



December 2017

# 2018 Investment Themes

# Contents

**5 Asia tech powers ahead**

Hugh Young

*Managing Director Asia, Aberdeen Asset Management*

**7 Keeping the faith: now is not the time to abandon inflation targets**

Jeremy Lawson

*Chief Economist, Standard Life Investments*

**9 China points to the financial future**

Brett Diment

*Head of Global Emerging Market Debt, Aberdeen Asset Management*

**11 Shopping online suits logistics just fine**

Anne Breen

*Head of Real Estate Research and Strategy, Standard Life Investments*

**13 Signal or Noise?: investors and political risk**

Lucy O'Carroll

*Chief Economist, Aberdeen Asset Management*

**15 Artificial intelligence: finding opportunities amid the rise of the machines**

Mikhail Zverev

*Head of Global Equities, Standard Life Investments*

**17 Exchanges and the companies quoted on them: surely it's different this time?**

Richard Dunbar

*Head of Economic and Thematic Research, Aberdeen Asset Management*

**19 Avoiding the pitfalls of quantitative investing**

Arne Staal

*Head of Multi-Asset Quant Strategies, Standard Life Investments*

**20 2018 at a glance**



# Foreword

**A lot has changed since we last published our annual outlook document. We've seen transformation in many areas – from geopolitics to central banking. Few would have predicted Donald Trump's victory in the US Presidential election; the escalation in tensions between the US and North Korea; the surprises in European politics; or the slew of natural disasters that have occurred so far in 2017. And yet, financial markets have so far proven remarkably resilient in the face of uncertainty.**

Equities, in particular, have powered ahead, with several major indices touching record highs in recent months. Whether they can continue to do so, against an unsettled political background and the combined pressures of rising inflation and potential interest rate increases, remains to be seen.

In this, our first annual investment themes document under our new brand, Aberdeen Standard Investments, expert contributors from both of our heritage businesses give their considered opinions on the possibilities ahead. From rapid advances in technology, to the implications of political risk, the articles on the following pages cover a broad range of topics of interest to investors. We hope you find them useful.



## Asia powers ahead in tech



**Hugh Young**  
*Managing Director Asia,  
Aberdeen Asset  
Management*

**In 40 years, Asia has moved from poverty to the forefront of technology. Asian companies are now innovators rather than imitators. Investors shouldn't take the West's technological superiority for granted.**

## Next year is the 40th anniversary of China's 'open door' policy – Deng Xiaoping's market reforms that eventually created an economic superpower. This was probably the most important development in a region that has changed beyond recognition.

In the mid-1960s, the Asia Pacific region was the poorest in the world. In 1978, when the Asian Development Bank granted its first health-sector loans, the beneficiaries were in Hong Kong and Singapore. Today, both places are thriving financial centres and among the world's richest per capita. Other regional economies produce many of the things the world needs to buy.

This is a tale of market reform, state sponsorship, globalisation, hard graft and luck. But it's also a story about technology: early on, it was technology transfer from the developed world; later, Asia adapted existing know-how to solve new problems. That's why Asia makes everything from clothing and cars to industrial robots and nuclear power plants.

Perhaps this is also why Asia still isn't known for innovation. For many people, the abiding impression is of a place that copies rather than invents. While that may once have been true, emerging Asian countries are at the vanguard of employing new technology to tackle some of today's biggest problems.

Take the environment. China, a notorious polluter, invested more money in renewable energy in 2015 than the United States, Japan and Britain combined. It's making a big push to put itself at the centre of the nascent electric-car industry and is already the world's largest market for these vehicles. The authorities there are considering an eventual ban on the production of petrol and diesel cars.

China's BYD, in which Warren Buffett's Berkshire Hathaway holds a 24.6% stake, is the world's biggest battery-maker and one of a handful of companies researching the creation of cheaper rechargeable batteries. Batteries are one of the biggest costs in electric vehicles; their hefty price tag is one reason they have yet to take off.

Meanwhile, India ranks seventh in the world for solar-energy capacity; a few years ago, it didn't even feature in the league table. With more mega solar farms to become operational in 2018, India hopes to achieve around 160 gigawatts of renewable energy capacity by 2022. To put this in context, the country's total grid capacity today is just over 180 gigawatts.

Then there's the issue of social inequality. India is using fingerprint and iris scans to help alleviate chronic poverty. The country has built a national database that assigns a unique 12-digit identification number to each person, linked to their biometric data. Out of a population of around 1.3 billion, more than 1.1 billion are registered.

The inability to verify someone's identity impeded basic tasks such as opening bank accounts and claiming government assistance. Poor record-keeping led to identity theft, fraud and corruption. More bank accounts allow government payments to be made directly to beneficiaries, rather than via corruption-prone intermediaries. Eventually, this database, riding on the ubiquitous smartphone, may form the basis of the next generation of digital financial services – enabling cashless payments across different platforms, or even allowing people to open a bank account with a selfie.

This handful of examples illustrates an important shift: we may soon look to emerging Asia for a glimpse of tomorrow's technology – whether in the form of solar panels, drones, supercomputers or fintech innovations. The implication is that so-called 'emerging' markets will turn to each other for their technology needs, rather than relying on handouts from the developed world.

So how should investors respond? Principally, they need to review their understanding of the capabilities of emerging Asian companies. Many firms have moved beyond the low-cost, low-value-added export model that worked so well in the early days of Asia's development.

In 2016, inventors in Asia accounted for more than 47% of all international patents, almost as many as the combined total from North America and Europe. So it's clear that regional economies harbour ambitions beyond assembling phones designed in California. Admittedly, that Asian tally includes Japan, but China is on track to overtake Japan for patents filed, while its annual investment in research and development is expected to surpass that of the US by 2020.

Four decades after Deng Xiaoping unleashed forces that transformed an entire continent, we may have reached an inflection point. Just as the global financial crisis, Brexit and the election of Donald Trump showed that the West doesn't have all the answers, the developed world's technological superiority could be the next sacred cow waiting to be slaughtered.



**Jeremy Lawson**  
*Chief Economist,  
Standard Life Investments*

## **Keeping the faith: now is not the time to abandon inflation targets**

**There are growing calls for central banks to reduce their emphasis on inflation. However, ignoring inflation would be a mistake. To do so would lock in low interest rates for longer and make it harder to counteract economic downturns.**

**Monetary policy is at an inflection point. The extraordinary support from central banks is being gradually scaled back as economies improve and financial markets remain calm. Yet investors remain sceptical about how much central banks will raise interest rates by, because inflation remains stubbornly low across most of the advanced world.**

Historically, declining unemployment has usually been closely followed by healthy increases in inflation. But this relationship – described by the Phillips Curve\* – has weakened significantly since the financial crisis. Even in economies like the US, Germany and Japan, where the unemployment rate has fallen below estimates of its natural rate, there are few signs of rapidly building inflation pressures.

This inflation ‘puzzle’ is prompting much soul-searching. Has the Phillips Curve broken down completely? Or is it that policy needs to remain looser for longer to overcome the cyclical and structural forces weighing on inflation? The answers to these questions, which will swirl around well into next year, have major consequences for the future of monetary policy and asset pricing.

The Bank for International Settlements (BIS) is leading the charge for a rethinking of monetary policy frameworks. It argues that low inflation is mainly due to the benign effects of globalisation and technological advances. The BIS also thinks that central banks’ commitment to ultra-low interest rates is distorting the economy and amplifying financial cycles. The upshot is that central banks put less weight on their inflation targets and withdraw policy support more quickly.

The wider central-bank community is unconvinced by this line of argument. There is agreement that there are structural restraints on inflation and that wages and consumer prices have become less responsive to changes in unemployment. But most central banks also think that inflation is still low because the recovery from the crisis has been so weak and spare capacity has not been completely eliminated. They have therefore drawn a very different lesson from the era of low inflation than the BIS: policy should be kept accommodative for longer, and it will simply take time for healing from past crises and the gradual erosion of spare capacity to be felt.

These debates are far from academic. In my view, it would be dangerous for central banks to give up on their medium-term inflation objectives. Doing so would lock in low inflation and low interest rates for longer, as well as further dampening inflation expectations. It would also undermine the ability of central banks to fight future recessions and deflationary shocks. That is because there would be less room for real interest rates and real wages to adjust. That would only serve

to increase output and financial-market volatility. Moreover, if a drop in inflation has been accepted once, why not again? Meanwhile, the real value of debt obligations would come down more slowly, weighing on demand.

As for credit and asset price imbalances, the financial crisis showed just how destabilising they can be. But the crisis was mostly a failure of regulation not of monetary policy. Accordingly, the financial cycle is best managed using targeted regulation, more effective micro and macro-prudential supervision, and the maintenance of ‘flexible’ inflation mandates that ensure that monetary and financial policymakers are singing from the same hymn sheet.

Reassuringly, central banks have not yet given up on their inflation objectives. Their reaction functions are therefore unlikely to change significantly in the near term. But the challenges of conducting monetary policy in a world of less responsive inflation and lower average growth and interest rates will not go away.

As a result, further policy experimentation is inevitable, especially when the next recession hits. Among the options being debated is for central banks to purchase real assets instead of just financial ones when unconventional policies are needed, and to coordinate those purchases with governments. Ben Bernanke (former Chairman of the US Federal Reserve) recently suggested that central banks should turn to temporary price-level targeting – whereby they would commit to compensating for periods of below-target inflation with periods of above-target inflation when policy rates have reached their lower bound. They may also explore mechanisms to reduce the lower bound itself by finding safer ways to deliver negative interest rates. Of course, with experimentation always come unintended consequences. Investors may think that the last decade has been difficult to navigate. But they ain’t seen nothing yet.

*\* The Phillips Curve describes the theoretical and historical empirical relationship between changes in economic slack and either wage or consumer price inflation. Normally it would be expected that as unemployment rates fall toward their natural or structural rates, underlying inflation rates would increase. In practice, however, both the position and slope of this curve has tended to shift over time, as has the amount of time it takes for changes in the labour market to impact wages and prices.*



**Brett Diment**  
*Head of Global Emerging  
Market Debt, Aberdeen  
Asset Management*

## China points to the financial future

**Financial technology is being widely adopted in China. The wealth-management industry is growing rapidly through fintech, and the banking, insurance and property sectors are facing disruption. Chinese fintech is set to expand both at home and abroad.**





**Every time I'm in Beijing, I always notice the street vendors selling their wares outside the Forbidden City. The food typically only costs a couple of yuan, yet, the last time I was there, I realised that the ladies selling them were happy to take payment on their phones using the Alipay app.**

I don't know what they do with the proceeds. But it's increasingly likely the funds will have been deposited into a money-market fund or another wealth-management product – all with a few swipes of a smartphone. Today, most Chinese people take financial technology – fintech – in their stride. In the year ahead, it will become an even more integral part of daily life.

China's fintech industry has come very far, very fast. Online payment provides the clearest example. These days, if you want to go for a meal, you can order and pay on your phone, turn up to the restaurant at the appointed hour and enjoy your dinner – without ever touching physical money or menus.

The Chinese online-payment industry already accounts for around half of global transactions. Alipay, operated by Alibaba's financial arm, is the market leader. But Tencent's Tenpay has been catching up fast. Tenpay's stroke of genius was to allow its users to send electronic hongbao – the red envelopes of money traditionally given as a Chinese New Year gift. Some 16 million online hongbao were sent in 2014 – rising to a billion in 2015. This helped Tenpay's share of the online-payment market to reach around 40% in just three years. Tenpay's rapid rise shows that we shouldn't rush to write off the smaller payment players – so we could see surprises here in 2018.

But there's much more to fintech than online payment. Chinese consumers are increasingly using mobile technology to borrow and invest. And alongside peer-to-peer lending, business-to-business finance is now taking off, with fintech firms offering cash and liquidity management for companies – filling gaps left by the cautious state-owned banks. Integration between online payment systems and wealth-management products is increasing – which is why these sausage-sellers could transform their earnings into investments through their phones.

Wealth-management products should grow rapidly in 2018. The range of online investment options is expanding, and customers are responding enthusiastically. A fifth of Chinese adults still have no bank account; with yields on bank deposits low and the A-share\* market notoriously volatile, many are likely to leapfrog that stage and go straight to wealth management.

One factor that's helped fintech's rapid ascent in China is the extent of smartphone penetration. Around 60% of Chinese people owns a smartphone: not necessarily an Apple or Android product, but a local model – Huawei or Xiaomi or Oppo. But although Chinese smartphone ownership is

on a par with Germany's and higher than that of Japan or France, it still trails South Korea's by a considerable margin. As smartphone ownership continues to grow, so too will the market for fintech products.

And in 2018, those products will cover a wider range of financial services. Fintech firms are now looking not only to disrupt banking, but to compete with insurers and property companies too. Alibaba is expanding into housing rentals, allowing customers to undertake every stage of the process through the company's apps. Meanwhile, Tencent has just received a licence to start an insurance company.

Consumer attitudes are contributing to the fintech boom. Surveys show that Chinese consumers are more relaxed about the use of personal data than their Western counterparts. This facilitates the monetisation of information by fintech companies, making their business models more viable – especially as fierce competition is keeping transaction fees low.

Another supportive aspect is the ready availability of credit for fledgling fintech firms. Lots of venture-capital companies are ready and willing to invest, and abundant liquidity means that start-ups can thrive. This has intensified the competition in this area, which will leave the eventual victors in great shape.

We expect the regulatory environment to remain benign in 2018. Although there has been some intervention to stamp out malpractice in peer-to-peer lending, the Chinese authorities seem generally content to let competition play out in fintech – a positive attitude that may reflect China's global lead in this area.

And that global lead looks set to continue. The Chinese fintech giants are now expanding their operations overseas. Alibaba has established joint ventures in Hong Kong and Indonesia, and is investing in India, South Korea and the US. It's also setting up a global research academy, with labs in Beijing, Hangzhou, the US, Russia, Israel and Singapore. Meanwhile, Tencent has been investing in Indian e-commerce and building partnerships in Thailand, South Africa and Europe. As 2018 unfolds, we're increasingly likely to associate fintech not with Silicon Valley, but with Beijing, Shenzhen and Hangzhou.

\* A-shares are shares of mainland China based companies and are traded on both stock exchanges in China, Shanghai and Shenzhen.



**Anne Breen**  
*Head of Real Estate  
Research and Strategy,  
Standard Life Investments*

## Shopping online suits logistics just fine

The rise of e-commerce has led to a surge in demand for logistics space. As a result, the industrial sector has outperformed across global real estate markets. Built-in upside for logistics and innovative distribution strategies means strong performance should continue.



**More of us are shopping online, which makes life easier and more convenient. It also makes for a more competitive and fast-moving battleground for retailers and creates disruption among real estate markets. The recent bankruptcy of Toys “R” Us highlights this, with the company failing to deal effectively with the rise of e-commerce. Financial-services firm Cowen expects US consumers to make 41% of their purchases of toys and games online in 2017, around double the amount bought over the internet in 2009.**

### **Retail’s pain is industrials’ gain**

While the move to online shopping is having a somewhat negative effect on the high street, it is having a more positive impact on another type of real estate – industrial buildings that deal with logistics. The industrial real estate sector has undergone structural change over the last 10 years or so. Traditional retailers re-shaping their supply chains, third-party logistics companies and the inexorable rise of e-commerce operators have driven demand. Amazon, for example, has dominated logistics take-up in the UK over recent years, as it looks to build capacity into its supply chain.

This surge in demand for logistics means that the industrial sector has driven commercial real estate performance globally. Indeed, industrial real estate outperformed the all-property benchmark in nearly every region during 2016.

As more institutional investors began investing in industrial properties, prices increased, driving capital growth. However, that is not the whole story. In the 30 global markets measured by MSCI in 2016, industrial assets had the strongest income returns in 18 of them. Landlords have pushed rents higher because industrial real estate is at, or near, historically low vacancy levels in most of the world’s markets. In the US, for example, when compared to its own performance history, logistics real estate is by far the healthiest property type, with vacancies one-third lower than the last cycle’s best reading. Given that context, it is not surprising that logistics has had the strongest rental growth of any US property type for 15 quarters in a row.

### **Is there room to grow?**

With industrial real estate having enjoyed a prolonged period of outperformance, the question for investors now is whether growth in e-commerce will continue to spur the sector. In our view, there is still plenty of room for improvement.

While e-commerce sales are still just a fraction of retail sales globally, growth far exceeds the rest of retail. In addition, distributing directly to an internet consumer is much less efficient than delivering to a bricks-and-mortar store, requiring over twice as much space for a given amount of sales.

Therefore, even as e-commerce eats away at other retail sales, there is built-in upside for logistics demand. According to large industrial REIT Prologis, just over 10% of space globally is currently dedicated to e-commerce, so there is quite literally plenty of room to grow.

### **Staying ahead of the game**

Many logistics companies are also employing increasingly innovative distribution strategies in order to meet demand effectively and efficiently. This includes making better use of existing industrial space through multi-storey design. Multi-functional facilities are also becoming increasingly common. Here, design flexibility is key, as industrial space combines with emerging sectors and activities such as bioscience, digital media and fashion design.

Finally, the ability of companies to fulfil ‘last mile’ delivery is another key success factor. With more people living in densely populated areas in and around cities, the concept of the sharing economy may result in urban consolidation centres (logistics facilities situated close to the areas they serve). These types of initiative illustrate that demand for logistics is unlikely to diminish any time soon, although the methods of delivery will change.

### **Proceed with caution**

As we look ahead, the market cycle for industrial real estate is relatively well advanced and pricing on prime assets is very competitive. As a result, choosing the best assets in the right locations is vital if investors are to continue extracting optimal returns. Despite this caution, the rise in e-commerce presents myriad opportunities and is one of the main reasons that logistics markets are likely to remain at the top of the ‘shopping’ list for many institutional real estate investors in 2018 and beyond.



**Lucy O'Carroll**  
*Chief Economist, Aberdeen  
Asset Management*

## Signal or noise?: investors and political risk in 2018

**Equity markets have proved resilient to recent political risks. Central banks and a broader energy market have helped to maintain stability. The rise of populism and uncertain global growth may pose fresh challenges in 2018.**



## **Proliferation of weapons of mass destruction. Terrorism. Populism. A newly emboldened Russia. The world is an unsettled place, but financial markets are relatively calm. A few factors could yet jolt them.**

US equity markets have sustained a significant portion of their post-election gains, despite the headlines speculating over possible Russian interference in the US presidential election, North Korean missile launches and a multitude of other potentially alarming events.

Such market insouciance is not particularly unusual. Since World War II, the US benchmark S&P 500 has fallen by an average 3.5% in response to shocks ranging from the Cuban missile crisis to the 2014 Crimean conflict. It has also typically regained its pre-shock levels within an average of five days.

Financial markets are certainly calmer than they would be without central banks' liquidity. In general, the knowledge that strong institutions like central banks will intervene in times of crisis (such as rate cuts in the wake of the 9/11 terrorist attacks) comforts investors.

The energy market may be playing a part, too. Oil prices, once a key means of transmitting shocks between markets and economies, are now far less sensitive to events in the Middle East and other oil-producing countries and regions. The shale revolution has transformed global oil markets in the past decade, reversing a long decline in US output, challenging OPEC's influence and helping to trigger the sharp drop in prices that began in 2014.

But there are political risks worth dwelling on in 2018. The current pick-up in global growth may not continue. Nor would it be guaranteed to insulate investors from political and geopolitical shocks. The recent global rebound still falls short of the sort of robust, inclusive recovery that might defuse some of the tensions underlying rising populism.

### **The rise of populism**

The forces behind populism have been many years in the making and may take as long to overcome. In previous decades, broadly centrist governments responded in similar ways to economic and political events. But the rise of populism appears to have broken this consensus.

Populist governments tend to have narrower, nationalist interests that are not well served through international cooperation. In this environment, institutions such as the G20, tasked with finding international solutions to international problems, will struggle. This is a concern in calm global conditions – even more so if events take a more troubling turn.

### **Questioning central banks**

Other institutional frameworks could be tested in 2018. Central banks may have helped calm markets, but they now face a crisis of confidence. With inflationary pressures far weaker than predicted, markets are questioning whether central banks still have a handle on how their economies work or how to respond to shocks.

If the removal of extraordinary policies does unsettle financial markets, central banks may not be able to rely on politicians to back them. Populists such as President Trump could find central banks a convenient political scapegoat during any shock. The danger is that institutional credibility is undermined just when it is needed most.

### **Don't ignore familiar risks**

Even apparently familiar risks need to be monitored closely. Events with a capacity for repetition, such as North Korea's missile tests or Israeli-Palestinian tensions, can have a diminishing impact on financial markets over time. A shock feels less like a shock when it is a familiar one. Investors tend to give a metaphorical shrug. But repeat events may be symptoms of a bigger shock to come.

The rational response to these risks is to keep a calm head. After all, investors may appear sanguine because they are simply looking beyond short-term 'noise', focusing instead on the fundamental strengths of economies or companies. This makes sense. Adjusting portfolios to address a particular risk can be costly, and it can potentially undermine longer-term investment strategies.

Against a backdrop of global recovery and capital continuing to flow relatively freely, the economic fundamentals arguably should carry greater sustained weight than political risks. Politics is not the be all and end all, but expect it to have a big bearing in 2018.



**Mikhail Zverev**  
*Head of Global Equities,  
Standard Life Investments*

## Artificial intelligence: finding opportunities amid the rise of the machines

Identifying the winners and losers of the rise of AI requires an understanding of the underlying technology – fast processors and vast datasets.

Hardware winners include both innovators and mass producers of semiconductors.

Facebook, Amazon and Google have vast amounts of data on their users, but so do other businesses such as health insurers.



**As artificial intelligence (AI) moves from the realms of fantasy to reality, it brings both opportunities and threats for investors in 2018. The possibilities of AI were underscored in 2015 when Google DeepMind's AlphaGo program triumphed over the reigning world champion in Go, a Chinese board game of profound complexity.**

In 2017, DeepMind announced that a new program, AlphaGo Zero, had beaten the original AlphaGo 100 times to nil. Information technology now allows the gathering, storage and analysis of the vast data sets needed to mimic the computational powers of the human brain. This not only brings hope, but also fears that manual work will be replaced by robots and decision-making by algorithms.

Apple's newest iPhone provides a commercial example. In 2012, Google algorithms learned to find videos of cats on YouTube. Google's researchers created a neural network of 16,000 computer processors with one billion connections that achieved 75% accuracy. The machine was never told what a cat was during the training. Jeff Dean, the Google Fellow who led the study, told the New York Times, "It basically invented the concept of a cat". Progress since has been spectacular. Now AI-based face recognition acts as the password to unlock the iPhone X.

### **Technology brings opportunity**

An understanding of the underlying technology guides us to where 2018's investment opportunities may occur. Many industries offer great data sets. If AI can help identify patterns and make better, faster decisions, it will driver higher sales, cut costs and even save lives.

These developments have opened the door to new opportunities for innovative companies. One example is NVIDIA, a US semiconductor company. Its original business was graphics processors that accelerated 3D graphics, driving the boom in video games. But the chips that power 3D graphics are also able to perform the tasks that drive machine learning. NVIDIA chips have become key components of machine-learning systems. As a result, sales increased, and the company's share price has risen more than eight-fold in the past three years.

We are still in the early days of AI growth. If AI can allow businesses to identify valuable data patterns and improve decision-making, there is more incentive to capture and store data. Tesco, the UK retailer, talks about every part of its retail infrastructure – from carts to tills to shelves – being able to generate and store data. This information can both help control costs and target higher sales through a deeper understanding of individual customers.

But the rise of AI is also good news for the semiconductor industry. Demand for memory chips produced by companies such as Samsung Electronics is already robust and growing. These trends will help sustain this growth.

### **Big data = valuable asset**

Companies that own great data sets will benefit from their 'asset' too. Facebook, Amazon and Google have vast amounts of data on their users and are actively investing in AI. In 2018, we expect investors' attention to shift to opportunities in more specialist niches, such as healthcare, which can be just as promising. American health insurer United Health has one of the largest data sets in the industry. It monitors the health data of tens of millions of patients, from drug prescriptions to hospital visits. It is working on detecting early changes in its customers' health using AI. The company's management team talks excitedly about being able to predict diabetes long before it develops and to intervene early to help its customers manage or prevent the disease.

### **Who is at threat?**

AI is also a threat to some existing business models. Algorithms are already effective at answering simple IT questions, providing customer helpdesk support. AI can even review basic legal documents. Today, these tasks are performed by IT services and business-process-outsourcing companies. The survivors will be those companies that adapt by automating these activities and shifting their offering towards more value-added services.

The speed of AI progress has been spectacular. The full impact on industries and societies lies ahead. Already, it has created a lot of value and presents real and material opportunities. The investment winners of 2018 will be those companies that not only have the right data but also understand how to use it.



NEW YORK

LONDON



**Richard Dunbar**  
*Head of Economic and  
Thematic Research,  
Aberdeen Asset  
Management*

## Exchanges and the companies quoted on them: surely it's different this time?

**The composition of the world's stock exchanges is in a state of perpetual flux. Companies that were household names, and industries that were pre-eminent, have vanished from the public consciousness. Given the rapid advances in technology, can we really expect today's stock-market titans to last forever?**





## Although it is not the oldest stock exchange in the world, the London Stock Exchange can trace its lineage back more than 300 years.

The earliest stockbrokers were debarred from London's centre of commerce, the Royal Exchange, because of rowdiness. Instead, they began to congregate at Jonathan's Coffee-House on Change Alley. Here, one of the early stockbrokers, John Castaing, began to post the prices of stocks, basic commodities such as salt and coal, and exchange rates. Since then, the stock exchange has undertaken a process of constant metamorphosis, moving from Change Alley to Sweetings Alley, to Threadneedle Street and finally to its current residence in Paternoster Square.

The nature of the stocks traded has changed greatly too, providing a number of lessons on the nature of business and the development of the global economy.

Joint-stock companies such as the British East India Company dominated those nascent exchanges. This reflected the creation and expansion of the British Empire. In due course, the sun rose and set on both the empire and the East India Company.

In the 1800s canals were de rigueur. Accordingly, they were popular constituents of the exchange. However, this enthusiasm was fairly short-lived as railways quickly rendered canals largely redundant, leaving shareholders somewhat poorer.

In 1890, Coats listed on the London Stock Exchange. Coats was a company at the epicentre of the booming global threads business and by 1910 had become the third-largest company in the world – behind only Standard Oil and US Steel. Eventually, it too was overtaken by technological change and cheaper alternatives. Coats survives to this day, but no longer on an epic scale.

As Karl Marx – no friend of the capitalist system – once observed: "History repeats itself – first as tragedy, then as farce". The UK's technology, media and telecoms (TMT) sector provides a good recent example of overly optimistic investors assuming that the sun would never set on a fashionable area of the market. In the event, TMT peaked at 32% of UK market capitalisation in 2000, but troughed in 2002 at 12%.

Similarly, in 2008 there was much talk globally of the mining 'supercycle', with the laws of economics apparently suspended for this sector. They weren't; a sector that peaked at 10% of the market now languishes at half that level.

And finally to banks in 2007 – peaking at 12% of the global market as we confidently asserted that our clever spreading of risk around the financial system would make it "different this time". It wasn't, and bank shares duly confirmed this by halving in value.

So, what sectors are now de rigueur globally, and could any of these stocks or sectors go the way of Coats, the canals or the East India Company?

Coats' contemporary equivalent today as the world's third-largest company is none other than Facebook. Surely it couldn't go the way of the famous threadmaker? Facebook has almost two billion users – each spending almost an hour a day communicating with each other. But can people really spend more of their time on the site? Is there still anyone left to join the gang? Is Facebook a publisher with broader responsibilities and with a consequent requirement for regulation? Many governments think so. Shareholders would be wise not to extrapolate.

More broadly, the US technology sector seems unassailable – who can see past Apple, Amazon and Microsoft? All fine companies with strong balance sheets and inspired leadership. But what happened to Yahoo, IBM and Blackberry? The world was their oyster, but they took some wrong turns and parted company from their customers.

The lessons from a study of the early stock exchanges are clear. The world's biggest and most successful companies change over time. Sectors ebb and flow, as economies adapt and change. It is difficult to see round the next corner: if only those canal companies had seen the railways coming, if only Coats had foreseen changes in the global textile industry, if only we had erased the phrase "mining supercycle" from the investment lexicon.

Forecasting is more difficult than ever, given the rapid advances in technology. Before we anchor to today's successes, we should bear in mind the lessons of history.

As we are often warned, the past performance of investments is no guide to their performance in the future. Although in this instance, it might just be...



**Arne Staal**  
*Head of Multi-Asset Quant  
Strategies, Standard Life  
Investments*

## **Avoiding the pitfalls of quantitative investing**

**Technological advances will drive increasing popularity of algorithmic investment strategies in 2018. Quantitative investing marries the science of models with the art of knowing when to use them. Algorithms and data are becoming more important, but investment still needs investors.**

**The rise of the investment algorithm has coincided with a nine-year bull run. What happens if 2018 is the year of the bear? The one thing we know is that it will be humans, not computers, who will have to navigate through the next crisis.**

## Beware of mirages

Increased use of data and technology can provide real investment insights but also increases potential for discovery of false signals. Next year will see growing use of algorithmic investment strategies, increasingly based on big datasets and machine learning. This can be a force for good: quantitative approaches help investors understand the true drivers of their portfolios and bring hope of better investment decisions and new sources of return. But the easier it is to access 'big' data, the easier it is to be misled. Like mirages, above-market returns promised by new strategies can disappear as soon as you invest. Statistical and human biases conspire to produce fake discoveries in historical data, and quantitative approaches have no appreciation of a changing world.

Keynes' description of economics applies equally to investment: "a science of thinking in terms of models joined to the art of choosing which models are relevant to the contemporary world". The global financial crisis reminded investors of the limits of models. Economists failed to predict the crisis. And political decisions mattered more than economics in bringing an end to the downturn.

## When the rules change

Politicians change the rules in ways models cannot capture. The Asian financial crisis of 1997–1998 led to the International Monetary Fund providing financial help to Thailand, Indonesia and South Korea. Malaysia took a different route, imposing capital controls that pegged the currency but locked investors in.

If we look further back, post-war investors in most UK public utilities were forced to hand their investments over to the state in return for government bonds.

Occasionally, markets cease to function at all. World War One caught the whole financial system by surprise. London was the centre of the financial world. UK banks had lent significant sums to German companies. The outbreak of war proved to be the Lehman moment, but without the safety net of the current web of central banks, governments and supranational bodies. The financial system froze, with 50 stock markets around the world closing, some for many months.

These risks remain relevant. In 2013, Cyprus imposed capital controls to limit outflows from its banking system. The UK Labour Party's current policies include nationalisation of railways and water utilities.

But surely market closures are a thing of the past? In *An Engine, Not a Camera: How Financial Models Shape Markets*, Professor Donald MacKenzie tells one story from the crash of October 1987, when the S&P 500 Index fell 22% and the S&P 500 futures contract fell 29% in trading on the Mercantile Exchange. This left several securities firms close to failure. There was a risk the exchange would be unable to open the following day. Continental Illinois Bank was the exchange's clearing agent and owed \$400 million. With minutes to spare, the chairman of the bank stepped in to release the funds needed to allow the exchange to open. As MacKenzie puts it, "The resolution of the crisis shows something of the little-understood network of personal interconnections that often underpins even the most global and apparently impersonal of markets".

## When things go wrong

When things go wrong, humans step in. A similar network kept the massive failure of hedge fund Long-Term Capital Management from bringing the financial system to a halt. Human intervention kept the doors open at the Royal Bank of Scotland and other financial institutions during the global financial crisis.

Quantitative investing is rapidly replacing traditional active management. Algorithms help reduce the bias and noise that hamper human decision-making. Information technology empowers us to back our judgements with empirical evidence. But the science must make sense and be used in context. In a world still driven by humans' fear and greed, investors need to understand the limits of quantitative finance.

Into 2018, big data is set to become bigger. Quantitative techniques have become vital tools for today's investors. But they are tools, not solutions. Successful investing requires an understanding of both the numbers and the context in which they are used. This requires judgement. Data scientists have a role to play, but investment still needs investors.

# 2018

## AT A GLANCE



**1 January** 10 years since Malta and Cyprus adopted the Euro and became the fourteenth and fifteenth Eurozone countries respectively

**23-26 January** The World Economic Forum Annual Meeting kicks off in Davos, Switzerland, on the theme of 'Acting Together in a Fractured World'

**3 February** Janet Yellen's term as US Federal Reserve chair ends



**1 June** 20 years since the European Central Bank was founded with the purpose of defining and executing the European Union's monetary policy

**June** California plans to allow self-driving cars to travel the state's highways without human drivers, with the new rules expected to take effect by June 2018



**20 May** The next Italian General Election will be held no later than 20 May 2018

**6 May** 10 years since then US Treasury Secretary Hank Paulson infamously claimed: "the worst is likely to be behind us" in reference to the so-called 'credit crunch'

**8 & 9 June** The 44th G7 Summit takes place in Quebec, Canada

**14 June** The FIFA World Cup gets underway in Russia



**1 July** Mexico holds its senate election, and will hold its Presidential election by the end of the month

**16 July** 100 years since revolutionary Russia executes Tsar Nicholas II, the last Emperor of Russia

**100 YEARS**



**18 July** 5 years since Detroit, Michigan, filed for bankruptcy, becoming the largest US municipal bankruptcy ever at \$18.5 billion



**October** Brazilian General Elections will take place this month



**October** European Chief Negotiator for Brexit, Michel Barnier, has said he wants all the talks with the UK to be wrapped up by October 2018, to allow ratification of the deal

**10 October**

World Mental Health Day



6 February

Marks the final stage in India's transition onto Aadhaar, the 12 digit unique identity number issued to all Indian residents based on their biometric and demographic data



17 February

10 years since Northern Rock, one of the UK's largest banks, was nationalised

8 March

International Women's Day



16 & 17 March

10 years since the collapse of US bank Bear Stearns



20-22 April

The International Monetary Fund (IMF) and World Bank have their Spring Meeting in Washington, D.C

8 April

Bank of Japan Governor Haruhiko Kuroda's current term scheduled to end



April

Tesla's Model 3, marketed as a "smaller, simpler and more affordable electric car", enters into mass production with delivery expected in the Spring of 2018

4 April

50 years since leader of the Civil Rights movement Martin Luther King Jr was assassinated

13 March

Russian Presidential election. Incumbent, Vladimir Putin, is eligible to seek re-election for a second consecutive term

August

Central Bankers gather at Jackson Hole, Wyoming for the annual economic symposium hosted by the Kansas City Federal Reserve. 2018 will mark 40 years from when the symposium was first held



11 August

10 years since Airbnb, now the world's largest home-sharing website, is founded by Brian Chesky, Joe Gebbia and Nathan Blecharczyk

15 September

10 years ago today Lehman Brothers filed for bankruptcy, the largest in history at the time, as massive leverage overwhelms an investment bank with \$639bn in assets



29 September

Ten year anniversary of the Icelandic Government's announcement that it would nationalise Iceland's third-largest bank, Glitnir. The beginning of the end for the Icelandic banking system



12-14 October

The IMF and World Bank meet in Bali Nusa Dua, Indonesia for their Annual Meeting



November

Ten years on from the announcement of China's \$586 billion stimulus package. The size of the injection would amount to a sixth of the country's GDP during 2007

6 November

All 435 seats in the House of Representatives and 33 of the 100 seats in the Senate will be contested in the US mid-term elections

11 November

Singles' Day, the Chinese bonanza of consumerism. Last year Alibaba surpassed \$14 billion in revenue on Singles' Day



## **Important information**

Investors should be aware that past performance is not a guide to future results. The value of investments, and the income from them, can go down as well as up and investors may get back less than the amount invested.

## **Aberdeen Standard Investments is a brand of the investment businesses of Aberdeen Asset Management and Standard Life Investments.**

This document should not be considered as an offer, investment recommendation, or solicitation, to deal in any investments or funds mentioned herein and does not constitute investment research. Aberdeen Standard Investments does not warrant the accuracy, adequacy or completeness of the information and materials contained in this document and expressly disclaims liability for errors or omissions in such information and materials.

Any research or analysis used in the preparation of this document has been procured by Aberdeen Standard Investments for its own use and may have been acted on for its own purpose. The results thus obtained are made available only coincidentally and the information is not guaranteed as to its accuracy. Some of the information in this document may contain projections or other forward looking statements regarding future events or future financial performance of countries, markets or companies. These statements are only predictions and actual events or results may differ materially.

All information, opinions and estimates in this document are those of Aberdeen Standard Investments, and constitute our best judgement as of the date indicated and may be superseded by subsequent market events or other reasons. Aberdeen Standard Investments reserves the right to make changes and corrections to any information in this document at any time, without notice.

The reader must make their own assessment of the relevance, accuracy and adequacy of the information contained in this document and make such independent investigations, as they may consider necessary or appropriate for the purpose of such assessment. This material serves to provide general information and is not meant to be investment, legal or tax advice for any particular investor. No warranty whatsoever is given and no liability whatsoever is accepted for any loss arising whether directly or indirectly as a result of the reader, any person or group of persons acting on any information, opinion or estimate contained in this document.

This material is not to be reproduced in whole or in part without the prior written consent of Aberdeen Standard Investments.

### **Risks of investing:**

**Equities:** Foreign securities may be more volatile, harder to price and less liquid than domestic securities. They are subject to different accounting and regulatory standards, and political and economic risks. These risks may be enhanced in emerging markets countries.

This is not a complete list or explanation of the risks involved and investors should read the relevant offering documents and consult with their own advisors before investing.

### **This document is available for distribution by the following Aberdeen Asset Management affiliates in the relevant countries:**

- In the United States, Aberdeen Standard Investments is the marketing name for the following affiliated, registered investment advisers: Aberdeen Asset Management Inc., Aberdeen Asset Managers Ltd, Aberdeen Asset Management Ltd, Aberdeen Asset Management Asia Ltd and Aberdeen Capital Management, LLC.
- Aberdeen Standard Investments is the marketing name in Canada for the following affiliated registered entities: Aberdeen Asset Management Inc., Aberdeen Fund Distributors, LLC, and Aberdeen Asset Management Canada Limited. Aberdeen Asset Management Inc. is registered as a Portfolio Manager in the Canadian provinces of Ontario, New Brunswick, and Nova Scotia and as an Investment Fund Manager in the provinces of Ontario, Quebec, and Newfoundland and Labrador. Aberdeen Asset Management Canada Limited is registered as a Portfolio Manager in the province of Ontario. Aberdeen Fund Distributors, LLC, operates as an Exempt Market Dealer in all provinces and territories of Canada.
- Aberdeen Standard Investments is the marketing name in Brazil for Aberdeen Asset Management Inc. and Aberdeen do Brasil Gestão de Recursos Ltda. Aberdeen do Brasil Gestão de Recursos Ltda. is an entity duly registered with CVM as an investment manager.
- United Kingdom, Norway, South Africa and EU Countries by Aberdeen Asset Managers Limited. Authorised and regulated by the Financial Conduct Authority in the United Kingdom. Registered Office: 10 Queen's Terrace, Aberdeen AB10 1YG. Registered in Scotland No. 108419.
- Switzerland by Aberdeen Asset Managers Switzerland AG (AAMS). Registered in Switzerland No. CH-020.3.033.962-7. Registered Office: Schweizergasse 14, 8001 Zurich. Authorised by the Swiss Financial Market Supervisory Authority (FINMA).

- Aberdeen Asset Managers Limited (AAML) holds a Category I financial services provider (FSP) licence in terms of the Financial Advisory and Intermediary Services Act, 2002, (FAIS) under licence 43675 and also holds professional Indemnity Insurance. The FSP licence entitles AAML to provide “intermediary services” (as defined in FAIS) to South African clients in relation to shares; money market instruments; debentures and securitised debt; warrants, certificates and other instruments; derivative instruments; participatory interests in Collective Investment Schemes; foreign currency denominated investment instruments; long-term deposits; and short-term deposits.
- Abu Dhabi Global Market (“ADGM”) by Aberdeen Asset Middle East Limited. Regulated by the ADGM Financial Services Regulatory Authority. Aberdeen Asset Middle East Limited, Al Sila Tower, 24th Floor, Abu Dhabi Global Market Square, Al Maryah Island, PO Box 5100737, Abu Dhabi, United Arab Emirates.
- Singapore by Aberdeen Asset Management Asia Limited, Registration Number 199105448E.
- Hong Kong by Aberdeen International Fund Managers Limited. This document has not been reviewed by the Securities and Futures Commission.
- Australia and New Zealand by Aberdeen Asset Management Limited ABN 59 002 123 364, AFSL No. 240263. In New Zealand to wholesale investors only as defined in the Financial Markets Conduct Act 2013 (New Zealand).

**This document is available for distribution by the following Standard Life Investments companies:**

- Standard Life Investments Limited is registered in Scotland (SC123321) at 1 George Street, Edinburgh EH2 2LL. Standard Life Investments Limited is authorised and regulated in the UK by the Financial Conduct Authority.
- Standard Life Investments (Hong Kong) Limited is licensed with and regulated by the Securities and Futures Commission in Hong Kong and is a wholly-owned subsidiary of Standard Life Investments Limited.
- Standard Life Investments Limited (ABN 36 142 665 227) is incorporated in Scotland (No. SC123321) and is exempt from the requirement to hold an Australian financial services licence under paragraph 911A(2)(l) of the Corporations Act 2001 (Cth) (the ‘Act’) in respect of the provision of financial services as defined in Schedule A of the relief instrument no.10/0264 dated 9 April 2010 issued to Standard Life Investments Limited by the Australian Securities and Investments Commission. These financial services are provided only to wholesale clients as defined in subsection 761G(7) of the Act. Standard Life Investments Limited is authorised and regulated in the United Kingdom by the Financial Conduct Authority under the laws of the United Kingdom, which differ from Australian laws.
- Standard Life Investments Limited, a company registered in Ireland (904256) 90 St Stephen’s Green Dublin 2, is authorised and regulated in the UK by the Financial Conduct Authority.
- Standard Life Investments (USA) Limited is registered as an Exempt Market Dealer with the Ontario Securities Commission and as an Investment Adviser with the US Securities and Exchange Commission. Standard
- Standard Life Investments (Japan) Limited, registered to Head of Kanto Local Financial Bureau (financial instrument business 2913) is licensed with and regulated by the Financial Services Agency in Japan, and is an association member of Japan Investment Advisers Association, and is a wholly-owned subsidiary of Standard Life Investments Limited.
- Standard Life Investments (Singapore) Pte. Ltd is regulated by the Monetary Authority of Singapore and licensed under the Securities and Futures Act (License No.: CMS100581-1), and is a wholly-owned subsidiary of Standard Life Investments Limited.

Investment involves risk. The value of investments, and the income from them, can go down as well as up and an investor may get back less than the amount invested. Past performance is not a guide to future results.

Aberdeen Standard Investments is a brand of the investment businesses of Aberdeen Asset Management and Standard Life Investments.

Visit us online  
[aberdeenstandard.com](http://aberdeenstandard.com)

The logo for Aberdeen Standard Investments. It features the word "Aberdeen" in a dark blue font, followed by "Standard" in a bold, dark blue font. A small blue triangle points upwards from the top right of the letter "d" in "Standard". Below "Standard" is the word "Investments" in a smaller, dark blue font.

Aberdeen Standard  
Investments