection, those lower prices would lead to the peaches being withdrawn from the market. All that would remain would be duds.

Some worry that a similar process is afflicting the accountancy profession. The sudden collapse of Carillion has put audit quality firmly back under the spotlight. The UK outsourcing company's income was massively restated and its assets impaired for the first time only months before its bankruptcy — despite longstanding questions about its financial health.

A report from the International Forum of Independent Audit Regulators shows that global accounting watchdogs identified serious problems at 40 per cent of the audits they inspected last year involving companies in "riskier" situations, such as M&A deals. These included conflicts that compromised objectivity, and widespread failures to test the accuracy and reasonableness of companies' data and assumptions.

"If you have a market and 40 per cent of the goods that are sampled are defective in some way, that is a market that is not functioning very well," says Karthik Ramanna, professor of business and public policy at Oxford's Blavatnik School of Government.

Of course, the market for audit services is not quite the same as that for used cars. For one thing, customers are obliged to buy the product — all companies above a certain size must be audited. The second difference is that the "purchaser" (in terms of who chooses) is not the end consumer, such as those creditors, counterparties and others who might take a dispassionate economic decision based on the contents of accounts. Instead it is an intermediary.

> There is little advantage for accountants to compete on audit quality

An audit is supposed to be a snapshot of a company. Instead, as the accountancy theorist Shyam Sunder observes, the interaction is more like that between a fashion photographer and a model. "The photographer records not simply the appearance of the model as it is in fact, but actively engages with the model to produce images that serve the purposes of both," he writes.

In this world, there is little obvious advantage for accountants to compete on audit quality — if that means ventilating searching questions that might expose vulnerabilities. Rather they are tiered on cost, which is why the "Big Four" — KPMG, Deloitte, PwC and EY — dominate the market for larger companies. They alone have the economies of scale and the reach to handle big international clients, and use this platform to sell more valuable ancillary services. Much of their ingenuity and lobbying muscle is used in sloughing off liability by offering generic, binary assessments of clients' financial statements, aiming to socialise the risk should they get things wrong.

Smaller audit firms have little appetite to challenge this oligopoly — it would require them to make substantial investments to reach the required scale. But there is no evidence that when they got there they would be able to attract superior returns by offering a better service.

Attempts have been made to break the symbiotic relationship between understanding auditors and self-interested executives. But efforts to buttress independence and objectivity by retendering auditing contracts more frequently have not succeeded. When Carillion collapsed, KPMG had been its auditor for the almost 20 years since the company was created.

Breaking up the biggest audit firms might lower the risk of another Enron-like lightning-strike reducing the Big Four to a "Titanic Three". It will not, however, end the lemon problem.

That would require investors to demand higher standards of audits and be prepared to pay for them. Auditors should give more colour about their decisions, and exercise greater judgment when it comes to determining what is a true and fair picture of a company's affairs.

Larry Fink, boss of BlackRock, has talked about focusing on the long-term value of businesses. Getting the incentives right around auditing would be one place to start.

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Technology

Uber to bolster takeaway service with launches in 100 cities

ALIYA RAM — LONDON

Uber is ramping up investment in food delivery this year with plans to launch its UberEats takeaway app in 100 new cities across Europe, the Middle East and Africa after generating a profit in a quarter of the locations where it currently operates.

Jason Droege, head of logistics at the San Francisco-based company, told the Financial Times in an interview that UberEats had been "more successful than we thought", and would play a central role in Uber's expansion outside of transport ahead of an expected initial public offering next year.

Uber has already rolled out UberEats in more than 200 cities, and will open the service in Ireland, Egypt, Kenya, Ukraine, Romania and the Czech Republic, in addition to more than 40 new cities in the UK and 35 new cities in France in an attempt to capture a bigger slice of the $28bn food delivery market in Europe, the Middle East and Africa.

Mr Droege declined to specify how much the company would invest to expand the service.

The plans come amid a push to improve financial discipline at Uber ahead of any Initial Public Offering. Dara Khosrowshahi, chief executive since August, is also looking to refocus on core markets as he attempts to clean up the company's tarnished image. Uber is close to signing a deal that would see it effectively pull back in south-east Asia in exchange for a stake of more than 20 per cent in Grab, its Singapore-based rival.

SoftBank, the Japanese technology group that became Uber's biggest investor late last year, told the Financial Times in January that the company should revamp UberEats.

Mr Droege said Mr Khosrowshahi was "a big fan of the [UberEats] business," which he added had "viable unit economics".

UberEats was profitable in 45 of the 200 cities in which it operated in the year to December 31, compared with just three out of 50 cities the previous year, Mr Droege said. At the end of last year, it generated about 10 per cent of the company's overall gross revenue, or $1.1bn in the fourth quarter.

The proposed expansion comes as competition in the sector intensifies, with rivals including London-based Deliveroo saying last month that it would hire 250 new tech employees to bolster its own global ambitions. The company already faces tough competition in the US, where DoorDash earlier this month raised $535m from a group led by SoftBank.

Market crash concerns hang over Norway's $1tn oil fund

Income is increasingly used by the government to bolster state budget

RICHARD MILNE
NORDIC CORRESPONDENT

In 2008, as the global financial system crashed, the investment portfolio of Norway's oil fund had its worst year ever, yet the sovereign fund managed to increase in size.

Its equities and bond investments dropped 23 per cent that year. But the world's largest sovereign wealth fund was saved by both a big inflow of money from Norway's petroleum revenues as oil prices remained high and a large boost from the exchange rate as the krone weakened.

Many are now wondering what would happen to Norway's $1tn oil fund if things are different in the next crisis.

The fund itself warned last week that a crash could wipe away more than 40 per cent of its value, particularly if the Norwegian krone became a safe haven currency and strengthened.

That has many experts worried that one of the few sovereign wealth funds located in a democracy could be drained rapidly in a real market crisis.

"The fund is untested in a crisis. The political system is untested in a crisis. By being poorly prepared we are running the risk of screwing the fund," says Espen Henriksen, associate professor at the BI business school in Oslo and an ex-fund official.

The problem is that Norway's government has become increasingly used to the doping the oil fund provides for the state budget. Under the so-called spending rule, which was revised last year, the government is allowed to use up to 3 per cent of the fund annually. This year it will use about 2.9 per cent, or NKr231bn ($30bn).

That is a record amount in krone, and represents fully 18 per cent of total government spending. The concern of some in Oslo is that, in an economic crisis that hits Norway hard, use of the oil fund may have to increase significantly to offset any fall in government income. "It is not unthinkable that you could have to use 10 per cent of the fund," says one government official.

That would drain the fund further, while the alternative would be to cut spending just as the economy needs it most. For Mr Henriksen, such a dilemma would test the fund and the cross-party political support it enjoys as never before.

"These are the really hard questions about the fund. This political consensus may extremely quickly evaporate in a crisis. The robustness of the savings mechanism has not been tested. To say we have a NKr5tn fund — and we're going to cut spending on hospitals, schools?" he asks.

It is little wonder, therefore, that fund officials have stepped up their warnings about what could happen in a market crash. No press conference with Yngve Slyngstad, chief executive of the fund's manager, goes by without him intoning that the exceptional market conditions of the past decade are unlikely to last.

Asked about figures that show last year the fund's cumulative return on investments exceeded the inflows from petroleum revenues for the first time, he tells the Financial Times: "It is a pause for reflection about this enormous tailwind we had with regards to the growth of the fund during the past six years, or even since the financial crisis. The numbers are mind-boggling with regards to the size of the fund we have accumulated."

The fund is now worth NKr8,000bn, or $1tn, and on average it owns 1.4 per cent of every single listed company in the world. It is worth four times the amount it was in 2008.

Oystein Olsen, Norway's central bank governor who oversees the fund, has made regular warnings as well about the possibility for the fund's value to fluctuate. But he says this is not done for "tactical considerations of any kind — what we observe is the data".

Senior government officials say the fund is robust and the spending rule is flexible enough for the government to ride out any market downturn. "We can smooth our spending over the cycle. There is very strong consensus around taking care of the fund," one says.

Still, concerns remain. One is that any fall in markets might not be followed by such a strong rebound as in 2009. If 2008 was its worst year, 2009 was its best with a return of 26 per cent on its investments. Mr Slyngstad cautions:

> 'To say we have a NKr5tn fund — and we're going to cut spending on hospitals, schools?'

"You never know whether history will repeat itself or not, so you have to be prepared for a situation where we do not get a rebound in markets if we have a considerable correction."

Another is over how the public might react. The 23 per cent fall in 2008 was greeted with much hand-ringing and the fund was forced to change strategy. Mr Slyngstad concedes there was "a lot of discussion internally on whether we should state" that a more than 40 per cent fall was possible.

Asked if it would be his nightmare scenario, he laughs nervously. "It's very hard to guess in advance what the political and media discussions would be in advance of events," he adds.

Prof Henriksen argues the fund is more vulnerable to a crash in other ways now as well. Petroleum revenues from the government have slowed to a trickle at best, the budget is more dependent than ever on oil money, and the fund itself has taken on more risk by increasing its equity holdings to almost 70 per cent from 47 per cent at the start of 2008.

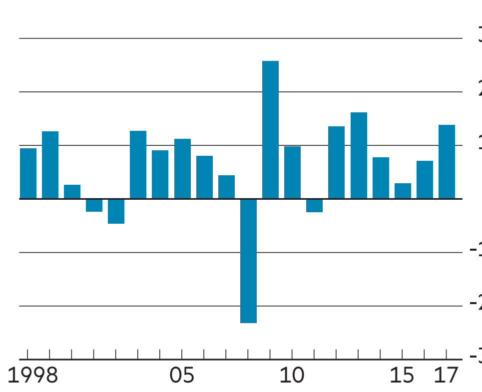
"In 2008, 09, 10, it [the size of the fund] never went down. It was massive inflows first, then a massive bull market. Now, it's a really worrisome question," he says.

Oystein Olsen, Norway's central bank governor, oversees the fund

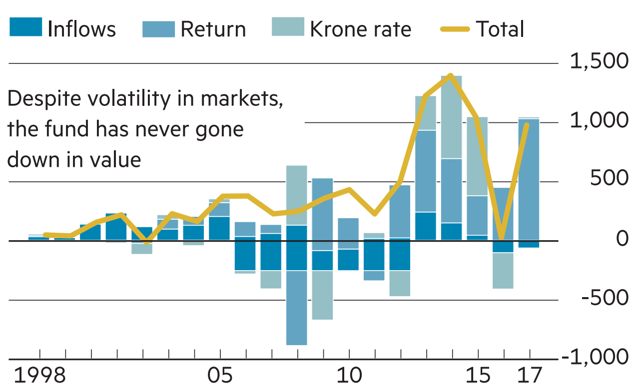
Choppy conditions

FT graphic

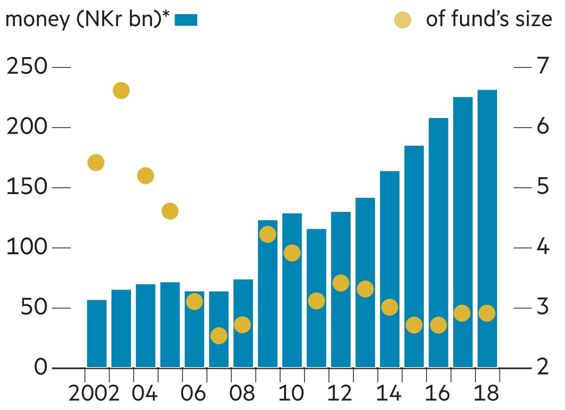
Norwegian oil fund performance



Change in market value at the Norwegian fund



Increasing use of the Norwegian fund



* At fixed 2018 prices

Sources: Norges Bank Investment Management; Norwegian finance ministry

Investment strategy
Politicians reluctant to take tricky decisions

Norwegian politicians face a number of big decisions about the oil fund this year and beyond.

However, the centre-right government has tried to park some of the trickiest ones for a little while longer.

Most controversial of all is the recommendation from the fund itself that it be banned from owning oil and gas shares — it says not because of climate change, but to help Norway's diversification from petroleum.

The finance ministry in Oslo has set up an expert group to report on it by the autumn.

The government is also hoping to postpone a decision on whether the fund should invest in infrastructure such as power stations, airports and roads abroad.

What is coming soon is a decision on whether the fund should be allowed to invest in private equity, with mixed signals coming from senior officials as to the answer.

The government's white paper on the fund, out after Easter, will also consider the investor's active management performance amid suggestions from some experts that it should be little more than an index-tracking fund.

Finally, the government should also publish its proposal for what to do with the organisation of the fund.

An expert panel has recommended setting up its own organisation by taking it out of the central bank. However, another possibility is that the fund could be given its own board while remaining within the central bank.

Travel & leisure

Japan's Abe poised to raise stakes in casinos gambit

Coalition parties to review gambling law after years of corporate lobbying

LEO LEWIS — TOKYO

International gaming operators could reap the rewards of more than 15 years of lobbying this week, as Japan's coalition parties discuss new rules that could lead to the country's first casinos.

The ruling Liberal Democratic party will propose granting casino licences to as many as six cities, said people within the government and gaming industry.

That would raise the stakes in a battle between the party of Prime Minister Shinzo Abe and its Komeito coalition partner, which is likely to counter that the number of casino licences available be just two — a position that reflects its more conservative view on gambling, said people briefed on its agenda.

Companies such as MGM Resorts International, Las Vegas Sands and Caesars Entertainment have long eyed Japan as one of the world's richest prizes — potentially becoming the second biggest gaming market after Macau.

Industry projections suggest that revenues in the country could hit $15bn a year, while analysts have put the value at closer to $25bn, assuming multiple resorts open across the country.

Industry executives say that even if Mr Abe's proposal is rejected or downsized, the government's move to grant a number of licences in the first wave will have a profound effect on the companies that want to enter the market.

"The operators had been expecting to compete in at most two all-or-nothing beauty parades for the first licences, but could now find themselves in a more strategic chase around regional Japan," said an executive from one Las Vegas-based group.

If the broader licence plan is approved, the first wave of casino-centric "integrated resorts" could appear in Nagasaki, Fukuoka and Tomakomai on the northern island of Hokkaido, as well as the larger metropolises of Osaka, Yokohama and Tokyo. In some cities, particularly Osaka and Tomakomai, land has already been identified: the smooth passage of legislation could see the first casinos opening after 2022.

The prospect of Japan enacting an "implementation bill" this year to set the rules under which casinos can operate has intensified promotional and lobbying activities among global operators.

Descriptions of imagined resorts have been accompanied by eye-watering investment pledges. Lawrence Ho, the head of Melco Resorts & Entertainment, one of Macau's biggest casino groups, has said he would invest "whatever it takes" and offered to relocate his headquarters to Japan.

For Mr Abe, whose broader "Abenomics" economic revival programme has lost its momentum, casinos represent a possible way to stimulate growth in regions suffering an exodus of people and wealth.

Technology. Data storage

Alibaba and Tencent court corporate clients in cloud push

Chinese groups follow US peers in wooing business and government sectors

LOUISE LUCAS — HONG KONG

Cloud computing is transforming the way companies across the world do business. But in China, it is playing an even more transformative role: the country's biggest consumer-oriented groups are increasingly tapping the corporate sector, too.

Alibaba and Tencent have muscled their way into the world's top 10 most valuable companies on the back of shoppers: Alibaba's Taobao market place counts 580m users while Tencent's WeChat messaging and social app has almost 500m users, according to market research firm eMarketer.

Now the duo are leading the charge into data storage and software services on the cloud, where they are courting business and government clients.

Alibaba commands an estimated 60 per cent of China's market, with more than 1m customers and revenues of $553m in the quarter to end of December. Tencent signalled its intentions when it offered free storage of 10 terabytes — enough to hold a year's worth of data generated by the Hubble space telescope — in a bid to tempt companies to put their data on its servers.

"It's very much a business-to-business [play] because that's where the money is," says Marin Ivezic, partner at PwC, the professional services firm. "Alibaba might have started with the consumer, but it's become a reputable player and if you look at Amazon Web Services, [Microsoft] Azure and Google they all target B2B," he added, referring to the dominant US cloud services.

The cloud is a particularly compelling proposition for Chinese small and medium-sized enterprises. "They don't want to buy equipment, they want to buy services," says Kevin Ji, research director at Gartner.

That plays to Alibaba's strengths, says Bhavtosh Vajpayee, a tech analyst at Bernstein Research. It already counts thousands of merchants on its Taobao platform and big brands on Tmall, and supplies them with data analytics and marketing services. By comparison, he calls Tencent "the quintessential consumer company", which has far less experience selling to enterprises.

The Chinese model appears to be emulating that of the west, where a handful of players target all the layers of cloud services.

AWS began by selling time or storage on its servers — mainly to consumers and small businesses — before adding software that helped turn the unit into Amazon's biggest profit centre with operating income of $4.3bn last year.

Alibaba and Tencent — along with Huawei, the telecoms group that has linked up with Microsoft in its drive into the cloud — were also quick to scale into services beyond mere storage.

Emily Zhang, an analyst at IDC, says the companies are already offer services such as file sharing, video conferences and other tools. But they are developing more, both by themselves and by partnering with third-parties such as SAP to deliver their services via their cloud.

The German group has helped Alibaba's customers to handle back office tasks on a pay-as-you-go basis, rather than buying in-house systems.

"It's the same as the US market," Ms Zhang says. "The bigger players are getting bigger in China."

The country's big tech groups also benefit from the fact that there are few local competitors, such as Shenzhen-based Kingdee, with the necessary scale in China, say analysts.

Grabbing a share of higher-margin services is key. Chinese players are slashing prices to woo customers and investing heavily in data centres — and losing money as a result. But an end to that approach may be in sight, at least for Alibaba. Karen Chan, analyst at Jefferies, expects its cloud unit to move into the black during the next fiscal year with a 3.2 per cent operating margin.

The big difference between the Chinese players and their US peers is the scope of their business. Alibaba, Tencent and Huawei are constrained in their ambitions by concerns among non-Chinese companies over where their data are held.

The quid pro quo is that the China market is virtually all down to domestic players, with Alibaba having a big lead. But, Mr Vajpayee says, "the battle for the number two slot in cloud is open".

Additional reporting by Richard Waters

Alibaba's cloud unit is forecast to move into the black during the next fiscal year — Chance Chan/Reuters

Contracts & Tenders

GOVERNMENT OF MAHARASHTRA
OFFICE OF THE EXECUTIVE ENGINEER
PUBLIC WORKS DIVISION NO. 2, MUL ROAD, CHANDRAPUR.

महाराष्ट्र शासन

Email: chandrapur2.ee@mahapwd.com **Phone No: 07172-252256**

E-TENDER NOTICE NO. - 79 YEAR 2017-18.

Online E-Tenders in **"B-2" (Item Rate)** forms are invited by Executive Engineer, Public Works Division No. 2, Chandrapur for the following works from bidders who satisfy the qualifying criteria. The tender documents should be downloaded from the Government Website: http://pwd.maharashtra.etenders.in The competent authority reserves the right to accept or reject any or all the tenders. Conditional Tenders will not be accepted.

Sr. No.	Name of Work	Estimated Cost (Rs. in Crores)
1.	**Construction of New Military School and infrastructure at Bhivkund, Tah. Ballarpur, Dist - Chandrapur.**	**320.00**

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1. **http://www.mahapwd.com**
2. **http://pwd.maharashtra.etenders.in**
   (If there is any change in notice, then the information/ Corrigendum will not be given in the newspapers and the same will be communicated on the above websites. Also, **Online Schedule will be applicable and final).**
3. Executive Engineer, Public Works Division No. 2, Chandrapur Office Notice Board.
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   Telephone No: **07172-252256** Email: **chandrapur2.ee@mahapwd.com**

Note:-

1. All eligible/ interested bidders are required to be enrolled on portal **http://pwd.maharashtra.etenders.in** before downloading tender document and participating in e-tendering process.
2. Bidders are requested to contact on the following telephone numbers for any doubts/ information/ difficulty regarding online enrollment or obtaining digital certificate.
   Sify Technologies Ltd. Nexternder (India) Pvt Ltd No: 2531 5555 / 2531 5556 (Pune) or 022-26611117 / 26611287 (Extn.) 25, 26 (Mumbai).
3. Tender Document Fee is to be paid via Online E-Payment Gateway Mode Only. The information of E-Payment Gateway is available on E-Tendering Website: **http://pwd.maharashtra.etenders.in**
4. The Post Qualification Criteria is included in this work contract.

Outward No: **1081/D-3(2)/Tender/2017-18 Dated: 05/03/2018.**
Office of the Executive Engineer
Public Works Division No. 2,
Mul Road, CHANDRAPUR.

Sd/-
Executive Engineer
Public Works Division No.2,
CHANDRAPUR.

DGIPR/ 2017-2018/6586

FRANKLIN TEMPLETON SHARIAH FUNDS
Société d'investissement à capital variable
Registered office: 8A, rue Albert Borschette, L-1246 Luxembourg
R.C.S. Luxembourg B 169 965

FRANKLIN TEMPLETON INVESTMENTS

NOTICE OF ANNUAL GENERAL MEETING OF SHAREHOLDERS OF FRANKLIN TEMPLETON SHARIAH FUNDS

Notice is hereby given that the Annual General Meeting of Shareholders (the "Meeting") of Franklin Templeton Shariah Funds (the "Fund") will be held at the registered office of the Fund on March 29, 2018, at 2:30 p.m., with the following agenda:

AGENDA

- Presentation of the Report of the Board of Directors;
- Presentation of the Report of the Shariah Board;
- Presentation of the Report of the Auditors;
- Approval of the Financial Statements of the Fund for the accounting period ended October 31, 2017;
- Discharge of the Board of Directors;
- Re-appointment of the following three Directors: William Jackson, Hans J. Wisser and James F. Kinloch;
- Appointment of Michel Tulle as additional director;
- Re-election of PricewaterhouseCoopers Société Coopérative as Auditors;
- Approval of the payment of dividends for the accounting period ended October 31, 2017;
- Consideration of such other business as may properly come before the Meeting.

VOTING

Resolutions on the agenda of the Meeting will require no quorum and will be taken at the majority of the votes expressed by the Shareholders present or represented at the Meeting.

VOTING ARRANGEMENTS

Shareholders who cannot attend the Meeting may vote by proxy by returning the Form of Proxy sent to them to the offices of the management company of the Fund, Franklin Templeton International Services S.à r.l., 8A, rue Albert Borschette, L-1246 Luxembourg, no later than March 21, 2018 at 5:00 p.m.

VENUE OF THE MEETING

Shareholders are hereby advised that the Meeting may be held at such other place in Luxembourg than the registered office of the Fund if exceptional circumstances so require in the absolute and final judgment of the Chairperson of the Meeting. In such latter case, the Shareholders present at the registered office of the Fund on March 29, 2018, at 2:30 p.m., will be duly informed of the exact venue of the Meeting, which will then start at 3:30 p.m.

To attend the Meeting, Shareholders shall be present at the registered office of the Fund at 2:00 p.m.

Please note that all references to time in this notice mean Luxembourg time.

The Board of Directors

BHARAT HEAVY ELECTRICALS LIMITED
(A Govt. of India Undertaking)
PPX-DABG, HEEP, BHEL, RANIPUR, HARIDWAR-249403, INDIA
Ph: +91-1334-284142, Fax: +91-1334-226462, E-mail: jainv@bhel.in
Tender No. - D/6580/17/3808D2

Bids are invited for following equipment.

Name of equipment	Qty.	Opening Date
Thermal Array Recorder	05 Nos.	22 March 2018

For details & downloading of tender document, visit our websites **www.bhel.com/www.bhelhwr.co.in/ www.tenders.gov.in** All corrigenda, addenda, amendments, time extensions, clarifications, etc. will be hosted only on websites. **Note:** Registration process for items required by BHEL is always open at **https://supplier.bhel.in** Prospective suppliers may visit this site and apply for registration in the respective unit.

Sr. Engineer (PPX-DABG)

Bharat Heavy Electricals Limited
BHEL Maharatna Company 50 Years Golden Jubilee 1964 - 2014
(GOVT. OF INDIA UNDERTAKING)
POWER SECTOR: EASTERN REGION
PLOT NO.DJ-9/1, SECTOR-II, KARUNAMOYEE, SALT LAKE CITY, KOLKATA-700091
PHONE: (033) 2339 8224,2339 8222/8220. FAX: (033)2321 1960

TENDER NOTICE

BHEL INVITES BID FROM REPUTED BIDDERS THROUGH E-PROCUREMENT PORTAL https://bheleps.buyjunction.in OR HARD COPY BID FOR **"DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION, COMMISSIONING ETC. OF AIR CONDITIONING SYSTEM FOR CUSTOMER OFFICE AT 2X660 MW MAITREE STPP, RAMPAL, BANGLADESH** "TENDER ENQUIRY NO:**PSER:PUR:PMX-360:129 (ENQ:17:PP:0015:PUR:160) Date: 12/03/2018**
LAST DATE FOR SUBMISSION OF COMPLETE OFFER OF THE ABOVE TENDER IS 22/03/2018 (15:00 HRS.)
FOR DETAILS OF PRE-QUALIFICATION CRITERIA AND OTHERS PLEASE VISIT THE WEB SITE **www.jantermanter.com OR www.bhel.com** / CPP PORTAL/ **https://bheleps.buyjunction.in** ON AND AFTER **12/03/2018.** ALL CORRIGENDA, ADDENDA, AMENDMENTS, TIME EXTENSIONS, CLARIFICATIONS, ETC. WILL BE HOSTED ON AFORESAID WEBSITES ONLY. BIDDER SHOULD REGULARLY VISIT WEBSITE(S) TO KEEP THEMSELVES UPDATED. THERE WILL BE NO PUBLICATION OF THE SAME THROUGH NEWSPAPERS OR ANY OTHER MEDIA. FOR FURTHER CLARIFICATIONS, IF ANY, PLEASE CONTACT UNDERSIGNED OR HEAD/PURCHASE ON ABOVE TEL. NO(S) & M-JUNCTION HELPDESK TEL. NO. 033-66011717 (9:30 AM TO 5:30 PM) FOR E-PROCUREMENT ASSISTANCE.

for & on behalf of BHEL
DGM (PURCHASE)

Public Notice

LUXEMBOURG TREASURY SECURITIES
Public limited liability company – Société Anonyme
Registered office: 42, rue de la Vallée, L-2661 Luxembourg,
R.C.S. Luxembourg, B 188.869
(the "Company")
ISIN Code: LU11139551963 / Common Code: 111395519

CONVENING NOTICE

Dear Certificate Holders,

You are hereby invited to the annual general meeting of the Company (the "Meeting") to be held in Luxembourg, on March 21st, 2018 at 10:00 a.m. (Luxembourg time) at 42, rue de la Vallée, L 2661 Luxembourg with the following agenda:

AGENDA

1. Acknowledgment of the management report of the board of directors and the statutory auditor concerning the financial year closing on 31 December 2017;
2. Approval of the financial statements and allocation of the result as at 31 December 2017;
3. Discharge to the members of the board of directors and the statutory auditor for the execution of their mandates until 31 December 2017; and
4. Miscellaneous.

VOTING

Please kindly note that the certificate holders may attend the Meeting and shall be entitled to speak but do not have voting right.

Yours sincerely,

Isabelle GOUBIN
Director
Luxembourg

Etienne REUTER
Director
Luxembourg

12th March 2018

Legal Notices

Appointment of Administrators
In the High Court of Justice, Business and Property Courts of England and Wales Insolvency and Companies List (ChD)

BEAUFORT ASSET CLEARING SERVICES LIMITED – IN SPECIAL ADMINISTRATION
(Company number 06637499, Court number: CR-2018-001745)
Nature of business: Security and commodity contracts dealing activities

BEAUFORT SECURITIES LIMITED – IN ADMINISTRATION
(Company number 02693942, Court number: CR-2018-001881)
Nature of business: Financial intermediation not elsewhere classified

Registered offices: 63 St. Mary Axe, London, England, EC3A 8AA
Principal trading addresses: 63 St. Mary Axe, London, England, EC3A 8AA

Date of appointments: 1 March 2018

Office-holder details: Russell Downs (IP number 9372), Douglas Nigel Rackham (IP number 8673) and Dan Yoram Schwarzmann (IP number 8912) of PricewaterhouseCoopers LLP, 7 More London Riverside, London, SE1 2RT.

Further information about these cases is available online at www.pwc.co.uk/beaufort or by calling the helpline numbers 0800 0639283 (from the UK) or +44 207 293 0227 (from outside the UK); or in writing to The Administrators/Special Administrators at 63 St. Mary Axe, London, England, EC3A 8AA.

Trading Directory


FT
FINANCIAL TIMES
FT FUTURE OF NEWS
Trust, Technology and Transformation in an Age of Upheaval
Stephen K. Bannon
Former White House Chief Strategist and CEO of Trump campaign
Dean Baquet
Executive Editor, The New York Times
Joanna Coles
Chief Content Officer, Hearst Magazines
Tamara Ingram
CEO, J. Walter Thompson
Lydia Polgreen
Editor-in-Chief, HuffPost
Jeff Zucker
President, CNN
March 22, 2018 | 10 on the Park, New York
Don't miss the opportunity to hear a wide range of influencers debate the major trends and disruptions impacting the news industry and media generally.
Book you ticket at live.ft.com/FutureNews.
Lead sponsor
FISHER INVESTMENTS
Associate sponsor
Deloitte.
Networking drinks reception sponsor
Good Growth
Speakers' dinner sponsors
TPG
CAA
An event from FINANCIAL TIMES LIVE

MARKET DATA

WORLD MARKETS AT A GLANCE

FT.COM/MARKETSDATA

Change during previous day's trading (%)

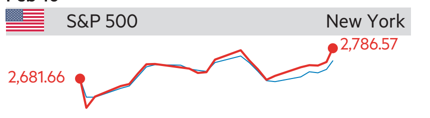
S&P 500	Nasdaq Composite	Dow Jones Ind	FTSE 100	FTSE Eurofirst 300	Nikkei	Hang Seng	FTSE All World $	$ per €	$ per £	¥ per $	£ per €	Oil Brent $ Sep	Gold $
1.74%	1.79%	1.77%	0.30%	0.41%	0.47%	1.11%	1.09%	-0.081%	0.289%	0.815%	-0.448%	2.95%	-0.03%

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

AMERICAS

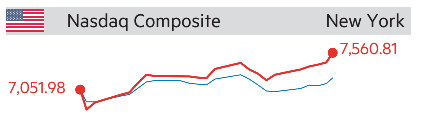
Feb 10 - - Index / All World

S&P 500 — New York



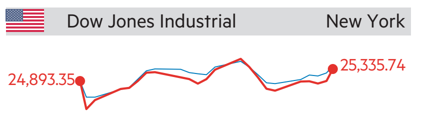
Day 1.74% Month 7.96% Year 17.93%

Nasdaq Composite — New York



Day 1.79% Month 11.56% Year 29.52%

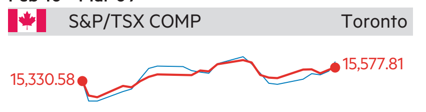
Dow Jones Industrial — New York



Day 1.77% Month 6.18% Year 21.48%

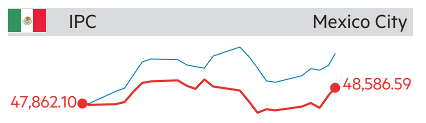
Feb 10 - Mar 09

S&P/TSX COMP — Toronto



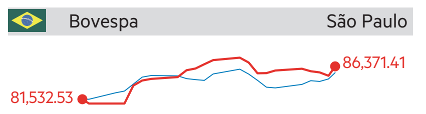
Day 0.25% Month 3.61% Year 0.52%

IPC — Mexico City



Day 0.72% Month 1.65% Year 2.80%

Bovespa — São Paulo

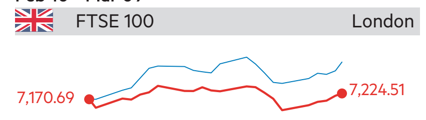


Day 1.63% Month 6.76% Year 33.73%

EUROPE

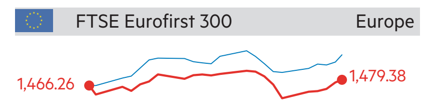
Feb 10 - Mar 09

FTSE 100 — London



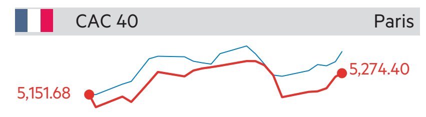
Day 0.30% Month 1.78% Year -1.31%

FTSE Eurofirst 300 — Europe



Day 0.41% Month 2.24% Year 0.50%

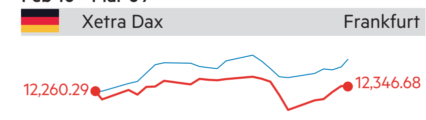
CAC 40 — Paris



Day 0.39% Month 2.38% Year 6.33%

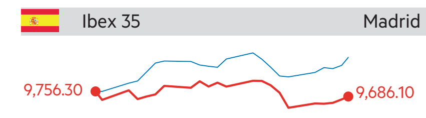
Feb 10 - Mar 09

Xetra Dax — Frankfurt



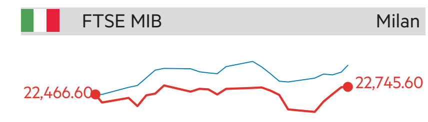
Day -0.07% Month 1.98% Year 3.07%

Ibex 35 — Madrid



Day 0.41% Month -0.72% Year -1.67%

FTSE MIB — Milan

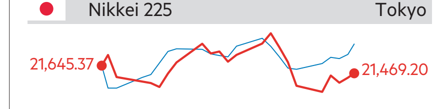


Day 0.06% Month 2.61% Year 16.22%

ASIA

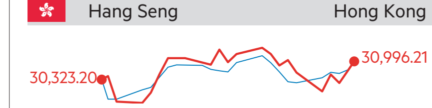
Feb 10 - Mar 09

Nikkei 225 — Tokyo



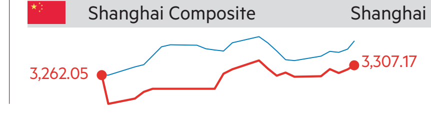
Day 0.47% Month -1.93% Year 11.50%

Hang Seng — Hong Kong



Day 1.11% Month 1.79% Year 30.33%

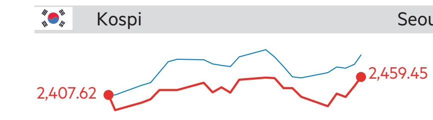
Shanghai Composite — Shanghai



Day 0.57% Month 1.38% Year 2.05%

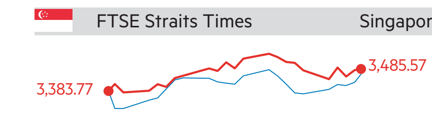
Feb 10 - Mar 09

Kospi — Seoul



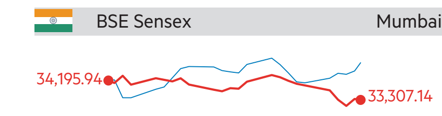
Day 1.08% Month 2.15% Year 17.37%

FTSE Straits Times — Singapore



Day 0.15% Month 2.04% Year 10.82%

BSE Sensex — Mumbai



Day -0.13% Month -3.21% Year 15.24%

Country	Index	Latest	Previous
Argentina	Merval	33182.60	32822.60
Australia	All Ordinaries	6069.10	6046.60
	S&P/ASX 200	5963.20	5942.90
	S&P/ASX 200 Res	3875.90	3946.70
Austria	ATX	3485.51	3462.87
Belgium	BEL 20	3987.04	3974.51
	BEL Mid	7316.29	7301.70
Brazil	Bovespa	86371.41	84984.61
Canada	S&P/TSX 60	921.64	919.12
	S&P/TSX Comp	15577.81	15538.70
	S&P/TSX Div Met & Min	992.29	1045.99
Chile	IGPA Gen	28197.82	27906.02
China	FTSE A200	10809.39	10741.89
	FTSE B35	9000.71	8988.96
	Shanghai A	3463.81	3444.17
	Shanghai B	330.72	328.63
	Shanghai Comp	3307.17	3288.41
	Shenzhen A	1971.70	1941.42
	Shenzhen B	1175.62	1166.03
Colombia	COLCAP	1474.31	1473.76
Croatia	CROBEX	1857.70	1852.99
Cyprus	CSE M&P Gen	68.24	68.21
Czech Republic	PX	1123.60	1118.17
Denmark	OMXC Copenahgen 20	998.09	998.65
Egypt	EGX 30	16472.28	16384.07
Estonia	OMX Tallinn	1310.46	1311.26
Finland	OMX Helsinki General	9916.18	9906.52
France	CAC 40	5274.40	5254.09
	SBF 120	4233.64	4216.13
Germany	M-DAX	26124.89	26049.05
	TecDAX	2692.43	2658.38
	XETRA Dax	12346.68	12355.57
Greece	Athens Gen	821.57	812.53
	FTSE/ASE 20	2113.77	2088.61
Hong Kong	Hang Seng	30996.21	30654.52
	HS China Enterprise	12431.20	12334.83
	HSCC Red Chip	4515.46	4447.22
Hungary	Bux	38411.50	38670.63
India	BSE Sensex	33307.14	33351.57
	Nifty 500	8986.40	9000.70
Indonesia	Jakarta Comp	6433.32	6443.02
Ireland	ISEQ Overall	6744.94	6753.49
Israel	Tel Aviv 125	1342.69	1342.18
Italy	FTSE Italia All-Share	25037.81	24984.70
	FTSE Italia Mid Cap	42556.69	42065.12
	FTSE MIB	22745.60	22731.10
Japan	2nd Section	7280.98	7278.28
	Nikkei 225	21469.20	21368.07
	S&P Topix 150	1381.70	1376.74
	Topix	1715.48	1709.95
Jordan	Amman SE	2215.10	2209.26
Kenya	NSE 20	3719.86	3740.97
Kuwait	KSX Market Index	6778.18	6808.45
Latvia	OMX Riga	1045.29	1043.98
Lithuania	OMX Vilnius	685.12	684.14
Luxembourg	LuxX	1585.33	1594.46
Malaysia	FTSE Bursa KLCI	1843.92	1839.62
Mexico	IPC	48586.59	48240.00
Morocco	MASI	13265.22	13158.82
Netherlands	AEX	537.14	535.22
	AEX All Share	800.57	798.01
New Zealand	NZX 50	8390.01	8358.70
Nigeria	SE All Share	43090.55	42952.70
Norway	Oslo All Share	915.75	912.79
Pakistan	KSE 100	43011.27	43072.74
Philippines	Manila Comp	8372.51	8381.85
Poland	Wig	61688.08	61036.99
Portugal	PSI 20	5423.80	5395.12
	PSI General	2971.43	2943.29
Romania	BET Index	8477.18	8471.65
Russia	Micex Index	2311.69	2291.23
	RTX	1285.53	1270.17
Saudi-Arabia	TADAWUL All Share Index	7562.11	7453.17
Singapore	FTSE Straits Times	3485.57	3480.44
Slovakia	SAX	335.10	328.46
Slovenia	SBI TOP	818.12	817.01
South Africa	FTSE/JSE All Share	59169.23	58926.01
	FTSE/JSE Res 20	35338.29	35135.02
	FTSE/JSE Top 40	52348.57	52057.14
South Korea	Kospi	2459.45	2433.08
	Kospi 200	317.67	314.78
Spain	IBEX 35	9686.10	9646.20
Sri Lanka	CSE All Share	6551.19	6521.24
Sweden	OMX Stockholm 30	1589.62	1585.53
	OMX Stockholm AS	576.61	575.30
Switzerland	SMI Index	8931.85	8896.42
Taiwan	Weighted Pr	10864.82	10823.24
Thailand	Bangkok SET	1775.37	1778.90
Turkey	BIST 100	116840.94	116315.98
UAE	Abu Dhabi General Index	4527.10	4519.58
UK	FT 30	3119.60	3110.20
	FTSE 100	7224.51	7203.24
	FTSE 4Good UK	6483.92	6469.90
	FTSE All Share	3993.45	3979.76
	FTSE techMARK 100	4541.03	4521.52
USA	DJ Composite	8371.50	8222.44
	DJ Industrial	25335.74	24895.21
	DJ Transport	10739.91	10465.63
	DJ Utilities	672.28	669.88
	Nasdaq 100	7101.18	6966.43
	Nasdaq Cmp	7560.81	7427.95
	NYSE Comp	12918.82	12745.01
	S&P 500	2786.57	2738.97
	Wilshire 5000	28859.55	28404.20
Venezuela	IBC	4928.78	4868.07
Vietnam	VNI	1123.41	1124.15
Cross-Border	DJ Global Titans ($)	310.75	306.36
	Euro Stoxx 50 (Eur)	3420.54	3413.28
	Euronext 100 ID	1030.32	1026.14
	FTSE 4Good Global ($)	6794.12	6710.92
	FTSE All World ($)	347.30	343.54
	FTSE E300	1479.38	1473.37
	FTSE Eurotop 100	2842.65	2833.26
	FTSE Global 100 ($)	1726.30	1702.54
	FTSE Gold Min ($)	1412.62	1410.59
	FTSE Latibex Top (Eur)	4522.20	4418.90
	FTSE Multinationals ($)	1985.61	1974.65
	FTSE World ($)	613.15	606.40
	FTSEurofirst 100 (Eur)	4148.02	4133.37
	FTSEurofirst 80 (Eur)	4822.05	4813.65
	MSCI ACWI Fr ($)	519.65	517.33
	MSCI All World ($)	2125.28	2115.98
	MSCI Europe (Eur)	1565.11	1549.79
	MSCI Pacific ($)	2844.99	2831.70
	S&P Euro (Eur)	1615.00	1611.30
	S&P Europe 350 (Eur)	1522.76	1517.40
	S&P Global 1200 ($)	2404.57	2376.16
	Stoxx 50 (Eur)	3016.37	3005.96

(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
Amazon.com	69.9	1578.89	27.03
Apple	56.6	179.98	3.04
Netflix	47.0	331.44	14.44
Micron Technology	35.5	54.59	-0.63
Microsoft	35.0	96.54	2.11
Facebook	33.6	185.23	2.89
Nvidia	30.9	245.33	4.15
Alphabet	24.2	1160.84	31.46
Alphabet	24.1	1160.04	34.04
Bank Of America	23.9	32.72	0.52

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Lam Research	224.95	12.21	5.74
Wynn Resorts	188.89	9.78	5.46
Kroger (the)	24.08	1.10	4.79
Alexion Pharmaceuticals	125.68	5.67	4.72
Netflix	331.44	14.44	4.56
Downs			
Mattel	14.84	-1.14	-7.11
Kimco Realty	14.48	-0.66	-4.36
Scana	39.13	-1.46	-3.59
Advanced Micro Devices	11.70	-0.27	-2.26
Hasbro	91.46	-1.92	-2.06

Based on the constituents of the S&P500

LONDON

ACTIVE STOCKS	stock traded m's	close price	Day's change
Rio Tinto	162.0	3726.50	33.50
Glencore	153.7	369.80	6.50
Bhp Billiton	147.6	1435.80	32.00
British American Tobacco	140.7	4273.50	12.00
Bp	130.5	478.20	3.20
Hsbc Holdings	128.3	705.80	3.00
Royal Dutch Shell	118.8	2261.50	-3.50
Glaxosmithkline	115.2	1336.00	-10.80
National Grid	113.2	783.70	-7.90
Reckitt Benckiser	104.1	5810.00	58.00

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Fdm (holdings)	988.00	48.00	5.11
Gvc Holdings	945.50	45.00	5.00
Vectura	81.35	3.60	4.63
Nmc Health	3514.00	152.00	4.52
Sirius Minerals	29.70	1.28	4.50
Downs			
Sig	136.30	-13.50	-9.01
Inmarsat	432.70	-31.20	-6.73
John Laing	249.60	-14.00	-5.31
Renewi	85.60	-3.80	-4.25
Brown (n)	193.00	-7.00	-3.50

Based on the constituents of the FTSE 350 index

EURO MARKETS

ACTIVE STOCKS	stock traded m's	close price	Day's change
Abertis Infr	524.5	18.64	0.01
Nestle N	344.3	65.15	0.53
Allianz Se Na O.n.	289.4	190.02	0.12
Roche Gs	279.5	195.64	0.21
Lufthansa Ag Vna O.n.	267.4	25.76	-1.53
Bayer Ag Na O.n.	248.4	97.81	0.34
Telecom Italia	247.7	0.83	0.03
Siemens Ag Na	246.7	105.70	0.16
Sap Se O.n.	247.7	88.39	0.53
Unilever Dr	245.4	44.74	0.59

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Tenaris	15.06	0.53	3.65
Acs Const.	30.22	0.88	3.00
Atlantia	27.85	0.80	2.96
Amadeus It	61.54	1.64	2.74
Galp Energia-nom	15.09	0.38	2.55
Downs			
W__rtsil__	19.16	-38.72	-66.90
Lufthansa Ag Vna O.n.	25.76	-1.53	-5.61
Ses	12.48	-0.25	-1.92
Seadrill	0.21	0.00	-1.49
Snam	3.66	-0.05	-1.43

Based on the constituents of the FTSEurofirst 300 Eurozone index

TOKYO

ACTIVE STOCKS	stock traded m's	close price	Day's change
Softbank .	704.4	8598.00	110.00
Fast Retailing Co.,	673.2	42400.00	230.00
Mitsubishi Ufj Fin.,	631.3	717.10	-2.80
Sony	581.5	5393.00	16.00
Tokyo Electron	568.4	21530.00	255.00
Toyota Motor	551.1	6791.00	-24.00
Fanuc	499.3	26185.00	45.00
Sumitomo Mitsui Fin.,	388.4	4518.00	2.00
Japan Tobacco .	355.5	2980.00	-20.00
Mizuho Fin.,	332.5	194.10	0.50

BIGGEST MOVERS	Close price	Day's change	Day's chng%
Ups			
Sekisui House,	1892.50	88.00	4.88
Asahi Kasei	1357.00	46.00	3.51
Hitachi Construction Machinery Co.,	4205.00	125.00	3.06
Eisai Co.,	6308.00	182.00	2.97
Fujikura	763.00	21.00	2.83
Downs			
Kobe Steel,	1025.00	-34.00	-3.21
Daiichi Sankyo ,	3719.00	-104.00	-2.72
Takeda Pharmaceutical	5618.00	-153.00	-2.65
Toho Z Co.,	5020.00	-100.00	-1.95
Thb Shizuoka Bank,	1028.00	-16.00	-1.53

Based on the constituents of the Nikkei 225 index

UK MARKET WINNERS AND LOSERS

FTSE 100	Mar 09 price(p)	%Chg week	%Chg ytd
Winners			
Smurfit Kappa	3220.00	32.5	30.4
Rolls-royce Holdings	925.80	13.3	9.9
Smith (ds)	510.20	11.0	-0.7
Mediclinic Int	617.40	7.5	-4.9
Johnson Matthey	3250.00	7.3	5.9
Coca-cola Hbc Ag	2518.00	6.5	5.8
Antofagasta	894.40	6.1	-10.6
Severn Trent	1826.00	6.0	-14.6
National Grid	783.70	6.0	-9.1
United Utilities	702.60	6.0	-14.0
Nmc Health	3514.00	5.5	22.5
Smith & Nephew	1331.00	5.3	5.4
Losers			
Just Eat	788.40	-7.1	1.5
Paddy Power Betfair	7885.00	-4.9	-11.4
Wpp	1204.50	-4.9	-9.9
Sainsbury (j)	243.00	-4.0	0.7
Marks And Spencer	277.70	-3.1	-12.1
Sky	1338.00	-2.6	31.7
Evraz	437.00	-1.6	23.2
Easyjet	1563.00	-0.9	4.1
Itv	153.20	-0.5	-8.7
Shire	3192.50	-0.4	-18.0
Standard Chartered	778.90	-0.1	0.2
Rentokil Initial	272.40	0.0	-11.4

FTSE 250	Mar 09 price(p)	%Chg week	%Chg ytd
Winners			
Tbc Bank	1840.00	13.6	5.3
Fdm (holdings)	988.00	13.6	7.0
Aveva	2060.00	12.8	-24.7
Ibstock	286.80	11.5	8.6
Vectura	81.35	11.4	-32.3
Hill & Smith Holdings	1345.00	11.4	1.4
Dignity	913.00	11.3	-49.8
Petrofac	489.00	10.8	-4.5
Stagecoach	143.50	10.6	-13.7
Euromoney Institutional Investor	1326.00	10.5	4.6
Bovis Homes	1194.00	10.2	1.3
Losers			
Alfa Financial Software Holdings	376.00	-17.8	-30.6
John Laing	249.60	-6.5	-16.2
Renewi	85.60	-5.3	-16.9
Acacia Mining	133.70	-5.2	-34.1
Inmarsat	432.70	-5.0	-12.0
Sig	136.30	-4.7	-22.6
Provident Fin	934.40	-4.5	2.3
Greene King	487.80	-4.1	-14.2
Ferrexpo	293.00	-3.7	-3.3
Rhi Magnesita N.v.	4310.00	-2.7	12.2
Wizz Air Holdings	3444.00	-2.5	-6.9
Rank	218.00	-2.2	-12.3

FTSE SmallCap	Mar 09 price(p)	%Chg week	%Chg ytd
Winners			
Interserve	78.40	41.6	-21.0
Huntsworth	94.00	23.7	15.2
Spirent Communications	126.00	22.3	23.5
Int Personal Finance	234.20	17.7	15.7
Sirius Real Estate Ltd	62.60	13.8	-5.2
Tt Electronics	239.50	11.4	8.1
Trinity Mirror	83.80	11.0	4.9
Gem Diamonds	92.00	10.8	27.8
Rps	252.50	9.3	-8.2
Restaurant	251.00	8.9	-15.0
Foxtons	80.30	8.8	-3.1
Ncc	210.00	8.4	-7.8
Losers			
Luceco	57.20	-25.7	-48.2
Renold	34.00	-25.3	-29.3
Moss Bros	56.90	-13.8	-35.0
Headlam	459.00	-13.6	-19.2
Up Global Sourcing Holdings	30.00	-10.7	-62.4
Biffa	210.00	-10.6	-18.1
Debenhams	25.82	-9.1	-26.6
Countrywide	83.10	-8.7	-27.9
Stock Spirits	256.50	-8.1	-5.4
Tyman	299.00	-7.1	-18.3
Mothercare	19.64	-6.5	-70.2
Gulf Marine Services	40.00	-6.3	-11.3

Industry Sectors	Mar 09 price(p)	%Chg week	%Chg ytd
Winners			
General Industrials	6892.10	12.4	7.8
Oil Equipment & Services	13183.20	8.8	2.2
Aerospace & Defense	5160.44	7.4	5.6
Health Care Equip.& Services	7859.07	4.9	3.5
Nonlife Insurance	3198.13	4.9	-0.9
Gas Water & Multiutilities	4659.16	4.8	-
Personal Goods	34264.85	4.5	-5.6
Software & Computer Services	2148.50	3.8	-
Forestry & Paper	21375.76	3.7	2.6
Electricity	7425.78	3.7	4.2
Automobiles & Parts	9972.33	3.7	34.2
Mobile Telecommunications	4556.65	3.6	-
Losers			
Industrial Metals	4572.14	-2.5	18.4
General Retailers	2450.89	-0.5	-3.7
Media	7504.34	-0.2	-0.8
Tobacco	46034.97	-0.1	-
Travel & Leisure	9845.38	0.6	-3.6
Banks	4423.18	0.6	-4.3
Food Producers	7374.78	0.7	-
Oil & Gas Producers	8236.88	1.4	-8.7
Fixed Line Telecommunication	2764.21	1.4	-
Food & Drug Retailers	3386.39	1.6	3.7
Pharmaceuticals & Biotech.	12063.52	1.8	-6.2
Equity Investment Instruments	9523.23	2.0	-1.8

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

CURRENCIES

Mar 09	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	20.2700	-0.1340	24.9717	-0.1834	28.1083	-0.1095
Australia	Australian Dollar	1.2762	-0.0090	1.5723	-0.0123	1.7698	-0.0077
Bahrain	Bahrainin Dinar	0.3770	-	0.4644	-0.0003	0.5228	0.0014
Bolivia	Bolivian Boliviano	6.9100	-	8.5128	-0.0062	9.5821	0.0258
Brazil	Brazilian Real	3.2470	-0.0179	4.0001	-0.0250	4.5025	-0.0126
Canada	Canadian Dollar	1.2838	-0.0104	1.5816	-0.0140	1.7802	-0.0096
Chile	Chilean Peso	602.5750	-4.0100	742.3434	-5.4837	835.5868	-3.2923
China	Chinese Yuan	6.3370	0.0049	7.8069	0.0004	8.7875	0.0305
Colombia	Colombian Peso	2861.6300	-12.3750	3525.3907	-17.8212	3968.2036	-6.4129
Costa Rica	Costa Rican Colon	569.1500	0.0250	701.1655	-0.4792	789.2365	2.1630
Czech Republic	Czech Koruna	20.6681	0.0451	25.4620	0.0371	28.6602	0.1397
Denmark	Danish Krone	6.0468	0.0046	7.4494	0.0003	8.3851	0.0290
Egypt	Egyptian Pound	17.6195	0.0330	21.7064	0.0249	24.4328	0.1115
Hong Kong	Hong Kong Dollar	7.8376	-0.0036	9.6555	-0.0115	10.8683	0.0243
Hungary	Hungarian Forint	253.0663	0.0671	311.7655	-0.1440	350.9253	1.0392
India	Indian Rupee	65.1600	0.0725	80.2740	0.0310	90.3569	0.3439
Indonesia	Indonesian Rupiah	13785.0000	-	16982.4843	-12.3527	19115.5978	51.5655
Israel	Israeli Shekel	3.4420	-0.0173	4.2404	-0.0245	4.7730	-0.0111
Japan	Japanese Yen	106.9550	0.8650	131.7634	0.9706	148.3138	1.5962
..One Month		106.9547	0.8645	131.7634	0.9706	148.3137	1.5960
..Three Month		106.9543	0.8637	131.7635	0.9707	148.3135	1.5956
..One Year		106.9521	0.8592	131.7637	0.9711	148.3137	1.5945
Kenya	Kenyan Shilling	101.1000	-0.1000	124.5503	-0.2139	140.1947	0.2398
Kuwait	Kuwaiti Dinar	0.3003	0.0003	0.3700	0.0001	0.4164	0.0015
Malaysia	Malaysian Ringgit	3.9120	0.0035	4.8194	0.0008	5.4247	0.0195
Mexico	Mexican Peson	18.5605	-0.1498	22.8656	-0.2013	25.7377	-0.1377
New Zealand	New Zealand Dollar	1.3722	-0.0067	1.6905	-0.0095	1.9028	-0.0042
Nigeria	Nigerian Naira	359.7500	0.2500	443.1947	-0.0141	498.8629	1.6911
Norway	Norwegian Krone	7.7822	-0.0653	9.5873	-0.0875	10.7915	-0.0612
Pakistan	Pakistani Rupee	110.5450	-	136.1861	-0.0991	153.2920	0.4134
Peru	Peruvian Nuevo Sol	3.2592	0.0042	4.0152	0.0023	4.5195	0.0180
Philippines	Philippine Peso	52.0400	-	64.1108	-0.0466	72.1635	0.1946
Poland	Polish Zloty	3.4049	-0.0086	4.1947	-0.0137	4.7216	0.0008
Romania	Romanian Leu	3.7810	0.0042	4.6580	0.0018	5.2431	0.0199
Russia	Russian Ruble	56.7213	-0.3412	69.8779	-0.4715	78.6550	-0.2598
Saudi Arabia	Saudi Riyal	3.7506	0.0002	4.6206	-0.0031	5.2009	0.0143
Singapore	Singapore Dollar	1.3154	-0.0024	1.6205	-0.0041	1.8241	0.0017
South Africa	South African Rand	11.8138	-0.1037	14.5540	-0.1385	16.3820	-0.0993
South Korea	South Korean Won	1069.8500	-0.4000	1318.0039	-1.4518	1483.5538	3.4474
Sweden	Swedish Krona	8.2439	-0.0252	10.1560	-0.0385	11.4317	-0.0040
Switzerland	Swiss Franc	0.9501	0.0012	1.1705	0.0007	1.3176	0.0053
Taiwan	New Taiwan Dollar	29.2955	0.0395	36.0906	0.0224	40.6239	0.1642
Thailand	Thai Baht	31.3700	-0.0100	38.6463	-0.0404	43.5006	0.1035
Tunisia	Tunisian Dinar	2.3976	0.0072	2.9537	0.0068	3.3247	0.0190
Turkey	Turkish Lira	3.8135	-0.0107	4.6980	-0.0167	5.2882	-0.0006
United Arab Emirates	UAE Dirham	3.6731	-0.0001	4.5250	-0.0034	5.0934	0.0137
United Kingdom	Pound Sterling	0.7211	-0.0020	0.8884	-0.0031	-	-
..One Month		0.7214	-0.0019	0.8883	-0.0030	-	-
..Three Month		0.7217	-0.0019	0.8882	-0.0031	-	-
..One Year		0.7234	-0.0019	0.8872	-0.0031	-	-
United States	United States Dollar	-	-	1.2320	-0.0009	1.3867	0.0037
..One Month		-	-	1.2316	-0.1510	1.3869	0.0037
..Three Month		-	-	1.2311	-0.1510	1.3873	0.0037
..One Year		-	-	1.2282	-0.1510	1.3890	0.0037
Venezuela	Venezuelan Bolivar Fuerte	39950.0000	50.0000	49216.4786	25.8433	55398.3970	218.5439
Vietnam	Vietnamese Dong	22761.0000	4.0000	28040.5017	-15.4981	31562.5681	90.5923
European Union	Euro	0.8117	0.0006	-	-	1.1256	0.0039
..One Month		0.8114	0.0006	-	-	1.1255	0.0039
..Three Month		0.8109	0.0006	-	-	1.1254	0.0039
..One Year		0.8080	0.0006	-	-	1.1244	0.0038

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 Mar 09	Day's chge%	Euro Index	£ Strlg Mar 08	£ Strlg Mar 07	Year ago	Div yield%	Cover	P/E ratio	X/D adj	Total Return
FTSE 100 (100)	7224.51	0.30	6337.89	7203.24	7157.84	7343.08	4.07	1.84	13.40	66.18	6183.17
FTSE 250 (250)	20085.07	0.59	17620.13	19968.01	19774.17	18961.42	2.72	2.25	16.29	44.66	14800.88
FTSE 250 ex Inv Co (202)	21563.96	0.66	18917.53	21422.83	21197.33	20279.14	2.81	1.81	19.66	41.83	16211.12
FTSE 350 (350)	4040.58	0.35	3544.70	4026.67	3998.92	4055.49	3.83	1.89	13.83	32.12	6933.30
FTSE 350 ex Investment Trusts (301)	4001.72	0.35	3510.61	3987.75	3960.19	4023.39	3.89	1.82	14.15	32.36	3538.40
FTSE 350 Higher Yield (111)	3653.72	0.22	3205.32	3645.68	3625.58	3808.63	5.36	1.54	12.09	43.85	6635.57
[illegible]											

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	7203.00	7204.19	7200.81	7204.32	7197.69	7196.31	7221.11	7218.16	7214.69	7225.11	7189.93
FTSE 250	19982.13	20026.25	20025.53	20002.92	20014.90	20015.39	20055.44	20066.07	20059.54	20085.07	19974.34
FTSE SmallCap	5764.82	5764.88	5766.27	5764.71	5771.47	5773.49	5774.60	5775.04	5768.88	5777.09	5763.04
FTSE All-Share	3980.30	3982.28	3980.81	3981.57	3979.22	3978.68	3990.95	3989.96	3988.11	3993.45	3975.12

Time of FTSE 100 Day's high:13:36:45 Day's Low13:25:45 FTSE 100 2010/11 High: 7778.64(12/01/2018) Low: 7069.90(02/03/2018)
Time of FTSE All-Share Day's high:16:35:30 Day's Low08:17:00 FTSE 100 2010/11 High: 4268.89(12/01/2018) Low: 3899.70(02/03/2018)

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FT 30 INDEX

	Mar 09	Mar 08	Mar 07	Mar 06	Mar 05	Yr Ago	High	Low
FT 30	3119.60	3110.20	3083.40	3076.30	3070.60	0.00	3377.70	3048.00
FT 30 Div Yield	1.97	1.97	2.00	2.00	2.00	0.00	3.93	2.74
P/E Ratio net	22.69	22.62	22.30	22.31	22.30	0.00	19.44	14.26

FT 30 since compilation: 4198.4 high: 19/07/1999; low49.4 26/06/1940Base Date: 1/7/35

FT 30 hourly changes

8	9	10	11	12	13	14	15	16	High	Low
3110.2	3111.5	3107.9	3106.5	3106.1	3105.2	3116.8	3113.6	3117.3	3120.3	3102.6

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

FX: EFFECTIVE INDICES

	Mar 08	Mar 07	Mnth Ago		Mar 09	Mar 08	Mnth Ago
Australia	92.41	92.55	94.00	Sweden	75.21	75.14	77.64
Canada	89.45	89.20	92.47	Switzerland	152.08	152.47	153.20
Denmark	110.95	111.05	110.54	UK	78.50	78.54	78.74
Japan	139.86	139.63	135.65	USA	96.94	96.72	97.02
New Zealand	115.42	115.39	116.57	Euro	96.26	96.55	95.95
Norway	87.24	87.34	86.82				

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

FTSE SECTORS: LEADERS & LAGGARDS

Year to date percentage changes

Tech Hardware & Eq	35.72	Electronic & Elec Eq	-1.90	Pharmace & Biotech	-5.94
Automobiles & Parts	33.93	FTSE SmallCap Index	-2.30	FTSE 100 Index	-6.03
Industrial Metals &	18.77	Financial Services	-2.76	NON FINANCIALS Index	-6.27
Industrial Transport	9.16	Financials	-3.05	Technology	-7.89
Aerospace & Defense	5.63	FTSE 250 Index	-3.09	Oil & Gas	-8.47
Chemicals	5.55	Basic Materials	-3.14	Utilities	-8.64
Food & Drug Retailer	3.72	Travel & Leisure	-3.34	Oil & Gas Producers	-8.70
Health Care Eq & Srv	3.32	General Retailers	-3.89	Beverages	-9.29
Forestry & Paper	2.77	Electricity	-4.06	Leisure Goods	-9.41
Oil Equipment & Serv	2.04	Banks	-4.22	Gas Water & Multi	-9.94
Media	-0.73	Mining	-4.69	Software & Comp Serv	-10.05
Nonlife Insurance	-0.77	Health Care	-4.88	Food Producers	-10.86
Life Insurance	-0.87	Real Est Invest & Se	-5.11	Consumer Goods	-11.28
Industrial Eng	-1.24	Construct & Material	-5.37	Fixed Line Telecomms	-11.37
Industrials	-1.49	FTSE All{HY-}Share Index	-5.41	Telecommunications	-11.76
Equity Invest Instr	-1.63	Real Est Invest & Tr	-5.55	Mobile Telecomms	-11.91
Consumer Services	-1.82	Personal Goods	-5.59	Household Goods & Ho	-12.97
		Support Services	-5.81	Tobacco	-15.52

FTSE GLOBAL EQUITY INDEX SERIES

Mar 9 Regions & countries	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
FTSE Global All Cap	7766	595.31	1.1	4.9	2.3	858.54	2.6	2.2
FTSE Global Large Cap	1445	524.08	1.1	4.7	2.5	776.01	2.8	2.4
FTSE Global Mid Cap	1703	799.72	1.0	5.1	1.9	1091.85	2.1	2.0
FTSE Global Small Cap	4618	843.10	1.1	5.9	1.9	1113.57	2.2	1.8
FTSE All-World	3148	347.30	1.1	4.8	2.3	529.27	2.7	2.3
FTSE World	2573	613.15	1.1	4.9	2.3	1254.60	2.7	2.3
FTSE Global All Cap ex UNITED KINGDOM In	7446	619.82	1.1	5.1	2.7	879.67	3.0	2.1
[illegible]								
FTSE RAFI US 1000	980	11706.74	1.6	5.0	1.5	15596.05	1.9	2.2
FTSE EDHEC-Risk Efficient All-World	3148	412.65	1.0	4.6	1.7	581.62	2.0	2.2
FTSE EDHEC-Risk Efficient Developed Europe	551	342.20	0.5	4.1	1.1	527.48	1.3	2.7
Oil & Gas	145	375.10	1.3	2.4	-4.1	619.70	-3.5	3.6

Mar 9 Sectors	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
Oil & Gas Producers	109	361.20	1.2	1.2	-4.0	610.06	-3.3	3.7
Oil Equipment & Services	27	297.10	2.0	2.0	-5.6	439.65	-5.0	3.4
Basic Materials	255	542.77	0.8	0.8	-0.4	841.53	0.0	2.6
Chemicals	119	810.18	1.1	1.1	0.5	1257.69	0.7	2.3
Forestry & Paper	16	326.59	0.8	0.8	6.0	561.91	6.3	3.0
Industrial Metals & Mining	68	478.69	0.0	0.0	-1.8	738.54	-1.6	2.6
Mining	52	636.70	0.5	0.5	-3.0	994.12	-1.8	3.2
[illegible]								
Financial Services	154	330.35	1.8	1.8	7.5	460.12	7.8	1.7
Technology	194	296.02	1.7	1.7	10.3	366.00	10.6	1.3
Software & Computer Services	96	512.86	1.8	1.8	10.8	601.89	10.9	0.8
Technology Hardware & Equipment	98	221.70	1.6	1.6	9.9	286.42	10.2	1.8
Alternative Energy	9	101.58	-0.3	-0.3	5.5	137.88	5.5	1.9
Real Estate Investment & Services	107	368.95	0.4	0.4	0.2	622.27	0.3	2.4

The FTSE Global Equity Series, launched in 2003, contains the FTSE Global Small Cap Indices and broader FTSE Global All Cap Indices (large/mid/small cap) as well as the enhanced FTSE All-World index Series (large/mid cap) - please see 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 100 SUMMARY

FTSE 100	Closing Price	Week's Change
3I Group PLC	922.40	16.40
Admiral Group PLC	1914	69.00
Anglo American PLC	1752.2	64.60
Antofagasta PLC	894.40	51.80
Ashtead Group PLC	2010	11.50
Associated British Foods PLC	2607	0.00
Astrazeneca PLC	4785.5	49.50
Aviva PLC	519.40	21.90
Bae Systems PLC	601.80	25.80
Barclays PLC	210.75	5.45
Barratt Developments PLC	548.60	16.20
Berkeley Group Holdings (The) PLC	3856	91.00
Bhp Billiton PLC	1435.8	23.20
BP PLC	478.20	14.10
British American Tobacco PLC	4273.5	53.50
British Land Company PLC	637.60	10.00
Bt Group PLC	239.40	3.15
Bunzl PLC	2040	90.00
Burberry Group PLC	1667.5	33.00
Carnival PLC	4738	117.00
Centrica PLC	141.80	0.40
Coca-Cola Hbc AG	2518	154.00
Compass Group PLC	1551.5	27.50
Crh PLC	2445	46.00
Croda International PLC	4632	176.00
Dcc PLC	6835	320.00
Diageo PLC	2446.5	65.00
Direct Line Insurance Group PLC	390.40	16.60
Easyjet PLC	1563	-14.00
Evraz PLC	437.00	-7.30
Experian PLC	1580.5	60.00
Ferguson PLC	5318	220.00
Fresnillo PLC	1238.5	41.00
G4S PLC	262.20	7.90
Gkn PLC	435.10	15.10
Glaxosmithkline PLC	1336	46.00
Glencore PLC	369.80	5.30
Halma PLC	1212	46.00
Hammerson PLC	455.40	7.50
Hargreaves Lansdown PLC	1720.5	63.50
HSBC Holdings PLC	705.80	0.80
Imperial Brands PLC	2592	8.00
Informa PLC	707.80	10.20
Intercontinental Hotels Group PLC	4590	136.00
International Consolidated Airlines Group S.A.	624.00	9.00
Intertek Group PLC	5052	179.00
Itv PLC	153.20	-0.70
Johnson Matthey PLC	3250	220.00
Just Eat PLC	788.40	-60.60
Kingfisher PLC	350.70	2.90
Land Securities Group PLC	917.10	4.10
Legal & General Group PLC	262.50	9.10
Lloyds Banking Group PLC	67.29	0.29
London Stock Exchange Group PLC	3936	99.00
Marks And Spencer Group PLC	277.70	-9.00
Mediclinic International PLC	617.40	43.00
Micro Focus International PLC	2023	35.00
Mondi PLC	1984.5	73.50
Morrison (Wm) Supermarkets PLC	227.90	5.20
National Grid PLC	783.70	44.50
Next PLC	4772	92.00
Nmc Health PLC	3514	182.00
Old Mutual PLC	256.50	10.50
Paddy Power Betfair PLC	7885	-410.00
Pearson PLC	751.40	32.60
Persimmon PLC	2597	13.00
Prudential PLC	1846.5	56.00
Randgold Resources LD	6034	94.00
Reckitt Benckiser Group PLC	5810	120.00
Relx PLC	1512.5	45.00
Rentokil Initial PLC	272.40	-0.10
Rio Tinto PLC	3726.5	88.00
Rolls-Royce Holdings PLC	925.80	108.40
Royal Bank Of Scotland Group PLC	261.80	4.20
Royal Dutch Shell PLC	2287.5	8.00
Royal Dutch Shell PLC	2261.5	12.00
Rsa Insurance Group PLC	635.20	21.80
Sage Group PLC	695.80	33.80
Sainsbury (J) PLC	243.00	-10.00
Schroders PLC	3404	57.00
Scottish Mortgage Investment Trust PLC	473.60	22.40
Segro PLC	599.00	26.80
Severn Trent PLC	1826	104.00
Shire PLC	3192.5	-13.00
Sky PLC	1338	-35.50
Smith & Nephew PLC	1331	67.00
Smith (Ds) PLC	510.20	50.40
Smiths Group PLC	1610	57.50
Smurfit Kappa Group PLC	3220	790.00
Sse PLC	1257	43.00
St. James's Place PLC	1153	44.50
Standard Chartered PLC	778.90	-1.10
Standard Life Aberdeen PLC	370.40	4.20
Taylor Wimpey PLC	188.10	2.05
Tesco PLC	212.70	10.70
Tui AG	1532	14.00
Unilever PLC	3894.5	182.00
United Utilities Group PLC	702.60	39.80
Vodafone Group PLC	207.00	7.98
Whitbread PLC	3932	133.00
Wpp PLC	1204.5	-61.50

UK STOCK MARKET TRADING DATA

	Mar 09	Mar 08	Mar 07	Mar 06	Mar 05	Yr Ago
	-	-	-	-	-	-
Order Book Turnover (m)	433.69	356.46	129.39	146.41	186.22	186.22
Order Book Bargains	1036902.00	1103439.00	1151038.00	1061417.00	1222144.00	1222144.00
Order Book Shares Traded (m)	1671.00	1886.00	1767.00	1913.00	1990.00	1990.00
Total Equity Turnover (£m)	5531.19	6175.52	5122.20	6433.89	4886.92	4886.92
Total Mkt Bargains	1137781.00	1219298.00	1271661.00	1166265.00	1360010.00	1360010.00
Total Shares Traded (m)	3763.00	4283.00	3972.00	4142.00	3856.00	3856.00

‡ 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.
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UK RIGHTS OFFERS

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

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

UK COMPANY RESULTS

Company		Turnover		Pre-tax		EPS(p)		Div(p)		Pay day	Total	
Eurocell	Pre	**224.906**	204.816	**23.661**	23.820	**19.600**	19.600	**6.00000**	5.70000	May 23	**9.000**	8.500
Inmarsat $	Pre	**1400.200**	1329.000	**229.800**	299.200	**0.400**	0.540	**12.00000**	33.37000	May 25	**33.600**	54.200
Maven Income and Growth VCT 3	Pre			**0.027**	2.061	**0.070**	5.010	**6.67000**	3.75000	Nov 30	**6.670**	3.750
Murray International Trust	Pre			**215.237**	430.214	**164.000**	333.200	**17.00000**	16.00000	May 18	**28.000**	26.500
RM Secured Direct Lending	Pre		-	**1.380**	-	**2.540**	-	**2.00000**	-	Mar 23	**2.000**	-
Secure Income REIT	Pre	**106.930**	93.214	**138.952**	94.066	**59.500**	48.200	**0.00000**	3.27730	-	**3.500**	6.215
SIG	Pre	**2878.400**	2845.200	**51.200L**	110.000L	**10.100L**	20.600L	**2.50000**	1.83000	Jul 6	**3.750**	3.660

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)
03/05	70.00	AIM	GRC	GRC International Group PLC	115.00	-4.90	125.00	85.00	6608.2
03/02	100.00		MATE	JPMorgan Multi-Asset Trust PLC	97.00	1.66	103.56	91.00	9032.2
02/27	196.00		IHP	IntegraFin Holdings PLC	270.00	4.80	273.00	230.00	89456.9

§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
[illegible]							
Japan (¥)							
AstellasPh	1540.5	-4.00	1603	1331.5	2.21	17.77	29797.78
Bridgestne	4588	-116.00	5605	4314	3.00	12.94	32667.29
Canon♦■	3880	-141.00	4472	3357	3.80	18.52	48384.86
CntJpRwy	19675	-10.00	21520	17525	0.69	9.89	37894.91
Denso	5924	-252.00	7218	4551	2.05	14.98	43981.7
EastJpRwy	9749	-146.00	11615	9511	1.35	13.17	35152.68
Fanuc	26185	-815.00	33450	20805	1.76	30.42	49958.26
FastRetail	42400	320.00	51580	30000	0.81	34.52	42050.61
Fuji Hvy Ind	3636	-91.00	4485	3400	3.85	12.59	26148.6
Hitachi	790.80	-29.50	944.20	566.30	1.72	12.93	35737.47
HondaMtr	3623	-208.00	4151	3000	2.61	6.39	61360.44
JapanTob	2980	-23.00	4243	2968.5	4.48	13.41	55724.38
KDDI	2665	58.50	3260	2551.5	3.29	11.80	64465.65
Keyence	64750	880.00	72400	42810	0.09	-	73618.33
MitsbCp	2904.5	-70.00	3318	2208.5	3.25	9.78	43180.57
MitsubEst	1802	-49.00	2278.5	1756	1.24	26.16	23434.31
MitsubishiEle	1732	-61.50	2179	1462	1.80	14.24	34771.2
MitsuiFud	2483.5	-76.00	2984	2274.5	1.41	26.33	23020.93
MitUFJFin	717.10	-29.30	894.40	642.20	2.47	38.66	93195.38
Mizuho Fin	194.10	-3.60	220.70	185.40	3.76	15.21	46076.62
Murata Mfg	15025	165.00	17910	14000	1.55	21.97	31646.05
NipponTT	4995	50.00	5905	4545	2.63	11.85	97905.56
Nissan Mt	1112	-8.50	1197	996.20	4.42	5.42	43882.35
Nomura	631.80	-20.00	767.80	567.70	3.08	9.01	21523.11
Nppn Stl	2343	-174.00	3132	2323.5	3.12	9.34	20818.13
NTTDCMo	2710	-13.00	2907.5	2501.5	3.23	14.36	98806.19
Panasonic	1635	-16.00	1800	1188	1.49	25.84	37499.34
Seven & I	4375	-6.00	4891	4234	2.01	23.20	36259.95
ShnEtsuCh	10980	25.00	13175	9174	1.11	22.48	44360.07
Softbank	8598	-199.00	10550	7494	0.50	6.25	88480.93
Sony	5393	91.00	5738	3402	0.41	-18.02	63828.16
SumitomoF	4518	-94.00	5333	3760	3.37	11.79	59749
Takeda Ph	5618	-402.00	6693	5115	3.12	23.88	41552.33
TokioMarine	4937	63.00	5517	4192	3.01	18.49	34528.51
Toyota	6791	-293.00	7806	5670	3.01	8.70	207180.73
Mexico (Mex$)							
AmerMvl	17.88	0.33	18.44	12.21	1.71	32.25	43251.85
FEMSA UBD	175.25	1.88	189.49	162.00	1.53	13.59	20406.04
WalMrtMex	46.92	1.32	48.59	38.51	1.35	24.84	44141.55
Netherlands (€)							
Altice	7.87	0.31	23.43	6.44	-	-4.05	13546.05
ASML Hld	169.20	14.85	169.45	112.60	0.71	34.49	89088.6
Heineken	87.54	3.24	91.42	77.78	1.51	27.68	62119.04
ING	14.33	0.21	16.69	13.52	4.55	11.33	68602.39
Unilever♦	44.74	2.57	52.31	42.13	3.12	20.82	94500.99
Norway (Kr)							
DNB	155.50	3.95	164.30	131.90	3.70	13.01	32545.84
Statoil	178.30	3.40	188.85	135.80	3.99	-88.67	76137.96
Telenor	180.20	5.70	191.70	131.00	4.37	57.34	34766.88
Qatar (QR)							
QatarNtBk	117.01	-3.99	150.50	115.01	2.78	8.36	29682.91
Russia (RUB)							
Gzprm neft	139.81	1.24	151.65	111.46	5.86	3.68	58351.9
Lukoil	3789	39.50	3985	2601	8.47	7.67	56817.93
MmcNrlskNckl	11077	-171.00	11970	7677	6.24	10.81	30903.5
Novatek	737.50	5.50	758.20	590.20	0.97	12.74	39478.6
Rosneft	313.25	-6.25	359.30	286.00	1.94	18.52	58529.71
Sberbank	274.60	1.60	285.00	136.20	2.23	8.16	104507.16
Surgutneftegas	28.63	0.41	31.35	24.09	2.13	10.32	18032.7
Saudi Arabia (SR)							
AlRajhiBnk	75.90	2.80	76.20	61.00	4.07	13.74	32886.49
Natnlcombnk	61.60	3.20	61.90	37.00	3.49	12.74	32849.82
SaudiBasic	108.40	3.80	108.60	94.25	3.80	16.20	86710.74
SaudiTelec	79.30	3.30	79.50	65.10	5.20	16.65	42288.82
Singapore (S$)							
DBS	28.13	-0.67	29.71	18.47	2.26	16.50	54695.31
JardnMt US$	62.81	-0.80	68.11	59.73	2.55	6.14	45615.91
JardnStr US$	39.42	-0.34	46.48	37.50	0.80	5.54	43666.18
OCBC	13.25	0.04	13.61	9.45	2.74	13.48	42164.56
SingTel	3.36	0.00	4.01	3.30	5.26	9.66	41710.55
UOB	28.04	0.00	28.80	21.30	2.52	14.04	35682.84
South Africa (R)							
Firstrand	66.42	-7.38	77.25	43.44	3.43	15.75	31538
MTN Grp	132.01	8.01	140.00	109.05	5.10	31.17	21055.34
Naspers N	3546.98	295.40	4142.99	2097.89	0.15	36.59	131702.83
South Korea (KRW)							
HyundMobis♦	221500	-6500.00	289500	212000	1.62	13.06	20153.91
KoreaElePwr	32500	-600.00	49000	31500	5.88	7.30	19501.64
SK Hynix	83300	6500	90300	46550	1.23	5.40	56683.27
SmsungEl	2487000	134000	2876000	1993000	1.88	9.86	298450.45
Spain (€)							
BBVA	6.65	0.00	7.93	6.57	4.49	11.36	54593.65
BcoSantdr	5.46	-0.03	6.25	5.24	3.86	12.80	108519.34
CaixaBnk	3.86	0.01	4.51	3.50	3.36	13.80	28458.49
Iberdrola	6.05	0.12	7.30	5.87	2.92	12.67	48003.04
Inditex	24.07	0.07	36.90	23.81	2.05	23.18	92418.33
Repsol	14.11	0.11	16.30	13.28	5.77	10.32	27046.19
Telefonica	8.17	0.34	10.63	7.45	4.89	14.60	52259.07
Sweden (SKr)							
AtlasCpcoB	317.80	19.80	339.70	260.40	2.15	22.19	15042.92
Ericsson	56.94	3.16	64.95	43.75	1.83	-9.95	21220.95
H & M	136.20	4.28	246.70	131.42	4.01	11.17	24132.36
Investor	375.10	14.30	425.60	348.00	2.73	3.80	20724.8
Nordea Bk	96.70	4.14	115.70	91.78	6.82	12.71	47505.77
SEB	98.06	2.74	109.00	92.78	5.86	11.83	25812.23
SvnskaHn	116.00	4.55	129.70	107.50	4.45	13.71	26860.64
Swedbank	210.50	6.90	226.30	190.30	6.55	12.02	28904.85
Telia Co	39.85	0.92	40.33	35.29	6.55	14.46	20931.24
Volvo	153.00	3.25	171.30	122.50	2.22	14.23	30593.97
Switzerland (SFr)							
ABB	23.31	0.99	27.24	21.65	3.19	23.24	53191.12
CredSuisse	17.26	0.66	18.81	12.91	3.97	-22.26	46417.91
Nestle	76.26	2.76	86.40	73.34	3.01	32.89	249785.1
Novartis	78.36	1.10	88.30	72.45	3.39	24.75	215814.31
Richemont	84.14	3.44	92.50	75.20	2.17	24.93	46225.42
Roche	229.00	11.25	273.00	214.30	3.58	22.82	169327.85
Swiss Re	96.92	3.44	98.80	81.65	5.10	11.71	35645.86
Swisscom	509.60	10.70	530.60	431.10	4.31	16.82	27783.27
Syngent	463.00	1.80	471.20	360.50	-	41.32	42748.26
UBS	17.41	0.29	19.77	15.11	-	16.33	70600.23
Zurich Fin	309.70	10.20	321.80	262.10	3.55	15.98	49330.98
Taiwan (NT$)							
Chunghwa Telecom	109.50	1.00	111.00	101.50	4.51	22.20	28995.63
Formosa PetChem	113.50	-1.00	127.00	101.00	5.28	13.59	36906.62
HonHaiPrc	91.90	4.00	122.50	86.10	4.89	11.82	54360.25
MediaTek	310.50	11.00	350.50	206.00	2.57	25.43	16761.56
TaiwanSem	250.50	7.50	266.00	183.00	2.79	19.06	221725.5
Thailand (THB)							
PTT Explor♦	534.00	-34.00	588.00	365.00	3.33	11.58	48621.73
United Arab Emirates (Dhs)							
Emirtestele	17.90	0.80	18.85	15.75	4.76	16.91	42381.63
United Kingdom (p)							
AscBrFd	2607	0.00	3387	2476	1.45	17.20	28619.88
AstraZen♦	4785.5	49.50	5520	4260	4.30	23.01	84041.81
Aviva	519.40	21.90	570.50	482.20	4.13	34.40	28905.28
Barclays♦	210.75	5.45	235.35	177.30	1.42	61.99	49868.17
BP♦	478.20	14.10	536.20	4.80	6.22	32.65	132163.57
BrAmTob	4273.5	53.50	17365.43	2879.89	3.96	18.81	135921.83
BSkyB	1338	-35.50	1378	893.42	-	28.29	31894.58
BT	239.40	3.15	349.20	224.30	6.04	14.87	32938.13
Compass	1551.5	27.50	1765.92	1396.5	2.17	21.76	35382.61
Diageo♦	2446.5	65.00	2735.5	2186.5	2.54	19.22	84306.31
GlaxoSmh♦	1336	46.00	1724.5	1236.4	5.99	28.25	91109.28
Glencore	369.80	5.30	416.90	270.00	1.40	12.51	73969.93
HSBC♦	705.80	0.80	798.60	618.00	5.33	19.89	195704.92
Imperial Brands♦	2592	8.00	3956.5	2553	6.17	17.61	34280.25
LlydsBkg	67.29	0.29	73.58	61.81	4.01	15.65	67249.43
Natl Grid	783.70	44.50	1174.36	733.00	5.82	15.78	36571.99
Prudential	1846.5	56.00	1992.5	1612.14	2.36	17.29	66248.15
RBS	261.80	4.20	304.20	221.80	-	-9.77	43440.85
ReckittB	5810	120.00	8110.43	5608	2.64	19.48	56634.01
RELX	1512.5	45.00	1784	1399	2.47	18.56	43456.02
RioTinto♦	3726.5	88.00	4226.56	2882.5	4.61	10.35	69428.43
RollsRoyce♦	925.80	108.40	994.50	733.50	0.50	-24.82	23623.74
RylDShlA♦	2261.5	12.00	2579.5	1982.5	6.23	23.34	262975.63
Shire♦	3192.5	-13.00	5021	2940.5	0.71	9.27	40185.85
StandCh♦	778.90	-1.10	864.20	678.80	-	45.22	35608.38
Tesco	212.70	10.70	217.10	165.35	-	37.98	24149.67
Vodafone	207.00	7.98	239.65	197.45	6.36	-75.30	76566.09
WPP	1204.5	-61.50	1774	1187	4.70	8.88	21197.97
United States of America ($)							
21stC Fox A	37.73	1.36	39.14	24.81	0.98	17.20	39767.75
3M♦	241.35	10.98	259.77	188.62	2.00	29.69	143575.31
AbbottLb	63.60	4.14	64.60	42.31	1.71	310.21	111066.84
Abbvie	119.29	4.25	125.86	63.12	2.20	35.26	189429.26
Accenture	161.51	4.01	165.58	114.82	1.61	27.90	103778.32
Adobe	221.11	11.32	221.27	119.11	-	63.86	109080.97
AEP	65.65	0.47	78.07	63.32	3.73	16.51	32300.17
Aetna	177.38	-0.15	194.40	124.84	1.01	30.46	57993.07
Aflac	91.68	4.17	91.73	70.64	1.95	7.75	35726.14
AirProd	171.10	11.33	175.17	133.63	2.28	35.44	37460.51
Alexion	125.68	7.76	149.34	96.18	-	62.24	27860.92
Allegran♦	157.28	13.26	256.80	142.81	1.82	-12.80	51952.8
Allstate♦	96.03	4.42	105.36	79.09	1.58	11.21	34038.61
Alphabet	1160.84	76.70	1198	824.30	-	62.91	346502.06
Altria	65.65	3.10	77.79	60.01	3.97	12.06	124764.5
Amazon	1578.89	78.64	1578.94	833.50	-	250.45	764351.99
AmerAir	56.07	2.89	59.08	39.21	0.73	14.03	26528.89
AmerExpr	99.05	3.45	102.39	75.51	1.39	32.53	85210.62
AmerIntGrp	56.57	0.06	67.30	55.07	2.32	-8.44	51052.67
AmerTower	143.58	9.58	155.28	112.78	1.87	52.46	63297.5
Amgen	191.10	6.02	201.23	152.16	2.47	69.30	137699.45
Anadarko	58.03	0.58	64.17	39.96	0.35	-66.60	30900.23
Anthem♦	232.80	-0.28	267.95	158.67	1.19	15.83	59532.06
Aon Cp	148.03	9.54	152.78	115.49	0.98	94.38	36442.1
Apple	179.98	3.77	180.62	137.05	1.40	18.03	913220.86
ArcherDan♦	43.30	1.10	46.39	38.59	3.03	15.14	24136.63
AT&T	37.05	0.70	42.70	32.55	5.45	7.59	227543.79
AutomData♦	118.83	5.23	125.24	95.50	2.02	29.95	52673.73
Avago Tech	253.78	2.91	285.68	208.44	1.68	60.31	104173.4
BakerHu	57.68	-	68.59	43.09	0.56	-197.51	24541.87
BankAm♦	32.72	1.09	32.85	22.07	1.22	20.46	335173.5
Baxter♦	68.89	2.61	72.58	51.03	0.91	51.70	37210.16
BB & T♦	56.03	1.74	56.19	41.17	2.31	19.95	43555.52
BectonDick♦	226.12	8.47	248.39	175.66	1.33	175.07	60202.75
BerkshHat	319600	16500	326350	242180	-	11.41	239298.9
Biogen	286.10	-0.86	370.57	244.28	-	23.41	60528.08
BkNYMeln	57.23	1.86	58.99	45.12	1.54	15.01	57787.95
BlackRock♦	577.18	39.60	594.52	368.00	1.78	18.63	92763.63
Boeing	354.52	9.85	371.60	173.75	1.64	25.75	208631.59
BrisMySq	67.92	1.75	70.05	51.56	2.37	108.62	110885
CapOne	100.79	4.07	106.50	76.05	1.63	26.15	49012.88
CardinalHlth	71.16	2.22	84.88	54.66	2.64	12.09	22394.54
Carnival♦	67.47	2.50	72.70	55.69	2.43	18.35	36052.79
Caterpillar	158.25	11.87	173.24	90.34	2.01	122.52	94574.28
CBS♦	52.18	-1.14	70.10	50.54	1.41	15.81	18009.8
Celgene	92.56	3.23	147.17	86.55	-	24.80	69617.61
CharlesSch	57.70	5.07	57.73	37.16	0.57	34.96	77691.52
Charter Comms	347.59	14.84	408.83	308.30	-	9.95	82902.32
Chevron Corp♦	117.22	5.58	133.88	102.55	3.78	23.58	223919.89
Chubb	144.00	4.14	157.50	133.82	2.01	17.15	66829.14
Cigna♦	173.36	-19.70	227.13	143.85	0.02	19.28	42104.87
Cisco	45.37	1.31	45.89	30.36	2.49	-150.08	218570.76
Citigroup	76.11	2.43	80.70	56.55	1.29	-25.25	195607.7
CME Grp♦	171.42	5.16	171.71	114.82	1.58	14.01	58348.31
Coca-Cola	44.82	1.10	48.62	41.83	3.38	161.94	191197.93
Cognizant	84.71	3.43	84.95	57.00	0.54	32.66	49813.83
ColgtPlm	71.24	1.97	77.91	68.19	2.29	30.48	62358.28
Comcast	37.13	0.64	44.00	34.78	1.74	7.63	172099.91
ConocPhil	55.06	1.00	61.32	42.27	1.97	-76.73	64672.24
Corning♦	29.93	1.13	35.10	26.32	2.12	-44.24	25663.57
Costco	188.58	-0.75	199.88	150.00	1.06	29.27	82821.45
CrownCstl	110.99	6.43	114.97	88.71	3.60	107.20	46024.47
CSX♦	58.00	2.96	60.04	45.41	1.38	9.45	51459.69
CVS	69.27	1.81	84.00	66.45	2.96	10.48	70276.64
Danaher	103.74	7.52	104.82	78.97	0.55	28.91	72365.86
Deere	167.93	14.62	175.26	106.93	1.39	39.14	54373.69
Delphi	48.83	2.13	60.39	31.83	-	14.84	4326.99
Delta♦	56.09	2.83	60.79	43.81	1.85	11.05	39650.77
Devon Energy	32.72	1.36	45.16	28.79	0.75	18.78	17213.99
DiscFinServ	78.42	2.58	81.93	57.50	1.70	14.11	27820.03
Disney	104.73	1.74	116.10	96.20	1.59	14.49	157479.93
DominRes♦	72.87	0.37	85.30	71.91	4.27	15.06	46894.01
DowChem♦	66.65	2.11	-	-	-	-	81542.6
DukeEner♦	76.13	0.78	91.80	72.93	4.70	16.99	53337.08
Eaton♦	83.14	3.44	89.85	69.82	2.96	12.14	36598.23
eBay	43.81	0.86	46.99	31.89	-	-44.99	44339.21
Ecolab	134.91	7.05	140.50	122.58	1.15	25.65	38969.89
Emerson	72.27	2.91	74.45	56.77	2.73	27.22	45879.71
EOG Res	102.80	1.35	119.00	81.99	0.67	22.49	59483.82
EquityResTP	59.51	3.55	70.46	54.97	3.47	35.62	21909.77
Exelon	37.50	0.58	42.67	33.30	3.58	9.21	36188.6
ExpScripts	80.75	5.98	85.07	55.80	-	10.18	45571.02
ExxonMb	74.56	-0.99	89.30	73.56	4.21	15.71	315945.18
Facebook	185.23	8.61	195.32	137.40	-	33.52	443796.56
Fedex♦	247.12	5.81	274.66	182.89	0.75	22.21	66200.88
FordMtr	10.73	0.33	13.48	10.14	5.73	5.51	41873.82
Franklin	40.46	1.67	47.65	37.01	2.10	33.45	22321.93
GenDyn	229.95	6.61	230.00	183.72	1.46	23.46	68279.89
GenElectric♦	14.94	0.82	30.54	13.95	5.76	-21.43	129717.69
GenMills	51.45	0.51	61.34	49.65	3.86	18.40	29277.3
GenMotors♦	37.84	0.41	46.76	31.92	4.12	167.79	53075.53
GileadSci	80.72	2.03	89.54	63.76	2.64	22.43	105740.6
GoldmSchs♦	270.77	12.65	273.79	209.62	1.10	29.32	102862.01
Halliburton♦	46.99	0.96	57.86	38.18	1.57	-89.88	41112.01
HCA Hold♦	103.90	2.52	106.84	71.18	-	17.03	36354.99
Hew-Pack	24.65	1.08	24.75	17.03	2.13	11.09	40459.86
HiltonWwde♦	81.47	2.57	88.11	55.79	0.75	20.64	25754.14
HomeDep♦	182.16	3.70	207.61	144.25	1.93	24.19	212717.09
Honywell	154.21	6.07	165.13	122.40	1.82	70.30	115966.23
HumanaInc	272.50	2.70	293.35	203.48	0.71	15.81	37628.76
IBM♦	159.31	4.82	179.49	139.13	3.80	25.31	146751.26
IllinoisTool	170.30	11.74	179.07	129.17	1.72	34.18	58165.24
Illumina	250.12	20.93	250.67	158.02	-	49.59	36767.64
Intcntl Exch	75.73	3.19	76.14	57.91	1.08	17.46	44097.15
Intel	52.19	3.21	52.30	33.23	2.12	25.58	243622.92
Intuit	177.17	8.33	177.51	114.80	0.80	49.91	45375.2
John&John♦	133.80	4.98	148.32	120.95	2.54	277.71	358972.23
JohnsonCn	38.54	2.27	44.37	34.51	2.69	23.35	35692.1
JPMrgnCh	118.04	4.72	119.33	81.64	1.84	18.25	405108.38
Kimb-Clark♦	111.94	-0.61	135.22	109.51	3.55	17.06	39258.06
KinderM	16.33	0.23	21.92	15.86	3.14	1593.53	36025.07
Kraft Heinz♦	67.23	0.06	93.88	66.36	3.74	7.33	81945.03
Kroger	24.08	-3.27	31.45	19.69	2.10	13.73	21223.19
L Brands	42.26	-1.09	63.10	35.00	5.93	12.34	11928.53
LasVegasSd	76.47	4.96	79.84	53.38	3.91	21.07	60325.79
LibertyGbl	33.69	1.99	39.73	28.17	-	-14.35	7402.48
Lilly (E)	79.61	2.38	89.09	73.69	2.68	-408.76	87220.52
Lockheed♦	340.49	-1.23	363.00	264.04	2.25	50.02	97233.98
Lowes	87.28	1.94	108.98	70.76	1.82	20.09	72421.5
Lyondell♦	112.28	5.07	121.95	78.01	3.24	8.92	44300.78
Marathon Ptl♦	70.22	5.03	73.53	47.78	2.22	10.22	33311.72
Marsh&M	85.87	3.25	86.54	71.79	1.71	29.19	43589.45
MasterCard	183.24	8.22	183.33	110.13	0.37	48.97	190065.01
McDonald's♦	157.24	8.97	178.70	127.35	2.50	24.08	124926.85
McKesson♦	155.79	5.89	178.86	133.82	0.82	6.92	32145.6
Medtronic	83.15	4.82	89.72	76.52	2.12	41.80	112699.3
Merck	55.14	0.78	66.41	53.12	3.51	61.83	148667.94
Metlife♦	47.84	2.34	55.91	43.38	3.43	10.30	49592.99
Microsoft	96.54	3.49	96.54	64.12	1.69	76.57	743338
Mnstr Bvrg	58.06	3.90	70.22	44.35	-	39.89	32885.34
MondelezInt	44.27	-0.15	47.23	39.19	1.90	22.61	65844.03
Monsanto	123.51	0.78	124.20	111.92	1.79	22.37	54450.39
MorganStly	58.67	3.93	58.79	40.06	1.57	18.58	105127.63
MylanNV	42.51	1.54	47.82	29.39	-	31.90	22797.29
Netflix	331.44	30.39	331.44	138.66	-	258.66	143827.88
NextEraE♦	154.81	1.96	159.64	127.09	2.60	13.27	72883.61
Nike♦	66.30	0.41	70.25	50.35	1.14	28.02	86049.1
NorfolkS♦	145.53	6.87	157.15	109.27	1.72	7.63	41330.12
Northrop♦	349.64	6.59	359.43	233.20	1.14	29.74	60867.98
NXP	123.68	-0.41	125.93	102.60	-	20.77	42793.63
Occid Pet♦	63.67	-1.97	78.09	57.20	4.93	36.54	48717.02
Oracle	52.97	2.65	53.14	42.25	1.39	22.19	219274.72
Pepsico♦	112.54	3.50	122.51	106.19	2.89	32.48	159796.48
Perrigo♦	84.95	1.96	95.93	63.68	0.77	98.66	11963.81
Pfizer	36.77	0.82	39.43	31.67	3.57	10.19	218886.84
Phillips66	95.91	4.54	107.47	75.14	2.92	9.50	48073.67
PhilMorris	108.30	1.49	123.55	96.66	3.99	27.23	168214.8
PNCFin	162.45	5.02	163.59	115.25	1.64	15.30	76609.86
PPG Inds♦	117.65	7.40	122.07	100.45	1.48	21.57	29398.45
Praxair♦	160.09	10.66	166.95	115.67	2.02	36.15	45967.7
Priceline	1905.64	20.64	2067.99	1612.41	-	39.47	92937.2
ProctGmbl	80.29	0.79	94.67	77.90	3.50	20.83	202411.39
Prudntl♦	110.30	4.70	127.14	97.88	2.79	6.02	46546.6
PublStor	199.96	4.96	232.21	180.48	4.10	28.98	34809.95
Qualcomm♦	63.03	-1.71	69.28	48.92	3.64	-21.65	93307.3
Raytheon	214.81	0.03	222.82	148.65	1.52	30.19	61973.97
Regen Pharm	341.70	11.23	543.55	313.53	-	32.24	36146.89
ReynoldsAm	65.40	0.40	-	-	-	-	-
S&P Global♦	194.96	5.94	196.14	127.28	0.86	32.90	49500.34
Salesforce	127.41	5.49	127.50	80.50	-	-	92028.24
Schlmbrg♦	68.78	3.31	80.89	61.02	2.98	-62.13	95326.13
Sempra Energy	109.08	1.99	122.98	100.63	3.09	105.36	27850.77
Shrwin-Will	421.16	30.92	435.15	305.70	0.83	21.50	39631.65
SimonProp	156.57	1.05	176.17	150.15	4.68	24.48	50153.88
SouthCpr	54.56	1.61	55.52	32.63	1.11	56.62	42176.43
Starbucks	58.46	1.53	64.87	52.58	1.84	18.82	82171.38
StateSt	109.83	5.55	114.27	75.27	1.49	20.45	40379.35
Stryker	166.41	5.61	170.00	129.03	1.07	60.57	62344.19
Sychrony Fin	37.28	1.35	40.59	26.01	1.54	15.03	28340.89
Target♦	70.49	-4.66	78.70	48.56	3.58	14.21	38316.44
TE Connect	105.75	4.37	108.23	71.93	1.52	30.08	37140.07
Tesla Mtrs	327.17	-7.95	389.61	242.78	-	-26.98	55265.54
TexasInstr	111.53	3.31	120.75	75.92	1.95	30.14	109721.82
TheTrvelers♦	142.30	4.42	150.55	113.76	2.04	18.94	38624.2
ThrmoFshr	217.89	11.45	226.44	151.74	0.28	37.96	87544.73
TimeWrnr	95.26	1.68	103.89	85.88	1.73	14.00	74288.67
TJX Cos	82.67	-0.98	84.79	66.44	1.45	21.40	52272.45
T-MobileUS	65.25	2.78	68.88	54.60	-	12.24	55751.47
UnionPac♦	137.28	8.78	143.05	101.06	1.85	10.02	106983.03
UPS B	110.38	5.01	135.53	102.12	3.08	19.19	75969.24
USBancorp	55.28	1.87	58.50	49.54	2.15	15.36	91257.93
UtdHlthcre♦	225.43	0.24	250.79	162.74	1.31	20.51	218140.25
UtdTech♦	134.07	4.13	139.24	107.05	2.08	22.95	107226.28
ValeroEngy	94.32	2.12	99.95	60.69	3.04	10.04	40857.18
Verizon	49.01	0.75	54.77	42.80	4.88	6.50	199935.62
VertexPharm	176.26	6.20	176.31	88.90	-	165.33	44751
VF Cp♦	73.59	0.07	84.38	51.22	2.40	40.11	29192.45
Viacom	32.72	-1.37	46.72	22.13	2.51	6.38	11547.25
Visa Inc	124.51	3.74	126.88	87.85	0.57	40.35	224444.79
Walgreen♦	70.60	0.02	87.79	63.82	2.25	19.04	69941.22
WalMartSto	88.72	-0.05	109.98	69.33	2.39	22.60	265024.53
WellsFargo	58.23	0.82	66.31	49.27	2.71	13.85	284031.61
Williams Cos♦	28.00	0.89	33.67	26.65	4.39	10.43	23165.17
Yum!Brnds	82.95	2.66	86.93	62.85	1.48	21.46	27581.96
Venezuela (VEF)							
Bco de Vnzla	26390	16590	26390	330.00	34.20	-	2409.22
Bco Provncl	620000	-35000.00	775000	5000	-	44.03	1673.42
Mrcntl Srvcs	2000000	1000000	2000000	15000	0.00	262.98	3047.86

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

[illegible]

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 %
Kroger	24.08	22.98	1.10	4.79	-3.27	-12.0	-13.20
AXA	22.49	22.66	-0.17	-0.73	-2.56	-10.2	-9.71
Cigna	173.36	171.96	1.40	0.81	-19.70	-10.2	-10.53
Firstrand	66.42	69.51	-3.09	-4.45	-7.38	-10.0	-0.30
Nppn Stl	2343.00	2359.50	-16.50	-0.70	-174.00	-6.9	-10.46
Takeda Ph	5618.00	5771.00	-153.00	-2.65	-402.00	-6.7	-7.74
[illegible]							

Based on the FT Global 500 companies in local currency

BONDS: HIGH YIELD & EMERGING MARKET

Mar 09	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$										
Qwest Capital Funding, Inc.	08/21	7.63	B+	WR	BB	102.61	6.75	0.00	0.02	-
High Yield Euro										
Astaldi S.p.A	12/20	7.13	CCC+	-	B	80.15	16.43	-0.07	1.60	-
[illegible]										

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

Mar 09	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
US$										
FleetBoston Financial Corp.	01/28	6.88	BBB+	Baa2	A-	115.91	4.83	0.06	0.23	1.93
FleetBoston Financial Corp.	01/28	6.88	BBB+	Baa2	A-	115.91	4.83	0.06	0.23	1.93
NationsBank Corp.	03/28	6.80	BBB+	Baa2	A-	115.98	4.77	0.06	0.23	1.87
NationsBank Corp.	03/28	6.80	BBB+	Baa2	A-	115.98	4.77	0.06	0.23	1.87
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INTEREST RATES: OFFICIAL

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INTEREST RATES: MARKET

[illegible]

BOND INDICES

[illegible]

VOLATILITY INDICES

[illegible]

BONDS: BENCHMARK GOVERNMENT

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GILTS: UK CASH MARKET

[illegible]

GILTS: UK FTSE ACTUARIES INDICES

[illegible]

COMMODITIES

[illegible]

BONDS: INDEX-LINKED

[illegible]

BONDS: TEN YEAR GOVT SPREADS

[illegible]

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

Teaching an old dog millennial tricks

Fabrizio Freda

Estée Lauder's ageing marque has been revived by its chief executive's reverse mentor scheme. By Scheherazade Daneshkhu

Fabrizio Freda has a younger mentor who teaches him how to use Facebook but 'most importantly, I learn what's cool' — Charlie Bibby

Fabrizio Freda, chief executive of Estée Lauder, grew up in Naples, though his business inspiration comes from an Italian born in Florence: Niccolò Machiavelli.

I remind him that he once cited *The Prince*, written in 1513, as the book that had most influenced his leadership style. He reminds me that his admiration is "not about the Machiavellian way to do things. No, I don't stand at all behind that." What he does admire is that "at a time when analytics were not invented, [it offers] the idea you really need to understand the environment you are in, to determine the right strategies for that environment".

Appropriately, Mr Freda's deployment of analysis and data has been a key feature of his nine-year tenure at the 72-year-old US cosmetics group, analysts say. His big success has been in getting younger customers to buy an ageing brand, although the family-controlled company also owns a host of others, including Clinique, Jo Malone, MAC and Bobbi Brown.

In the luxurious Claridge's Hotel suite hired for our interview, Mr Freda, 60, assures me that his own room is nowhere near as sumptuous.

It was in this London hotel over dinner in 2007 that Leonard Lauder, son of founders Estée and Joseph, and chairman emeritus, persuaded the former Procter & Gamble executive to join the company. "Actually, to persuade my wife," Mr Freda says, "because, kindly, Leonard wanted to make sure that all my family would be happy to live in New York. So this was the hotel where the family decision happened, more than the professional decision."

Mr Freda replaced William Lauder, grandson of Estée Lauder, who launched her first face creams in 1946.

Mr Lauder described leading a publicly listed family company as "a life sentence". During his rocky five-year tenure, the group's market value shrank. Since Mr Freda arrived in July 2009, it has risen almost eight-fold from $6.6bn to $53bn. Estée Lauder's shares have outperformed the S&P 500 Personal Products index by 300 per cent and French rival L'Oréal by 165 per cent over the same period.

About seven years ago, Mr Freda set up "the compass", an in-house team of five people who forecast beauty industry trends up to 10 years ahead. The compass is updated every two years. Mr Freda says the direction it sets has "so far proven to be absolutely accurate".

He cites the recent pick-up in skincare sales after years of explosive growth in make-up. This time, the skincare trend is driven by products promising instant results, rather than traditional anti-ageing products. These include Glamglow, which specialises in 10-minute face masks to make skin "camera ready". Its revenues have doubled since it was bought by Estée Lauder three years ago.

Millennials are avid buyers of cosmetics and appealing to them is crucial for Estée Lauder, given its traditionally older customer base. These younger consumers have 10 lipsticks for every three their mothers had, says Mr Freda; and, unlike their parents, who tend to be loyal to one fragrance, they buy several. His own son, he says, "changes fragrances like he changes shoes".

> **'You should never let a big crisis pass without taking advantage of doing all the changes'**

Though Mr Freda does not say so, Estée Lauder has been playing catch-up to bigger rival L'Oréal, which was quicker to sell online and embrace digital technology, while Estée Lauder kept its focus on department stores.

In response, Mr Freda hired more millennials, who now make up 67 per cent of the company's workforce. And he launched a reverse mentoring scheme for senior leaders, which pairs them with younger colleagues. His own reverse mentor taught him how to use Facebook but "most importantly, I learn what's cool". The two meet once a month. She "shows me what's new on Instagram, or YouTube or the new cool retail model that she would shop in. And beyond that, she then gives me her point of view, of where are our gaps. This happens to me and to all my direct reports at the same time, so it's a big cultural push to wake up."

The scheme launched in the US and Canada in 2015 with 40 young mentors. There are now more than 300 in 20 or so countries.

One of the company's initiatives, Estée Edit, a range fronted by model and reality star Kendall Jenner, was pulled last year after 18 months, as sales fell short of expectations. "In the end, it was not authentic," Mr Freda says. Nevertheless, the venture raised the profile of the flagship Estée Lauder brand, he says. More than half of those buying that brand in China are millennials, and in the US its proportion of millennial customers has doubled in the past three years, according to the company.

Mr Freda also acquired on-trend make-up brands, including Smashbox (2010), Becca and Too Faced (both in 2016), lessening the group's historic dependence on skin care.

According to San Francisco-based Tribe Dynamics, which analyses the impact of social media trends on business performance, L'Oréal still outperformed Estée Lauder last year on this metric — but not by much — and both are well ahead of Coty, the third-largest cosmetics group.

Looking back, Mr Freda says his big contribution has been developing what he calls "multiple engines of growth" to reduce traditional dependence on the US market, on skincare, and on the department stores that Estée once toured to sell her products. He has also pushed further into Asia and Latin America.

These measures contributed to Estée Lauder bucking the low-growth trend that has afflicted most consumer goods groups in recent years.

Though Mr Freda's arrival coincided with the financial downturn, he believes that made it easier to push through his changes. "You should never let a big crisis pass without taking advantage of doing all the changes, because during a normal period it's less clear to the people why they have to change, and there is more resistance," he says.

A sentiment with which Machiavelli would surely have agreed.

Ask an outsider

Competitive advantages are fragile, so to thrive in the long term, companies have to continue to reinvent themselves, says Veronique Nguyen, an adjunct professor of strategic management at HEC Paris.

"Estée Lauder provides a good example of embracing and driving change, by means of product, brand and marketing innovation," she says.

But Prof Nguyen suggests the company could go further, and recombine existing assets with input from complementary partners — these might include other companies — to help develop new businesses.

She cites tyre manufacturer Michelin as an example: "It has exploited market opportunities and runs a portfolio of business models."

One of these is Michelin Solutions. Set up in 2013, Prof Nguyen points out that it provides services that help fleets of business vehicles to save fuel and reduce operating costs and emissions. "These services involve partner companies," she says, "that ensure the maintenance of vehicles in the field with their own network of service stations."

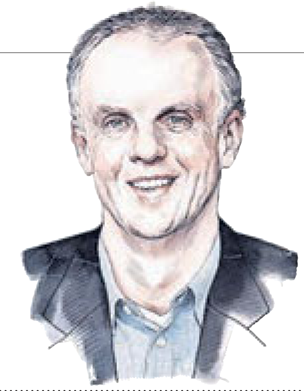
Janina Conboye

FT Week ahead

The FT's take on what to look out for in the coming week now runs online only. For guidance on what is happening in markets, economics, companies and politics, go to: ft.com/weekahead

THE AUTHORITY ON GLOBAL FUND MANAGEMENT | FINANCIAL TIMES | Monday March 12 2018

FTfm

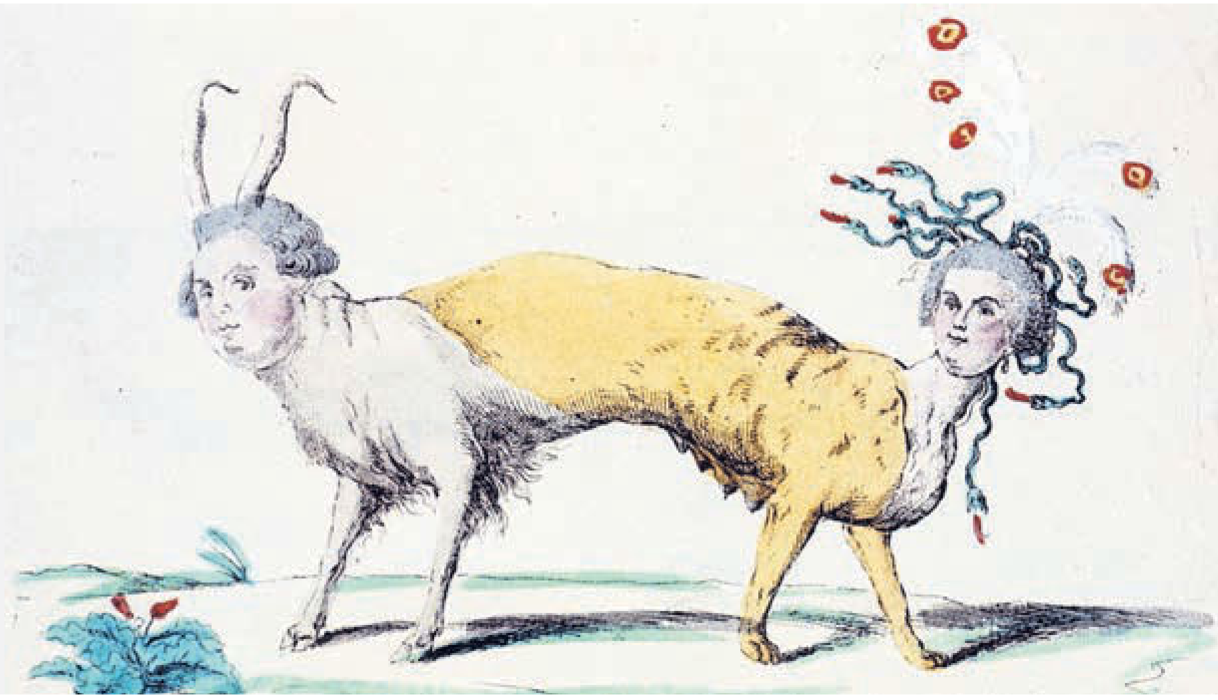


Ian Simm
From natural sciences to Impax Asset Management
PAGE 4

Investors loathe two-headed monsters

A small but significant number of asset managers are embracing a leadership structure that has been tried — and has often failed — at a range of companies.

For boards and management teams overseeing co-chief executives, there are challenges to overcome. Investors typically loathe two-headed monsters due to the lack of clarity over who has ultimate control, the potential for internal conflict and the doubling of big pay packets.
PAGE 6



Universal History Archive/UIG via Getty images

Wall St's February shake-up forced $23.5bn out of funds that track US equities

Volatility drives ETF outflows

CHRIS FLOOD

The blast of volatility that shook Wall Street in February drove investors to pull money from exchange traded funds that track US equities for the first time in two years.

The US withdrawals have raised questions over whether the ETF industry can sustain its breakneck pace of expansion after four consecutive years of record breaking growth that have pushed global ETF assets above the $5tn mark.

Investors have poured more than $1tn in new money into US-listed equity ETFs over the past five years, helping to fuel a bull run for the US stock market which hit an all-time high on January 26. But worries about high valuations and rising interest rates triggered a correction for the benchmark S&P 500 index which dropped 10 per cent by February 8 in volatile trading conditions.

The correction was accompanied by net outflows of $23.5bn last month from ETFs that track US and Canadian equities, according to ETFGI, a consultancy.

Investors also pulled $5bn in February from ETFs linked to bonds issued by US companies amid concerns that the US central bank could increase monetary tightening in response to inflationary pressures.

State Street, the manager of the largest ETF that tracks the S&P 500 index, saw net outflows of $25.3bn from its US ETF business last month while Invesco, which oversees the most popular ETF tracking the Nasdaq index, registered US withdrawals of $2bn. WisdomTree, the New York-listed manager that some observers believe is a potential target for others that want to expand their ETF presence, saw US outflows of around $790m in February. In contrast, BlackRock and Vanguard, the world's largest asset managers, both attracted positive US inflows, but at a slower rate than last year.

Matthew Bartolini, who oversees US ETF research for State Street, said the US stock market had "stumbled [last month] after an exuberant sprint" in January. He added that the "big question" was whether the developments in February marked the end of the bull market for US stocks and bonds.

He said the recovery for the
continued on page 2

Managers set aside millions for Mifid costs

OWEN WALKER

Asset managers are setting aside tens of millions of dollars after agreeing to swallow the cost of paying for investment research following the introduction of wide-ranging European market rules this year.

The additional costs are hitting fund manager profit margins just as they are coming under intense pressure to reduce fees.

The Markets in Financial Instruments Directive, or Mifid II, brought sweeping changes to Europe's finance sector in January, including requiring fund managers to pay directly for research rather than receiving it for free from brokers and investment banks. Almost all investment houses opted to shoulder the cost of research rather than pass it on to clients.

Janus Henderson, the newly merged US-Australian group with $371bn assets under management, has estimated the cost of paying for research at $19m a year. Man Group, the listed UK manager that oversees $109bn, has set aside up to $15m.

Jupiter, the UK fund house with £50bn ($69bn) under management, said its decision to include research costs within its own income statement would mean £5m of expenses.

"Margins are definitely under a lot more pressure compared to what they were a few years ago and these extra costs are having a further
continued on page 2

INSIDE

Brussels sharpens sustainable focus

EUROPEAN COMMISSION

Plan would force asset managers to consider environmental factors

JENNIFER THOMPSON — LONDON
JIM BRUNSDEN — BRUSSELS

Asset managers and investors not already considering sustainability factors when they make investments may soon be compelled to do so under new proposals from Brussels.

The European Commission said it intends to put forward a legislative proposal by the end of June making it clear that institutional investors and asset managers have a duty to consider sustainability when they make investments. It added that existing EU regulation in this area is "neither sufficiently clear nor consistent across sectors".

The disclosure came as part of a set of proposals on sustainable finance announced by the commission on Thursday as it looks to encourage green investments and mitigate the risks to investors posed by climate change. It estimated that financial losses from extreme weather around the world were €117bn in 2016, an 86 per cent increase since 2007.

Institutional investors could find themselves duty bound to consider how their investments will have an impact on global warming and rising sea levels — Christian Charisius/dpa

However, the proposal was greeted with dismay by the industry with the European Fund and Asset Management Association, saying it disagreed with the view that asset managers are "not systematically considering sustainability in the investment process".

The trade body said that, while it was supportive "of the overall direction" of the commission's efforts to promote sustainable investment, making such a requirement more explicit in law would "turn ESG to a 'tick the box' compliance exercise". It said "consideration of sustainability objectives has to be driven by asset owners".

Andrew Howard, head of sustainable research at Schroders, said the commission's plan to create an EU labelling system for green financial products could also be problematic.

"The field has not yet reached the maturity needed to define the characteristics of sustainable investment practices or products," he said. "Attempting to do so risks shutting off the innovation and deeper understanding that many investors — ourselves included — strive to develop."

Brussels plans to create a European classification system defining what qualifies as a "sustainable" investment that can be enshrined in law. It is also considering whether to ease regulatory capital charges for banks on loans for projects that are deemed environmentally sound.

The commission said it will explore "the potential calibration of capital requirements of banks" backing sustainable investments, should this pose no risk to financial stability.

"If we manage to get it right it could encourage banks and other financial institutions to provide more capital to sustainable investments, but of course you have to be very cautious," said Jyrki Katainen, a vice-president of the European Commission. "Green investment doesn't necessarily mean that it is risk free. We don't want to do anything that would undermine financial stability . . . we need more facts before acting."

A so-called green "supporting factor" would be controversial as toughening capital requirements has been one of the main ways regulators have sought to strengthen the banking system in the decade since the financial crisis.

"There is a danger of unintended consequences further down the line," said Mr Howard.

One specific area of research for Brussels will be the idea that people who buy energy-efficient homes may find it easier to pay their mortgage because of lower heating bills, potentially justifying lower risk weights on those home loans. "If the link is robust enough we intend to act on it," one official said.

Volatility drives ETF outflows

continued from page 1

S&P 500 after February's correction suggested that the stock market had "got away with just a skinned knee, not a broken ankle".

Bank of America Merrill Lynch noted that its proprietary Bull and Bear barometer returned to signal a "buy" for equities at the start of March after surging to an extreme level in February and delivering a clear "sell" warning.

Earnings for the US stock market are forecast to rise by around 19 per cent in 2018 but uncertainty over the outlook for equities has been amplified by President Donald Trump's decision to impose tariffs on imports of steel and aluminium, a move that threatens to spark a damaging trade war with the EU and China.

That threat led an acceleration in outflows in the first week of March with investors pulling a further $10bn from US equity funds, according to EPFR, the data provider.

"A trade war would represent a real source of uncertainty. President Trump's new tariff policy will have a larger impact on fund flows if the situation escalates," said Matthieu Guignard, global head of product development for Amundi, the French asset manager.

> 'President Trump's new tariff policy will have a larger impact on fund flows if the situation escalates'

Deborah Fuhr, co-founder of ETFGI, noted that February's outflows from US ETFs were not matched by withdrawals in either Europe or Asia.

"European listed ETFs have attracted inflows of around $25.9bn already this year. Growth should accelerate as regulatory changes, such as Mifid II, will help to spur adoption across Europe where usage by retail investors in particular remains far lower than in the US," said Ms Fuhr.

Assets held in ETFs listed in Europe will almost triple from $811bn currently to around $2.2tn by the end of 2022, according to Citi, the US investment bank.

Citi added: "We expect ETFs share of the overall European fund market to rise to match that in the US. ETFs represent 17.7 per cent of the $19.3tn US fund market, but currently only 4.7 per cent of the $17.4tn invested in European funds."

Fund managers set aside millions for Mifid

continued from page 1

impact," said Marina Cremonese, an analyst covering fund managers at Moody's, the credit rating and research company.

The initial figures are significantly below some industry estimates before the rules were brought in. A survey of members of the CFA Institute, the investment association, in November showed respondents expected to pay a median of 10 basis points of assets under management for research each year, or $1m costs for every $1bn of assets.

But the early estimates from fund companies put the outlay at less than a tenth of those figures. Moody's said the wider impact of complying with Mifid II would increase fund manager spending by 0.5-5 per cent, including compliance, disclosure, budgeting, audit requirements and research.

Some larger managers have played down the significance of the added costs. Invesco, the US manager with $938bn of assets, said it did not expect the expenditure to be material to its financial statements.

Meanwhile, Peter Harrison, chief executive of Schroders, the UK's second-biggest listed house with £447bn under management, said its investment in an internal research team meant the impact would be minimal.

The additional costs are likely to be much tougher for smaller managers, which are expected to reduce the amount of research they use.

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NEWS

Women facing battle to get on corporate ladder

DIVERSITY

Greater boardroom representation not matched at lower level

JENNIFER THOMPSON

Greater representation of women on company boards has not been accompanied by increases on the lower rungs of the corporate ladder, suggesting diversity initiatives targeting top executives are working but more needs to be done to improve the gender balance of companies as a whole.

A report from Thomson Reuters found the average proportion of female employees in 3,411 companies worldwide was 34.1 per cent in 2016, down from 34.2 per cent in 2011, while the proportion of female managers fell from 25.6 per cent to 25.3 per cent.

However, the number of female executives at those companies rose from 10.6 per cent to 12.5 per cent, with an even larger jump at the board level, up from 10.3 per cent to 16.8 per cent.

"The picture we see across the [whole] corporate level hints at the challenge," said Elena Philipova, global head of environmental, social and governance issues at Thomson Reuters, adding that the pattern was "concerning".

Pavita Cooper, a member of the steering committee at the 30% Club campaign group, said in some sectors there were more women than men at the entry level. "The issue is the rate at which women are progressing," she added. "Some of this is going to require wider societal change."

Gender diversity is a topic of increasing importance to large investors, partly due to a recognition it can improve financial performance and cut risk.

Last month, 27 global investors with £10.5tn of assets under management, including Japan's Government Pension Investment Fund and BlackRock, signed up to an initiative pushing for 30 per cent of women on FTSE 350 boards and 30 per cent of women in senior management at FTSE 100 companies by 2020.

Efforts to increase numbers of female directors are having some success — Getty

> "The issue is the rate at which women are progressing"

Ms Philipova said there had been "a marked increase in the number of investors utilising environmental, social, and governance [ESG] factors for their investment decisions as they look to enhance returns, better manage risks and align their portfolios with industry trends and sentiment".

Lawmakers in some European countries have also been pushing for more women in senior management and on boards. France, which of the ten largest economies in the survey had the highest proportion of women on boards at 39.6 per cent in 2016, passed a law in 2011 requiring boards of CAC 40 companies to have women account for at least 40 per cent of their members by 2017. Norway has also introduced board diversity quotas.

In Japan the proportion of women on boards was just 3.9 per cent. However, an increase in the number of companies reporting on their gender diversity composition over the past five years has laid bare imbalances across companies as a whole despite the success of top-down measures.

Companies with more even gender representation at a lower level tended to have more diversified boards, the research showed. Food and drug retailers, for example, had the highest female board representation with 21.5 per cent and an above-average proportion of female employees of 54.7 per cent.

Movers & shakers

• **Vanguard**, the world's second-largest asset manager, has hired **David He** as chief operating officer for China, a newly created role based in Shanghai. Mr He previously worked for Fidelity International.

David He

• **State Street Global Advisors** has promoted **Lochiel Crafter** to head of its global institutional group with responsibility for distribution efforts worldwide. Mr Crafter will be replaced as head of Asia Pacific for the $2.8tn asset management arm of State Street, the US-listed bank, by James MacNevin, SSgA's chief operating officer for the Asia Pacific region.

Caroline Baron

• **Hearthstone**, the £200m residential property investment specialist, has appointed **Cedric Bucher** as chief executive. He succeeds Alan Collett who will remain as chairman. Mr Bucher joins from Cardano, the investment adviser.

Lochiel Crafter

• **Michael Reinhard** will move in April to **Universal Investment** as chief operating officer for the €355bn German fund service provider. Mr Reinhard is joining from Axa IM.

Stephanie Carbonneil

• **Tim Williams** has joined **HSBC Global Asset Management** as head of real estate investment in its alternative investments arm. Mr Williams previously worked for CBRE, the property group. Sonal Saluja has also joined the team from 90 North Real Estate, the property adviser.

• There are two new senior US business development directors at **Investec Asset Management** as it looks to expand in North America. **Loc Vukhac** and **Matt Hagbom** join from BlackRock and Mercer Investments respectively.

• **Franklin Templeton**, the $770bn California-based asset manager, has hired **Caroline Baron** as head of ETF sales for the Emea region. Ms Baron previously worked for Invesco.

• **Lee Matthews** has moved to **AllianceBernstein** as UK sales director for the $569bn US asset manager. He joins from Standard Life Aberdeen.

• **Stanhope Capital**, the $10bn London-based investment boutique, has hired **Alex Kershaw** as a partner in the portfolio management team. A former UK diplomat, Mr Kershaw previously served as head of the London office for Cambridge Associates, the investment consultant.

• **Stephanie Carbonneil** has moved to **Amundi** as head of third party distribution for UK, Ireland and Greece for the €1.4tn Paris-listed asset manager. Ms Carbonneil, who will be based in London, previously worked for Schroders.

• The **Securities and Exchange Commission**, the US regulator, has appointed **Heidi Stam**, a former general counsel at Vanguard, to the SEC's investor advisory committee.

FACE TO FACE

Zigzag route leads Simm to green fund management

Impax Asset Managment	
Assets	**£11.2bn** (at 31/01/2018)
Employees	**130**
Headquaters	**London, UK**
Ownership	**Listed on Aim (24% BNP Paribas Asset M'ment; 33% staff interests; 43% free float)**

INTERVIEW

An interest in how money can change environment defines scientist's journey

ATTRACTA MOONEY

Ian Simm runs one of the UK's fastest-growing asset managers. But the way he tells it, his career in the investment industry was a happy accident.

Instead of joining a graduate programme or serving time as an analyst, the chief executive and founder of Impax Asset Management's 10-year route into asset management took several detours.

"Do you want the long or the short version?" he jokes, when asked how he found himself in the sector.

Even the short version is far from concise. It starts at Cambridge university, where Mr Simm ran the expedition society. Interested in nature and the environment, he read Our Common Future, a report written by former Norwegian prime minister Gro Harlem Brundtland in 1987, which set out the idea of sustainable development where the consumption of current generations does not affect the choices of those of the future.

"I read the book, drank the Kool-Aid. I was particularly interested in how money solved environmental problems."

Ten years of a "zigzag career" later, which included an expedition to west Africa to track vegetation on the edge of the Sahara desert (where he caught malaria), a stint in environmental consultancy, a masters degree and an attempt to set up a business to sell solar lighting systems in South Africa, Mr Simm found himself at the predecessor company to Impax AM.

Impax, which celebrates its 20-year anniversary this year, has since grown to become the "world's largest investment manager dedicated to investing in the environmental space", Mr Simm says.

Listed on the junior stock market in London, the company now has more than $15bn in assets under management, which rose 60 per cent last year. Assets have been further boosted by the recent acquisition of Pax World, a US fund house.

The 2015 Paris Agreement, where global governments agreed to tackle climate change, has also spurred growth. Wearing a blue and white check shirt and no tie, Mr Simm says the Paris accord strengthened the case for sustainable investing — and helped draw investors to Impax.

"There's been a recognition through the Paris discussions and publicity that climate change is a serious risk," he says. "[The agreement] demonstrates that there is a high likelihood that governments are going to be strengthening clean energy markets, and probably infrastructure and water supply markets, and generally supporting the transition to a more sustainable economy."

Millennials are also helping to drive growth, he says. "The millennial generation are definitely putting pressure on their private wealth managers to find ways of managing money that are consistent with a more sustainable planet."

Impax invests in listed equities it believes tap into the shift towards a greener future. It also offers fixed income and smart beta products since its acquisition of Pax, one of the world's first socially responsible asset managers.

The fund house has invested in infrastructure projects for 13 years, including wind, solar and hydro power. "There's a whole revolution under way in the power space, as clean energy becomes cost competitive, largely without a subsidy," he says. By last year, renewable energy accounted for almost a third of electricity generated in the UK.

Pension funds and other investors, meanwhile, have increasingly looked to infrastructure in recent years. The sector has tripled in size since 2009, according to Preqin, the data provider, with assets under management at a record high of $418bn in June.

But there are concerns about the risks in infrastructure projects generally, as well as in renewable energy, particularly after a spate of bankruptcies among developers in the solar and wind industries in recent years.

Mr Simm plays down concerns about such risks, saying they are usually simple projects that generate steady long-term yields. But he admits Impax has avoided infrastructure projects in the UK, where he says energy policies have been "turned upside down" in recent years.

"If you go to France or Germany or most other European countries, then there is very solid regulation around the economics of new projects, and a very well-established and diverse development community that's looking for capital," he says.

Along with projects in continental Europe, Impax has in recent years increasingly looked there for its clients too.

"Our older client base is in the UK, and we are very committed to carrying on serving those clients and we are seeing growth. But the biggest growth is coming from places like Scandinavia, France, Benelux," he says. British investors account for less than 10 per cent of the company's total assets under management.

This poses a challenge for the fund house as the date for the UK's exit from the EU edges closer. There are widespread and growing fears that British asset managers could in the future find themselves cut off from European investors.

Mr Simm says the company has a contingency plan, but admits it needs to be more detailed. He adds: "The history of EU regulations is that they wait, literally, to the night before. Then they stay up all night, and they come away with a deal. If they do that [for Brexit], then half the economy is going to disappear by the time they come out of their dark room."

The conversation returns to the rapid changes emerging in response to climate change, such as the growth of battery-powered cars. A physicist by training, it is clear that the technology and science behind the companies he invests in excites him, but he does not own a Tesla electric car, as much as he would like to.

The father-of-two seems happy that he ended up accidentally running an asset manager. "I have a very powerful reason for being in the space I'm in," he says. "I do look around and wonder what it is that motivates a lot of my peers in investment management in general. Why are they doing it? Is it just to make lots of money for themselves, or do they have a vocation for what they're doing?"

CV

Born
1966, West Yorkshire, UK

Education
1988, Cambridge university; natural sciences (physics) degree
1993, Harvard university; public administration masters degree

Career
1990-91, Consultant — Environmental Resources Management;
1993-95, Engagement manager — McKinsey & Co;
1996-97, Director — Impax Capital;
1998-date, Founder and chief executive — Impax Asset Management

Pay
£852,546 *(including long-term incentives, 2017)*

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MANAGING ASSETS FOR INSURERS UK

Finding Returns in Uncertain Times

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CEO
AXA UK & Ireland

Guillermo Donadini
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Richard Pereira
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18 April | Millennium Mayfair, London

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Investors run scared from two-headed chief monster

A medieval image of the Amphisbaena, a Greek mythological creature with a head at each end — Alamy

Sharing the hot seat between co-CEOs is catching on, but the structure can store up trouble, writes *Owen Walker*

Gerry Grimstone, the City grandee who chairs Standard Life Aberdeen, is getting used to dealing with questions from shareholders over his company's unusual leadership set-up.

"Of course people ask questions, such as 'would it not be better to have one chief executive?' " says Sir Gerry, who helped bring together Standard Life and Aberdeen Asset Management last year. The deal led to the bosses of both companies, Keith Skeoch and Martin Gilbert, becoming co-heads of the combined group.

"It was a decision that was taken because we wanted to do it, not one forced upon us by dynamics of the deal," Sir Gerry adds. "The reason we wanted to take it was we knew we were creating a very complex global company."

SLA is one of a small but growing number of asset managers embracing a management structure that has been tried — and has often failed — at companies such as Deutsche Bank, Citigroup, Oracle, Whole Foods and Chipotle.

For boards and management teams overseeing such leadership set-ups, there are several challenges to overcome. Investors typically loathe two-headed monsters due to the lack of clarity over who has ultimate control, the potential for internal conflict and the doubling of big pay packets.

Defining responsibilities

In response to initial investor concerns, SLA outlined the roles for Mr Gilbert and Mr Skeoch soon after the deal was announced. Mr Skeoch was to focus on the company's operations and investments, while Mr Gilbert would have a more external-facing role, dealing with business development, client relations and marketing.

But those working closely with the company say these divisions are not as clearly defined as they appear. At a recent company away day focusing on investment strategy, for example, Mr Skeoch was absent, but Mr Gilbert and Rod Paris, the company's chief investment officer, ran the discussions. Sir Gerry says such overlapping is inevitable given the fact both chief executives are used to having complete oversight of a business.

Debra Brown, an associate at Russell Reynolds, the recruiter, says the success of dual chief executive structures is rooted in the personalities involved. "If you have two very different individuals who complement each other — Mr Ying and Mr Yang — you could divide it that way," she says. "One could be very strategic and the other being operational — that is how most US companies divide the chief executive and president roles."

At Investec Asset Management, which recently announced it will bring in co-chief executives, the two executives who will replace founder Hendrik du Toit in October come from separate parts of the business. John Green, global head of the client group, is expected to be responsible for business development, while Mimi Ferrini, the current co-chief investment officer, will keep this title in addition to his co-chief executive position. Mr Green and Mr Ferrini have worked in the same management team for 17 years.

Acadian, the $92bn quantitative investment specialist, introduced co-chief executives in December, promoting John Chisholm, the chief investment officer, and Ross Dowd, head of the company's client group, to the top.

Dimensional Fund Advisors, which manages $577bn globally, has long had a co-leader structure, with Gerard O'Reilly, a co-chief investment officer, joining Dave Butler, head of global financial adviser services, in the role last year. "It's about communication," says Mr Butler on how the two work together. "We have our own opinions . . . but the goal is to collaborate on everything."

Not all fund managers have such defined roles. Since the merger of Janus Capital and Henderson Group last May, the new entity has decided against setting out the responsibilities. Greg Carlson, an analyst at Morningstar who covers Janus Henderson, says his understanding is that Dick Weil, who ran Janus, oversees the US business, while Andrew Formica, formerly of Henderson, covers non-US business. This is despite both men being based in London.

> 'If you have two very different individuals — Mr Ying and Mr Yang — you could divide it that way'

Mr Carlson says there may be some internal confusion over reporting lines. "Enrique Chang, [the chief investment officer], reports to both and discusses virtually everything with each of them," he says. "It seems they jointly discuss a lot of topics."

Succession planning

When unorthodox leadership structures are announced, investors and analysts will want to know how long the arrangement will last and whether one individual will emerge as the sole leader in the future.

Janus Henderson hoped to swat away such doubts by saying its structure would be reviewed three years after the merger completes. The company points to Mr Weil's relocation from Denver to London as proof of the set-up's longevity. But this has not convinced some sceptics.

"I know they are supposed to review the arrangements within three years, but will it last that long? It's hard to say," says Mr Carlson. "Chief executives tend to be pretty strongly opinionated — what happens when there is more than one person at the top? The odds are stacked against it lasting for the long term."

SLA decided against setting a review date to make clear it saw the arrangement not as temporary, but as one that would endure. However, as with Janus Henderson, the combined group has so far been unable been to stem outflows and industry watchers are already starting to ask how long the co-chief executives' honeymoon period can last — if it is not over already.

Sir Gerry says that in any event, the industry should not expect the set-up to come to an end when one of the executives replaces him as chairman next year. He says SLA is well aware that shareholders do not like former chief executives moving into the chairman's role.

Aligning pay

Another thorny issue for companies with two heads is remuneration. The scrutiny that shareholders and governance watchers give to the level of executive pay at underperforming companies is especially intense when there are two people receiving it.

The problems emerge in trying to

Andrew Formica and Dick Weil, co-chief executives of Janus Henderson, are thought to work very closely with each other — Charlie Forgham-Bailey

align two different pay structures. "You have to make sure their compensation is equivalent," says Jeanne Branthover, managing partner at DHR International, a recruiter. "Once you make the decision to have co-chief executives, you have no other choice."

As it is unlikely either would willingly take a pay cut, the most common outcome is that the lower paid executive has their deal brought up in line with the more generous package. As a result, bosses that merge companies from a position of weakness — to stem outflows and cut costs, for example — can often appear to achieve big pay rises in the first year.

At Janus Henderson, Mr Formica almost tripled his pay last year to $7.6m, while Mr Weil's rose by more than $1m to $9m. This was despite the company suffering a combined $10.2bn of outflows throughout 2017.

The biggest element of the pay awards for each executive was a bonus payment, which was based on several targets, including three-year investment performance, revenue growth, total net flows and growth in net income, as well as completing strategic initiatives, some of which are related to integrating the businesses.

Meanwhile, Standard Life Aberdeen took the opportunity when redrawing the pay structures to cut the maximum bonus pay out for both chief executives significantly.

"They need to make sure there is enough work to go around and the chief executives do not spend too much time on the golf course," says Carl Sjostrom, an independent adviser on executive pay, on co-chief executive structures generally. "If they feel the success of this merger is down to getting the two working all hours of the day and making best use of their contacts, then it will be worth it for the shareholders."

Dealing with shareholders

Investors often take a sceptical view of co-leader arrangements, especially if the structures cause confusion inside and outside the company. George Dallas, policy director at the International Corporate Governance Network, says the group does not have a formal stance on joint chief executives, as they are still so rare.

But he adds: "There needs to be specific circumstances for them. How does the balance of power really work?

'There needs to be specific circumstances. How does the balance of power really work?'

How stable is it? What are the pressure points? These are the issues that could crop up."

He says it can be a good way of dealing with succession planning, especially if a less experienced executive is expected to become the sole leader eventually, but such plans should be clearly outlined. However, he says any suggestion that one executive could eventually become chairman would be resisted by shareholders.

Equity markets are thriving but are they relevant?

THE LAST WORD

John Kay

The equity markets with which we are familiar came into being in the 19th century to finance railways and railroads. Railways and railroads were capital intensive projects, and the capital required was specific to that particular use. There is little you can do with a railway except run trains on it. The savings needed were collected in modest amounts from a large number of moderately well-off individuals. These investors bought both equity and bonds in the new enterprises, and were provided with a degree of liquidity through these expanded capital markets.

This financing model, closely bound up with British imperialism and the development of the interior of the US, was extended to resource companies, and in due course to manufacturing. US Steel, established in 1901 from the merger of three American steel giants and listed on the New York Stock Exchange, was then by far the largest corporation in the world. General Electric, formed in 1892, was part of the first Dow Jones index — and the only one that remains today.

The publicly quoted manufacturing corporation, controlled by professional managers, was the dominant business form of the 20th century. In the first Fortune 500 list of 1956, nine out of the 10 top companies were manufacturers. Among them were three automobile companies — General Motors, Chrysler, and Ford; and three steel companies, Bethlehem, Inland, and US Steel.

Where are they now? US Steel, once by far the largest corporation in the world, is no longer part of the Fortune 500. Bethlehem Steel survives only as the name of a rock band and a soccer club, Inland is owned by ArcelorMittal, Chrysler by Fiat, and General Motors has emerged chastened from its 2009 bankruptcy. Ford is bloodied but unbowed by global competition, yet its market capitalisation is far outstripped by that of Tesla.

The list of today's top ten companies by market capitalisation does not include Tesla, but does register Apple, Alphabet, Amazon, Microsoft and Facebook. There is only one manufacturing company — and that, Johnson & Johnson, is a very different business from the steel and automobile makers of 50 years before.

Berkshire Hathaway, sui generis, includes manufacturing businesses among its collection of investments. The era of the diversified manufacturing conglomerate is coming to an end. But the listed holding company, such as Berkshire, or Alphabet — a cross between Warren Buffett's creation and an incubator — may represent an important part of the future. Like the private equity house, these conglomerates internalise the process of capital allocation and corporate governance. Both ownership forms are direct responses to the excessive costs, burdensome regulation and weak governance characteristic of modern public equity markets.

Markets were useful in raising capital to build 19th century railways but companies nowadays have many sources of funding — Alamy

> This financing model was closely bound up with British imperialism and development of the US

The largest companies of 1956 were large by all measures — sales, market capitalisation, employment, and operating assets. No longer. Walmart and Hon Hai (better known as Foxconn) are today's largest private sector employers, along with businesses like Compass, which might be regarded as global gangmasters.

Apple's market capitalisation today exceeds $800bn, and Alphabet is not far behind. For both these companies, operating assets account for about $30bn of that value. Such modern businesses employ very little capital, and such assets as they do use mostly need not be owned by the company that operates from them.

As a source of capital for business, equity markets no longer register on the radar screen. In both Britain and US, funds withdrawn through acquisitions for cash and share buybacks routinely exceed the amounts raised in rights issues and IPOs.

At the same time, savings have become institutionalised. Initially this took place mainly through the investment activities of pension funds and insurance companies. Today much of their activity has been outsourced and while pension funds and insurance companies are still important players, the equity investment chain is today dominated by the big asset managers — BlackRock, Vanguard, Fidelity and their competitors. And sovereign wealth funds are an increasingly important fraction of public market equity ownership.

The paradox of modern capital markets is that although there is less and less need for market activity from the point of view of either the end users of finance, or the investors who are the ultimate beneficiaries of finance, the volume of market activity has increased exponentially. To what purpose?

John Kay is an FT contributing editor. johnkay@johnkay.com

READERS WRITE ...

Mercer says managers should pay to run clients' money

I have a far easier solution: scrap the base fee. Keep only the performance fee. If asset managers underperform, they won't get any fee and will get hurt by their fixed costs. It used to be like that. And I agree with Mercer that current fee structures are flawed with asset managers being incentivised to grow AUM at the detriment of performance. *Monsieur Alpha via FT.com*

Rather than adding to the criticism of the asset-management industry, people should look at what value investment consultants bring to the table. In my experience very little, other than giving trustees a very expensive comfort blanket that beneficiaries pay for.
Eternal Student via FT.com

Is money laundering the favourite crime of America's elite?

What about privacy? I prefer to pay for things in cash because I don't want the government, credit card companies and other nosy parties to know how I spend my money. Given that the cost of a nice dinner for four people in NY can easily approach $500, when I go to dinner, I always take quite a few hundred dollar bills. A brick of $20s is not convenient. And no, sadly I don't have cash income. All my income comes from salary that is reported to the government every year.
DM via FT.com

The hypocrisy of not asking for any assurances from foreign banks when these piles of $100 bills are transferred back to the US is appalling.
Ron-Ohio via FT.com

The $100 bill is thought to be the money launderers' tool of choice

Too-clever ETFs are a car crash waiting to happen

I always apply the "would an 8 year old understand this business" test which would filter out most of the derivatives problems.
DTMenace via FT.com

The ETF industry is a gigantic accident waiting to happen. Littered with liquidity mismatches and investors who have no acquaintance that things can and do go down in a real economy. Financial repression and money printing have put people in at the top. The sell off two weeks ago highlighted how simple reductions can be explosive.
Tiger II via FT.com

Fund managers 'asleep at the wheel' over exorbitant exec pay

The level of pay for executives at large, established companies where they were not instrumental in their growth and moreover, where they operate in relatively mature markets and the business could probably easily carry on fine without the senior team, is a disgrace. Unfortunately the custodians of the retail pension market do not take their responsibility seriously at all.
SR74 via FT.com

So the fund managers who charge exorbitant "management fees" for funds which over the long term will never perform beyond "market return" have to assess the high pay packages of CEOs . . . quite a funny world we are in.
journeywest via FT.com

Fund managers were said to be complacent about issues such as gender diversity

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BlackRock offers clients ways to opt out of US gun stocks

Am I the only one worried about passive investors' ownership of firms that by definition they have no clue about? (Not talking of gun companies only).
alloquoi via FT.com

Better than doing nothing but plenty of room to do more.
AKT via FT.com

COMMENT

US unions face threat of radical funding cut

VIEW FROM THE US

John Dizard

US Supreme Court justices are now formally reviewing the arguments they heard last month in what I believe to be the most politically and economically significant case of the year: Janus v AFSCME. The ruling in Janus, which will probably be handed down in late June, has the potential to radically cut the power and funding available to state and local employees' unions.

AFSCME, the largest trade union of public employees in the US, and other unions are preparing a political offensive to counter what is expected to be an adverse decision. If private equity managers, hedge fund consultants and the rest of the "carried interest" industry were thinking clearly, they would be paying for the union organisers' signs and using their limousines to take the members to rallies.

The higher-touch investment managers have been slow to grasp the likely consequences, perhaps as they do not like to think about their dependence on the government employees' unions. Of course they nod absently about the need for reform of state government, including the underfunding of pension plans. Yes, deplorable . . . should be run like a business . . .

Their own business is about the management of risky and illiquid investments, hopefully for a higher return but certainly for high fees. Those funds attract more state and local pension fund money when the sponsoring governments are financially stressed, for example by unfunded pension liabilities. According to a February 2018 paper by Aleksandar Andonov of Erasmus University and Joshua Rauh of Stanford University: "An unfunded liability equal to an additional year of government revenue raises the portfolio (expected return) by 21 basis points."

What if those high expected returns turn out to be disappointing? Then the state government has to make up the difference with cuts in services or tax increases. Those higher taxes now have limited deductibility against federal taxes, thanks to the new Trump tax law. Or worker benefits could be cut to keep the budget balanced.

The unions know the defined-benefit pension plans they negotiated are at risk of being cut back or transformed into less generous defined contribution plans. Even Governor Jerry Brown of California, a long-time union ally, has said that "at the next downturn when things look pretty dire, [pensions] will be on the chopping block".

This is where the Janus case comes in. The plaintiff, Mark Janus, is an Illinois child services worker who refuses to join the American Federation of State, County and Municipal Employees.

Pro-trade union demostrators in Chicago last week — Scott Olson/Getty

He does not want to pay AFSCME an "agency fee" in lieu of union dues that cover the union's contract negotiation services, and its costs of political representation. Janus argues he is preserving his free speech rights; AFSCME counters he wants a "free ride" on the pay, benefits and work conditions it has negotiated.

If, as generally expected, a majority of the court sides with Janus and overturns 41 years of precedent, the unions face declines in membership and revenues. In the next economic and market decline, the defined-benefit-pension advocates would have fewer resources to fight cutbacks.

Pensions for state and municipal workers are often protected by state laws and even state constitutions, as well as union contract terms. Also, even conservative Republicans find it challenging to cut benefits for their favoured "first responders" such as firefighters and police.

In the last down-cycle for the economy, state and municipal governments were cushioned by the Obama administration's stimulus plan. That is unlikely to be repeated next time.

How about using creative accounting to cover up pension funding shortfalls? That has been a good strategy for early-to-mid-career politicians. Traditionally the Government Accounting Standards Board has been more like a Montessori teacher than a Marine drill sergeant.

Since 2015, though, it has pushed state governments to recognise shortfalls in returns on pension funds, or "deferred inflows of resources", over a five-year period rather than a 30-year period. It still allows the state pension fund sponsors and their actuaries to determine their expected long-term returns on investment.

Usually these annual expected returns are between 7 per cent and 8 per cent, which is a Trumpian premium on nominal GDP, and a multiple of what other countries assume. In recent years, state governments have sought to meet those ambitious targets by increasing their commitment to volatile traded equity, private equity and managed property.

What happens, though, in the next bear market? Stanford's Mr Rauh believes that "in a market correction like the mid-1970s, the municipal bond market would wake up very quickly". Overcommitted state governments would pay up or be shut out.

Even without a recession or bear market, demographic pressures of an ageing work force and rising medical costs are reducing funds for spending on public services or infrastructure.

If the public sector unions lose the Janus case, they will have difficulty preserving the defined-benefit model. A shift to defined contribution plans will put a serious dent in private equity funds, hedge funds and property companies.

People power pushes responsible investment up agenda

COMMENT

Catherine Howarth

BlackRock, the world's largest fund manager, surprised many last week by moving swiftly on the hot topic of gun control.

Its public statement on engagement with manufacturers and retailers of firearms provides an unusual if welcome level of detail about the specific questions that directors of these companies must now answer to BlackRock's satisfaction.

The move lends credibility to the bold claims in chairman Larry Fink's letter to the CEOs of companies in which it invests that "to prosper over time, every company must not only deliver financial performance, but also show how it makes a positive contribution to society".

Other unusual suspects have now converted to the benefits of socially sustainable business behaviour. Jana Partners, the activist hedge fund, grabbed the attention in January with a public letter to the board of Apple demanding action to address the addictive nature of its products, while highlighting the consequences of such addiction for the "health and development of the next generation".

Safeguarding the health of the next generation was a key motivation for both Schroders and Rathbone Greenbank which recently issued a "sugar framework" to convey their rapidly changing "expectations" for companies that make and sell sweet treats.

And if that was not enough to make the children of the world applaud, there is surely no issue more relevant to their wellbeing than climate change. On this, institutional investors with combined assets of $28tn announced their commitment in December to a five-year programme of dialogue and action to address the emissions of the world's 100 largest carbon polluters.

Something is going on here and, as a citizen at least, it is hard not to like the look of it. We should remember the fund management industry is a service provider that ultimately needs to meet consumer demand.

Naturally, consumers of investment products want healthy financial returns, but they increasingly seek more than that: they want an investment industry that at the very least does no harm to the health of people and planet; and at best makes a meaningful positive contribution to the lives of workers and communities whilst protecting fragile ecosystems.

This demand for positive impact is coming at least as much from institutional clients as from retail investors. Indeed, some of the largest pension funds are signed up supporters of the UN's Sustainable Development Goals.

In the last decade many pension funds have undergone a deep rethink about their fiduciary duties. The crisis of 2008 was humbling, and it stretched to breaking point the notion that a fund's obligations to its beneficiaries could be met by slavishly tracking a benchmark and periodically sacking asset managers who fail to hug it closely enough.

As the world's invested assets have swollen, it is dawning on citizens, politicians and investors themselves that the actions of institutional capital allocators will significantly determine whether we meet a range of daunting social and environmental challenges. Disappointed on many issues by politics and politicians, people are looking for other channels to get stuff done. A growing number see real potential in voting with their money.

It would be naive in the extreme — indeed dangerous — to look to private capital to solve all our collective problems. Nevertheless, with global assets under management set to rise to $145tn by 2025, fiduciary investors surely have a role to play and a growing responsibility.

The European Commission will this week publish its much-awaited action plan on sustainable finance. It seems EU financial services policymaking is no longer focused narrowly on the success of the financial industry per se. Rather, the political vision for the EU Capital Markets Union is evolving to make finance a stronger tool to serve the wider interests and long-term goals of European citizen-savers.

The UK and its mighty investment industry must also embrace new thinking to thrive and compete. An asset management sector properly focused on delivering both social and financial benefit to clients and communities worldwide is an appealing proposition. Imminent reform of the UK's Stewardship Code offers a particularly good opportunity to move in this direction, and to signal the sort of smart soft power that the UK will increasingly need as we seek to prosper outside the EU.

Catherine Howarth is chief executive of ShareAction and a member of HM Treasury's Taskforce on Asset Management

ANALYSIS

Popularity of direct lending prompts debt fund inflows

Loans from private equity and asset managers have grown as banks have pulled back, writes *Jennifer Thompson*

Soho House, operator of plush members' clubs, secured a £375m debt refinancing package — Alamy

When Soho House secured a £375m debt refinancing package last year attention was primarily focused on the finances of the global network of upscale private members' clubs.

But the agreement between Soho House, an operator of private members' clubs, and Permira Debt Managers also illustrated an increasingly important avenue of funding for companies in Europe.

While the deal — £275m for refinancing with the option of a further £100m — was Permira's largest direct lending investment it was just the latest in a series that has seen the private equity group provide loans to a French software group, a German car parts maker and a UK holiday park operator.

Direct lending by investment groups has been on a tear in recent years. Last year 75 funds raised $56.7bn, more than twice as much as in 2016, according to data provider Preqin.

Spurring this growth has been a retreat in bank lending amid growing regulatory pressure and the need for companies to shore up balance sheets. Loans originating from asset managers and private equity groups, who tout their willingness to offer bespoke financing deals, have poured in to fill the gap for companies who may be too small to tap the bond market.

Europe's share of the direct lending pie is edging up with funds based on the continent that run direct lending strategies raising more than €20bn across 27 funds last year, up from €9bn and 16 funds in 2014.

But analysts have raised concerns about the level of capital flowing into the sector, with the pressure to put funds to work heightening the risk of bad deals being done.

"There is a wall of capital out there [and] everyone is competing," said Peter Bate, a director at KPMG, the professional services firm. "There's so much capital people kind of have to invest. The fund managers only get paid when the money goes in the ground."

David McCann, analyst at Numis, also urges caution. "Clearly companies will know there's a lot of capital that has been raised to go into this sector," he said. "Ultimately [you face] a trade off: do you want to get paid [earn fees on deployed money] or keep that discipline [hold back on potentially dud investments]?"

Returns are certainly under pressure. The median net internal rate of return for direct lending funds, the preferred industry measure, was 10.7 per cent for funds of a 2010 vintage, according to Preqin. By 2014 that had dropped to 7.9 per cent.

Investment managers unsurprisingly argue there is still plenty of space for them to do good deals but some acknowledge the process is tricky.

"We are challenged by making the right investments," said Max Mitchell, head of direct lending at Intermediate Capital Group.

Last November London-listed ICG said it had raised a further €4.2bn for direct lending fund Senior Debt Partners (SDP) III, which added to prior investor commitments gave it €5.2bn in dry powder.

Mr Mitchell points to ICG's long experience with direct lending — it made its first direct loan in 1989 — as evidence it will be able to spot potential dud deals. Though it is early days, ICG is on track to deploy SDP III's funds within two to three years, he added.

"There are still good deals to be done," said Andrew McCullagh, a managing director at Hayfin Capital, a direct lending specialist based in London which raised $3.8bn last year.

But he adds that the UK is becoming a more cut-throat market. "There's no doubt it has become a much more competitive market".

For this reason managers are increasingly focused on opportunities in Europe where it has become easier to do deals over the past eighteen months after a spate of reforms in France, Germany and Italy paved the way for funds to loan directly to companies in those markets.

"They introduced more flexible regimes — that was an important shift," says Owen Lysak, a regulatory associate at Clifford Chance, the law firm. "It feels less opaque and less of a minefield."

> "There is a wall of capital out there [and] everyone is competing"
>
> PETER BATE, DIRECTOR AT KPMG

Last year a report into loan funds by the International Organisation of Securities Commissions, the global umbrella body for securities regulators, also highlighted Europe as an area for growth. "[T]here appears to be some room for growth . . . [it] is too early to assess how the markets will develop there. Nevertheless a certain demand is already identified," Iosco said.

The regulatory climate is also favourable. The European Commission is monitoring the sector but did not take up suggestions by the European Securities and Markets Authority, the bloc's financial watchdog, to pin down an EU-wide framework for loan funds. It believes the sector does not pose a significant risk to financial stability or investors.

"The UK market is probably far more open to direct lending than Europe", said Patrick Marshall, head of private debt at Hermes Investment Management, but he says Europe is now opening up to new forms of corporate debt.

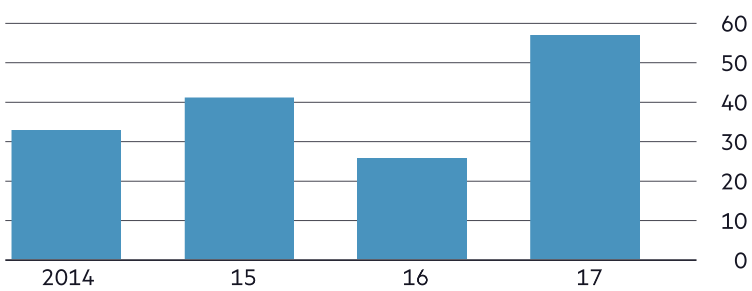
Hermes has a £750m lending fund which focuses on what Mr Marshall informally terms "beer-drinking Europe" — the UK, Ireland, Scandinavia, Germany and Belgium — and primarily senior secured loans. It is run as part of a joint-lending agreement with Royal Bank of Scotland which requires the UK bank to share information on companies which have approached it for loans.

Even though the market is maturing, 40 per cent of investment consultants said that private debt had performed better than their initial expectations last year, according to a study by Preqin, with a majority recommending that investors devote as much or more to direct lending funds in 2018.

"[Over the] long term, direct lending is here to stay," said KPMG's Mr Bate. But he warns that from a companies' perspective it is becoming more of a buyers' market. "There isn't a huge amount of differentiation. Money is money."

Money flowing into private debt funds

Global annual direct lending fundraising ($bn)



Source: Preqin

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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.

Abbey Life Assurance Company Limited (UK)

100 Holdenhurst Road, Bournemouth BH8 8AL 0345 9600 900
additional fund prices can be found @ www.abbeylife.co.uk

Fund	Bid	Offer	D+/-	Yield
Insurances				
Life Funds				
Prop. Acc. Ser 2	1595.90	1679.90	0.20	-
Selective Acc. Ser 2	1827.30	1923.50	7.80	-
American Ser. 4	2383.90	2509.40	-1.10	-
Custodian Ser. 4	554.50	583.70	0.90	-
Equity Ser. 4	662.70	697.50	2.40	-
European Ser 4	751.60	791.20	3.60	-
Fixed Int. Ser. 4	938.80	988.20	-0.40	-
Intl Ser. 4	590.80	621.90	1.50	-
Japan Ser 4	491.70	517.60	0.20	-
Man. Ser. 4	1997.50	2102.60	3.50	-
Money Ser. 4	525.50	553.20	0.00	-
Prop. Ser. 4	1136.30	1196.10	0.20	-
Custodian Ser 5	529.40	557.30	0.80	-
International Ser 5	564.10	593.80	1.40	-
Managed Ser 5	1907.20	2007.60	3.30	-
Money Ser 5	514.50	541.60	0.00	-
Property Ser 5	1084.90	1142.00	0.10	-
Pension Funds				
American	2911.50	3064.70	-1.40	-
Equity	5925.80	6237.70	23.30	-
European	1580.50	1663.70	9.10	-
Fixed Int.	1753.70	1846.00	-0.90	-
International	1310.10	1379.10	3.60	-
Japan	540.00	568.40	0.30	-
Managed	5350.50	5632.10	11.60	-
Property	2959.40	3115.20	0.20	-
Security	1479.60	1557.50	-0.30	-
Selective	2334.50	2457.30	2.10	-
Formerly Hill Samuel Life Assurance Ltd				
100 Holdenhurst Road, Bournemouth, BH8 8AL 0345 6023 603				
Managed Ser A (Life)	1892.90	2003.10	-3.10	-
Managed Ser A (Pensions)	1285.00	1352.60	-2.50	-
Formerly Target Life Assurance Ltd				
100 Holdenhurst Road, Bournemouth, BH8 8AL 0345 6023 603				
Managed (Life)	1909.80	2010.40	-3.10	-
Managed Growth (Life)	635.20	668.70	-1.30	-
Managed (Pensions)	7711.80	8117.60	-15.20	-
Managed Growth (Pensions)	801.30	843.50	-1.90	-

additional fund prices can be found on our website

Algebris Investments (IRL)

Fund	Bid	Offer	D+/-	Yield
Regulated				
Algebris Financial Credit Fund - Class I EUR	€ 158.59	-	0.29	0.00
Algebris Financial Income Fund - Class I EUR	€ 148.61	-	0.40	0.00
Algebris Financial Equity Fund - Class B EUR	€ 138.40	-	0.20	0.00
Algebris Asset Allocation Fund - Class B EUR	€ 98.18	-	-0.05	0.00
Algebris Macro Credit B EUR Acc	€ 110.74	-	0.32	0.00
Algebris Core Italy Fund - Class R EUR	€ 97.65	-	0.36	-

The Antares European Fund Limited

Fund	Bid	Offer	D+/-	Yield
Other International				
AEF Ltd Usd (Est)	$ 706.94	-	-32.48	-
AEF Ltd Eur (Est)	€ 696.51	-	-31.58	0.00

Arisaig Partners

Fund	Bid	Offer	D+/-	Yield
Other International Funds				
Arisaig Africa Consumer Fund Limited	$ 14.87	-	-0.03	0.00
Arisaig Asia Consumer Fund Limited	$ 92.04	-	-0.19	0.00
Arisaig Global Emerging Markets Consumer Fund	$ 11.95	-	-0.01	0.00
Arisaig Global Emerging Markets Consumer UCITS	€ 12.56	-	0.07	0.00
Arisaig Global Emerging Markets Consumer UCITS STG	£ 14.22	-	0.06	0.00
Arisaig Latin America Consumer Fund	$ 28.41	-	0.02	0.00

Artemis Fund Managers Ltd (1200)F (UK)

57 St. James's Street, London SW1A 1LD 0800 092 2051

Fund	Bid	Offer	D+/-	Yield
Authorised Inv Funds				
Artemis Capital R ACC	1577.14	1664.28	-0.72	1.74
Artemis European Growth R Acc	364.19	384.19	1.09	0.81
Artemis European Opps R Acc	105.74	111.56	0.38	0.76
Artemis Global Emg Mkts I GBP Acc	143.32	-	0.74	-
Artemis Global Emg Mkts I GBP Dist	132.59	-	0.68	-
Artemis Global Energy R Acc	29.40	31.10	0.08	0.43
Artemis Global Growth R Acc	261.97	276.30	1.23	0.81
Artemis Global Income R Acc	129.59	136.74	0.87	3.43
Artemis Global Income R Inc	96.32	101.64	0.64	3.53
Artemis Global select R Acc	103.91	109.58	0.51	0.00
Artemis High Income R Inc	79.36	84.27	-0.01	5.43
Artemis Income R Acc	416.09	440.52	1.44	3.81
Artemis Income R Inc	224.68	237.87	0.78	3.92
Artemis Monthly Dist R Inc	71.49	75.69	0.24	4.23
Artemis Pan-Euro Abs Ret GBP	121.17	-	0.17	-
Artemis Strategic Assets R Acc	82.61	87.36	0.07	0.00
Artemis Strategic Bond R M Acc	95.87	101.63	0.08	3.32
Artemis Strategic Bond R M Inc	57.34	60.79	0.05	3.38
Artemis Strategic Bond R Q Acc	96.04	101.82	0.07	3.33
Artemis Strategic Bond R Q Inc	57.60	61.06	0.05	3.40
Artemis UK Select Fund Class R Acc	539.75	570.31	0.90	1.16
Artemis UK Smaller Cos R Acc	1634.93	1751.12	-0.38	1.27
Artemis UK Special Sits R Acc	578.44	613.26	2.08	1.59
Artemis US Abs Ret I Acc	113.24	-	0.17	0.00
Artemis US Equity I Acc	177.38	-	1.52	0.39
Artemis US Ex Alpha I Acc	192.50	-	1.68	0.00
Artemis US Extended Alpha I Hedged Acc	£ 1.41	-	0.01	0.00
Artemis US Select I Acc	183.65	-	1.63	0.28
Artemis US Select I Hedged Acc	£ 1.44	-	0.01	0.19
Artemis US Select I Inc	163.05	-	1.46	0.28
Artemis US Smlr Cos I Acc	192.37	-	1.12	0.05

Artisan Partners Global Funds PLC (IRL)

Beaux Lane House, Mercer Street Lower, Dublin 2, Ireland
Tel: 44 (0) 207 766 7130

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Artisan Partners Global Funds plc				
Artisan Global Equity Fund Class I USD Acc	$ 19.81	-	0.10	0.00
Artisan Global Opportunities I USD Acc	$ 17.83	-	0.09	0.00
Artisan Global Value Fund Class I USD Acc	$ 21.24	-	0.02	0.00
Artisan US Value Equity Fund Class I USD Acc	$ 15.18	-	0.09	0.00
Artisan Global Opportunities Class I EUR Acc	€ 21.76	-	0.29	0.00

Ashmore Investment Management Limited (LUX)

2 rue Albert Borschette L-1246 Luxembourg

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Ashmore SICAV Emerging Market Debt Fund	$ 99.62	-	0.12	5.94
Ashmore SICAV Emerging Market Frontier Equity Fund	$ 198.09	-	-0.10	0.64
Ashmore SICAV Emerging Market Total Return Fund	$ 90.72	-	-0.10	5.46
Ashmore SICAV Global Small Cap Equity Fund	$ 179.73	-	0.90	0.57
EM Mkts Corp.Debt USD F	$ 98.42	-	0.05	6.62
EM Mkts Loc.Ccy Bd USD F	$ 90.69	-	-0.37	5.09
EM Short Duration Fund Acc USD	$ 136.74	-	0.04	0.00

Aspect Capital Ltd (UK)

Fund	Bid	Offer	D+/-	Yield
Other International Funds				
Aspect Diversified USD	$ 404.46	-	-5.03	0.00
Aspect Diversified EUR	€ 233.65	-	-2.97	0.00
Aspect Diversified GBP	£ 122.31	-	-1.54	0.00
Aspect Diversified CHF	SFr 110.02	-	-1.40	0.00
Aspect Diversified Trends USD	$ 118.90	-	-0.22	0.00
Aspect Diversified Trends EUR	€ 114.72	-	-0.23	0.00
Aspect Diversified Trends GBP	£ 121.68	-	-0.24	0.00

Atlantas Sicav (LUX)

Fund	Bid	Offer	D+/-	Yield
Regulated				
American Dynamic	$ 4650.53	-	-64.33	0.00
American One	$ 4313.70	-	-96.89	0.00
Bond Global	€ 1359.58	-	-1.84	0.00
Eurocroissance	€ 978.58	-	-30.46	0.00
Far East	$ 999.29	-	-26.71	0.00

Bank of America Cap Mgmt (Ireland) Ltd (IRL)

Fund	Bid	Offer	D+/-	Yield
Regulated				
Global Liquidity USD	$ 1.00	-	0.00	0.61

Barclays Investment Funds (CI) Ltd (JER)

39/41 Broad Street, St Helier, Jersey, JE2 3RR Channel Islands 01534 812800

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Bond Funds				
Sterling Bond F	£ 0.47	-	0.00	2.75

BlackRock (JER)

Fund	Bid	Offer	D+/-	Yield
Regulated				
BlackRock UK Property	£ 44.11	-	0.05	2.47
BLK Intl Gold & General	$ 5.39	5.68	-0.02	0.00

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Brown Advisory Funds plc (IRL)

http://www.brownadvisory.com Tel: 020 3301 8130

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Brown Advisory US Equity Growth Fund USD B	$ 31.32	-	0.15	0.00
Brown Advisory American Fund USD B	$ 21.19	-	0.06	0.02
Brown Advisory US Smaller Companies Fund USD B	$ 24.24	-	0.09	0.00
Brown Advisory US Small Cap Blend Fund USD B	$ 16.44	-	0.04	0.00
Brown Advisory US Flexible Equity Fund USD B	$ 14.99	-	0.05	0.00
Brown Advisory Global Leaders Fund USD C	$ 13.98	-	0.04	0.00
Brown Advisory US Sustainable Growth Fund USD C	$ 12.81	-	0.05	-
Brown Advisory US Mid-Cap Growth Fund USD C	$ 12.15	-	0.07	-

CCLA Investment Management Ltd (UK)

Senator House 85 Queen Victoria Street London EC4V 4ET

Fund	Bid	Offer	D+/-	Yield
Authorised Inv Funds				
Diversified Income 1 Units GBP Inc	£ 1.54	1.54	0.01	3.33
Diversified Income 2 Units GBP Inc	£ 1.48	1.48	0.00	-
Diversified Income 3 Units GBP Inc	£ 1.49	1.49	0.00	-
The Public Sector Deposit Fund				
The Public Sector Deposit Fund-share class 1 ♦ F *	100.00	-	0.00	0.49
The Public Sector Deposit Fund-share class 4 ♦ F *	100.00	-	0.00	0.43

CCLA Investment Management Ltd (UK)

Senator House 85 Queen Victoria Street London EC4V 4ET

Fund	Bid	Offer	D+/-	Yield
Property & Other UK Unit Trusts				
CBF Church of England Funds				
Investment Inc	1605.85	1613.83	-11.90	3.33
Investment Acc	3545.19	3562.82	-26.28	0.00
Global Equity Inc	180.43	180.85	-1.84	3.87
Global Equity Acc	289.04	289.72	-2.95	0.00
UK Equity Inc	161.46	161.90	-1.37	3.74
UK Equity Acc	260.61	261.33	-2.22	0.00
Fixed Interest Inc	164.56	165.14	-0.04	4.01
Fixed Interest Acc	546.80	548.74	-0.11	0.00
Property Fund Inc	135.35	139.89	0.04	5.49

CCLA Fund Managers Ltd (UK)

Senator House 85 Queen Victoria Street London EC4V 4ET

Fund	Bid	Offer	D+/-	Yield
Property & Other UK Unit Trusts				
COIF Charity Funds (UK)				
Investment Inc	1452.27	1459.49	-5.64	2.60
Investment Acc	15121.28	15196.46	-58.75	0.00
Ethical Invest Inc	222.10	223.21	-0.79	2.65
Ethical Invest Acc	310.08	311.62	-1.11	0.00
Global Equity Inc	171.01	171.42	-0.83	-
Global Equity Acc	277.07	277.73	-1.35	0.00
Fixed Interest Inc	135.95	136.43	0.09	2.66
Fixed Interest Acc	845.82	848.82	0.52	0.00
Property Inc	116.06	119.95	0.04	5.51
Local Authorities Property Fd (LAMIT) (UK)				
Property	295.75	320.69	0.96	4.81

CG Asset Management Limited (IRL)

25 Moorgate, London, EC2R 6AY
Dealing: Tel. +353 1434 5098 Fax. +353 1542 2859

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Capital Gearing Portfolio Inc	£ 31165.69	31165.69	-54.81	0.53
CG Portfolio Fund Plc				
Absolute Return Cls M Inc	£ 114.45	114.45	0.61	1.30
Capital Value Cls V Inc	£ 150.30	150.30	-0.30	0.45
Dollar Fund Cls D Inc	£ 142.80	142.80	0.79	1.73
Dollar Hedged GBP Inc	£ 96.32	96.32	0.08	1.75
Real Return Cls A Inc	£ 185.03	185.03	0.81	2.28

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Candriam Investors Group (LUX)

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Candriam Eqts L Australia Cap	A$ 1236.29	-	-0.67	0.00
Candriam Bds Euro Cap	€ 1175.59	-	2.20	0.00
Candriam Bds Gbl Infl Sh Dur Cap	€ 139.27	-	-0.02	-
Candriam Qt-Eqts Europe Cap	€ 2540.12	-	26.62	0.00
Candriam Qt-Eqts USA Cap	$ 3101.75	-	18.57	0.00

Candriam Investors Group (BE)

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Candriam Sust Euro Bonds Cap	€ 366.67	-	0.65	0.00
Candriam Sust North America Cap	$ 46.99	-	0.14	0.00
Candriam Sust World Cap	€ 28.15	-	0.26	0.00

Candriam Investors Group

Fund	Bid	Offer	D+/-	Yield
Other International Funds				
Candriam Eqts L Emerging Mkts Cap	€ 894.80	-	10.05	0.00
Candriam Eqts L Europe Cap	€ 1003.04	-	11.97	0.00
Candriam Eqts L Japan Cap	¥ 22684.00	-	20.00	0.00
Candriam Bonds Credit Opportunities	€ 199.00	-	-0.04	0.00
Candriam Bds Euro Conv. Classic Cap	€ 3531.86	-	-3.07	0.00
Candriam Bds Euro Corp ExFin Cap	€ 171.11	-	0.24	0.00
Candriam Bds Euro Gov.Cl.Cap	€ 2318.27	-	4.79	0.00
Candriam Bds Euro High Yield Cap	€ 1122.56	-	0.32	0.00
Candriam Bds Euro High Yield R Cap	€ 125.79	-	0.04	0.00
Candriam Bds Euro Long Term Cap	€ 8454.16	-	34.19	0.00
Candriam Bds Euro Sh.Term Cap	€ 2094.74	-	0.39	0.00
Candriam Bds International Cap	€ 994.63	-	0.95	0.00
Candriam Bds USD Cap	$ 949.94	-	-0.43	0.00

Carmignac Gestion Luxembourg UK Branch (LUX)

Carmignac Portfolio
www.carmignac.co.uk

Fund	Bid	Offer	D+/-	Yield
FCA Recognised				
Carmignac Portfolio UGlbBd F GBP Acc	£ 140.02	140.02	0.15	0.00

Some funds have distribution unit and/or units denominated in other currencies
The full list can be found at www.carmignac.com

Cedar Rock Capital Limited (IRL)

Fund	Bid	Offer	D+/-	Yield
Regulated				
Cedar Rock Capital Fd Plc	$ 439.36	-	-6.83	1.55
Cedar Rock Capital Fd Plc	£ 500.38	-	-1.02	1.60
Cedar Rock Capital Fd Plc	€ 374.77	-	0.62	1.59

Charles Schwab Worldwide Funds Plc (IRL)

Fund	Bid	Offer	D+/-	Yield
Regulated				
Schwab USD Liquid Assets Fd	$ 1.00	-	0.00	0.29

Chartered Asset Management Pte Ltd

Fund	Bid	Offer	D+/-	Yield
Other International Funds				
CAM-GTF Limited	$ 323298.41	323298.41	-1473.00	0.00
CAM GTi Limited	$ 708.54	-	14.77	0.00
Raffles-Asia Investment Company	$ 1.68	1.68	-0.02	1.18

Cheyne Capital Management (UK) LLP

Fund	Bid	Offer	D+/-	Yield
Other International Funds				
Cheyne European Event Driven Fund (M)	€ 149.98	-	2.23	-

price updated (D) daily, (W) weekly, (M) monthly

Consistent Unit Tst Mgt Co Ltd (1200)F (UK)

Stuart House, St John's Street, Peterborough, PE1 5DD
Dealing & Client Services 0345 850 8818

Fund	Bid	Offer	D+/-	Yield
Authorised Inv Funds				
Consistent UT Inc	51.25xd	52.13	0.57	4.70
Consistent UT Acc	132.20xd	134.50	1.50	4.70
Practical Investment Inc	233.90	250.80	1.00	3.16
Practical Investment Acc	1224.00	1312.00	6.00	3.16

Coronation Fund Managers

+44 (0)20 7389 8840 www.coronation.com
Enquiries: +27 (21) 680 2837/2457 coronationfunds@coronation.co.za

Fund	Bid	Offer	D+/-	Yield
Other International Funds				
Global Emerging Markets - Class A	$ 18.53	-	0.06	0.00
All Africa	$ 19.94	-	0.48	0.00
Africa Frontiers	$ 21.21	-	0.20	0.00

CP Global Asset Management Pte. Ltd.

www.cpglobal.com.sg, Tel: +65 6466 6990

Fund	Bid	Offer	D+/-	Yield
International Mutual Funds				
CP Multi-Strategy Fund	$ 157.32	-	2.09	-

CP Capital Asset Management Limited

www.cpgbl.com, email: fundservices@cpgbl.com

Fund	Bid	Offer	D+/-	Yield
International Mutual Funds				
CPS Master Private Fund	$ 219.58	-	0.00	-
CP Global Alpha Fund	$ 180.13	-	-0.50	-

DAVIS Funds SICAV (LUX)

Fund	Bid	Offer	D+/-	Yield
Regulated				
Davis Value A	$ 53.78	-	0.10	0.00
Davis Global A	$ 42.32	-	0.14	0.00

FTfm

Deutsche Asset Management (LUX)
Tel: + 44 207 545 9070 www.dws.co.uk

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Deutsche Invest I Top Dividend GBP RD	£ 130.18	130.18	0.73	2.45
Deutsche Invest I Top Euroland GBP RD	£ 134.93	134.93	1.41	0.82
Deutsche Invest I Multi Opportunities GBP CH RD	£ 98.31	98.31	0.15	0.00
Deutsche Invest I Global Bonds GBP CH RD	£ 103.63	103.63	0.02	0.00

Dodge & Cox Worldwide Funds (IRL)
6 Duke Street,St.James,London SW1Y 6BN
www.dodgeandcox.worldwide.com 020 3713 7664

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Dodge & Cox Worldwide Funds plc - Global Bond Fund				
EUR Accumulating Class	€ 12.16	-	0.11	0.00
EUR Accumulating Class (H)	€ 10.31	-	0.01	0.00
EUR Distributing Class	€ 10.68	-	0.09	3.93
EUR Distributing Class (H)	€ 9.04	-	0.00	3.67
GBP Distributing Class	£ 11.59	-	0.09	3.85
GBP Distributing Class (H)	£ 9.32	-	0.00	3.28
USD Accumulating Class	$ 10.79	-	0.00	0.00
Dodge & Cox Worldwide Funds plc-Global Stock Fund				
USD Accumulating Share Class	$ 22.35	-	0.10	0.00
GBP Accumulating Share Class	£ 26.62	-	0.29	0.00
GBP Distributing Share class	£ 19.07	-	0.21	0.47
EUR Accumulating Share Class	€ 27.26	-	0.34	0.00
GBP Distributing Class (H)	£ 12.06	-	0.05	0.36
Dodge & Cox Worldwide Funds plc-International Stock Fund				
USD Accumulating Share Class	$ 18.04	-	0.07	0.00
EUR Accumulating Share Class	€ 17.25	-	0.21	0.00
Dodge & Cox Worldwide Funds plc-U.S. Stock Fund				
USD Accumulating Share Class	$ 26.17	-	0.08	0.00
GBP Accumulating Share Class	£ 29.47	-	0.28	0.00
GBP Distributing Share Class	£ 18.44	-	0.17	0.75
EUR Accumulating Share Class	€ 27.56	-	0.30	0.00
GBP Distributing Class (H)	£ 11.82	-	0.04	0.38

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

Fund	Bid	Offer	D+/-	Yield
Vietnam Property Fund (VPF) NAV	$ 0.80	-	0.03	0.00

DSM Capital Partners Funds (LUX)
www.dsmsicav.com

Regulated

Fund	Bid	Offer	D+/-	Yield
DSM Global Growth I2 Acc	€ 188.89	-	2.48	0.00
DSM Global Growth I2 Dis	A$ 108.87	-	1.17	-
DSM Global Growth I1 Acc	€ 122.20	-	0.19	0.00
DSM US Large Cap Growth A	$ 153.70	-	0.90	0.00
DSM US Large Cap Growth I2	€ 124.84	-	1.47	0.00

EdenTree Investment Management Ltd (UK)
PO Box 3733, Swindon, SN4 4BG, 0800 358 3010

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Amity UK Cls A Inc	233.00	-	0.90	1.46
Amity UK Cls B Inc	232.30	-	0.80	2.28
Higher Income Cls A Inc	132.30	-	-2.00	4.38
Higher Income Cls B Inc	137.90	-	-2.00	4.34
UK Equity Growth Cls A Inc	283.80	-	0.90	1.04
UK Equity Growth Cls B Inc	289.90	-	1.00	1.81
Amity Balanced For Charities A Inc	111.00	-	-1.30	5.00
Amity European Fund Cls A Inc	270.80	-	0.50	1.07
Amity European Fund Cls B Inc	273.60	-	0.60	1.88
Amity Global Equity Inc for Charities A Inc	128.70	-	0.30	3.24
Amity International Cls A Inc	276.20	-	0.80	1.14
Amity International Cls B Inc	278.70	-	0.90	1.88
Amity Sterling Bond Fund A Inc	106.50	-	-1.00	4.55
Amity Sterling Bond Fund B Inc	116.70	-	-1.10	4.55

Edinburgh Partners Limited (IRL)
27-31 Melville Street, Edinburgh EH3 7JF
Tel: +353 1 434 5143 Dealing - Fax +353 1 434 5230

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Edinburgh Partners Opportunities Fund PLC				
Emerging Opportunities I USD $	$ 1.44	-	0.01	1.33
European Opportunities I EUR	€ 2.74	-	0.03	1.85
European Opportunities I GBP	£ 2.44	-	0.02	1.63
European Opportunities A EUR	€ 2.70	-	0.03	0.92
Global Opportunities I USD	$ 2.01	-	0.01	1.33
Global Opportunities I GBP	£ 1.46	-	0.01	1.14
Pan European Opportunities I EUR	€ 1.83	-	0.02	-

Electric & General (1000)F (UK)
Stuart House St.John's Street Peterborough PE1 5DD
Orders & Enquiries: 0845 850 0255

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Authorised Corporate Director - Carvetian Capital Management				
Electric&General Net Income A	187.50	-	2.50	1.63

Ennismore Smaller Cos Plc (IRL)
5 Kensington Church St, London W8 4LD 020 7368 4220

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Ennismore European Smlr Cos NAV	£ 123.79	-	-0.67	0.00
Ennismore European Smlr Cos NAV	€ 138.87	-	-0.57	0.00

Ennismore European Smlr Cos Hedge Fd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
NAV	€ 515.79	-	-2.26	0.00

Equinox Fund Mgmt (Guernsey) Limited (GSY)
Regulated

Fund	Bid	Offer	D+/-	Yield
Equinox Russian Opportunities Fund Limited	$ 202.09	-	1.73	0.00

Euronova Asset Management UK LLP (CYM)
Regulated

Fund	Bid	Offer	D+/-	Yield
Smaller Cos Cls One Shares	€ 43.41	-	-0.22	0.00
Smaller Cos Cls Two Shares	€ 29.37	-	-0.15	0.00
Smaller Cos Cls Three Shares	€ 14.82	-	-0.07	0.00
Smaller Cos Cls Four Shares	€ 19.04	-	-0.08	0.00

Eurobank Fund Management Company (Luxembourg) S.A.
Regulated

Fund	Bid	Offer	D+/-	Yield
(LF) Absolute Return	€ 1.36	-	-0.01	0.00
(LF) Eq Emerging Europe	€ 0.91	-	-0.01	0.00
(LF) Eq Mena Fund	€ 12.78	-	0.15	0.00
(LF) Greek Government Bond	€ 28.46	-	0.31	0.00
(LF) Greek Corporate Bond	€ 14.75	-	0.05	0.00
(LF) FOF Dynamic Fixed Inc	€ 11.72	-	-0.01	0.00
(LF) FOF Real Estate	€ 14.68	-	0.09	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

Fund	Bid	Offer	D+/-	Yield
Allocator World Fund N-ACC-GBP	£ 1.64	-	-0.01	0.99
Asia Pacific Ops W-Acc	£ 1.81	-	0.01	0.93
Cash Fund Y-Acc-GBP	£ 1.00	-	0.00	0.08
Cash Fund Y-Inc-GBP	£ 1.00	-	0.00	0.19
Extra Income Fund Y-ACC-GBP	£ 1.26	-	0.00	3.64
Extra Income Fund Y-GACC-GBP	£ 1.31	-	0.00	3.73
Fidelity Select 50 Balanced Fund PI-ACC-GBP	£ 1.01	-	0.01	-
Fidelity Short Dated Corporate Bond Fund Y - Gross Inc	£ 9.74	-	0.00	4.23
Fidelity Short Dated Corporate Bond Fund Y - Gross Acc	£ 10.26	-	0.00	1.17
Global Enhanced Income W-ACC-GBP	£ 1.60	-	0.01	3.68
Global Enhanced Income W-INC-GBP	£ 1.29	-	0.01	4.69
Global Property W Inc	£ 1.36	-	0.02	2.53
Index Emerging Markets P-Acc	£ 1.62	-	0.01	1.58
Index Emerging Markets P-Inc-GBP	£ 1.36	-	0.01	1.82
Index Europe ex UK Fund P-Inc-GBP	£ 1.34	-	0.01	2.13
Index Europe ex UK P-Acc	£ 1.41	-	0.01	2.01
Index Japan Fund P-Inc-GBP	£ 1.52	-	0.01	1.66
Index Japan P-Acc	£ 1.60	-	0.01	1.53
Index Pacific ex Japan P-Acc	£ 1.53	-	0.02	2.79
Index Pacific ex Japan P-INC-GBP	£ 1.20	-	0.01	3.29
Index UK P-Acc	£ 1.28	-	0.01	2.54
Index US P-Acc	£ 1.92	-	0.01	1.46
Index World P-Acc	£ 1.69	-	0.01	1.66
MoneyBuilder Balanced Y-INC-GBP	£ 0.57	-	0.01	4.11
MoneyBuilder Income Fund Y-ACC-GBP	£ 12.76	-	0.01	3.28
MoneyBuilder Income Fund Y-GACC-GBP	£ 14.90	-	-0.04	3.24
Multi Asset Alloc Advent N-ACC-GBP	£ 1.37	-	0.00	1.23
Multi Asset Balanced Inc N-GINC-GBP	£ 1.11	-	-0.01	4.08
Multi Asset Balanced Inc N-INC-GBP	£ 1.09	-	0.00	4.08
Multi Asset Inc & Growth N-INC-GBP	£ 1.11	-	0.00	4.00
Multi Asset Open Advent N-ACC-GBP	£ 1.35	-	0.00	0.63
Multi Asset Open Defen N-ACC-GBP	£ 1.20	-	0.00	1.05
Multi Asset Open Defen N-GACC-GBP	£ 1.23	-	0.00	1.03
Sterling Core Plus Bond GMACC	£ 12.08	-	-0.04	2.49
Sterling Core Plus Red Dur	£ 11.20	-	-0.03	2.10
Strategic Bond Fund Y-ACC-GBP	£ 1.20	-	0.00	3.01
Strategic Bond Fund Y-GACC-GBP	£ 1.22	-	0.00	3.03
Target 2020 A-ACC-GBP	£ 0.65	-	0.00	0.45
Target 2025 A-ACC-GBP	£ 1.61	-	0.00	0.52
Target 2030 A-ACC-GBP	£ 1.82	-	0.01	0.57
UK Invest Grade Long Credit GACC	£ 115.40	-	0.10	2.61
UK Opportunities Fund W-ACC-GBP	237.40	-	0.80	1.26
UK Opportunities Fund W-INC-GBP	133.30	-	0.50	1.31
Institutional OEIC Funds				
America	£ 5.59	-	0.04	0.60
Emerging Markets	£ 5.04	-	0.03	0.68
Europe (ex-UK) Fund ACC-GBP	£ 5.20	-	0.02	1.14
Fidelity Pre-Retirement Bond Fund	£ 136.80	-	0.00	2.65
Global Focus	£ 4.25	-	0.03	0.59
Index Linked Bond	£ 3.16	-	-0.03	0.22
Index Linked Bond Gross	£ 3.86	-	-0.03	0.22
Japan	£ 3.15	-	0.03	0.39
Long Bond	£ 0.56	-	0.00	2.20
Long Bond Gross	£ 0.97	-	0.00	2.17
Long Bond Fund Gross Inc	£ 12.70	-	-0.08	2.16
Pacific (Ex Japan)	£ 5.13	-	0.04	1.41
Pan European	£ 3.44	-	0.02	1.83
Select Emerging Markets Equities	£ 2.03	-	0.02	0.67
Select Global Equities	£ 4.15	-	0.02	0.96
South East Asia	£ 5.71	-	0.06	1.53
Sterling Core Plus Bond Gr Accum	£ 2.46	-	-0.01	2.51
Sterling Core Plus Bond Inc	£ 1.50	-	-0.01	2.56
UK	£ 4.14	-	0.02	2.18
UK Aggreg Bond Gr Accum	£ 2.06	-	0.00	2.35
UK Corporate Bond	£ 1.29	-	0.00	2.86
UK Corporate Bond - Gross	£ 2.58	-	0.00	2.80
UK Corporate Bond Fund Gross Inc	£ 11.71	-	0.00	2.87
UK Gilt Fund Inc	£ 1.35	-	0.00	1.65
UK Gilt Gross	£ 2.23	-	-0.01	1.63
UK Long Corp Bond	£ 1.52	-	0.01	3.02
UK Long Corp Bond - Gross	£ 2.98	-	0.01	2.95
UK Long Corporate Bond - Gross Inc	£ 12.13	-	0.00	3.01
Retail Share Classes				
Emerging Markets - retail	£ 1.98	-	0.01	0.17

(*)CAR - Net income reinvested

Findlay Park Funds Plc (IRL)
30 Herbert Street, Dublin 2, Ireland Tel: 020 7968 4900

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
American Fund USD Class	$ 111.54	-	0.67	0.00
American Fund GBP Hedged	£ 59.36	-	0.35	0.00
American Fund GBP Unhedged	£ 80.64	-	0.86	0.00
Latin American Fund USD Class	$ 17.28	-	0.00	0.00
Latin American Fund GBP Unhedged	£ 12.73	-	0.06	0.00

The First Investor QSCC
5th Floor, Barwa Bank Building, Grand Hamad Street
, P.O. Box 16034, Doha, State of Qatar
+ 974 4459 6111
http://www.tfi.com.qa/

Other International Funds

Fund	Bid	Offer	D+/-	Yield
TFI GCC Equity Opportunities Fund (Q)	QAR 1280.10	-	0.04	0.00

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

Fund	Bid	Offer	D+/-	Yield
Asia-All Cap Acc GBP	£ 1.53	-	0.01	0.56
Asia Focus Acc GBP	£ 1.76	-	0.01	0.81
Diversified Growth B Acc	£ 1.16	-	0.01	1.48
Emerging Markets Bond A Accumulation	£ 1.33	-	0.00	5.59
Emerging Markets Bond A Income	£ 1.02	-	0.00	5.86
Global Listed Infrastructure Acc	232.72	-	1.54	3.30
Global Listed Infrastructure Inc	168.82	-	1.12	3.38
Global Property Securities A Accumulation	190.67	-	0.86	2.72
Global Property Securities A Income	140.18	-	0.63	2.77
Global Resources A Shares	273.27	-	-2.70	0.35
Greater China Growth A Shares	862.78	-	10.96	0.73
Japan Focus Acc GBP	£ 1.80	-	0.00	0.07

Foord Asset Management
Website: www.foord.com - Email: info@foord.com

FCA Recognised - Luxembourg UCITS

Fund	Bid	Offer	D+/-	Yield
Foord International Fund | R	$ 40.82	-	0.25	-
Foord Global Equity Fund (Lux) | R	$ 13.61	-	0.11	-
Regulated				
Foord Global Equity Fund (Sing) | B	$ 16.42	-	0.14	0.00
Foord International Trust (Gsy)	$ 40.50	-	0.25	0.00

Franklin Templeton International Services Sarl (IRL)
JPMorgan House - International Financial Services Centre,Dublin 1, Ireland

Other International Funds

Fund	Bid	Offer	D+/-	Yield
Franklin Emerging Market Debt Opportunities Fund Plc				
Franklin Emg Mkts Debt Opp CHF	SFr 17.88	-	0.03	8.00
Franklin Emg Mkts Debt Opp GBP	£ 11.17	-	0.07	5.90
Franklin Emg Mkts Debt Opp SGD	S$ 24.00	-	0.03	4.57
Franklin Emg Mkts Debt Opp USD	$ 18.74	-	-0.01	5.89

Fundsmith LLP (1200)F (UK)
PO Box 10846, Chelmsford, Essex, CM99 2BW 0330 123 1815
www.fundsmith.co.uk, enquiries@fundsmith.co.uk

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Fundsmith Equity T Acc	363.12	-	3.61	0.56
Fundsmith Equity T Inc	337.13	-	3.34	0.56

GAM
funds@gam.com, www.funds.gam.com

Regulated

Fund	Bid	Offer	D+/-	Yield
LAPIS TOP 25 DIV.YLD-D	£ 103.36	-	1.17	1.95

GYS Investment Management Ltd (GSY)
Regulated

Fund	Bid	Offer	D+/-	Yield
Taurus Emerging Fund Ltd	$ 236.30	241.13	-0.70	0.00

Genesis Asset Managers LLP
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Emerging Mkts NAV	£ 8.24	-	0.07	1.29

Global Investment House

Fund	Bid	Offer	D+/-	Yield
Global GCC Islamic Fund	$ 99.53	-	-0.53	0.00
Global GCC Large Cap Fund	$ 149.36	-	-0.65	0.00
Global Saudi Equity Fund	SR 231.54	-	-2.01	0.00

HPB Assurance Ltd
Anglo Intl House, Bank Hill, Douglas, Isle of Man, IM1 4LN 01638 563490

International Insurances

Fund	Bid	Offer	D+/-	Yield
Holiday Property Bond Ser 1	£ 0.54	-	0.00	0.00
Holiday Property Bond Ser 2	£ 0.65	-	0.00	0.00

Haussmann
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Haussmann Cls A	$ 2769.32	-	-10.23	0.00
Haussmann Cls C	€ 2360.71	-	-13.31	0.00
Haussmann Cls D	SFr 1238.45	-	-7.47	0.00

Hermes Investment Funds Plc (IRL)
Hermes Investment Management Limited, 1 Portsoken Street, London E1 8HZ +44 (0) 207 680 2121

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Hermes Abs Return Credit Fund Class F Acc	£ 1.16	1.16	0.00	0.00
Hermes Abs Return Credit Fund Class F Acc USD	€ 1.92	1.92	-0.01	0.00
Hermes Asia Ex-Japan Equity Fund Class C Acc GBP	£ 2.68	2.68	0.03	0.00
Hermes Asia Ex-Japan Equity Fund Class C Acc USD	€ 4.70	4.70	0.07	0.00
Hermes Europe Ex-UK Equity Fund Class F Acc	£ 2.09	2.09	0.01	0.00
Hermes Europe Ex-UK Equity Fund Class F Acc EUR	€ 3.97	3.97	0.03	0.00
Hermes European Alpha Equity Fund Class F Acc	£ 1.72	1.72	0.00	0.00
Hermes European Alpha Equity Fund Class F Dis	£ 1.63	1.63	0.00	1.16
Hermes European Alpha Equity Fund Class F Acc EUR	€ 3.37	3.37	0.01	0.00
Hermes Global Emerging Markets Fund Class F Acc	£ 2.08	2.08	0.01	0.00
Hermes Global Emerging Markets Fund Class F Acc USD	€ 4.29	4.29	0.04	0.00
Hermes Global Equity Fund Class F Acc	£ 2.21	2.21	0.01	0.00
Hermes Global Equity Fund Class R Acc USD	€ 4.70	4.70	0.05	0.00
Hermes Global ESG Equity Fund Class F Acc	£ 1.68	1.68	0.01	0.00
Hermes Global High Yield Credit Fund Class F Acc	£ 1.50	1.50	0.00	0.00
Hermes Global High Yield Credit Fund Class F Acc EUR	€ 3.16	3.16	0.00	0.00
Hermes Global Small Cap Fund Class F Acc	£ 1.51	1.51	0.00	0.00
Hermes Global Small Cap Fund Class F Acc USD	€ 2.17	2.17	-0.01	0.00
Hermes Impact Opportunities Equity Fund F	$ 1.99	-	-0.01	-
Hermes Impact Opportunities Equity Fund F	£ 0.97	-	0.00	-
Hermes Multi Asset Inflation Fund Class F GBP Acc	£ 1.03	1.03	0.00	0.00
Hermes Multi Strategy Credit Fund Class F Acc Hed	£ 1.15	1.15	0.00	0.00
Hermes SDG Engagement Equity Fund F	$ 2.12	-	0.00	-
Hermes SDG Engagement Equity Fund F	£ 1.02	-	0.00	-
Hermes US All Cap Equity Class F Stg £ Acc	£ 1.44	1.44	0.01	0.00
Hermes US All Cap Equity Class F Acc USD	€ 2.18	2.18	0.00	0.00
Hermes US SMID Equity Fund Class F Acc	£ 2.34	2.34	0.00	0.00
Hermes US SMID Equity Fund Class F Acc USD	€ 4.05	4.05	0.02	0.00

Hermes Property Unit Trust (UK)
Property & Other UK Unit Trusts

Fund	Bid	Offer	D+/-	Yield
Property	£ 6.44	6.92	0.01	2.72

INDIA VALUE INVESTMENTS LIMITED (INVIL)
www.invil.mu

Other International Funds

Fund	Bid	Offer	D+/-	Yield
NAV	£ 8.47	-	-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

Fund	Bid	Offer	D+/-	Yield
IVI European Fund EUR	€ 21.98	-	0.19	0.00
IVI European Fund GBP	£ 26.23	-	0.20	0.00

Invesco Fund Managers Ltd (UK)
Perpetual Park, Henley-On-Thames, Oxon, RG9 1HH
Dealing: 0800 085 8571
Investor Services: 0800 085 8677
www.invescoperpetual.co.uk

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
INVESCO PERPETUAL Funds				
Asian Acc ♦F	789.81	-	10.68	0.56
Asian Inc ♦F	697.29	-	9.43	0.56
Asian Equity Income Acc ♦F	83.05	-	0.79	3.76
Asian Equity Income Inc ♦F	63.96	-	0.61	3.87
Balanced Risk 6 Acc	59.16	-	0.00	0.00
Balanced Risk 8 Acc	61.42	-	0.05	0.00
Balanced Risk 10 Acc	65.24	-	0.06	0.00
Corporate Bond Acc ♦F	201.91	-	0.13	2.88
Corporate Bond Inc ♦F	90.92	-	0.06	2.94
Distribution Acc ♦F	118.43	-	0.26	4.64
Distribution Inc ♦F	62.41	-	0.13	4.75
Emerging European Acc ♦F	60.26	-	0.13	1.78
Emerging European Inc ♦F	52.85	-	0.11	1.81
European Equity Acc ♦F	1166.97	-	-1.58	1.28
European Equity Inc ♦F	945.92	-	-1.28	1.29
European Equity Income Acc ♦F	98.47	-	0.04	3.02
European Equity Income Inc ♦F	69.87	-	0.03	3.09
European High Income Acc ♦F	101.92	-	0.12	3.08
European High Income Inc ♦F	68.08	-	0.08	3.14
European Opportunities Inc ♦F	101.26	-	-0.22	0.81
European Opportunities Acc ♦F	107.23	-	-0.22	0.80
European Smlr Cos Acc ♦F	263.48	-	-0.85	0.16
Global Bond Acc ♦F	136.46	-	0.07	1.23
Global Bond Inc ♦F	87.47	-	0.04	1.24
Glbl Distribution Acc	62.09	-	0.07	3.27
Glbl Distribution Inc	53.77	-	0.07	3.28
Global Emerging Markets Acc ♦F	386.04	-	3.23	0.53
Global Emerging Markets Inc ♦F	343.99	-	2.87	0.53
Global Equity (acc) ♦F	667.77	-	2.25	0.83
Global Equity (inc) ♦F	593.60	-	2.00	0.83
Global Equity Income Acc ♦F	163.00	-	0.58	3.03
Global Equity Income Inc ♦F	122.57	-	0.44	3.11
Gbl Financial Capital Acc	106.01	-	-0.01	4.54
Gbl Financial Capital Inc	81.01	-	0.00	4.71
Global Opportunities Acc ♦F	143.80	-	0.50	0.31
Global Smaller Cos Acc ♦F	2556.46	-	2.52	0.02
Global Smaller Cos Inc ♦F	2436.60	-	2.40	0.02
Global Targeted Rets Acc	58.52	-	0.13	0.70
High Income Acc ♦F	838.21	-	3.98	3.55
High Income Inc ♦F	426.82	-	2.03	3.64
High Yield Fund Acc	122.77	-	0.07	5.68
High Yield Fund Inc	43.10	-	0.02	5.89
Hong Kong & China Acc ♦F	755.70	-	5.65	0.27
Income & Growth Acc ♦F	1042.84	-	5.87	4.00
Income & Growth Inc ♦F	412.64	-	2.33	4.12
Income Acc ♦F	3181.31	-	14.49	3.60
Income Inc ♦F	1655.85	-	7.54	3.69
Japan Acc ♦F	431.16	-	-2.21	0.46
Japanese Smlr Cos Acc ♦F	141.93	-	-0.80	0.00
Latin America Acc ♦F	160.10	-	0.14	0.90
Latin America Inc ♦F	130.93	-	0.12	0.91
Managed Growth Acc ♦F	217.87	-	0.68	0.63
Managed Growth Inc ♦F	179.18	-	0.57	0.63
Managed Income Acc ♦F	195.25	-	0.64	2.52
Managed Income Inc ♦F	112.56	-	0.37	2.57
Money Acc ♦F	90.39	-	0.00	0.04

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Fund	Bid	Offer	D+/-	Yield
Monthly Income Plus Acc ♦F	330.18	-	0.02	4.64
Monthly Income Plus Inc ♦F	109.40	-	0.01	4.76
Pacific Acc ♦F	1594.85	-	4.12	0.38
Pacific Inc ♦F	1444.91	-	3.74	0.39
Tactical Bond Acc ♦F	72.39	-	0.02	1.64
Tactical Bond Inc ♦F	60.82	-	0.02	1.66
UK Companies Acc ♦F	453.47	-	0.81	2.09
UK Focus Acc F	246.61	-	0.16	2.12
UK Focus Inc F	193.73	-	0.12	2.16
UK Growth Acc ♦F	653.75	-	0.76	2.03
UK Growth Inc ♦F	390.08	-	0.46	2.07
UK Smaller Cos Equity Acc ♦F	1247.68	-	7.20	0.27
UK Smaller Cos Equity Inc ♦F	948.25	-	5.47	0.27
UK Strategic Income Acc ♦F	188.67	-	1.17	3.24
UK Strategic Income Inc ♦F	130.38	-	0.80	3.32
US Equity Acc ♦F	757.48	-	5.07	0.00
Invesco Perpetual Funds (No Trail)				
Asian (No Trail) Acc ♦F	334.82	-	4.53	0.99
Asian (No Trail) Inc ♦F	295.09	-	4.00	1.00
Asian Equity Income (No Trail) Acc ♦F	172.00	-	1.64	3.75
Asian Equity Income (No Trail) Inc	132.49	-	1.26	3.86
Balanced Risk 6 No Trail Acc	121.63	-	0.00	0.00
Balanced Risk 8 No Trail Acc	126.47	-	0.10	0.00
Balanced Risk 10 No Trail Acc	134.31	-	0.14	0.00
Corporate Bond (No Trail) Acc ♦F	180.64	-	0.12	3.11
Corporate Bond (No Trail) Inc ♦F	120.27	-	0.08	3.19
Distribution (No Trail) Acc ♦F	183.81	-	0.40	4.63
Distribution (No Trail) Inc ♦F	110.28	-	0.25	4.74
Emerging European (No Trail) Acc ♦F	126.75	-	0.27	2.13
Emerging European (No Trail) Inc ♦F	106.86	-	0.23	2.18
European Equity (No Trail) Acc ♦F	208.45	-	-0.28	1.74
European Equity (No Trail) Inc ♦F	166.33	-	-0.22	1.77
European Equity Income (No Trail) Acc ♦F	205.22	-	0.08	3.01
European Equity Income (No Trail) Inc ♦F	145.66	-	0.06	3.08
European ex UK Enhanced Index (No Trail) Acc ♦F	125.27	-	0.50	2.27
European ex UK Enhanced Index (No Trail) Inc ♦F	122.27	-	0.49	2.31
European High Income (No Trail) Acc ♦F	211.94	-	0.24	3.07
European High Income (No Trail) Inc ♦F	141.58	-	0.17	3.13
European Opportunities (No Trail) Acc ♦F	227.10	-	-0.47	1.28
European Opportunities (No Trail) Inc ♦F	205.47	-	-0.42	1.30
European Smaller Companies (No Trail) Acc ♦F	327.35	-	-1.06	0.59
Global Balanced Index (No Trail) Acc ♦F	196.30	-	0.59	1.89
Global Bond (No Trail) Acc ♦F	154.17	-	0.08	1.48
Global Bond (No Trail) Inc ♦F	135.79	-	0.07	1.49
Glbl Distribution Acc (No Trail)	126.58	-	0.16	3.64
Glbl Distribution Inc (No Trail)	109.61	-	0.13	3.72
Gbl Emerging Markets (No Trail) Acc ♦F	255.97	-	2.14	0.95
Gbl Emerging Markets (No Trail) Inc ♦F	232.99	-	1.95	0.96
Global Equity (No Trail) acc ♦F	298.22	-	1.01	1.27
Global Equity (No Trail) inc ♦F	268.08	-	0.90	1.28
Global Equity Income (No Trail) Acc ♦F	341.11	-	1.23	3.02
Global Equity Income (No Trail) Inc ♦F	256.51	-	0.92	3.09
Global ex UK Core Equity Index (No Trail) Acc ♦F	249.03	-	1.02	1.47
Global ex UK Enhanced Index (No Trail) Acc ♦F	294.03	-	1.56	1.79
Global ex UK Enhanced Index (No Trail) Inc ♦F	118.22	-	0.62	1.81
Gbl Fin Cap No Trail Acc	218.56	-	0.00	4.53
Gbl Fin Cap No Trail Inc	167.05	-	0.00	4.70
Global Opportunities (No Trail) Acc ♦F	374.34	-	1.28	0.75
Global Smaller Companies (No Trail) Acc ♦F	377.85	-	0.38	0.46
Global Smaller Companies (No Trail) Inc ♦F	357.18	-	0.36	0.46
Global Targeted Income Fund Acc (No Trail)	100.66	-	0.29	3.40
Global Targeted Income Fund Inc (No Trail)	104.98	-	0.31	3.34
Global Targeted Rets (No Trail) Acc	119.38	-	0.26	1.13
High Income (No Trail) Acc ♦F	181.32	-	0.86	3.54
High Income (No Trail) Inc ♦F	123.06	-	0.59	3.63
High Yield Fund (No Trail) Acc	257.39	-	0.14	5.67
High Yield Fund (No Trail) Inc	168.37	-	0.10	5.88
Hong Kong & China (No Trail) Acc ♦F	303.22	-	2.27	0.71
Income & Growth (No Trail) Acc ♦F	248.36	-	1.40	3.99
Income & Growth (No Trail) Inc ♦F	179.32	-	1.01	4.11
Income (No Trail) Acc ♦F	176.86	-	0.81	3.59
Income (No Trail) Inc ♦F	121.18	-	0.55	3.68
Invesco Global Emerging Mkts Bond Acc (No Trail)	96.53	-	0.17	4.26
Invesco Global Emerging Mkts Bond Inc (No Trail)	92.20	-	0.16	4.36
Japan (No Trail) Acc ♦F	207.27	-	-1.06	0.92
Japanese Smaller Companies (No Trail) Acc ♦F	365.75	-	-2.06	0.00
Latin American (No Trail) Acc ♦F	156.60	-	0.14	1.34
Latin American (No Trail) Inc ♦F	136.98	-	0.13	1.36
Managed Growth (No Trail) Acc ♦F	266.70	-	0.85	0.98
Managed Growth (No Trail) Inc ♦F	240.26	-	0.76	0.99
Managed Income (No Trail) Acc ♦F	236.19	-	0.78	2.52
Managed Income (No Trail) Inc ♦F	182.62	-	0.60	2.56
Monthly Income Plus (No Trail) Acc ♦F	192.68	-	0.01	4.63
Monthly Income Plus (No Trail) Inc ♦F	109.09	-	0.01	4.75
Pacific (No Trail) Acc ♦F	299.29	-	0.78	0.77
Pacific (No Trail) Inc ♦F	276.29	-	0.72	0.89
Tactical Bond (No Trail) Acc ♦F	149.76	-	0.05	2.13
Tactical Bond (No Trail) Inc ♦F	121.92	-	0.04	2.16
UK Focus (No Trail) Acc F	205.25	-	0.13	2.60
UK Focus (No Trail) Inc F	160.58	-	0.11	2.66
UK Enhanced Index (No Trail) Acc ♦F	509.00	-	1.44	3.65
UK Enhanced Index (No Trail) Inc ♦F	294.70	-	0.84	3.76
UK Growth (No Trail) Acc ♦F	174.93	-	0.21	2.52
UK Growth (No Trail) Inc ♦F	132.66	-	0.15	2.58
UK Smaller Companies Equity (No Trail) Acc ♦F	410.95	-	2.38	0.68
UK Smaller Companies Equity (No Trail) Inc ♦F	372.74	-	2.15	0.69
UK Strategic Income (No Trail) Acc ♦F	758.16	-	4.71	3.23
UK Strategic Income (No Trail) Inc ♦F	524.03	-	3.26	3.31
US Enhanced Index (No Trail) Acc ♦F	123.81	-	0.70	1.45
US Enhanced Index (No Trail) Inc ♦F	120.90	-	0.68	1.47
US Equity (No Trail) Acc ♦F	319.09	-	2.14	0.21

Invesco (LUX)
Dublin 00 353 1 439 8100 Hong Kong 00852 3191 8282

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Invesco Management SA				
Invesco Active Multi-Sector Credit Fund A	€ 3.14	-	0.00	0.00
Invesco Asia Balanced A dist	$ 14.91	-	0.03	2.91
Invesco Asia Consumer Demand Fund A income	$ 18.57	-	0.16	0.06
Invesco Asia Infrastructure (A)	$ 15.39	-	0.08	0.75
Invesco Asia Opportunities Equity A	$ 147.32	-	0.88	0.00
Invesco Balanced Risk Allocation Fund A	€ 16.74	-	0.02	0.00
Invesco Emerging Europe Equity Fund A	$ 12.64	-	-0.01	0.00
Invesco Emerging Local Currencies Debt A Inc	$ 7.22	-	-0.01	5.83
Invesco Emerging Market Structured Equity Fund A	$ 13.02	-	0.04	0.00
Invesco Energy A	$ 16.48	-	-0.09	0.00
Invesco Euro Corporate Bond Fund (A)	€ 17.90	-	0.02	0.00
Invesco Euro Reserve A	€ 320.14	-	-0.01	0.00
Invesco Euro Bond A	€ 7.52	-	0.01	0.00
Invesco European Growth Equity A	€ 27.12	-	0.10	0.00
Invesco Global Absolute Return Fund A Class	€ 10.98	-	0.03	0.00
Invesco Global Bond A Inc	$ 5.84	-	-0.01	0.79
Invesco Global Conservative Fund 90 (EUR) A	€ 11.72	-	0.00	0.00
Invesco Global Equity Income Fund A	$ 73.12	-	0.05	0.00
Invesco Global Inc Real Estate Sec A dist	$ 9.35	-	0.03	2.08
Invesco Global Inv Grd Corp Bond A Dist	$ 12.09	-	0.02	2.81
Invesco Global Leisure A	$ 57.25	-	0.17	0.00
Invesco Global Smaller Comp Eq Fd A	$ 78.33	-	0.09	0.00
Invesco Global Structured Equity A	$ 51.41	-	0.22	0.74
Invesco Global Total Ret.(EUR) Bond Fund A	€ 13.72	-	0.02	0.00
Invesco Gold & Precious Metals A	$ 4.91	-	-0.02	0.00
Invesco Greater China Equity A	$ 67.29	-	0.32	0.00
Invesco India Equity A	$ 70.42	-	-0.05	0.00
Invesco Japanese Equity Adv Fd A	¥ 4692.00	-	23.00	0.00
Invesco Japanese Value Eq Fd A	¥ 1618.00	-	6.00	0.00
Invesco Latin American Equity A	$ 8.29	-	-0.02	0.00
Invesco Nippon Small/Mid Cap Equity A	¥ 1742.00	-	-3.00	0.00
Invesco Pan European Equity A EUR Cap NAV	€ 20.46	-	0.05	0.00
Invesco Pan European High Income Fd A	€ 14.43	-	0.03	1.91
Invesco Pan European Small Cap Equity A	€ 25.06	-	0.09	0.00
Invesco Pan European Structured Equity A	€ 18.69	-	0.16	0.00
Invesco Real Return (EUR) Bond Fund A	€ 15.92	-	0.01	-
Invesco UK Eqty Income A	£ 31.81	-	0.14	0.00
Invesco UK Investment Grade Bond A	£ 1.05	-	0.00	1.96
Invesco US Structured Equity A	$ 26.91	-	0.07	0.00
Invesco US Value Eq Fd A	$ 41.80	-	0.08	0.00
Invesco USD Reserve A	$ 88.07	-	0.00	0.00

Invesco Global Asset Management Ltd (IRL)
Dublin 00 353 1 439 8100 Hong Kong 00 852 2842 7200

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Invesco Stlg Bd A QD F	£ 2.67	-	0.00	3.23
Invesco Asian Equity A	$ 9.53	-	0.08	0.00
Invesco ASEAN Equity A	$ 112.47	-	0.09	0.29
Invesco Bond A	$ 28.15	-	-0.07	2.25
Invesco Continental Eurp Small Cap Eqty A	$ 298.89	-	-1.47	0.00
Invesco Emerging Markets Equity A	$ 52.17	-	0.30	0.00
Invesco Emerging Markets Bond A	$ 21.98	-	0.02	5.11
Invesco Continental European Equity A	€ 9.21	-	0.03	0.83
Invesco Gilt A	£ 15.80	-	-0.01	0.91
Invesco Global Small Cap Equity A NAV	$ 166.56	-	-0.23	0.00
Invesco Global High Income A NAV	$ 12.20	-	0.00	5.06
Invesco Gbl R/Est Secs A GBP F F	£ 8.69	-	0.04	1.22
Invesco Global Health Care A	$ 128.20	-	0.13	0.00
Invesco Global Select Equity A	$ 16.72	-	0.01	0.15
Invesco Jap Eqty Core A	$ 22.72	-	-0.17	0.14
Invesco Japanese Equity A	$ 26.80	-	-0.08	0.00
Invesco Korean Equity A	$ 28.26	-	0.56	0.00
Invesco PRC Equity A	$ 84.38	-	0.78	0.00
Invesco Pacific Equity A	$ 69.57	-	0.01	0.07
Invesco Global Technology A	$ 23.53	-	0.09	0.00
Invesco UK Eqty A	£ 8.99	-	0.01	1.77

Janus Henderson Investors (UK)
PO Box 9023, Chelmsford, CM99 2WB Enquiries: 0800 832 832
www.janushenderson.com

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Janus Henderson Asia Pacific Capital Growth Fund A Acc	1131.00	-	10.00	0.03
Janus Henderson Asian Dividend Income Unit Trust Inc	110.04	115.61	1.49	5.69
Janus Henderson Cautious Managed Fund A Acc	261.10	-	0.60	3.30
Janus Henderson Cautious Managed Fund A Inc	150.50	-	0.40	3.37
Janus Henderson China Opportunities Fund A Acc	1513.00	-	14.00	0.44
Janus Henderson Emerging Markets Opportunities Fund A Acc	212.00	-	0.50	0.29
Janus Henderson European Growth Fund A Acc	238.70	-	0.90	0.84
Janus Henderson European Selected Opportunities Fund A Acc	1652.00	-	7.00	0.57
Janus Henderson Fixed Interest Monthly Income Fund Inc	21.98	22.93	0.01	4.94
Janus Henderson Global Sustainable Equity Fund A Inc	293.30	-	1.00	0.05
Janus Henderson Global Equity Income Fund A Inc	60.58	-	0.27	3.28
Janus Henderson Global Equity Fund Acc	3111.69	3245.72	22.63	0.00
Janus Henderson Global Technology Fund A Acc	1760.00	-	14.00	0.00
Janus Henderson Multi-Asset Absolute Return Fund A Acc	140.70	-	-0.10	0.43
Janus Henderson Multi-Manager Active Fund A Acc	224.30	-	0.90	0.00
Janus Henderson Multi-Manager Distribution Fund A Inc	134.30	-	0.30	2.99
Janus Henderson Multi-Manager Diversified Fund A Acc	85.09	-	0.10	2.69
Janus Henderson Multi-Manager Global Select Fund Acc	239.90	-	1.10	0.30
Janus Henderson Multi-Manager Income & Growth Fund A Acc	175.10	-	0.40	2.09
Janus Henderson Multi-Manager Income & Growth Fund A Inc	153.20	-	0.40	2.12
Janus Henderson Multi-Manager Managed Fund A Acc	277.20	-	0.90	0.02
Janus Henderson Multi-Manager Managed Fund A Inc	270.10	-	0.90	0.02
Janus Henderson Sterling Bond Unit Trust Acc	219.53	229.00	0.17	2.25
Janus Henderson Sterling Bond Unit Trust Inc	64.88	67.67	0.05	2.28
Janus Henderson Strategic Bond Fund A Inc	123.90	-	0.10	4.02
Janus Henderson UK & Irish Smaller Companies Fund A Acc	664.40	-	-4.50	0.42
Janus Henderson UK Absolute Return Fund A Acc	156.70	-	0.10	0.00
Janus Henderson UK Alpha Fund A Acc	147.70	-	1.40	1.88
Janus Henderson UK Equity Income & Growth Fund A Inc	633.60	-	-2.80	3.71
Janus Henderson UK Index Fund A Acc	606.60	-	2.90	2.13
Janus Henderson UK Property PAIF A Acc	£ 2.26	2.38	0.00	2.91
Janus Henderson UK Property PAIF A Inc	£ 1.02	1.07	0.00	2.97
Janus Henderson UK Tracker Fund A Acc	271.30	-	1.30	2.16
Janus Henderson US Growth Fund A Acc	1025.00	-	9.00	0.00

Kames Capital ICVC (UK)
Kames House, 3 Lochside Crescent, Edinburgh, EH12 9SA
0800 358 3009 www.kamescapital.com

Authorised Funds

Fund	Bid	Offer	D+/-	Yield
Diversified Monthly Inc B Acc	134.29	-	0.24	4.90
Diversified Monthly Inc B Inc	109.09	-	0.19	5.03
Diversified Growth B Acc	£ 1.62	-	0.00	2.69
Ethical Cautious Managed B Acc	£ 1.34	-	0.01	2.01
Ethical Cautious Managed B Inc	£ 1.21	-	0.00	2.03
Ethical Corporate Bond B Acc	£ 1.87	-	0.00	3.07
Ethical Corporate Bond B Inc	£ 1.02	-	0.00	3.10
Ethical Equity B Acc	£ 2.25	-	0.01	2.08
High Yield Bond B Acc	£ 2.72	-	0.01	3.84
High Yield Bond B Inc	£ 0.98	-	0.00	3.85
Investment Grade Bond B Acc	178.37	-	0.02	2.20
Investment Grade Bond B Inc	£ 1.24	-	0.00	2.72
Sterling Corporate Bond B Acc	£ 0.82	-	0.00	2.94
Sterling Corporate Bond B Inc	£ 0.33	-	0.00	2.96
Strategic Bond B Acc	£ 1.23	-	0.00	2.48
Strategic Bond B Inc	£ 1.22	-	0.00	2.50
UK Equity B Acc	£ 3.04	-	0.01	2.29
UK Equity Absolute Return B Acc	£ 1.13	-	0.00	0.00
UK Equity Income B Acc	£ 2.53	-	0.01	4.43
UK Equity Income B Inc	£ 1.78	-	0.01	4.56
UK Opportunities B Acc	£ 2.01	-	0.01	1.79
UK Smaller Companies B Acc	£ 3.80	-	0.02	1.49

Kames Capital Investment Portfolios ICVC (UK)
Kames House, 3 Lochside Crescent, Edinburgh, EH12 9SA
0800 358 3009 www.kamescapital.com

Authorised Funds

Fund	Bid	Offer	D+/-	Yield
Property Income B Acc	131.00	131.00	0.06	4.40
Property Income B Inc	109.44	109.44	0.05	4.51

Kames Capital VCIC (IRL)
1 North Wall Quay, Dublin 1, Ireland +35 3162 24493

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Absolute Return Bond B GBP Acc	1109.99	-	0.27	1.29
Eq Market Neutral B Acc	933.38	-	0.11	0.00
High Yield Global Bond A GBP Inc	519.08	-	0.22	3.10
High Yield Global Bond B GBP Inc	1090.38	-	0.47	3.61
Investment Grade Global Bd A GBP Inc	570.72	-	0.35	1.83
Kames Emerging Market Bond Fund - B Acc USD	$ 11.26	-	-0.03	0.00
Kames Global Equity Income B GBP Acc	1677.27	-	7.23	0.00
Kames Global Equity Income B GBP Inc	1455.44	-	-8.32	3.19
Kames Global Diversified Growth Fund - B Acc EUR	€ 11.32	-	0.04	0.00
Kames Global Equity Market Neutral Fund - B Acc GBP	£ 10.39	-	-0.03	0.00
Global Sustainable Equity B Acc GBP	£ 14.29	-	0.06	0.00
Global Sustainable Equity C Acc GBP	£ 14.34	-	0.06	0.00
Kames Absolute Return Bond Global Fund - B Acc GBP	£ 10.31	-	0.00	0.00
Short Dated High Yld Bd B Acc GBP	£ 10.04	-	0.00	-
Short Dated High Yld Bd C Acc GBP (Hdg)	£ 10.07	-	0.00	-
Strategic Global Bond A GBP Inc	1124.88	-	0.20	0.91
Strategic Global Bond B GBP Inc	638.34	-	0.12	1.42

Kleinwort Hambros Bank Limited (UK)
5TH Floor, 8 St James's Square, London, SW1Y 4JU
Dealing and enquiries: 033 0024 0785

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Unit Trust Manager/ACD - Host Capital				
HC Kleinwort Hambros Growth A Acc	200.89	-	1.06	1.36
HC Kleinwort Hambros Growth A Inc	184.09	-	0.97	1.38
HC Kleinwort Hambros Equity Income A Inc	110.92	-	0.62	3.06
HC Kleinwort Hambros Equity Income A Acc	181.04	-	1.03	4.00
HC Kleinwort Hambros Multi Asset Balanced A Acc	156.92	-	0.78	0.81
HC Kleinwort Hambros Multi Asset Balanced A Inc	148.30	-	0.74	0.81
HC Kleinwort Hambros Fixed Income A Acc	129.07	-	0.07	3.44
HC Kleinwort Hambros Fixed Income A Inc	109.56	-	0.06	3.44

Lazard Fund Managers Ltd (1200)F (UK)
P.O. Box 364, Darlington, DL1 9RD
Dealing: 0870 6066408, Info: 0870 6066459

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Lazard Investment Funds (OEIC) B Share Class				
Developing Markets Acc	128.30	-	0.80	0.00
Developing Markets Inc	126.70	-	0.80	0.00
Emerging Markets Acc	370.00	-	1.50	1.20
Emg Mkts Inc	316.20	-	1.20	1.21
European Alpha Acc	861.80	-	1.60	0.79
European Alpha Inc	771.90	-	1.40	0.81
European Smaller Cos Acc	634.60	-	-1.90	0.65
Global Equity Income Acc	168.70	-	0.80	4.73
Global Equity Income Inc	103.00	-	0.50	4.88
Managed Bal Inc	165.30	-	0.90	1.79
UK Income Acc	1395.00	-	0.00	4.25
UK Income Inc	623.00	-	0.00	4.37
UK Omega Acc	254.60	-	1.20	1.72
UK Omega Inc	232.60	-	1.00	1.74
UK Smaller Cos Inc	2081.00	-	-7.00	1.10

LF Funds (Banque Libano-Francaise Group) (LUX)
www.eblf.com - lffunds@eblf.com

Regulated

Fund	Bid	Offer	D+/-	Yield
Lebanon Income Fund (USD) Class A	$ 104.46	-	1.01	1.67
LF Total Return Bond Fund - Class A	$ 130.07	-	0.02	0.00
LF Total Return Bond Fund - Class D	$ 119.66	-	0.02	2.88

Link Asset Services (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 922 0044

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
LF Heartwood Balanced MA B Acc ♦	144.40	-	0.37	0.35
LF Heartwood Cautious MA B Acc ♦	140.21	-	0.28	0.43
LF Heartwood Defensive MA B Acc	114.98	-	0.13	0.07
LF Heartwood Growth MA B Acc ♦	175.43	-	0.56	0.09
LF Heartwood Income MA B Inc ♦	111.70	-	0.11	3.06
LF Heartwood Income Plus MA B Inc ♦	117.19	-	0.21	3.64
LF Seneca Diversified Growth A Acc	270.93	-	0.33	2.07
LF Seneca Diversified Growth B Acc	162.67	-	0.20	2.65
LF Seneca Diversified Growth N Acc	160.17	-	0.20	2.43
LF Seneca Diversified Income A Inc	93.69	-	0.14	4.85
LF Seneca Diversified Income B Inc	112.49	-	0.17	4.84
LF Seneca Diversified Income N Inc	110.90	-	0.17	4.84
Investment Adviser - Morant Wright Management Limited				
LF Morant Wright Japan A Acc ♦	397.47	-	0.52	0.00
LF Morant Wright Japan A Inc ♦	389.14	-	0.51	0.43
LF Morant Wright Japan B Acc ♦	427.77	-	0.57	0.91
LF Morant Wright Japan B Inc ♦	396.38	-	0.52	0.92
LF Morant Wright Nippon Yield A Acc ♦	422.42	-	0.45	2.15
LF Morant Wright Nippon Yield A Inc ♦	348.94	-	0.37	2.18
LF Morant Wright Nippon Yield B Acc ♦	443.01	-	0.47	2.14
LF Morant Wright Nippon Yield B Inc ♦	366.04	-	0.40	2.19

Lloyds Investment Fund Managers Limited (1000)F (JER)
PO Box 311, 11-12 Esplanade, St Helier, Jersey, JE4 8ZU 01534 845555

Fund	Bid	Offer	D+/-	Yield
Other International Funds				
Lloydstrust Gilt	£ 12.3900	-	0.0000	1.95
Lloyds Investment Funds Limited				
Euro High Income	€ 1.5910	-	0.0020	3.02
European	£ 10.2500	-	0.1000	0.54
High Income	£ 0.8615xd	-	0.0006	4.35
International	£ 5.5680	-	0.0480	0.30
North American	£ 22.4500	-	0.1800	0.00
Sterling Bond	£ 1.5230	-	0.0020	2.75
UK	£ 7.5310	-	0.0720	0.61
Lloyds Gilt Fund Limited				
Lloyds Gilt Fund Quarterly Share	£ 1.3020	-	0.0010	1.63
Monthly Share	£ 1.2480xd	-	0.0000	1.63
Lloyds Money Fund Limited				
Sterling Class	£ 52.5230	-	0.0000	-0.20
Lloyds Multi Strategy Fund Limited				
Conservative Strategy	£ 1.2240	-	0.0030	0.86
Growth Strategy	£ 1.7850	-	0.0110	0.67
Aggressive Strategy	£ 2.4120	-	0.0210	0.00
Global USD Growth Strategy	$ 1.6570	-	0.0050	0.00

Dealing Daily

Lothbury Property Trust (UK)
155 Bishopsgate, London EC2M 3TQ +44(0) 20 3551 4900

Fund	Bid	Offer	D+/-	Yield
Property & Other UK Unit Trusts				
Lothbury Property Trust GBP	£ 1942.59	2094.44	15.66	3.11

M & G Securities (1200)F (UK)
PO Box 9038, Chelmsford, CM99 2XF
www.mandg.co.uk/charities Enq./Dealing: 0800 917 4472

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Charifund Inc	1550.39	-	-9.71	4.87
Charifund Acc	23734.82	-	-148.55	4.72

M & G Securities Ltd (UK)

Fund	Bid	Offer	D+/-	Yield
UK Charity Funds				
Charibond	123.51	-	0.03	3.73
(Accum Units)	3966.82	-	0.90	3.73
NAACIF	84.54	-	-0.15	4.02
(Accum Units)	8328.97	-	-14.89	3.92

M&L Capital Management Limited
c/o Capita Financial Administrators (Ireland) Limited
Tel:+353 1 400 5300

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
M&L Global Growth Class A USD Accumulation	$ 1.55	-	0.01	0.00
M&L Global Growth Class B GBP Accumulation	£ 1.52	-	0.02	0.00
M&L Global Growth Class C USD Income	$ 1.49	-	0.01	3.19
M&L Global Growth Class D GBP Income	£ 1.45	-	0.01	3.31
M&L Global Growth Class E USD Accumulation	$ 1.52	-	0.01	0.00
M&L Global Growth Class F GBP Income	£ 1.43	-	0.01	2.89

Majedie Asset Management LTD (UK)
www.majedie.com

Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Global Equity X Acc GBP	£ 1.62	-	0.00	0.58
Global Focus X Acc GBP	£ 1.57	-	0.01	0.61
UK Equity X Acc	173.18	-	-0.67	2.67
UK Focus X Acc	194.63	-	2.06	1.71
UK Income X Inc	156.84	-	0.33	4.86
UK Smaller Companies A Acc	313.10	-	-1.13	1.06

Majedie Asset Management LTD (IRL)

FCA Recognised

Fund	Bid	Offer	D+/-	Yield
US Equity Z Acc GBP	£ 1.73	-	0.01	0.00
Tortoise Z Acc GBP	£ 1.00	-	0.00	0.00

FTfm

MMIP Investment Management Limited (GSY)
Regulated
Multi-Manager Investment Programmes PCC Limited

Fund	Bid	Offer	D+/-	Yield
UK Equity Fd Cl A Series 01	£ 2827.36	2852.51	-26.45	0.00
Diversified Absolute Rtn Fd USD Cl AF2	$ 1685.49	-	19.51	0.00
Diversified Absolute Return Stlg Cell AF2	£ 1670.05	-	17.49	0.00
Global Equity Fund A Lead Series	£ 1437.31	1443.06	-6.20	0.00

Marlborough Fd Managers Ltd (1200)F (UK)
Marlborough House, 59 Chorley New Road, Bolton, BL1 4QP 0808 145 2500
www.marlboroughfunds.com
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Balanced	196.26	207.00	0.26	0.37
Bond Income	50.96	53.84	0.05	3.66
Cautious Inc	93.01	97.99	0.30	2.00
Defensive A Inc	114.14	114.14	0.09	0.40
Emerging Markets	347.83	347.83	1.88	1.44
ETF Global Growth A	189.79	189.79	0.49	0.00
ETF Commodity A	81.51	81.51	0.21	0.00
European Multi-Cap	483.50	483.50	0.87	0.31
Extra Income	83.41	88.26	-1.23	3.95
Far East Growth A Inc	250.74	250.74	1.78	1.21
Global	245.49	258.75	1.64	0.00
Global Bond Inc	149.88	158.47	0.00	3.12
High Yield Fixed Interest	74.89	79.41	0.07	4.51
Multi Cap Income A Inc	157.25	157.25	-1.00	4.36
Nano-Cap Growth A Acc	154.9606	170.3200	144.4414	0.00
Special Situations A Acc	1677.49	1775.12	8.90	0.27
UK Multi-Cap Growth A Inc	345.92	366.05	3.46	0.20
UK Micro Cap Growth A	718.40	760.21	2.15	0.09
US Multi-Cap Income	452.69	452.69	1.74	0.51

MFM - Third Party Funds

Fund	Bid	Offer	D+/-	Yield
Junior Oils	75.10	79.47	-2.14	0.00
Junior Gold C Acc	36.60	36.60	-0.15	0.00
MFM Bowland	238.94	258.31	1.37	0.70
MFM Hathaway Inc	135.38	141.76	0.34	1.45
MFM Techinvest Special Situations Acc	197.43	197.43	0.69	0.00
MFM Techinvest Technology Acc	463.44	463.44	1.71	0.00
MFM UK Primary Opportunities A Inc	410.15	410.15	-2.45	1.32

Marwyn Asset Management Limited (CYM)
Regulated

Fund	Bid	Offer	D+/-	Yield
Marwyn Value Investors	£ 432.07	-	-16.69	0.00

McInroy & Wood Portfolios Limited (UK)
Easter Alderston, Haddington, EH41 3SF 01620 825867
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Balanced Fund Personal Class Units	4675.30xd	-	21.80	1.57
Income Fund Personal Class Units	2519.70xd	-	1.60	2.87
Emerging Markets Fund Personal Class Units	2163.70xd	-	10.30	1.68
Smaller Companies Fund Personal Class Units	5236.80xd	-	17.10	1.20

MILLTRUST INTERNATIONAL

Emerging Markets Managed Accounts PLC (IRL)
emma@milltrust.com, +44(0)20 8123 8369, www.milltrust.com
Regulated

Fund	Bid	Offer	D+/-	Yield
Milltrust ASEAN A	$ 119.59	-	-1.08	0.00
Milltrust India A	$ 172.87	-	-1.18	0.00
Milltrust Latin America A	$ 113.21	-	-0.50	0.00
Milltrust Keywise China Fund	$ 163.07	-	-1.00	0.00
Milltrust SEDCO MENA Fund (Class A) *	$ 101.18	-	-0.13	0.00

Milltrust International Managed Investments ICAV (IRL)
mimi@milltrust.com, +44(0)20 8123 8369 www.milltrust.com
Regulated

Fund	Bid	Offer	D+/-	Yield
MAI - Buy & Lease (Australia)	A$ 99.42	-	-0.58	-
MAI - Buy & Lease (New Zealand)	NZ$ 99.44	-	-0.56	0.00
British Innovation Fund	£ 98.71	-	-1.03	-
EICM South Asia Hospitality 1	$ 101.98	-	4.50	-

Ministry of Justice Common Investment Funds (UK)
Property & Other UK Unit Trusts

Fund	Bid	Offer	D+/-	Yield
The Equity Idx Tracker Fd Inc	1676.00	1676.00	10.00	2.61

Distribution Units

MIRABAUD 1819 Asset Management

Mirabaud Asset Management (LUX)
www.mirabaud.com, marketing@mirabaud-am.com
Conviction based investment vehicles details available here www.mirabaud-am.com
Regulated

Fund	Bid	Offer	D+/-	Yield
Mir. - Glb Strat. Bd I USD	$ 109.61	-	0.04	0.00
Mir. - EqPanEuropeSm&Mid	£ 156.69	-	1.87	0.00
Mir. - Eq UK High Income I GBP	£ 123.08	-	-0.30	0.00

Morgan Stanley

Morgan Stanley Investment Funds (LUX)
6b Route de Trèves L-2633 Senningerberg Luxembourg (352) 34 64 61
www.morganstanleyinvestmentfunds.com
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
US Advantage A F	$ 85.52	-	0.71	0.00
Asian Equity A F	$ 56.79	-	0.61	0.00
Asian Property A F	$ 20.82	-	0.13	0.00
Emerg Europ, Mid-East & Africa Eq A F	€ 83.75	-	0.44	0.00
Emerging Markets Debt A F	$ 87.28	-	0.13	0.00
Emerging Markets Domestic Debt AX F	£ 12.45	12.45	0.04	5.27
Emerging Markets Equity A F	$ 47.81	47.81	0.51	0.00
Euro Bond A F	€ 16.21	16.21	0.00	0.00
Euro Corporate Bond AX F	£ 27.89	27.89	-0.06	1.30
Euro Strategic Bond A F	€ 46.55	46.55	0.01	0.00
European Currencies High Yield Bd A F	€ 24.69	24.69	0.01	0.00
European Equity Alpha A F	€ 43.77	-	0.23	0.00
European Property A F	€ 34.80	34.80	0.05	0.00
Eurozone Equity Alpha A F	€ 12.75	12.75	0.06	0.00
Global Bond A F	$ 42.87	42.87	-0.12	0.00
Global Brands A F	$ 128.42	-	1.04	0.00
Global Convertible Bond A F	$ 45.63	-	0.09	0.00
Global Property A F	$ 29.92	-	0.03	0.00
Indian Equity A F	$ 46.15	-	0.18	0.00
Latin American Equity A F	$ 61.09	-	1.25	0.00
Short Maturity Euro Bond A F	€ 20.41	20.41	0.00	0.00
US Dollar Liquidity A F	$ 13.15	-	0.00	0.00
US Growth A F	$ 111.25	-	1.00	0.00
US Growth AH F	€ 74.34	74.34	0.67	0.00
US Growth AX F	£ 80.27	80.27	0.74	0.00
US Property A F	$ 66.44	-	-0.07	0.00

Morgens Waterfall Vintiadis.co Inc
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Phaeton Intl (BVI) Ltd (Est)	$ 499.40	-	1.81	0.00

NATIXIS INVESTMENT MANAGERS

Natixis International Funds (LUX) I SICAV (LUX)
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
ASG Managed Futures Fund I/A (USD)	$ 100.45	100.45	-0.29	0.00
Harris Global Equity Fund R/A (USD)	$ 335.24	335.24	1.02	0.00
Loomis Sayles Global Growth Equity Fund I/A (USD)	$ 138.01	138.01	0.41	0.00
Loomis Sayles U.S. Growth Equity Fund I/A (USD)	$ 141.18	141.18	0.55	0.00

Natixis Investment Funds (UK)
Authorised Funds

Fund	Bid	Offer	D+/-	Yield
DNCA European Select Equity Fund	£ 1.05	-	0.01	-
Harris Global Concentrated Equity Fund	£ 1.67	-	0.00	1.29
H2O MultiReturns Fund N/A (GBP)	£ 1.56	-	0.01	0.71
Loomis Sayles U.S. Equity Leaders N/A (GBP)	£ 2.40	-	0.02	0.13

New Capital Fund Management Ltd (IRL)
Regulated

Fund	Bid	Offer	D+/-	Yield
New Capital Euro Value Credit Fund - EUR Inst Acc	€ 100.30	-	0.15	-

new capital funds by EFG Asset Management

New Capital UCITS Fund PLC (IRL)
Leconfield House, Curzon Street, London, W1J 5JB
www.newcapitalfunds.com
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
New Capital Asia Value Credit Fund - USD Ord Inc	$ 93.83	-	-0.22	3.90
New Capital Asia Pacific Equity Income Fund - USD Ord Inc	$ 112.15	-	0.71	2.44
New Capital Dynamic European Equity Fund - EUR Ord Inc	€ 184.08	-	1.77	2.69
New Capital China Equity Fund - USD Ord Acc	$ 179.55	-	2.51	0.00
New Capital Global Value Credit Fund - USD Ord Acc	$ 184.01	-	0.09	0.00
New Capital Global Equity Conviction Fund - USD Ord Acc	$ 126.22	-	0.54	0.00
New Capital Strategic Portfolio UCITS Fund - USD Inst Acc	$ 121.46	-	0.36	0.00
New Capital Wealthy Nations Bond Fund - USD Inst Inc	$ 115.71	-	0.01	4.38
New Capital Swiss Select Equity Fund - CHF Ord Acc	SFr 168.35	-	2.26	0.00
New Capital US Growth Fund - USD Ord Acc	$ 283.16	-	1.17	0.00
New Capital All Weather Fund - EUR Inst Acc	€ 101.47	-	0.03	0.00
New Capital Dynamic UK Equity Fund - GBP Inst Acc	£ 108.37	-	0.97	0.00
New Capital US Small Cap Growth Fund - USD Inst Acc	$ 134.79	-	0.03	0.00
New Capital Global Alpha Fund - USD Ord Inc	$ 106.26	-	0.16	0.31

NORTHWEST INVESTMENT MANAGEMENT

Northwest Investment Management (HK) Ltd
11th Floor, Kinwick Centre, 32, Hollywood Road, Central Hong Kong +852 9084 4373
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Northwest China Opps $ Class	$ 3329.90	-	203.41	0.00
Northwest $ Class	$ 2484.38	-	98.69	0.00

OASIS

Oasis Crescent Management Company Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Oasis Crescent Equity Fund	R 10.26	-	0.02	0.00

Oasis Global Mgmt Co (Ireland) Ltd (IRL)
Regulated
Oasis Global Investment (Ireland) Plc

Fund	Bid	Offer	D+/-	Yield
Oasis Crescent Global Short Term Income Fund	$ 0.98	-	0.00	1.62
Oasis Global Equity	$ 30.07	-	-0.40	0.51

Oasis Crescent Global Investment Fund (Ireland) plc

Fund	Bid	Offer	D+/-	Yield
Oasis Crescent Global Equity Fund	$ 31.42	-	0.04	0.42
Oasis Crescent Variable Balanced Fund	£ 10.39	-	0.05	0.00
OasisCresGl Income Class A	$ 10.62	-	-0.01	2.67
OasisCresGl LowBal D ($) Dist	$ 12.30	-	0.01	0.00
OasisCresGl Med Eq Bal A ($) Dist	$ 13.00	-	0.01	0.39
Oasis Crescent Gbl Property Eqty	$ 9.40	-	0.06	1.95

ODEY ASSET MANAGEMENT

Odey Asset Management LLP (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 300 2106
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions

Fund	Bid	Offer	D+/-	Yield
LF Odey Continental European GBP R Acc	978.57	-	2.06	0.64
LF Odey Opus GBP R Inc	4107.68	-	8.06	0.00
LF Odey Absolute Return GBP R	274.03	-	0.91	0.00
LF Odey Portfolio Fund GBP R Inc	156.95	-	-0.40	0.00

Odey Asset Management LLP (CYM)
Regulated

Fund	Bid	Offer	D+/-	Yield
OEI Mac Inc GBP A	£ 156.90	-	3.74	0.00
OEI Mac Inc GBP B	£ 90.88	-	2.70	0.00
OEI MAC Inc USD	$ 834.58	-	19.78	0.00
Odey European Inc EUR	€ 361.44	-	7.00	0.00
Odey European Inc GBP A	£ 144.61	-	2.80	0.00
Odey European Inc GBP B	£ 81.98	-	1.59	0.00
Odey European Inc USD	$ 172.87	-	3.33	0.00
Giano Capital EUR Inc	€ 4841.83	-	217.37	0.00

Odey Asset Management LLP (IRL)
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Odey Pan European EUR R	€ 313.11	-	1.16	0.00
Odey Allegra International EUR O	€ 167.31	-	0.61	0.00
Odey Allegra Developed Markets USD I	$ 162.46	-	1.02	0.00
Odey European Focus Fund	€ 18.95	-	0.09	0.00
Odey Giano European Fund EUR R	€ 123.16	-	-0.13	0.00
Odey Odyssey USD I	$ 92.13	-	-0.90	0.00
Odey Swan Fund EUR I	€ 41.51	-	-0.65	0.00
Odey Absolute Return Focus Fund	$ 86.78	-	0.63	0.00

Odey Wealth Management (CI) Ltd (IRL)
www.odey.com/prices
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Odey Opportunity EUR I	€ 239.75	-	0.71	0.00

Omnia Fund Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Estimated NAV	$ 1002.33	-	-46.69	0.00

OPTIMA Fund Management

Optima Fund Management
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Cuttyhunk Fund II Limited	$ 1590.38	-	69.05	0.00
JENOP Global Healthcare Fund Ltd	$ 16.75	-	-0.42	0.00
OPTIKA Fund Limited - Cl A	$ 131.80	-	5.56	0.00
Optima Fd NAV (Est)	$ 97.99	-	-0.33	0.00
Optima Discretionary Macro Fund Limited (Est)	$ 86.00	-	-0.36	0.00
The Dorset Energy Fd Ltd NAV (Est)	$ 19.92	-	-1.12	0.00
Platinum Fd Ltd (Est)	$ 113.59	-	-0.99	0.00
Platinum Fd Ltd EUR (Est)	€ 21.01	-	-0.20	0.00
Platinum Japan Fd Ltd (Est)	$ 73.09	-	1.37	0.00
Optima Partners Global Fd (Est)	$ 16.99	-	-0.06	0.00
Optima Partners Focus Fund A	$ 17.95	-	-0.01	0.00
Optima STAR Fund (hedged)	$ 107.91	-	-0.38	0.00
Optima STAR Long Fund	$ 146.12	-	0.29	0.00

Oryx International Growth Fund Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
NAV (Fully Diluted)	£ 9.30	-	0.32	0.00

PICTET 1805 Asset Management

Pictet Asset Management (Europe) SA (LUX)
15, Avenue J.F. Kennedy L-1855 Luxembourg
Tel: 0041 58 323 3000
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Pictet-Absl Rtn Fix Inc-HI EUR	€ 106.86	-	0.06	0.00
Pictet-Asian Equities Ex Japan-I USD F	$ 333.88	-	1.73	0.00
Pictet-Asian Local Currency Debt-I USD F	$ 169.76	-	-0.25	0.00
Pictet-Biotech-I USD F	$ 860.12	-	5.44	0.00
Pictet-CHF Bonds I CHF	SFr 505.54	-	0.09	0.00
Pictet-China Index I USD	$ 170.27	-	1.84	0.00
Pictet-Clean Energy-I USD F	$ 102.64	-	0.74	0.00
Pictet-Digital-I USD F	$ 423.00	-	1.19	0.00
Pictet-Em Lcl Ccy Dbt-I USD F	$ 188.79	-	-0.86	0.00
Pictet-Emerging Europe-I EUR F	€ 405.17	-	0.68	0.00
Pictet-Emerging Markets-I USD F	$ 736.32	-	1.28	0.00
Pictet-Emerging Markets Index-I USD F	$ 323.41	-	1.64	0.00
Pictet-Emerging Corporate Bonds I USD	$ 125.43	-	-0.08	0.00
Pictet-Emerging Markets High Dividend I USD	$ 135.97	-	0.40	0.00
Pictet-Emerging Markets Sust Eq I USD	$ 115.97	-	0.35	0.00
Pictet-EUR Bonds-I F	€ 598.15	-	1.43	0.00
Pictet-EUR Corporate Bonds-I F	€ 211.64	-	0.35	0.00
Pictet-EUR Government Bonds I EUR	€ 163.06	-	0.41	0.00
Pictet-EUR High Yield-I F	€ 273.37	-	1.29	0.00
Pictet-EUR Short Mid-Term Bonds-I F	€ 137.60	-	0.03	0.00
Pictet-EUR Short Term HY I EUR	€ 126.39	-	-0.32	0.00
Pictet-EUR Sov.Sht.Mon.Mkt EUR I	€ 101.60	-	-0.01	0.00
Pictet-Euroland Index IS EUR	€ 153.14	-	1.63	0.00
Pictet-Europe Index-I EUR F	€ 185.86	-	1.92	0.00
Pictet-European Equity Selection-I EUR F	€ 756.64	-	8.55	0.00
Pictet-European Sust Eq-I EUR F	€ 263.87	-	2.50	0.00
Pictet-Global Bds Fundamental I USD	$ 129.42	-	-0.26	0.00
Pictet-Global Bonds-I EUR	€ 162.27	-	0.82	0.00
Pictet-Global Defensive Equities I USD	$ 176.23	-	0.19	0.00
Pictet-ST Emerg Local Currency Debt-I USD F	$ 111.14	-	-0.56	0.00
Pictet-Global Emerging Debt-I USD F	$ 404.28	-	-1.02	0.00
Pictet-Global Env.Opport-I EUR	€ 202.79	-	2.15	0.00
Pictet-Global Megatrend Selection-I USD F	$ 300.65	-	1.62	0.00
Pictet-Global Sust.Credit HI EUR	€ 149.36	-	0.41	0.00
Pictet-Greater China-I USD F	$ 711.73	-	5.91	0.00
Pictet-Health-I USD	$ 285.71	-	0.96	0.00
Pictet-High Dividend Sel I EUR F	€ 164.48	-	2.01	0.00
Pictet-India Index I USD	$ 123.08	-	0.46	0.00
Pictet-Indian Equities-I USD F	$ 607.01	-	-1.09	0.00
Pictet-Japan Index-I JPY F	¥ 18261.46	-	57.43	0.00
Pictet-Japanese Equities Opp-I JPY F	¥ 11757.34	-	52.71	0.00
Pictet-Japanese Equity Selection-I JPY F	¥ 16520.59	-	47.72	0.00
Pictet-LATAM Lc Ccy Dbt-I USD F	$ 143.73	-	-0.63	0.00
Pictet-Multi Asset Global Opportunities-I EUR	€ 121.40	-	0.28	0.00
Pictet-Nutrition-I EUR	€ 211.82	-	2.66	0.00
Pictet-Pacific Ex Japan Index-I USD F	$ 443.64	-	3.93	0.00
Pictet-Premium Brands-I EUR F	€ 172.19	-	2.46	0.00
Pictet-Russia Index I USD	$ 81.92	-	-0.67	0.00
Pictet-Russian Equities-I USD F	$ 80.99	-	-0.37	0.00
Pictet-Security-I USD F	$ 262.15	-	0.95	0.00
Pictet-Select-Callisto I EUR	€ 103.48	-	-0.45	0.00
Pictet-Small Cap Europe-I EUR F	€ 1359.83	-	13.18	0.00
Pictet-ST.MoneyMkt-I	€ 139.39	-	-0.01	0.00
Pictet-ST.MoneyMkt JPY I USD	¥ 101116.02	-	-1.98	0.00
Pictet-ST.MoneyMkt-ICHF	SFr 121.95	-	-0.01	0.00
Pictet-ST.MoneyMkt-IUSD	$ 138.80	-	0.02	0.00
Pictet-Timber-I USD F	$ 208.73	-	1.06	0.00
Pictet TR-Agora I EUR	€ 124.77	-	0.14	0.00
Pictet TR-Corto Europe I EUR	€ 144.67	-	0.50	0.00
Pictet TR-Divers Alpha I EUR	€ 112.92	-	0.07	0.00
Pictet TR-Kosmos I EUR	€ 109.75	-	-0.59	0.00
Pictet TR-Mandarin I USD	$ 164.83	-	0.60	0.00
Pictet-US Equity Selection-I USD	$ 245.59	-	0.18	0.00
Pictet-US High Yield-I USD F	$ 163.96	-	0.06	0.00
Pictet-USA Index-I USD F	$ 248.64	-	1.15	0.00
Pictet-USD Government Bonds-I F	$ 639.32	-	0.67	0.00
Pictet-USD Short Mid-Term Bonds-I F	$ 131.22	-	0.01	0.00
Pictet-USD Sov.ST.Mon.Mkt-I	$ 104.74	-	0.02	0.00
Pictet-Water-I EUR F	€ 326.24	-	3.82	0.00

PLATINUM CAPITAL MANAGEMENT

Platinum Capital Management Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Platinum All Star Fund - A	$ 133.48	-	-	-
Platinum Global Dividend Fund - A	$ 50.23	-	-	-
Platinum Global Growth UCITS Fund	$ 10.00	-	-	-

POLAR CAPITAL

Polar Capital Funds Plc (IRL)
Regulated

Fund	Bid	Offer	D+/-	Yield
Automation & Artificial Intelligence CL I USD Acc	$ 10.79	10.79	0.08	-
Asian Financials I USD	$ 398.81	398.81	0.91	0.00
Biotechnology I USD	$ 24.30	24.30	0.11	0.00
European Income Acc EUR	€ 11.97	11.97	0.12	0.00
European Ex UK Inc EUR Acc	€ 11.00	11.00	0.09	0.00
Financial Opps I USD	$ 15.17	-	0.03	1.79
GEM Income I USD	$ 12.87	-	0.04	0.00
Global Convertible I USD	$ 13.11	13.11	0.01	0.00
Global Insurance I GBP	£ 6.01	-	0.05	0.00
Global Technology I USD	$ 43.50	-	0.32	0.00
Healthcare Blue Chip Fund I USD Acc	$ 12.17	12.17	0.04	0.00
Healthcare Opps I USD	$ 44.04	-	0.11	0.00
Income Opportunities B2 I GBP Acc	£ 2.26	2.26	0.00	0.00
Japan Alpha I JPY	¥ 248.73	248.73	0.47	0.00
Japan I JPY	¥ 2521.97	-	9.57	0.00
North American I USD	$ 24.93	24.93	0.10	0.00
UK Absolute Equity I GBP	£ 20.45	20.45	-0.08	0.00
UK Val Opp I GBP Acc	£ 11.92	11.92	0.03	0.00

Polar Capital LLP (CYM)
Regulated

Fund	Bid	Offer	D+/-	Yield
European Forager A EUR	€ 185.30	-	0.49	0.00

Private Fund Mgrs (Guernsey) Ltd (GSY)
Regulated

Fund	Bid	Offer	D+/-	Yield
Monument Growth 06/03/2018	£ 487.57	493.26	-6.66	3.29

Prusik Investment Management LLP (IRL)
Enquiries - 0207 493 1331
Regulated

Fund	Bid	Offer	D+/-	Yield
Prusik Asian Equity Income B Dist	$ 209.33	-	1.41	3.35
Prusik Asia A	$ 291.82	-	0.56	0.00
Prusik Asian Smaller Cos A	$ 172.26	-	-0.03	0.00

Purisima Investment Fds (UK) (1200)F (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 922 0044
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions

Fund	Bid	Offer	D+/-	Yield
Global Total Fd PCG A	241.95	-	1.69	0.54
Global Total Fd PCG B	240.08	-	1.68	0.30
Global Total Fd PCG INT	237.26	-	1.66	0.07

Purisima Investment Fds (CI) Ltd (JER)
Regulated

Fund	Bid	Offer	D+/-	Yield
PCG B ♦	212.82	-	0.26	0.00
PCG C ♦	209.04	-	0.26	0.00

ram ACTIVE INVESTMENTS

Ram Active Investments SA
www.ram-ai.com
Other International Funds

Fund	Bid	Offer	D+/-	Yield
RAM Systematic Emerg Markets Core Eq	$ 110.91	-	0.29	-
RAM Systematic Emerg Markets Eq	$ 194.29	-	0.51	-
RAM Systematic European Eq	€ 449.05	-	3.54	-
RAM Systematic Global Shareholder Yield Eq	$ 132.54	-	-0.18	0.00
RAM Systematic Long/Short Emerg Markets Eq	$ 120.78	-	-0.11	-
RAM Systematic Long/Short European Eq	€ 153.41	-	-0.39	-
RAM Systematic North American Eq	$ 306.13	-	0.16	-
RAM Tactical Convertibles Europe	€ 148.28	-	0.60	-
RAM Tactical Global Bond Total Return	€ 144.56	-	-0.04	-
RAM Tactical II Asia Bond Total Return	$ 141.27	-	-0.11	-

FTfm

Rathbone Unit Trust Mgmt (1200)F (UK)
PO Box 9948, Chelmsford, CM99 2AG
Order Desk: 0845 300 2101, Enquiries: 0207 399 0399
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Blue Chip Income Inc	146.75	151.65	0.98	4.28
Blue Chip Income Acc	239.33	246.91	1.60	4.07
Ethical Bond Inc	95.04	96.91	0.10	4.23
Ethical Bond Acc	198.24	201.61	0.19	4.12
Global Opportunities Acc	209.31	215.69	2.05	0.00
Income Inc	882.49	912.89	5.57	3.96
Income Acc	1481.02	1529.28	9.34	3.84
Multi Asset Enhanced Growth Acc	161.32	-	0.82	0.19
Multi Asset Strategic Growth inc	173.70	-	0.70	1.37
Multi Asset Strategic Growth acc	190.23	-	0.77	1.35
Multi Asset Total Return inc	130.33	-	0.24	1.53
Multi Asset Total Return acc	148.53	-	0.27	1.51
Rathbone UK Opportunities Inc	493.12	510.63	2.34	2.38
Rathbone UK Opportunities Acc	624.62	645.90	2.97	2.32
Strategic Bond I-Class Acc	142.64	143.33	0.02	3.18
Strategic Bond I-Class Inc	116.26	116.95	0.02	3.24

ROBECO
The Investment Engineers

Robeco Asset Management (LUX)
Weena 850, 3014 DA Rotterdam, The Netherlands
www.robeco.com/contact
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Asia-Pacific Equities (EUR)	€ 161.53	-	1.40	0.00
BP US Premium Equities (EUR)	€ 236.30	-	0.55	0.00
BP US Premium Equities (USD)	$ 274.26	-	0.65	0.00
Chinese Equities (EUR)	€ 102.66	-	2.39	0.00
Em Stars Equities (EUR)	€ 229.03	-	1.95	0.00
Emerging Markets Equities (EUR)	€ 199.21	-	1.80	0.00
Glob.Consumer Trends Equities (EUR)	€ 198.15	-	2.56	0.00
High Yield Bonds (EUR)	€ 144.93	-	0.47	0.00
New World Financials (EUR)	€ 67.76	-	0.72	0.00

Royal London Unit Managers Ltd. (1200) F (UK)
5th Floor, Churchgate House, 56 Oxford Street, Manchester M1 6EU 03456 057777
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Royal London Sustainable Diversified A Inc	£ 1.89	-	0.01	1.11
Royal London Sustainable World A Inc	232.90	-	1.90	0.54
Royal London Corporate Bond Mth Income	92.09	93.49	0.04	3.88
Royal London European Growth Trust	151.10	153.40	0.40	0.00
Royal London Sustainable Leaders A Inc	557.60	-	4.90	1.18
Royal London UK Growth Trust	554.20	562.60	4.10	1.57
Royal London UK Income With Growth Trust	223.30	226.80	0.70	4.58
Royal London US Growth Trust	224.20	227.70	1.70	0.00

Additional Funds Available
Please see www.royallondon.com for details

RUFFER

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

Fund	Bid	Offer	D+/-	Yield
LF Ruffer European C Acc	573.31	-	-5.95	0.31
LF Ruffer European C Inc	105.76	-	-1.09	0.61
LF Ruffer European O Acc	563.77	-	-5.89	0.00
LF Ruffer Equity & General C Acc	447.99	-	1.58	0.04
LF Ruffer Equity & General C Inc	413.02	-	1.46	0.04
LF Ruffer Equity & General O Acc	440.57	-	1.53	0.00
LF Ruffer Equity & General O Inc	408.77	-	1.42	0.00
LF Ruffer Gold C Acc	146.28	-	2.99	0.60
LF Ruffer Gold C Inc	88.53	-	1.81	0.55
LF Ruffer Gold O Acc	143.80	-	2.93	0.35
LF Ruffer Japanese C Inc	116.20	-	-2.33	0.21
LF Ruffer Japanese C Acc	247.25	-	-4.97	0.23
LF Ruffer Japanese O Acc ✠	242.83	-	-4.90	0.00
LF Ruffer Pacific C Acc	373.95	-	-1.92	0.93
LF Ruffer Pacific C Inc	105.15	-	-0.54	1.18
LF Ruffer Pacific O Acc	367.41	-	-1.92	0.63
LF Ruffer Total Return C Acc	437.61	-	-1.64	1.55
LF Ruffer Total Return C Inc	294.50	-	-1.11	1.56
LF Ruffer Total Return O Acc	430.32	-	-1.64	1.55
LF Ruffer Total Return O Inc	289.46	-	-1.10	1.57

S. W. MITCHELL CAPITAL

S W Mitchell Capital LLP (IRL)
Regulated

Fund	Bid	Offer	D+/-	Yield
SWMC European Fund B EUR	€ 17931.10	-	-39.88	0.00
SWMC Small Cap European Fund B EUR	€ 15523.88	-	-157.16	0.00

ROBECOSAM
We are Sustainability Investing.

RobecoSAM (LUX)
Tel. +41 44 653 10 10 http://www.robecosam.com/
Regulated

Fund	Bid	Offer	D+/-	Yield
RobecoSAM Sm.Energy/A	€ 17.90	-	0.22	1.20
RobecoSAM Sm.Energy/N	€ 15.90	-	0.22	0.00
RobecoSAM Sm.Materials/A	€ 206.30	-	0.67	1.28
RobecoSAM Sm.Materials/N	€ 208.09	-	0.94	0.00
RobecoSAM Sm.Materials/Na	€ 139.91	-	0.63	1.27
RobecoSAM Gl.Small Cap Eq/A	€ 114.11	-	0.81	1.10
RobecoSAM Gl.Small Cap Eq/N	€ 198.40	-	1.67	0.00
RobecoSAM Sustainable Gl.Eq/B	€ 213.56	-	1.97	0.00
RobecoSAM Sustainable Gl.Eq/N	€ 187.20	-	1.73	0.00
RobecoSAM S.HealthyLiv/B	€ 184.71	-	1.82	0.00
RobecoSAM S.HealthyLiv/N	€ 175.02	-	1.72	0.00
RobecoSAM S.HealthyLiv/Na	€ 132.81	-	1.14	1.39
RobecoSAM S.Water/A	€ 237.13	-	2.47	1.44
RobecoSAM S.Water/N	€ 200.40	-	2.34	0.00

Rubrics

Rubrics Global UCITS Funds Plc (IRL)
www.rubricsam.com
Regulated

Fund	Bid	Offer	D+/-	Yield
Rubrics Emerging Markets Fixed Income UCITS Fund	$ 137.04	-	-0.20	0.00
Rubrics Global Credit UCITS Fund	$ 15.83	-	0.01	0.00
Rubrics Global Fixed Income UCITS Fund	$ 161.70	-	0.03	0.00
Q Rubrics India Fixed Income UCITS Fund	$ 11.22	-	-0.02	0.00
Rubrics India Fixed Income UCITS Fund	$ 96.26	-	-0.22	0.00

Schroder Property Managers (Jersey) Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Indirect Real Estate SIRE	£ 141.23	147.71	-0.34	2.22

Scottish Friendly Asset Managers Ltd (UK)
Scottish Friendly Hse, 16 Blythswood Sq, Glasgow G2 4HJ 0141 275 5000
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Managed Growth ✦	284.30	-	1.60	0.00
UK Growth ✦	315.40	-	2.20	0.00

Slater Investments Ltd (UK)
www.slaterinvestments.com; Tel: 0207 220 9460
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Slater Growth	511.65	542.87	0.36	0.00
Slater Income A Inc	161.47	161.47	-0.15	0.00
Slater Recovery	233.66	247.92	0.22	0.00
Slater Artorius	199.02	199.02	0.09	0.24

Standard Life Wealth (JER)
PO Box 189, St Helier, Jersey, JE4 9RU 01534 709130
FCA Recognised
Standard Life Offshore Strategy Fund Limited

Fund	Bid	Offer	D+/-	Yield
Bridge Fund	£ 1.8625	-	0.0142	1.97
Global Equity Fund	£ 2.3643	-	0.0211	0.85
Global Fixed Interest Fund	£ 0.9950	-	0.0008	4.14
Income Fund	£ 0.5588	-	0.0025	3.38
Sterling Fixed Interest Fund	£ 0.8655	-	0.0006	3.47
UK Equity Fund	£ 2.1404	-	0.0094	3.09

STENHAM ASSET MANAGEMENT

Stenham Asset Management Inc
www.stenhamassetmanagement.com
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Stenham Credit Opportunities A Class USD	$ 116.82	-	1.94	0.00
Stenham Equity UCITS USD	$ 185.65	-	1.98	0.00
Stenham Growth USD	$ 230.12	-	6.28	-
Stenham Healthcare USD	$ 216.52	-	12.52	0.00
Stenham Managed Fund USD	$ 122.37	-	3.22	0.00
Stenham Quadrant USD A	$ 427.17	-	8.78	-
Stenham Trading Inc USD	$ 122.92	-	2.37	-
Stenham Universal USD	$ 456.00	-	7.64	-
Stenham Universal II USD	$ 167.11	-	2.73	0.00

Stewart Investors

Stewart Investors (UK)
23 St Andrew Square, Edinburgh, EH2 1BB
enquiries@stewartinvestors.com
Client Services: 0800 587 4141
Dealing Line: 0800 587 3388
Authorised Funds

Fund	Bid	Offer	D+/-	Yield
SI Asia Pacific A Acc	1327.71	-	6.65	0.29
SI Asia Pacific A Inc	£ 2.40	-	0.01	0.42
SI Asia Pacific Leaders A Acc	640.74	-	3.85	0.48
SI Asia Pacific Leaders A Inc	£ 2.20	-	0.01	0.42
SI Asia Sustainability A Acc	497.10	-	1.74	0.15
SI Global Emerging Mkts A Acc	818.41	-	1.20	0.26
SI Global Emerging Mkts Leaders A Acc	586.07	-	1.83	0.86
SI Global Emerging Mkts Sus A Acc	322.62	-	1.23	0.19
SI Indian Sub-Cont A Acc	468.09	-	2.72	0.00
SI Latin America A Acc	£ 2.73	-	0.02	0.49
SI Worldwide Equity A Acc	£ 1.86	-	0.00	0.00
SI Worldwide Equity A Inc	£ 1.89	-	0.01	0.00
SI Worldwide Leaders A Acc	426.69	-	3.05	0.00
SI Worldwide Sus A Acc	£ 1.95	-	0.01	0.00
SI Worldwide Sus A Inc	£ 1.88	-	0.01	0.00

EI STURDZA

E.I. Sturdza Strategic Management Limited (GSY)
Regulated

Fund	Bid	Offer	D+/-	Yield
Strat Evarich Japan Fd Ltd JPY	¥ 88308.00	-	-4872.00	0.00
Strat Evarich Japan Fd Ltd USD	$ 873.99	-	-49.27	0.00

E.I. Sturdza Funds PLC (IRL)
Regulated

Fund	Bid	Offer	D+/-	Yield
Nippon Growth (UCITS) Fd - B	¥ 91777.00	-	-16.00	0.00
Strategic China Panda Fd - USD	$ 3761.02	-	50.87	0.00
Strategic Euro Bond Fd - Acc	€ 1124.56	-	-0.28	0.00
Strategic Europe Value Fd - EUR	€ 210.19	-	3.30	0.00
Strategic European Smaller Companies Fd - EUR	€ 1357.84	-	13.28	0.00
Strategic Global Bond Fd - USD	$ 1044.32	-	0.98	0.00
Strategic Global Quality Fd - USD Inst	$ 138.82	-	1.72	0.00
Strategic Quality Emerging Bond Fd - USD	$ 1058.28	-	-0.25	0.00
Strategic US Momentum and Value Fd - USD Class	$ 864.74	-	3.18	0.00
Strategic Japan Opportunities Fund	¥ 61930.00	-	442.00	-
Strategic Beta Flex Fund	€ 1015.94	-	2.57	0.00

SUPERFUND
THE FUTURE OF INVESTING

Superfund Asset Management GmbH
www.superfund.com, +43 (1) 247 00
Regulated

Fund	Bid	Offer	D+/-	Yield
Superfund Green EUR SICAV	€ 942.98	-	0.17	0.00
Superfund Red EUR SICAV	€ 787.47	-	0.33	0.00
Superfund Blue EUR	€ 787.95	-	-1.46	0.00
Other International Funds				
Superfund Green Gold SICAV	$ 1032.10	-	-2.31	0.00
Superfund Red Silver SICAV	$ 408.79	-	1.01	0.00

Thesis Unit Trust Management Limited (UK)
Exchange Building, St Johns Street, Chichester, West Sussex, PO19 1UP
Authorised Funds

Fund	Bid	Offer	D+/-	Yield
TM New Court Fund A 2011 Inc	£ 14.94	-	0.07	0.39
TM New Court Fund - A 2014 Acc	£ 15.04	-	0.07	0.45
TM New Court Equity Growth Fund - Inc	£ 15.65	-	0.09	0.45

TOSCAFUND

Toscafund Asset Management LLP (UK)
www.toscafund.com
Authorised Funds

Fund	Bid	Offer	D+/-	Yield
Aptus Global Financials B Acc	£ 4.49	-	0.03	4.28
Aptus Global Financials B Inc	£ 3.52	-	0.02	4.44

Toscafund Asset Management LLP
www.toscafund.com
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Tosca A USD	$ 387.31	-	27.36	-
Tosca Mid Cap GBP	£ 274.92	-	-12.94	-
Tosca Opportunity B USD	$ 420.58	-	-9.31	-
Pegasus Fund Ltd A-1 GBP	£ 65.33	-	-0.56	0.00

treetop ASSET MANAGEMENT

TreeTop Asset Management S.A. (LUX)
Regulated
TreeTop Convertible Sicav

Fund	Bid	Offer	D+/-	Yield
International A	€ 330.79	-	1.72	0.00
International B	$ 442.89	-	2.14	0.00
International C	£ 139.29	-	0.73	2.50
International D	€ 289.83	-	1.48	2.40
TreeTop Global Sicav				
Global Opp.A	€ 175.36	-	0.97	0.00
Global Opp.B	$ 186.45	-	0.64	0.00
Global Opp.C	£ 247.73	-	1.90	0.00
Sequoia Equity A	€ 167.62	-	1.00	0.00
Sequoia Equity B	$ 186.84	-	0.64	0.00
Sequoia Equity C	£ 216.35	-	1.75	2.76

TROY ASSET MANAGEMENT

Troy Asset Mgt (1200) (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 608 0950
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions
Trojan Investment Funds

Fund	Bid	Offer	D+/-	Yield
Spectrum Fund O Acc	212.67	-	0.06	0.50
Spectrum Fund O Inc	204.64	-	0.07	0.50
Spectrum Income Fund O Acc	115.54	-	0.23	2.90
Spectrum Income Fund O Inc	106.55	-	0.22	2.97
Trojan Ethical Income O Acc	114.26	-	0.88	3.13
Trojan Ethical Income O Inc	107.47	-	0.82	3.22
Trojan Fund O Acc	299.27	-	1.09	0.44
Trojan Fund O Inc	245.94	-	0.89	0.44
Trojan Global Equity O Acc	301.33	-	3.03	0.67
Trojan Global Equity O Inc	252.09	-	2.53	0.68
Trojan Global Income O Acc	103.43	-	0.81	2.99
Trojan Global Income O Inc	99.85	-	0.78	3.05
Trojan Income O Acc	309.41	-	2.05	4.11
Trojan Income O Inc	177.09	-	1.17	4.25

UBS Asset Management (UK)
5 Broadgate, London, EC2M 2QS
Client Services 0800 358 3012, Client Dealing 0800 358 3012
www.ubs.com/retailfunds
Authorised Inv Funds
OEIC

Fund	Bid	Offer	D+/-	Yield
UBS Global Emerging Markets Equity C Acc	£ 0.85	-	0.01	1.10
UBS Global Optimal C Acc	£ 1.00	-	0.01	0.70
UBS UK Opportunities C Acc	£ 0.87	-	0.00	2.97
UBS US Equity C Acc	£ 1.22	-	0.01	0.26
UBS S&P 500 Index C Acc	£ 0.81	-	0.00	1.48
UBS Targeted Return C Acc	£ 13.69	-	0.03	1.27
UBS Sterling Corporate Bond Indexed C Acc	£ 0.60	-	0.00	2.86
UBS Multi Asset Income C Inc Net	£ 0.49	-	0.00	3.94
UBS UK Equity Income C Inc Net	£ 0.70	-	0.00	4.01
UBS Corporate Bond UK Plus C Inc Net	£ 0.53	-	0.00	4.16
UBS Global Allocation (UK) C Acc	£ 0.79	-	0.00	1.64
UBS Global Enhanced Equity Income C Inc	£ 0.45	-	0.00	6.48
UBS US Growth C Acc	£ 1.30	-	0.01	0.00
UBS Emerging Markets Equity Income C Inc	£ 0.53	-	0.00	3.96
UBS FTSE RAFI Dev 1000 Index J Acc	£ 142.80	-	0.96	2.42
UBS MSCI World Min Vol Index J Acc	£ 147.50	-	1.37	2.25

Unicapital Investments (LUX)
Regulated

Fund	Bid	Offer	D+/-	Yield
Investments IV - European Private Eq.	€ 120.08	-	-10.04	0.00
Investments IV - Global Private Eq.	€ 171.84	-	-15.19	0.00

Unicorn Asset Management Ltd (UK)
PO Box 10602, Chelmsford, Essex, CM1 9PD 0845 026 4287
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
UK Growth A Inc	596.41	-	-6.76	0.72
Mastertrust A Inc ✠ F	509.53	-	1.87	0.23
UK Growth B Inc	599.46	-	-6.76	1.35
Mastertrust B Inc ✠ F	457.60	-	1.69	0.90
Outstanding British Cos A Acc ✠ F	298.23	-	1.36	0.77
Outstanding British Cos B Acc ✠ F	316.69	-	1.44	1.45
UK Smaller Cos A Inc ✠ F	567.37	-	-5.78	1.14
UK Smaller Cos B Inc ✠ F	555.65	-	-5.63	1.79
UK Income A Acc ✠ F	305.40	-	-4.05	3.92
UK Income A Inc ✠ F	249.59	-	-3.31	4.02
UK Income B Acc ✠ F	329.91	-	-4.37	3.90
UK Income B Inc ✠ F	269.76	-	-3.57	4.00

Value Partners Hong Kong Limited (IRL)
www.valuepartners-group.com, fis@vp.com.hk
Regulated

Fund	Bid	Offer	D+/-	Yield
Value Partners Asia Dividend Stocks Fund A USD	$ 7.86	-	0.05	0.00
Value Partners Classic Equity Fund USD Z Unhedged	$ 15.73	-	0.07	0.00
Value Partners Classic Equity Fund CHF Hedged	SFr 15.58	-	0.06	0.00
Value Partners Classic Equity Fund EUR Hedged	€ 15.85	-	0.07	0.00
Value Partners Classic Equity Fund GBP Hedged	£ 16.48	-	0.07	0.00
Value Partners Classic Equity Fund GBP Unhedged	£ 18.91	-	0.13	0.00
Value Partners Classic Equity USD Unhedged	$ 19.54	-	0.09	0.00
Value Partners Global Emerging Market Bond Fund	$ 10.61	-	0.01	0.00
Value Partners Global Emerging Market Equity Fund	$ 11.11	-	0.10	-
Value Partners Greater China Equity Fund	$ 12.31	-	0.10	0.00
Value Partners Health Care Fund HKD Class A Unhedged	HK$ 12.40	-	0.09	0.00
Value Partners Health Care Fund USD Class A Unhedged	$ 12.51	-	0.09	0.00

Waverton Investment Funds Plc (1600)F (IRL)
waverton.investments@citi.com
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Waverton Asia Pacific A USD	$ 23.87	-	0.15	0.64
Waverton Global Equity Fund A GBP	£ 19.58	-	0.13	0.25
Waverton Global Strategic Bond Fund A USD	$ 8.66	-	0.00	4.96
Waverton UK Fund A GBP	£ 13.37	-	0.06	1.89
Waverton Equity Fund A GBP	£ 19.04	-	0.08	0.00
Waverton Sterling Bond Fund A GBP	£ 9.44	-	0.01	4.44

WA Fixed Income Fund Plc (IRL)
Regulated

Fund	Bid	Offer	D+/-	Yield
European Multi-Sector	€ 117.28	-	0.26	3.91

YapıKredi Asset Management

Yapi Kredi Asset Management (TUR)
www.yapikrediportfoy.com.tr Tel: + 90 (212) 385 48 48
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Eurobond Fund	TRY 0.105192	-	-0.000011	-
Koc Affiliate and Equity Fund	TRY 0.978677	-	0.873474	-
DPM Bonds and Bills Fund (FX)	$ 1.053586	-	0.948383	0.00

yuki

Yuki International Limited (IRL)
Tel +44-20-7269-0207 www.yukifunds.com
Regulated
Yuki Mizuho Umbrella Fund

Fund	Bid	Offer	D+/-	Yield
Yuki Mizuho Japan Dynamic Growth	¥ 10235.00	-	52.00	0.00
Yuki Japan Low Price	¥ 49278.00	-	399.00	0.00
Yuki Japan Value Select	¥ 21600.00	-	123.00	0.00
Yuki Asia Umbrella Fund				
Yuki Japan Rebounding Growth Fund JPY Class	¥ 39918.00	-	294.00	0.00
Yuki Japan Rebounding Growth Fund USD Hedged Class	$ 1561.56	-	11.25	0.00

Zadig Gestion (Memnon Fund) (LUX)
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Memnon European Fund I GBP	£ 170.47	-	2.19	0.00

Money Market Trusts and Bank Accounts

CCLA Investment Management Ltd
Senator House 85 Queen Victoria Street, London EC4V 4ET

	Gross	Net	Gross AER	Int Cr
CBF Church of England Deposit Fund	0.35	-	0.35	Qtr

CCLA Fund Managers Ltd
Senator House 85 Queen Victoria Street, London EC4V 4ET

	Gross	Net	Gross AER	Int Cr
COIF Charities Deposit Fund	0.32	-	0.32	Qtr

Data Provided by
MORNINGSTAR®
www.morningstar.co.uk

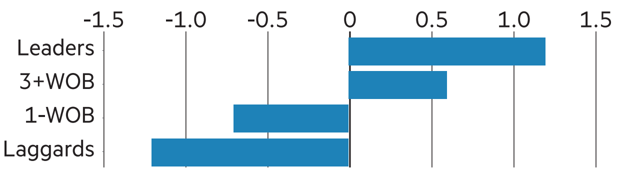
Data as shown is for information purposes only. No offer is made by Morningstar or this publication.

CHART TO START THE WEEK

Gender-diverse companies prove to be more productive

Productivity growth boosted by women on company boards

% compound annual increase in corporate revenue per employee, 2012-16



Leaders - cos. with at least 3 female directors that follow best practice standards
3+WOB - companies with at least 3 female directors
1-WOB - companies with 1 or 0 female directors
Laggards - cos. with 1 or 0 female directors that have no plans to improve gender diversity
Source: MSCI

Gender diversity on a company's management board has a significant impact on productivity growth and on returns to investors, according to research published to mark International Women's day by MSCI.

The indices and analytics provider examined the composition of boards at 617 of the world's largest companies. It found that average employee productivity growth was higher for companies that employed three or more women at board level between 2012 and 2016 than those that had just a single or no female directors.

Companies that employed a gender-diverse board and which also followed best practice standards in human capital management were able to deliver even higher productivity growth over the same time period.

MSCI found that the stronger productivity growth at these leading companies translated into higher profits, measured by returns on equity, than at those which did not have gender-diverse boards.

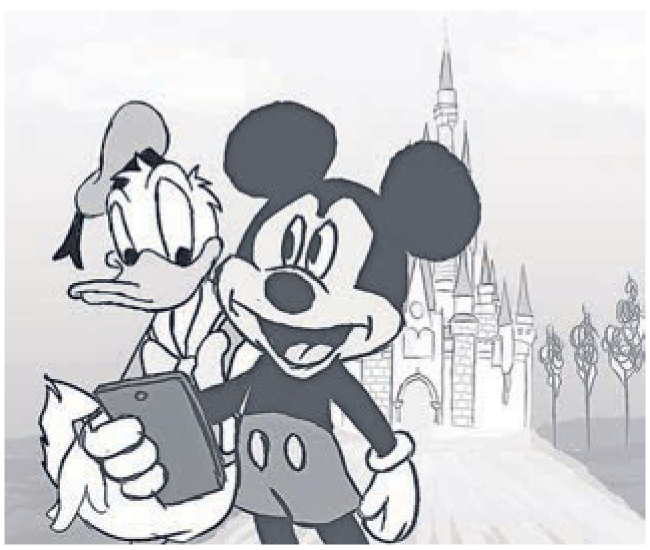
Dividend payouts to investors were higher too for these diversity-friendly companies than at those where boards are dominated by men and which failed to disclose any evidence of their plans to foster the development of female talent.

MSCI said its findings provided support for the argument that meaningful gender diversity at the board level was also a reflection of the importance paid by companies to the recruitment and development of both male and female talent.

Women remain remarkably under-represented in senior corporate roles globally and account for fewer than one in five board directors of the world's leading publicly traded companies.

Just 17.3 per cent of board seats were held by women at the 2,494 companies spread across 47 countries that comprise the MSCI All Country World index. MSCI's findings that gender diversity can boost returns may spur change.

Chris Flood



"We've got to put on our thinking caps, Donald, because our friend Rupert needs help pronto. Seems a monster called Comcast is trying to gobble up his Pie in the Sky."

THE LAST WORD

What are markets for?

The equity markets with which we are familiar came into being in the 19th century to finance railways and railroads. What is their purpose for the very different companies of today?

JOHN KAY, PAGE 8

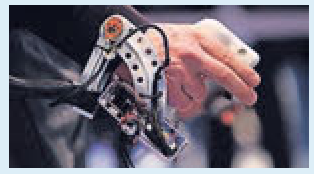
INSIDE AND ONLINE

QUOTE OF THE WEEK

John Dizard

How about using creative accounting to cover up pension funding shortfalls? That has been a good strategy for early-to-mid-career politicians.

PAGE 9



VIDEO

Wearable robots

Richard Waters explores the latest exoskeleton technology to push his body beyond its limits

VIDEO.FT.COM

FT/NIKKEI JOINT SPECIAL REPORT

FT Health

Combating Dementia

Monday March 12 2018

www.ft.com/reports | @ftreports

Scientists inch towards the answers

Recent work has thrown up surprising clues to how dementia works, writes *Clive Cookson*

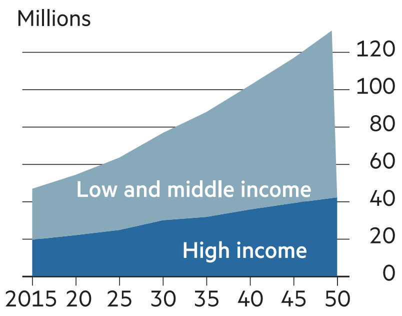
On the face of it, dementia research may seem in a grim position with drug after drug failing clinical trials, and the ultimate cause of Alzheimer's and related diseases remaining as elusive as ever.

We still lack medicines that can even slow the development of dementia, let alone stop or reverse it, yet David Reynolds, who follows the field closely from his position as chief scientist with the charity Alzheimer's Research UK, sounds optimistic.

"We are getting an increasingly sophisticated understanding of what is going on in these diseases," he says. "We are starting to use the information to develop new treatments."

The most obvious feature of Alzheimer's is that nasty misshapen proteins build up in the brain, while the organ itself shrinks as its neurons die off. At the same time the patient's cognitive abilities gradually decline, with progressive memory loss, confusion and personality change. Scientists are now trying to disentangle the complex web of cause and effect that gives rise to Alzheimer's and, with different biochemistry, to other forms of dementia.

Growing numbers of people diagnosed with dementia



Source: Alzheimer's Disease International

Two proteins in particular accumulate in Alzheimer's brains: "amyloid plaques" and "tau tangles". Amyloid plaques have received by far the most attention from scientists and drug developers. These sticky deposits are the endpoint of a biological process that begins with a molecule called amyloid precursor protein (APP) which is present in all healthy neurons.

The so-called amyloid pathway involves enzymes that cut APP into fragments called amyloid beta or aBeta, which accumulate into insoluble plaques.

Although the amyloid pathway is widely considered to be a hallmark of Alzheimer's, it does not lead inevitably to dementia. The 90+ Study at the University of California, Irvine, has enrolled 1,600 people over the age of 90, who have agreed to undergo cognitive assessment while alive and then to donate their brain for analysis after they die. Roughly one-third of participants have dementia, one-third have some cognitive loss and one-third "retain excellent cognition and motor skills", says Claudia Kawas, the 90+ Study leader.

> One of the hottest topics in dementia research is the immune system

"When we did autopsies on the brains of our non-demented individuals, we found that 40 per cent had fully fledged Alzheimer's disease pathology," she adds. In other words many very old people have a brain full of plaques and tangles, without suffering dementia. Conversely one-third of over-90s with dementia have not accumulated amyloid or tau but are suffering from severe loss of cells in the part of the brain called the hippocampus.

The key genetic determinant of whether amyloid accumulation causes Alzheimer's is a gene called ApoE that produces proteins involved in fat metabolism. One common variant called ApoE-2 protects against dementia even in people whose brain is full of amyloid, says Prof Kawas, whereas those with the ApoE-4 gene are almost certain to develop dementia as amyloid plaques form.

One of the hottest topics in dementia research is the immune system. Evidence is accumulating that inflammation associated with an unbalanced

Continued on page 2

Singing for the Brain Finding things that work

George and Dot Smith: together for more than 60 years — Charlie Bibby/FT

A UK project is harnessing music to help people living with dementia. Studies have shown that 'musical memory' is handled by a part of the brain that remains relatively unscathed by dementia. Read more on **Page 4** and listen to our podcast at: www.ft.com/dementiamusic

Inside

Treatment Scientists are focusing on new trials that will be an important test of the 'amyloid plaque' hypothesis, writes *David Crow*

Hunt is on for a cure as more drugs flunk final stages

The last few years have been miserable for the estimated 50m dementia sufferers worldwide who are waiting for the first treatments that can arrest the devastating brain diseases.

Drug after drug has flunked the final stage of testing, even after earlier studies have offered hope that the experimental medicines might be able to slow the relentless march of the illness.

Until a pharmaceuticals group develops a "disease-modifying" medicine, patients must make do with a handful of drugs that only slightly ameliorate the ravages of Alzheimer's disease — which accounts for between 60 and 70 per cent of dementia cases — but do nothing to stop or slow it.

The failing streak has continued to dominate the first few weeks of 2018.

Last month, Merck announced it was ending a large Phase III trial of its Alzheimer's medicine early, after a committee monitoring the trial said the medicine was unlikely to benefit patients in the earliest stage of the disease.

Merck had already stopped a trial of the medicine, known as a "beta-secretase inhibitor", last year, after it failed to work on a group of patients whose disease had been classed as mild or moderate by doctors.

In an interview with the FT shortly before announcing the most recent failure, Rob Davis, Merck's chief financial officer, said the company knew the drug had "activity", but conceded there remained a question as to "how soon in the disease process you intercede".

It turned out that even targeting patients who have only just started exhibiting symptoms was still too late for this particular medicine.

The next big hope is a drug being developed by Biogen, a biotech company based in Massachusetts. Its medicine, aducanumab, is designed to clear the brain of sticky plaques known as "beta-amyloid", which accumulate in the brains of people with Alzheimer's, and which some scientists blame for the disease.

Although Biogen's drug appears to be able to remove those plaques, it is not yet clear whether doing so will result in a corresponding improvement in a patient's brainpower.

The company's two trials of aducanumab in mild patients, known as Engage and Emerge, are due to complete enrolment in the summer with a final result expected in 2020. The studies are being seen as an important test of the so-called "amyloid hypothesis".

But Biogen also kicked off 2018 with some inauspicious news, after it announced that it was enrolling a further 510 patients in the trials.

The company decided to add the extra participants after it looked at early data from the trial and noticed what it described as "more variability on the primary endpoint".

Both trials are blinded, meaning Biogen's researchers cannot tell which patients are getting the drug and which ones are on a placebo, but concerns have been raised over their decision to enrol more participants.

Although such a move does not necessarily indicate the trials will fail, investors become wary when drugmakers move the goalposts in a middle of a study, and shares in Biogen declined by about 7 per cent after the announcement.

"Net-net we view this as a negative, as it highlights the inherent challenges in Alzheimer's studies," says Brian Abrahams, a biotech analyst at RBC, an investment bank.

If aducanumab does fail, it will provide more evidence for those who say focusing on the plaques themselves might be a red herring. They suggest that by the time the sticky deposits have built up, it could already be too late.

"If you get [researchers] at a table with a few beers they will admit we really don't know what those plaques are doing," says Sean Harper, the top scientist at Amgen, the world's largest biotech company. "We don't have any idea whether removing them is the right thing to do, whether it's even deleterious, or if it's just neutral," he adds. "If you see pictures of an Alzheimer's brain, a lay person can see it is already profoundly affected, perhaps beyond the point of no return." Dr Harper is among those scientists who believes the best approach is to try to tackle Alzheimer's before patients have even been diagnosed.

His company has a partnership with Novartis, the Swiss drugmaker, which is testing a drug in people with no outward signs of the disease, but who carry a gene that makes them more predisposed to developing it in the future.

This medicine, like Merck's, tries to inhibit the enzyme known as beta-secretase, which is implicated in the formation of amyloid plaques.

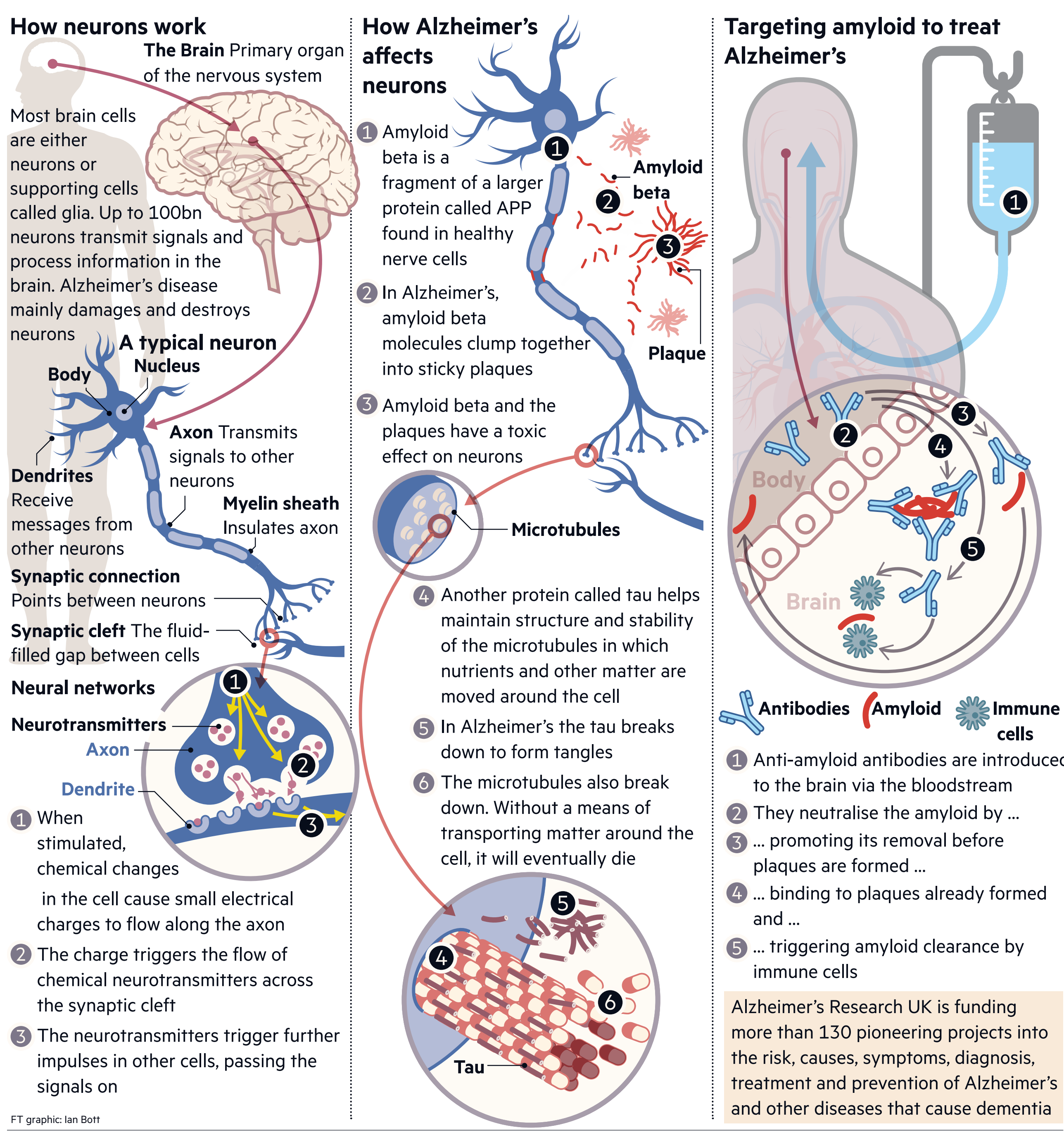
"What we've been able to observe is that humans who have a natural resistance to beta-secretase enzyme activity also have an . . . eight-fold lower risk of developing Alzheimer's," says Dr Harper. "We continue to believe the target is very good but that you have to go earlier," he adds. Some scientists tackling Alzheimer's believe the whole amyloid hypothesis is flawed.

Other companies have focused their efforts on other pathologies thought to be involved with the disease, like brain tangles known as tau.

And start-ups like Denali and Alector, both based in San Francisco, are exploring microglial cells that provide the brain with its energy.

But many of these efforts are still in the very earliest stages: for now, at least, Alzheimer's patients must hold out hope that the amyloid hypothesis still has promise.

It will be several years until they have anything approaching a conclusive answer to the scientific question, let alone a drug that is proven to work.



Financial burden of dementia is set to grow

Costs

Higher health insurance premiums may be the only solution, says *Jonathan Eley*

Caring for those who suffer from dementia is not only exhausting and sometimes distressing, it is also wildly expensive, both for the individuals directly affected and for wider society. In its most recent estimate, Alzheimer's Disease International (ADI), a UK-based international federation of Alzheimer's patient groups, put the global cost of dementia at $818bn in 2015. This means that if dementia were a country, it would be the 18th largest economy in the world.

Alzheimer's is the most expensive disease in the US, costing more than heart disease or cancer, according to Alzheimer's Association, a US patient advocacy group. Yet it is not drugs that account for the lion's share of the costs — one of the most popular treatments for mitigating the worst effects of Alzheimer's, Donepezil, often sold under the brand name Aricept, typically costs less than £2 per month in the UK. Instead, in developed countries at least, the main economic burden of the disease is the cost of looking after those who are affected. ADI estimates global social care costs alone — provided by community care professionals or in residential homes — amounted to $327bn in 2015, or two-fifths of the total. Social care is not medical care. That means its costs are often not fully covered by medical insurance, where it exists. ADI estimates that the costs of informal or unpaid care add up to a further two-fifths of the total. Governments and health insurers around the world are struggling to find a solution. Across the OECD, the club of mostly rich nations, spending on long-term care, and many of those who need it will be living with dementia, averaged around 1.7 per cent of GDP in 2017.

The potentially crippling cost of social care is creeping up the political agenda. In the UK, advocacy groups contrast the free care available under the National Health Service for conditions such as cancer, strokes and heart disease with the life-changing financial burdens for those with dementia. In developing countries, the costs of caring for those with dementia fall overwhelmingly upon individuals rather than the state or insurers. ADI figures show informal care accounted for about three-fifths of the costs of dementia in low-to-middle income countries. This has obvious implications for economic growth, as those who might otherwise be economically active are sidelined.It has at least become clearer in recent years which solutions will not work. Encouraging citizens to save voluntarily for dementia care is a non-starter. the Alzheimer's Society, a UK-based patient advocacy group, has estimated it would take 125 years to save up for the typical dementia care bill. Private health insurance has also struggled to create affordable funding models.

What does work? A 2014 study found that mandatory insurance schemes to cover social care costs in countries such as Japan, Korea, France, Germany, the Netherlands and Sweden are in some cases reaching the limits of their financial viability. Higher co-payments or higher premiums — both politically tricky — may be required as populations continue to age.

$818bn Global cost of dementia in 2015 according to ADI

£2 Monthly cost of one common treatment

Alzheimer's cries out for star-studded fundraising

OPINION

Barbara Judge

My mother worked until she was 88 as a dean at New York Institute of Technology. Six months after she retired she forgot how to walk. As she did not have to get up for school any more, walking had become superfluous.

She now sits at home in a wheelchair, staring into space. She does recognise me and other close family members, but she answers our questions as if she is in a dream.

Even though she is still alive, and in fact still physically healthy, I have lost my mother, my mentor, my supporter and my best friend. Every day I miss her wise counsel, good judgment and unconditional love.

She was always worried that she would get Alzheimer's because my grandfather had died from it. Often, when I was sat next to doctors at social events, I would ask them if they thought my mother would develop Alzheimer's based on the facts I presented to them. Invariably they would ask "how old is she?" I would reply that she was 81, 82 or 83 etc. and they would say "if she has lived this long without it, she probably won't get it now".

I believe that she did in fact have Alzheimer's for a long time before it became apparent, but because she was working, and her mind and body were engaged, she managed to stave it off. In any case, as soon as she left her job, her mind started leaving her.

I know that realistically there is nothing I can do for her now except go to New York to visit her every month. She is receiving all the available drugs, which we know do not cure at all, but sometimes slow down the process.

Due to the feeling of helplessness, I decided I had to do something. So I joined the board of Dementia UK in January 2015.

At that point it struck me that people did not seem to be talking about Alzheimer's and dementia, or raising money for it at high-profile events, in the same way as they had in the past in connection with HIV/Aids. I therefore decided to focus on what I do best.

I went on to conceive and chair a first bi-annual fundraising ball in September 2016 in London that raised £250,000 in one night. I have been asked to repeat it and the event will be held on June 13.

I have mentioned the Alzheimer's ball to illustrate how high profile, unusual events can capture the attention of many potential donors — I have witnessed first-hand in America the benefits that such fundraising efforts can bring. When I was younger, HIV/Aids had just started spreading at a relatively rapid rate. It attracted the attention of the American public, including actors, pop stars and high-profile fashion folk.

> HIV/Aids was a fashionable cause and there were many big events to raise money

All of a sudden HIV/Aids became a fashionable cause and there were many well-attended events to raise money. Today, there is such good medication for this terrible disease that sufferers can live a long and healthy life.

I wonder why the same is not true for dementia. This could be because without any "sex appeal" or "celebrity high-profile" survivors of Alzheimer's or dementia, there is nobody to tell their story.

Indeed, there is nobody to promote the research and personify a campaign for more funding in the way there has been for HIV/Aids and cancer, and numerous other killer diseases in the past.

There is no doubt that as we are all living longer and that an increasing number of people will be diagnosed with dementia, which tends to afflict people in their 80s or 90s.

In the 1970s, a diagnosis of cancer was considered a death sentence. Now, because of a tremendous research effort, cancer survival rates for many common cancers have vastly improved.

I want to see this kind of transformational change for dementia.

Decades of underfunding have meant that dementia research is lagging far behind that for other health conditions such as HIV. Such research is also 20 years behind the progress being made with cancer. Dementia is killing more people every year. It is a condition we cannot prevent or cure and was the leading cause of death in the UK in 2017.

Across the world, someone develops a new case of dementia every 3 seconds, according to research published by Alzheimer's Disease International; in the UK someone develops dementia every three minutes.

Like my mother, about 50 million people worldwide are living with dementia every day and this number will almost double every 20 years, reaching 82m in 2030 and 152m in 2050, according to WHO estimates.

A century ago, not long before my mother was born, people with diabetes or tuberculosis would have probably died quickly — but we found treatments or vaccines for them in the early 20th century.

My wish and hope for 2018 and beyond is that we can make the same difference in the 21st century with dementia.

Scientists inch towards answers on how disorders work

Continued from page 1

immune response contributes to Alzheimer's. The latest study, published last month by researchers at Southampton and Oxford universities, concluded that people who took anti-inflammatory medication for arthritis cut their risk of developing dementia by half.

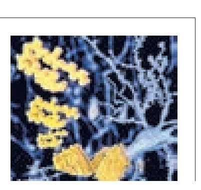
The UK Alzheimer's Society is funding a controlled clinical trial of anti-inflammatory arthritis drugs called TNF-alpha inhibitors.

"It is vital to explore whether drugs developed for other conditions also have benefits for dementia, as it could make it much quicker to get new drugs to the people who desperately need them," says James Pickett, Alzheimer's Society head of research.

The longer term aim is to design medicines that modulate the immune system specifically to fight against dementia. Microglia, the brain's specialist immune cells, will be key.

Alongside the development of dementia treatments, researchers are working on better diagnostic tests, which could eventually find a place in medical practice.

The best available indicator of Alzheimer's pathology is still the build-up of aBeta protein in the brain while the amyloid plaques are still being formed.



Amyloid beta: the main component of sticky plaques that form in the brains of those suffering from Alzheimer's

The molecules most toxic to brain cells seem to be so-called oligomers that form when aBeta molecules link together rather than the end-stage plaques.

A promising approach to drug development is to stop these aBeta oligomers forming in the first place.

The only techniques available now to track this activity are PET brain scans (expensive) and cerebrospinal fluid testing (invasive).

But the long-awaited prospect of a blood test for amyloid formation came closer last month when a team of Japanese scientists published a study that showed they had been able to identify individuals with abnormal aBeta deposits in the brain with 90 per cent accuracy.

"These data are very promising and may be incredibly useful in the future," says Professor Tara Spires-Jones, a dementia specialist at Edinburgh University. Since 2012 a widely accepted target has been to have the first treatment that safely modifies the underlying course of Alzheimer's available by 2025.

That is still achievable, says Dr Reynolds, though the slow pace of clinical development means that this drug must already be in at least the early stages of testing in patients.

It will not be a miracle cure — and it may need to be combined with other drugs — but once it has proved its efficacy, this pioneering product will provide a basis for a real pharmaceutical assault on dementia.

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Experience dementia for a day

Help Virtual reality simulator in Japan looks to end younger people's indifference to sufferers, writes *Robin Harding*

Disconcerting: Robin Harding tries the VR experience (left) and an impression of what he could see — Silver Wood

I am standing on top of a tall building and a kind-faced lady is urging me to step forward and plunge into the traffic below. "Just one step," she says. For a second, I lean out and feel a rush of vertigo as a juggernaut roars past below.

It is scary and disorienting. "What are you doing to me?" I say.

The scene dissolves and next I am sitting in the back seat of a stationary car looking out of its open door at the same woman. Again, she urges me to step forward, and I do. The car was taking me home.

I have just taken part in a virtual reality simulation of what it is like to have dementia, created by a Japanese company called Silver Wood. This particular experience simulates a condition called visuospatial dysgnosia, which involves a loss of spatial awareness so the small step down from a car felt like the height of a building.

"Dementia doesn't just equal a loss of memory, there are all sorts of varieties," says Tadamichi Shimogawara, the founder and chief executive of Silver Wood. "So far we've made 12 virtual reality episodes and they're all based on interviews with dementia patients. We've tried to reflect the world they see and experience as faithfully as possible."

As the world's fastest ageing society, Japan confronts what Masaki Muto of the International University of Health calls a "pandemic of dementia". Based on trends in demographics and lifestyle, the government expects one in 20 Japanese will have dementia by 2025, amounting to 7.3m people. By 2050 the figure will be one in 10.

According to a study by Keio University, the economic cost of looking after people with Alzheimer's disease and other types of dementia in Japan amounts to ¥14.5tn ($128bn) a year, and will be a greater strain on the public finances in future.

But even more than a crisis of numbers, Japan is facing a crisis of empathy. In an atomised society, where the young have struggled with economic insecurity for the past two decades, there is a tendency to write off and ignore people with dementia.

That tendency is what Mr Shimogawara wants to combat with his simulations, which use standard consumer virtual reality headsets. "We want to get rid of prejudices about dementia," he says. "Rather than a dementia sufferer we want people to be seen as individuals."

His simulations vividly show the diversity of dementia. A second episode is based on Alzheimer's disease. I am sitting on a train, hearing an internal monologue agonising about where I am and whether to get off. I cannot see the station signs. None of the passengers will meet my eye. The train stops and all the other passengers get out. I follow them and stand lost on the platform. "Where am I?" I say. "Eh?" says the station attendant. "The exit is over there." Eventually, another passenger comes along and reads the pass around my neck, which says I have early-onset Alzheimer's. The simulation conveys the anxiety of feeling lost where nobody understands you, like being in a foreign country. "What we wanted to show here is that while it's possible to think of Alzheimer's as being a kind of disability, we've actually all been in that position," says Mr Shimogawara. "The way to help someone is just the same."

A third simulation, based on Lewy bodies dementia (where protein develops inside nerve cells), is like a horror film. I see people who are not there. The wire of a phone charger turns into a snake and writhes. Curtains move with the window closed. Some of this feels threatening and some does not, yet the people around me see none of it, carrying on a regular conversation. Dementia with Lewy bodies is a common and distressing variant of the condition. Visual hallucinations are one symptom.

Although its purpose is public-spirited, Silver Wood is very much a business, with its roots in the design of nursing homes. It has been offering the simulations as Virtual Reality Dementia Experiences for local governments, education boards and hospitals and has had 12,000 participants since 2016.

Mr Shimogawara would like to make his dementia simulations more widely available. He sees a worldwide market for them as software applications, especially in Asian countries where populations are ageing rapidly, such as China.

Achieving that will require a step up in quality. "One of main issues is making the experience interactive," he says. At present, the simulations are 360-degree videos; a user can change what they see by moving their head, but the story always plays out the same.

Making a big social impact will depend on showing the simulations to people who do not care about dementia rather than just those who are interested enough to seek them out.

"In the world we need to support each other, but to create an environment for that, we need to know how other people feel," says Mr Shimogawara. "Using virtual reality, people can experience what the world is like for people with dementia and understand it for themselves."

Japanese providers see business opportunities

Case study

China offers a big potential dementia care market, say *Kosuke Terai* and *Yuichi Nitta*

Asia is ageing rapidly, but has little care provision outside the traditional family. Providers from Japan, which has the world's largest proportion of over 60s, see a big business opportunity for nursing care particularly when it comes to dementia, an illness which strikes the elderly hardest.

China, which already has 230m people over 60, is a prime target, particularly because of its one child policy which has left fewer young adults to care for the elderly.

Nichiigakkan, a leading Japanese provider of long-term care, in December opened a nursing home in Beijing for patients suffering from dementia.

The 23-bed facility caters to wealthy customers, with monthly fees starting at Rmb25,000 ($4,000).

The fees cover specialised therapy, including group activities such as cooking and sessions to help residents remember events from their past. The company has based its programmes on similar offerings in Japan.

In China, Nichiigakkan has gone through a period of trial and error. While the company has offered home care there since April 2016, this strategy has failed to generate the expected results, as it remains common in China for live-in housekeepers to handle nursing care. Nichiigakkan suffered losses of ¥1.4bn ($13.1m) at its China operations for the year through to last March.

The company is hoping that demand for residential care for those living with dementia will turn that loss into a profit by the end of the 2019 fiscal year in March 2020. It forecasts revenues will increase to ¥20bn, 10 times their current level, by the end of March 2021. It is set to open another facility in Beijing and homes in the nearby city of Tianjin as well as in Shenyang, capital of the northeastern province of Liaoning.

The company also plans to provide home-care services and day-care facilities near the residential homes so that patients can benefit from different levels of care.

Medical Care Service, another Japanese company, is also aiming at the Chinese market. It opened a nursing home in 2014 in Nantong, in the eastern coastal province of Jiangsu. Now it is set to open a 150-bed facility in Guangzhou — about two hours on the train from Hong Kong.

China is not the only country in Asia with a rapidly ageing population. The number of people aged 60 or over in Asia is forecast to double from 550m in 2017 to 1.2bn in 2050, according to the UN. Dementia patients in Asia and Oceania are expected to more than double to about 70m by 2050, according to Alzheimer's Disease International.

This helps to explains why Japanese care providers are also looking elsewhere in the region. Home healthcare provider Riei began training Thai caregivers after setting up a Bangkok unit in 2003. The Japanese company opened its first residential care facility on the outskirts of Bangkok in 2016 to meet demand for nursing care.

Caregivers trained by Riei in Thailand are on hand 24 hours a day. Residents, who are mostly Thai locals, are charged a monthly rate of 60,000 baht ($1,900).

Riei opened a residential care facility on the outskirts of Bangkok in 2016

But Japanese companies see not only an opportunity to reach new markets but also to bring much-needed caregivers to Japan. Since December, a consortium including Japanese nursing care providers Sakura Community Service and Egao Ichiban have been experimenting with home healthcare in Myanmar's commercial capital Yangon. Sakura and its partners plan to bring caregivers trained in Myanmar to Japanese facilities through Japan's five-year foreign technical trainee programme. Afterwards, the staff will be placed in jobs back home. If the arrangement succeeds, it could help ease Japan's shortage of caregivers while increasing Myanmar's caregiving expertise.

Theatre gives voice to the forgotten

Arts West Yorkshire Playhouse is staging productions written and devised by those living with dementia, writes *Sarah Neville*

It is Friday morning at West Yorkshire Playhouse, a theatre in the north of England, and the group behind a pioneering festival, is holding its regular weekly meeting to review progress.

The festival is called Every Third Minute — subtitled "a festival of theatre, dementia and hope" — and several of the curators in the meeting are themselves living with dementia.

Designed to reflect the true, "lived" experience of those with the condition, the festival is the brainchild of Nicky Taylor, research associate at the theatre. Over the past eight years, Ms Taylor's work has focused on lifting the stigma of a dementia diagnosis and helping those with the condition to lead full lives.

Her mission arose from her experience running creative workshops for the over-55s. She found that when people started to develop cognitive problems, they often stopped attending — just when they most needed stimulating social activities.

In part to address this, four years ago the theatre started staging "dementia-friendly productions" — versions of its mainstream productions that had been amended to ensure that people with the condition could enjoy the experience.

Technical aspects of the show, such as noise levels, are adjusted; clear signs are put up to make sure people can easily find their way to lavatories or the café; and higher numbers of staff than usual are on hand to offer support.

Every Third Minute — so named because every three minutes someone in the UK will develop dementia — takes this inclusive approach a step further. It is, Ms Taylor believes, the first festival in the world to tell the stories of people living with the condition from their own perspective, as opposed to that of people caring for, or grieving for, loved ones with dementia. She says the Playhouse's "confidence and ambition has grown over the years" and it is now "genuinely sharing creative decision-making with people with dementia".

The power of music: choirmaster Peter Edwards leads a rehearsal with a difference — the participants are dementia sufferers — Charlie Bibby/FT

Singing for the Brain One of many initiatives that harness music to alleviate symptoms

It is a cold morning in a church hall in Croydon, south London, and Peter Edwards is warming up his singers with some call-and-response exercises. But this is no ordinary choir: the participants are dementia sufferers, enjoying a final session before an appearance at Buckingham Palace.

Mr Edwards leads his group through rousing renditions of "She'll Be Coming Round the Mountain" and "Oh, What a Beautiful Mornin'" before turning up the excitement by handing out maracas and tambourines.

Singing for the Brain, as the session is called, is organised by the Alzheimer's Society, a UK dementia support and research charity. It is one of many initiatives harnessing music to help those with dementia and their carers.

The Commission on Dementia and Music, a UK project backed by the Utley Foundation, a family charitable trust, aims to turn this "cottage industry" of programmes into a national policy of musical interventions for all dementia sufferers by 2020.

This is a steep task given its estimate that less than 5 per cent of care homes in the UK currently provide music as part of treatment.

The commission's recommendations, published in January, are bolstered by neurological studies which have shown "musical memory" is handled by a part of the brain that remains relatively unscathed by diseases such as Alzheimer's.

Sally Bowell, research fellow at International Longevity Centre UK and one of the report's authors, says: "Music can help alleviate some of the behavioural and psychological symptoms of dementia such as agitation and wandering, and has been shown to help reduce reliance on anti-psychotic drugs."

Darren Dodd

Dementia prize
County council offers £100,000 for best proposal

An English local council has instigated a global search for innovative ideas to transform the way people live with dementia.

Essex county council's Challenge Dementia Prize is open to individuals, teams and companies that devise "next generation" products, technologies and services to help those affected to "remain connected to the people and places around them and to maintain their identity", it says.

Benjamin Mann, Essex's senior policy and strategy adviser, says the prize is an acknowledgment that the council is "not necessarily best placed to find the solutions" to all the pressures facing its residents. Mr Mann says the intention is to engage "the unusual suspects", such as someone living with dementia.

The 10 finalists will each receive £5,000 and the chance to work with organisations such as PA Consulting, TechUK and the Alzheimer's Society. The winner will receive £100,000 to invest in their idea. "It could wind up with one person winning the prize but another nine viable, marketable ideas . . . that can then go on and get funding elsewhere," Mr Mann says.

The closing date for entries is April 13. Further information is available on the council's Challenge Prizes web page. **SN**

The most striking manifestation of this approach is the theatre's decision to team people who are living with dementia with professional writers. The aim of this strategy is to produce work which is filled with the authentic voice of those coping with dementia's vicissitudes in their daily lives.

A Horse Called Freedom, part of the festival, is one such production. It is co-authored by Rosa Peterson and Barney Bardsley, a writer.

Explaining the creative process, Ms Peterson, diagnosed almost four years ago with dementia, tells the FT: "I did all the talking and [Ms Bardsley] did all the writing . . . She wrote [my words] down and fiddled with it."

The stimulus for the work, explains Ms Peterson, was her memory of riding a runaway horse, aged 14. Far from being frightened, she loved "the freedom . . . going galloping, just you and the horse". Her experience of having dementia is integrated into the play, in part through the use of hallucinations and characters "hearing voices": both can be hallmarks of the condition.

Of the work, she says: "It is a mixture of happiness and a bit of sadness but really mostly happy."

Ms Taylor says that from the start it was important to the members of the curation group that "laughter and music" should be an integral part of the festival.

This spirit is visible at the curators' meeting, where the mood feels light-hearted and warm.

Pete Grogan, who has early onset dementia, reveals that the evening before the meeting, he attended *Still Alice*, a production playing in the theatre's main auditorium. It tells the fictional story of an academic diagnosed

> Her experience of having dementia is integrated into the play, in part through the use of hallucinations

with dementia at the age of 50.

In keeping with the theatre's determination that it should honestly and accurately reflect the real experiences of those with dementia, Wendy Mitchell — who has recently published a book about living with dementia, *Somebody I Used to Know* — acted as paid consultant to the cast.

Mr Grogan tells the group that seeing the production has made him appreciate how much better his own experience is than that of the play's central character. "I am not too bad on not remembering things. I am certainly not perfect but certainly a lot better than the lady [in the play]."

A life-long musician, he is providing a musical accompaniment for some of the Every Third Minute productions.

As the curators' meeting draws to a close, he sits down at a keyboard and starts to play. He chooses one song by The Beatles that seems to carry a particular resonance: *Let it Be*.

Keen to disseminate its approach, the Playhouse has now produced a handbook for groups that would like to follows its example and regularly hosts visitors from other theatres around the UK as well as from overseas, who are eager to see it in action.

Ms Taylor sums up: "It really is a two-way process between people with dementia and theatre professionals — we learn so much from each other."

Studies point to risk factors for getting the disease

Prevention

Tackling hearing loss, poor education and obesity might help, says Clive Cookson

At first sight the global growth in Alzheimer's disease and other forms of dementia looks terrifying. The World Health Organisation's latest estimates, released in December, put the total number of people with dementia at 50m today — and that is projected to reach 82m in 2030 and 152m in 2050.

The increase results entirely from demographic changes. By far the largest risk factor for dementia is old age. As deaths from other causes — infections, cancer and cardiovascular disease — decline, the number of dementia-prone people in the population is rising fast.

Yet the frightening overall figures conceal the good news that in many industrialised countries the age-related incidence of dementia is beginning to fall. In the UK and US an 80-year-old today is about 10 per cent less likely to suffer from dementia than one a decade ago, though the fall is mainly among men rather than women.

Many scientists think the decline must be due to changing environmental and lifestyle factors. If we can identify the factors responsible, we might learn from them to come up with a prevention strategy for Alzheimer's.

An expert commission set up by the Lancet medical journal reported in July that more than a third of dementia cases could be prevented by tackling non-genetic factors ranging from poor education, stress and obesity to hearing loss, head injury and pollution.

"There is a lot of research showing that a generally healthy lifestyle can have a marked effect on your risks of developing dementia," says David Reynolds, Alzheimer's Research UK chief scientist.

The decline in age-related incidence could be due to improved cardio-vascular health or more education and physical activity, showing that "dementia does not have to be an inevitable part of ageing", says James Pickett, head of research at the London-based Alzheimer's Society.

Evidence that education protects against Alzheimer's is also growing. "Many studies have shown that the more years spent in full time education, the lower the risk of Alzheimer's," says Hugh Markus of the Department of Clinical Neurosciences at the University of Cambridge.

"But it is difficult to unravel whether this is an effect of education improving brain function, or whether it's the case that people who are more educated tend to come from more wealthy backgrounds and therefore have a reduction in other risk factors that cause Alzheimer's disease."

Prof Markus is leading a study to unpick these factors. Results published in BMJ in December showed that genetic variants predicting educational attainment were strongly associated with Alzheimer's disease. Other studies have found that up to 19 per cent of Alzheimer's cases can be attributed to low education.

A favourite idea is that many years of education, followed by a creative career and retirement activities that keep the brain as active as possible, build up a "cognitive reserve".

However, it is far from clear to what extent this reserve needs to be established during early and mid life, and how much people can build it up further through mind-expanding activities in old age.

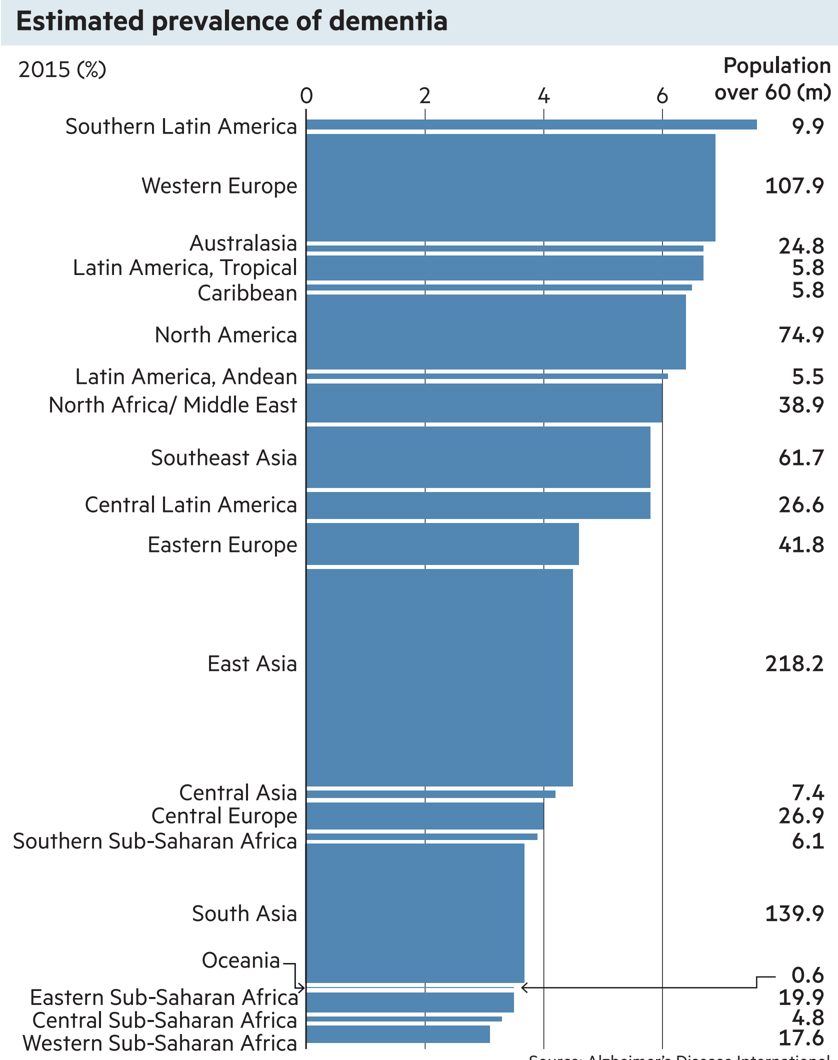
Many environmental factors have been linked to an increased risk of dementia, ranging from air pollution to head injury.

The most surprising of the nine significant risk factors identified by the Lancet commission is hearing loss in middle age, which could cut the number of dementia cases by 9 per cent if everyone was treated before deafness set in.

It is important to remember that, while studies may suggest that one-third or more cases of dementia are preventable, these are population-level estimates that do not necessarily take into account individual circumstances.

By having bad luck and the wrong genes, an individual who does all the right things may still develop Alzheimer's, just as a non-smoker living a healthy life and trying to avoid air pollution may die young of lung cancer.

Estimated prevalence of dementia



Source: Alzheimer's Disease International

Scientist turns to Ayurvedic medicine in hunt for a treatment

India

Researchers are also starting a 10-year population study that will follow 10,000 rural Indians, writes *Amy Kazmin*

In Kolar, a farming district two hours drive from India's IT hub Bangalore, researchers are enlisting 10,000 residents for a groundbreaking, 10-year study on dementia in rural Indians.

The investigation will track participants' health and mental acuity for a decade, probing the relationship between physical wellbeing and dementia. The study aims to identify the factors that both raise and lower risk of developing dementia. Led by Vijayalakshmi Ravindranath, chair of the Indian Institute of Science's Centre for Neuroscience, it will be the first probe of its kind in south Asia.

"Dementia starts two to three decades before the actual presentation of symptoms. We also believe lifestyle factors contribute to dementia," says Prof Ravindranath.

"I want it to be the Framingham of India," she adds, referring to the landmark cardiovascular study of residents of the US town of Framingham, which has provided many modern insights into heart disease and its prevention.

There has been little research on dementia in the developing world, where public health concerns typically focus on infectious diseases or reducing infant and maternal mortality.

That constitutes an imbalance that many scientists and public health experts are trying to correct. Two thirds of the world's dementia sufferers actually reside in low and middle-income countries, according to Alzheimer's Disease International, a global research and advocacy group. It has set up an international research collective called 10/66 Dementia Research Group. Its name refers to the 66 per cent of dementia sufferers who live in those low and middle income countries and the 10 per cent, or less, of population-based research that has been carried out in those regions.

"We require research to find out the extent of dementia and the care

Vijayalakshmi Ravindranath
GiovanniCavulli for University of Trento

arrangements," says Dr Amit Dias, a professor at Goa Medical College, and India co-ordinator for the 10/66 Dementia Research Group.

Philanthropic funding for scientific research into the disease itself is also growing in India, where concerns about geriatric care are mounting.

"We never worried about ageing before," says Prof Ravindranath, but she points out that fewer elderly people live with their adult children. "Because of the joint [or extended] family system, people were shielded from this. But with the social order breaking down, people are thinking about it a lot more."

In 2014, Kris Gopalakrishnan, one of the co-founders of the Indian IT giant Infosys, donated $35m to establishment of a new Centre for Brain Research at the IIS in Bangalore. The centre is collaborating with the National Institute of Mental Health and Sciences on the

> 'Dementia starts two to three decades before the presentation of symptoms'

Kolar study. Prof Ravindranath has also received a $11m grant from the Tata Trusts for research into Alzheimer's disease, particularly to focus on early detection — before obvious symptoms emerge.

Working with mice, her team has already identified one potential biomarker for early detection of Alzheimer's. Their findings were published in the Journal of Neuroscience, a peer reviewed journal, in December. They are now planning a study of 600 upper-middle class professionals in Bangalore as part of the project.

Besides studying the progress of the disease, many believe India's traditional medical system, Ayurveda, might provide clues for how to slow, stop or even reverse Alzheimer's progress — a goal that has so far eluded Western pharmaceutical companies, despite spending billions of dollars. "If you look at the Alzheimer's situation, it's very bleak," Prof Ravindranath says.

Ten years ago, she began testing traditional Ayurvedic memory-boosting formulas on mice, with no success at first. But then she isolated the root of a plant called *Withania somnifera*, or *Ashwaghandha* in Sanskrit.

It turned out that mice treated for 30 days with oral doses of purified *Ashwaghandha* root showed a sharp reduction in the brain of the amyloid plaque and amyloid protein — conditions that have been strongly associated with Alzheimer's — and showed improved mental performance.

"The mouse that was forgetting and had tons of amyloid — it completely reversed it," the scientist says.

Taking that initial research forward has been challenging.

Prof Ravindranath has worked to purify a large batch of the plant for toxicology tests, but her institute lacks the experience or financial muscle for serious drug development. However, she says she will keep pushing her research forward.

"We need to partner with somebody now," she says. "When we are at the stage that nothing that we think will work has worked, we should explore new avenues. And one of those is leveraging ancient knowledge. But unless we base it on strong scientific foundations, it won't gain acceptability."