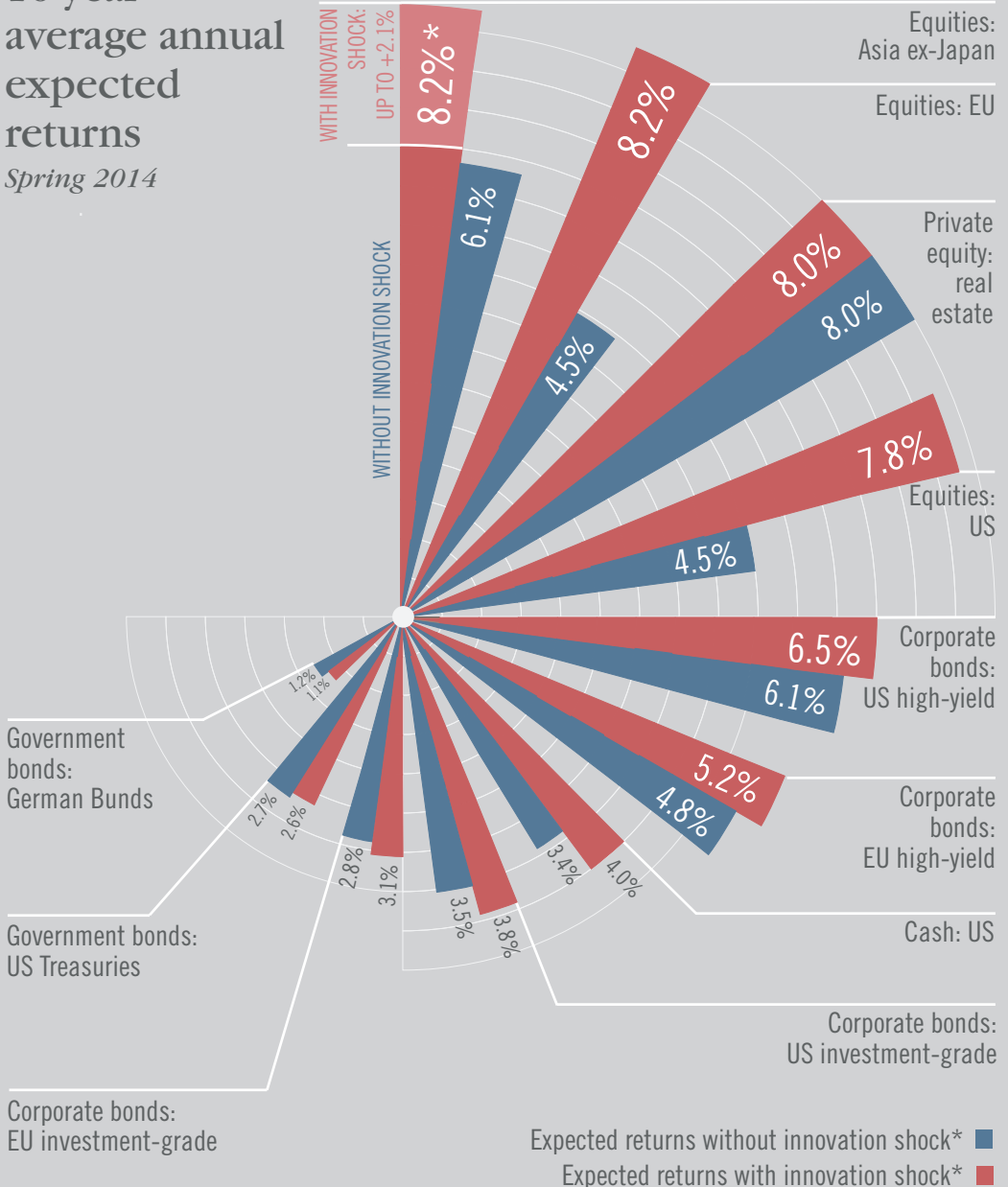


10-year average annual expected returns

Spring 2014



Calculating expected returns for asset classes forms one of the cornerstones of asset allocation. Having a lengthy investment time-horizon makes it feasible to allow for an eventual innovation shock leading to a paradigm shift in economic regime. We have based our models on a 10-year investment time-frame. For each asset class, we have put forward two projections for annual average returns, the difference being whether we have made allowance for an innovation shock or not.



* Average annualised nominal returns, in local currencies, with coupons and dividends reinvested

EDITORIAL

Supply, rather than demand, central to our calculations of expected returns

Dear Reader,

The first issue of *Horizon* in July 2013 highlighted economic regimes as a key feature in our specific method used to calculate estimated long-term returns from asset classes. This approach stems from thorough-going research culminating in a straightforward conclusion: over the very long run, returns from assets are chiefly influenced by real GDP growth rates and inflation. In the wake of powerful rallies in 2013, estimated returns have declined by 6.4% to 4.5% for European shares and from 5.7% to 4.5% as well for US equities. Likewise, estimated returns to be generated by high-yield US corporate bonds have come down from 7.3% to 6.1%. Estimated returns from other asset classes have barely budged.

Pinpointing the very distinctive economic regimes that have prevailed over the decades has provided the platform to devise scenarios for returns over the next ten years. On top of the characteristics differentiating the various regimes experienced by economies over the decades, observations reveal that downturns follow on from strong upswings, with the reverse true as well. This alternating rule of thumb lay behind our decision to envisage a scenario whereby the global economy would revert to normal over the coming decade, as we had outlined in our previous issue of *Horizon*.

In addition to regimes of economic growth and inflation reverting to normal, we have explored the very real

possibility of a deep-seated change that might happen in the regime for economic growth as a result of radical innovation. In Section II of this issue, we have presented a more detailed analysis of the essential role innovation plays in the processes of economic growth. We believe that, in a setting of mature modern-day economies, it is no longer demand that generates sustainable growth, but supply. Supply-side shocks arise out of ground-breaking innovation. In our approach to economic analysis, we have reversed the classic Keynesian proposition postulating that the remedy to economic torpor lies in a recovery engineered via reflationary government spending. In reality, although Keynesian reflation will have some impact on the level of economic activity, we consider it is only likely to be temporary. Conversely, shocks on the supply side are liable to fuel sustainable growth. Significantly, governments do, however, some role to play in such supply-side shocks. Disappointingly on that score though, fiscal/budget policy mixes implemented by governments in developed-world nations over the last few years have not been geared to favouring the key dual innovation/investment dynamo.

Despite this, technological progress is in full swing in several areas of the economy, such as the Internet, robotics/automation and transport.

These few examples demonstrate that, inevitably, innovation has over the years retained its dynamic thrust to drive the economy. We have no doubt these will work towards constructing a future of prosperity once growth is back up to cruising speed. At least that is the lesson learned from economic history over the last three centuries, and one that provides very solid bedrock for our ongoing optimism. ■

I. Expected returns from asset classes

For each asset class and for each of the three selected economic blocs, we have calculated estimated expected returns on the basis of two regimes for economic growth and inflation:

- (1) regimes with an innovation shock;
- (2) regimes with no innovation shock.

Outcomes from our calculations are summarised in the table opposite. The calculations were computed using prices as of 25 April 2014. Our calculations take into account our macroeconomic analysis for the starting- and end-point regimes for growth and inflation, as outlined in Section IV of this issue of *Horizon*.

For comparison purposes, we have also presented in the table the returns as estimated by us in July 2013 and historical average returns for the same asset classes for the 2011-2014 period. The figures shown are average annualised returns, in local currencies, with dividends and coupons reinvested.

From one issue of Horizon to the next, our calculated estimates of long-term returns from asset classes will change. This can happen as a result of shifts in economic regimes or movements on financial markets. However, it should be clearly understood the fluctuations have nothing to do with any rewriting of our calculation methodology (for more details on that, readers should consult the relevant background material accessible at <http://perspectives.pictet.com/category/publications/horizon>).

Any recalibrations we might make to the starting- and end-point economic regimes will stem from specific turns of events (further details on the outlines of our current economic scenarios can be found in Section IV of this issue of Horizon). As a result, revised values for our estimates of expected returns presented in this issue can be put down to how asset prices have been moving in recent months.

Expected returns from asset classes with an

		With innovation shock	
		Projection (April 2014)*	Projection (July 2013)*
		2014-2024	2013-2023
Equities	Private equity	15.0%	15.0%
	Equities: EU	8.2%	10.2%
	Equities: US	7.8%	9.2%
	Equities: Asia ex-Japan	8.2%	9.0%
	Private equity: real estate	8.0%	8.0%
Corporate bonds	Corporate bonds: US high-yield	6.5%	7.0%
	Corporate bonds: EU high-yield	5.2%	6.9%
	Corporate bonds: EU investment-grade	3.1%	3.7%
	Corporate bonds: US investment-grade	3.8%	3.6%
Interest rates	Cash: US	4.0%	3.6%
	Government bonds: US Treasuries	2.6%	2.2%
	Government bonds: German Bunds	1.1%	1.0%

*Average annualised nominal returns, in local currencies, with coupons and dividends reinvested.

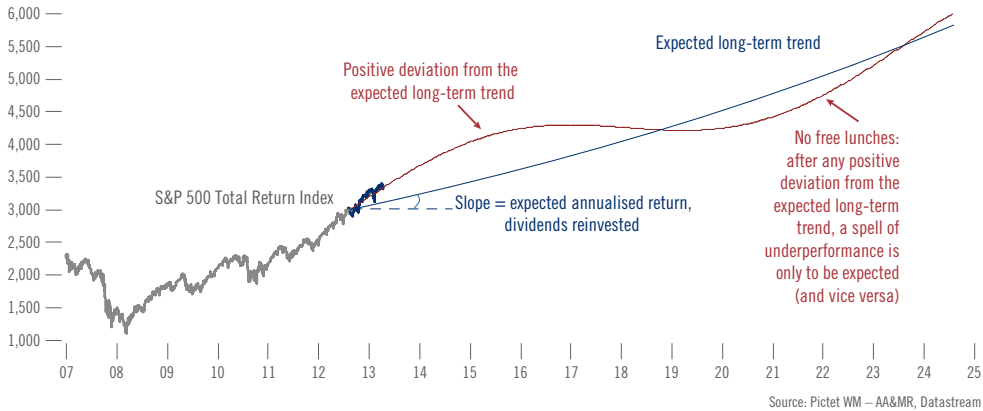
Expected long-term returns calculated as of 25 April 2014

Since we last published *Horizon*, the inaugural issue, in July 2013, expected returns as calculated have changed little, with the notable exceptions of US and European shares. As can be seen from the table, estimated annual average returns from US equities under the scenario with an innovation shock have come down from +9.2% to +7.8%; under the scenario with no innovation shock, those estimated returns have declined from +5.7% to +4.5%. Similarly for European equities, expected returns have been shaded down from +10.2% to +8.2% for the scenario with an innovation shock and from +6.4% to +4.5% without.

The findings from our calculations demonstrate, yet again, that the highest return from all asset classes, regardless of whether an innovation shock is factored in or not, is expected from private equity. The extra incremental return offered by this particular asset class needs to be weighed in the balance against its lack of liquidity. As the full investment cycle in private equity runs for around seven years, the payback on this investment will only be earned in full at the end of that seven-year period. As that is an exceptionally lengthy time to sit tight and hold an investment, investors tend to demand a bonus in the form of a superior return.

innovation shock and with no innovation shock

Difference	Without innovation shock		Difference	Annualised historical performance %	Annualised volatility %
	Projection (April 2014)*	Projection (July 2013)*			
	2014-2024	2013-2023		2011-2014	2011-2014
0.0%	15.0%	15.0%	0.0%	-	-
-2.0%	4.5%	6.4%	-1.9%	9.2%	16.3%
-1.4%	4.5%	5.7%	-1.2%	15.0%	15.9%
-0.8%	6.1%	6.8%	-0.7%	1.6%	17.1%
0.0%	8.0%	8.0%	0.0%	-	-
-0.5%	6.1%	7.3%	-1.2%	9.3%	3.4%
-1.7%	4.8%	7.0%	-2.2%	11.1%	4.3%
-0.6%	2.8%	3.3%	-0.5%	6.1%	2.5%
0.2%	3.5%	3.7%	-0.2%	6.1%	4.3%
0.4%	3.4%	3.0%	0.4%	0.1%	0.0%
0.4%	2.7%	2.5%	0.2%	4.9%	7.1%
0.1%	1.2%	1.3%	-0.1%	7.2%	5.9%



Our models for calculating estimated returns allow for no free lunches: gains already booked by European and US shares in 2013 have resulted in a concomitant reduction in their expected long-term returns.

What interpretation should be put on the lower returns now expected from US and European shares? They can be straightforwardly blamed on the more powerful rallies on those stock markets than implied by expected long-term returns. On the basis of unchanged starting- and end-point economic regimes, estimated returns can undergo quite noticeable changes if, during the calculation period, the relevant asset class significantly outperforms (or underperforms) relative to the trajectory plotted by initial calculations. If an asset class outperforms dramatically compared to the estimated expected long-term return, the latter will automatically diminish for the future.

In effect, this is precisely what has happened for developed-world equities since we last published *Horizon* in mid-2013. Between end-June 2013 and 25 April 2014, the benchmark S&P 500 advanced by 18.0%. Over the same period, the leading index for European stocks, the STOXX Europe 600, climbed by 19.4%. Those gains translate into annualised returns of 21.3% and 23.0%, respectively. Those returns already in the bag work out at roughly three times higher than the calculated estimated long-term returns. This means both US and European equities are running ahead of the curve. With the core

scenario unchanged, that also means expected future returns will be diminished. That is borne out by the chart above.

Plainly, the reverse is true too: if an asset class were to underperform relative to its underlying forward trend, its future expected return would automatically increase.

Few changes in the case of fixed-income asset classes

Normalisation of the economic climate, as outlined in our inaugural July 2013 issue of *Horizon*, is gradually spreading throughout the asset classes. Nevertheless, estimated returns from fixed-income asset classes have barely budged. Only the lesser-quality corporate bonds, labelled ‘high-yield’, have seen a reduction in their estimated expected returns.

If we look at US and European government bonds, yields on 10-year US Treasuries or German Bunds have changed very little: the yield on 10-year US Treasury bonds has gone up from 2.62% to 2.68%, an increase of 6 basis points; equivalent German Bunds are now yielding 1.48%, having inched down from 1.71%. As movements in interest rates and yields are one of the significant variables influencing shifts in future returns, it comes as no real surprise to see that expected returns for government debt changed only fractionally between mid-2013 and late April 2014.

Moving to corporate bonds, normalisation of economic conditions has extended the trend of spread narrowing on both sides of the Atlantic, especially for bonds in the high-yield category. Credit spreads have closed from 545bp to 447bp on US corporates and from 403bp to 256bp for European corporates. The feed-through impact of this is that the main thrust of the reduction in expected returns can be attributed to this spread narrowing. As we have made no change to our long-term scenario for spreads on high-yield corporates, this has led to the estimated long-term return coming down a little. If we take the scenario with no innovation shock, expected returns, including coupons, have declined from +7.3% to +6.1% for US corporates and from +7% to +4.8% for European corporates.

It should be remembered that returns estimated for the scenario with no innovation shock are predicated on the scenario of a normalising economic climate, as illustrated by the starting- and end-point economic regimes. These regimes are defined by the two cornerstone risk factors of real economic growth and inflation. Any such shift in regime obviously influences future expected returns from asset classes, pointing towards higher expectations for those assets with the highest degree of risk. This normalisation process would, understandably, be turned on its head if a serious economic shock were to take place, such as a credit crunch in China. Average expected returns from the highest-risk assets could, therefore, be dented. ■

II. Innovation shock and economic growth

The concept of the innovation shock is an essential component of any economic analysis. Its very occurrence can thoroughly rewrite the economic outlook. We need look no further than the advent of the railways, cars or even the radio to understand straightaway what we mean by the significance and relevance of innovation shocks. Innovation has become such a topical issue that a line of economic thinking has evolved out of it, one based on endogenous growth in the economy. Its proponents are numbered among the new wave of supply-side economists. They view economics in a way other than predicated by the Keynesian school of thought, rooted in demand.

In our initial issue of *Horizon*, we had pinpointed three types of radical innovation shock: (1) technological – these thoroughly and permanently alter levels of economic activity, boosting growth on the back of big productivity gains and the formation of new production capacities; (2) regulatory – leading to a much greater degree of entrepreneurship worldwide and an extension of democracy; (3) cognitive – involving a shift in monetary-policy stances (move from inflation targeting to targeting of price levels or asset pricing) and new supply-side economic policies.

Before going any further, we need to find answers to a few key questions. What drives economic growth? Why has economic growth been more vigorous in some countries than others? Why has it been more robust in some eras than others? We are suggesting making use of the framework provided by theories of long-term economic growth to try to shed some light on these issues and grasp what role innovation can play in all this. The doctrine of innovation economics differentiates between two types of technological shock: radical/revolutionary and transitory. Radical shocks thoroughly change the production process. Changes can even be seen at the level of society at large. Such shocks often lead to the role of

government being rethought and the social order being thoroughly shaken up. These shocks and resultant upheavals combine to propel economies onto a trajectory of permanently faster growth. Dissemination of knowledge and new technologies throughout the economy as a whole produces ongoing and lasting productivity gains.

Conversely, temporary technology shocks will only impart a short-lived boost to economic growth. So, with no ongoing conveyor-belt of investment, no recurring incremental growth will take hold. But why should investment play such a linchpin role? According to economic theories, long-running expansion in an economy hinges on what happens to two major fundamental factors: demographics and productivity. Productivity itself is influenced by technical and technological advances, which emerge as a third crucial factor driving long-term economic growth. The concept of a – revolutionary – technology shock works its way through by virtue of that third factor. To put it more simply, economic growth fluctuates as a result of the compound sum of the rate of growth in the working population and productivity gains. Any hope of an economy climbing onto that higher plane of long-lasting faster growth will lie with the influence being

exerted on population growth or by finding the means to boost productivity.

In that light, the ageing and greying of populations throughout most of the developed world point to the demographics factor acting more as a brake on growth. However, the fairly recent past in terms of economic timelines shows that, in the 1990s, the US economy generated growth above its long-run trend thanks to two contributory factors. First, it had found a new source of productivity gains driven by widespread use of all the new information and communications technologies. Moreover, thanks to a galloping rate of population growth, it managed to tap into the necessary workforce resources to generate a higher level of output.

Looking ahead over the next ten years, the advent of a technology shock is quite feasible. Are we on the verge of an imminent genuinely revolutionary technological breakthrough whose benefits for economic recovery have not yet been properly seen? Or are we just consenting victims, prey to vain hopes of better things around the corner? The difficulties of perceiving any impending innovation shock are rendered much worse by the fact genuine technological revolutions take time to feed through to deliver tangible and sustainable boosts to economic growth. Seen from that angle, the development of new technologies is still too recent for us to witness any visible or measurable impact on the scale of an economy overall, such as the US economy. Nevertheless, is it realistic to presume a revolutionary technology shock will occur? Finding the right answer to that question is of paramount importance. If the answer is 'Yes', we can all look forward to the future brimful of confidence as it will mean economic growth should quicken smartly over the next few years. ■

The doctrine of innovation economics differentiates between two types of technological shock:

- radical shocks that thoroughly change or revolutionise the production process;
 - temporary technology shocks that only tend to impart a short-lived boost to economic growth.
-

III. Insights into an innovation shock Biotechnology: potential innovation shock for the 2014-2024 period

Fresh winds are blowing through the biotechnology industry. Over the coming ten years, this industry should be capable of generating sustained growth, with large-scale deployment of human-genome sequencing at a cost of less than a thousand dollars being the main locomotive driving the sector forward. Advances on the genomics front should, for instance, contribute towards making it feasible to treat more forms of cancer. Progress will, however, also be made in many other fields of application, such as vaccines, therapeutic treatments for rare disorders and diseases, personalised health care, agribusiness, biomaterials or energy production, such as ethanol being manufactured through genetically modified organisms. This source of energy might well be commercially viable and competitive over the coming decade. Obstacles hindering ongoing development in these fields now seem to lie more in the domains of ethics and regulation than in the shape of technological hurdles or issues. In that respect, government authorities often seem to come up short when it comes to keeping up with the rapid pace of progress.

Today, the biotech industry has begun to harvest the fruits of research work undertaken over the last half century since the discovery of DNA. Over 350 million sufferers worldwide from ailments ranging from cardiovascular disorders to diabetes are already benefiting from progress made on the biotechnology front. Economic expansion in the biotech sector is closely correlated with demographic trends, ageing of the population and regulatory changes affecting the pharmaceuticals industry. According to the independent Economic Intelligence Unit, the pharmaceutical industry overall is projected to average growth of 5.3% p.a. between 2013 and 2017 whereas biotechnology can be expected to expand at a rate disproportionately faster than the rates at which populations are expanding and ageing.

According to IBIS World, growth in the biotechnology industry should average 9.2% a year between 2013 and 2018. Over that same period, biotech companies' turnover would jump from USD262bn to USD407bn. McKinsey consultants estimate the new-generation genomics market is about to experience a Big Bang. Annual turnover could soar to USD1,600bn by 2025.

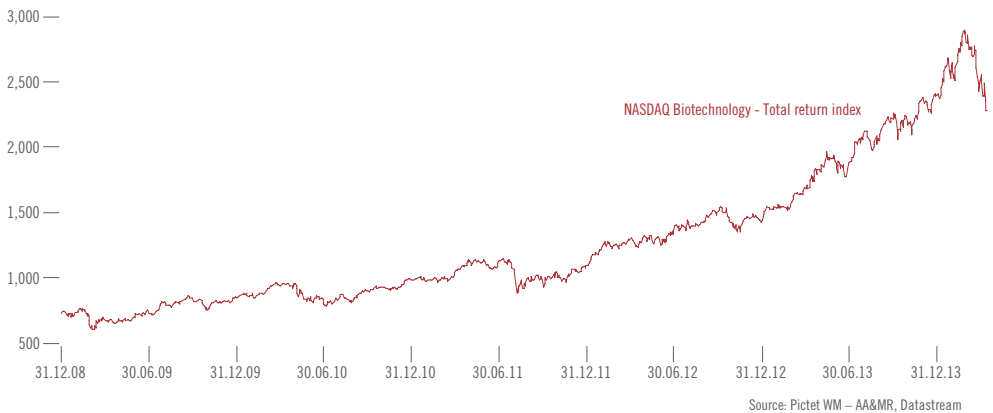
The US is the main home of biotechnology as 54% of biotech companies worldwide have their headquarters in the country. Europe and Asia

have a combined 44%, split into 29% and 15%, respectively. This lop-sided geographical pattern is mirrored in investment opportunities. The biotech sector has been enjoying a stock-market renaissance not seen since 2000, with businesses worth almost USD6.2bn being launched in the form of IPOs in the US in 2013. Market capitalisation of the NASDAQ Biotechnology index more than doubled between 31 December 2008 and April 2014, from USD277bn to top USD570bn. The index itself has rocketed by 243% in five years, working out at an annualised average return of 18.7%, twice the rate achieved by the S&P 500 over the same time-frame.

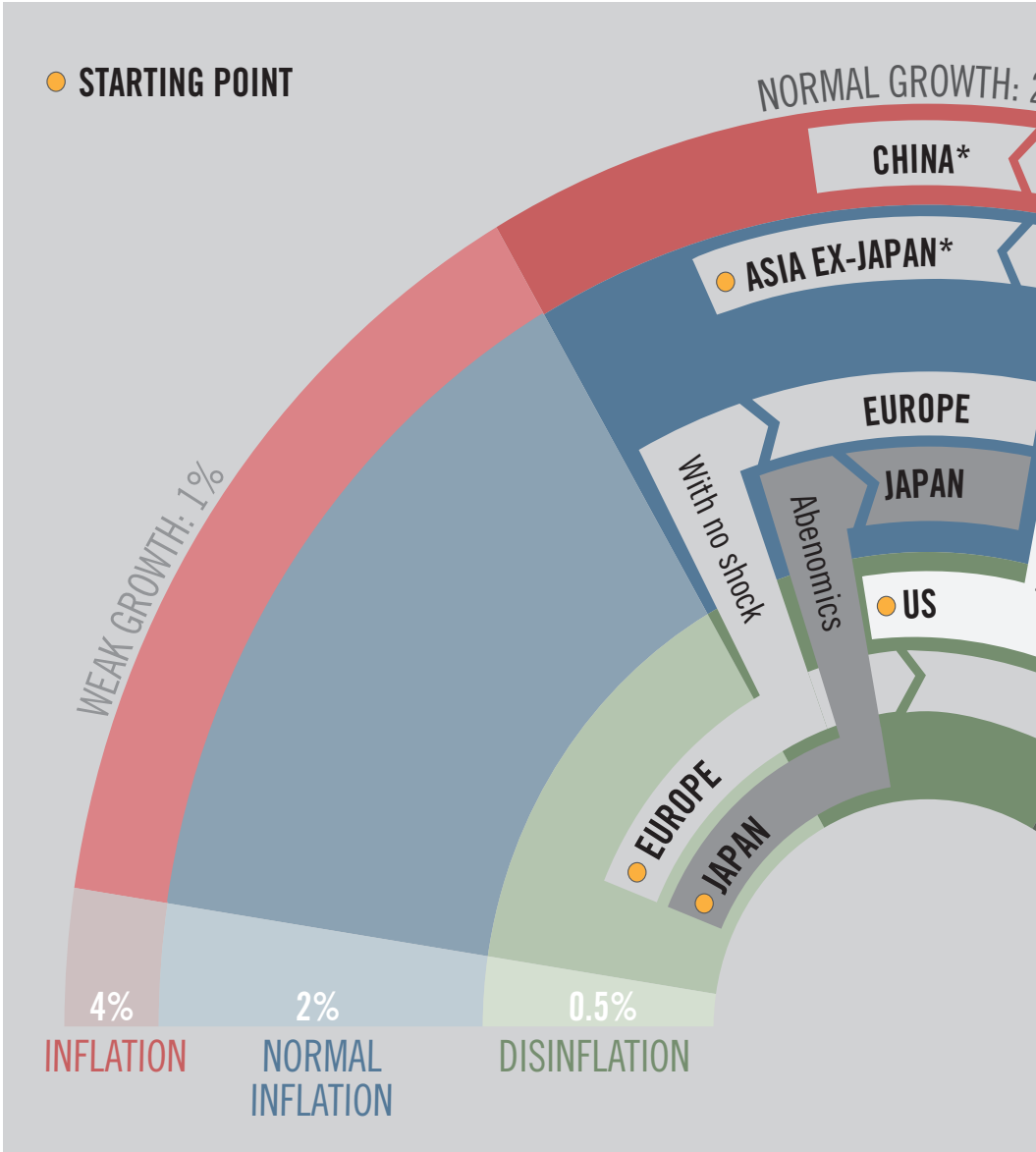
This impressive advance can be put down to specialist and institutional investors' enthusiasm for all things biotech, underpinned by companies' improving business fundamentals. EBITDA (profits from ongoing operations before interest, taxes, depreciation and amortisation) have risen by a factor of 2.5X over the same period. And it will not halt there. Financial analysts' consensus is projecting an increase of almost 40% for 2014. Investors' keen interest in the biotech sector can at times verge on a monomaniacal obsession, with tell-tale signs of excess and overexuberance as seen during the dot.com bubble. For example, Pharmacyclics' share price has soared 116-fold since end-2008, propelling its P/E ratio up to an astronomical 115X.

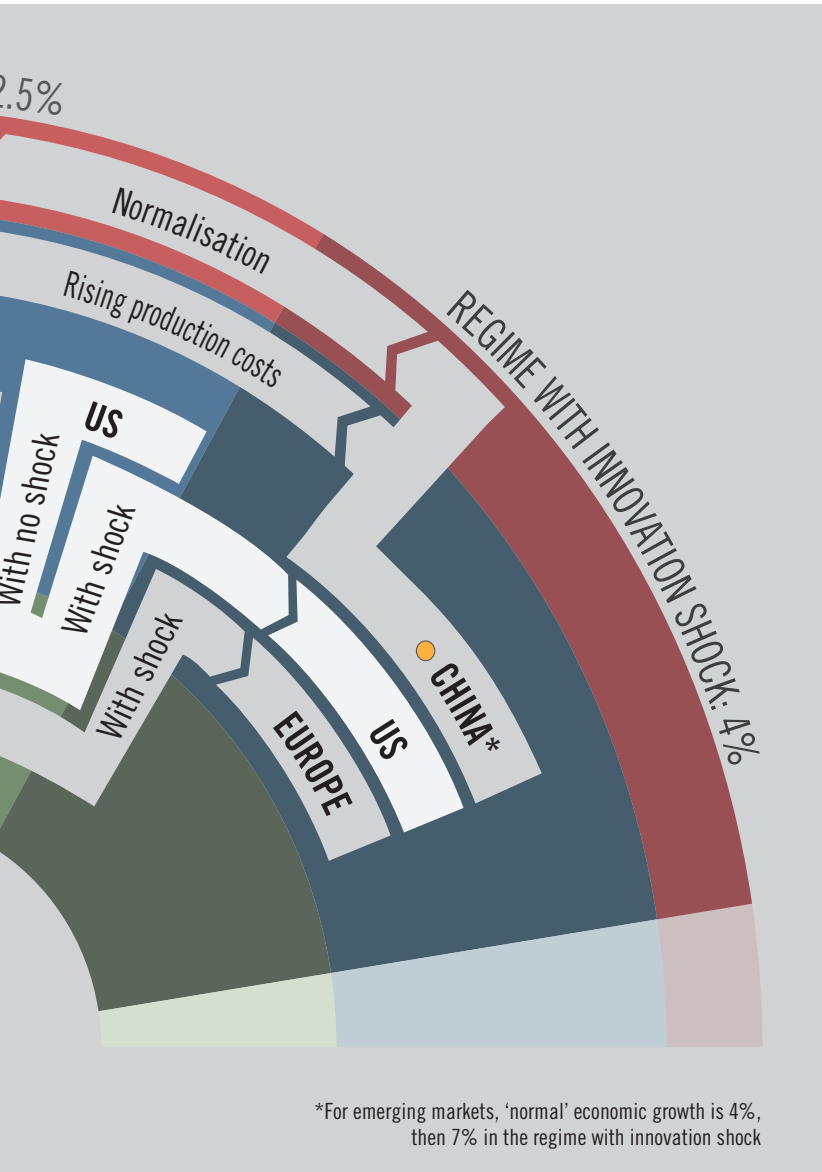
Sky-high valuations like that suggest the risk of a severe correction looming large. That process may well have already kicked in. Nevertheless, no matter what might happen with share prices in the next few months, biotechnology will expand its contribution towards economic growth overall as its fields of application are so extensive. We are not just talking about medicines. Biotechnology will have a key role to play in agriculture and food production. Specialist companies are on course to enjoy a spell of expansion. The Googles and Amazons of the biotechnological world have not yet been built. As a result, biotechnology looks set to stay very much on both economists' and investors' radar-screens in the coming years. ■

DYNAMISM OF BIOTECH COMPANIES' EARNINGS GROWTH REFLECTED IN THE PERFORMANCE OF BIOTECH SHARES



Inflation and real GDP growth: two risk factors and plausible scenarios





Our scenarios for shifts in regimes governing growth and inflation for the three major economic blocs in question are summarised in this schematic diagram, depending on whether there is an innovation shock or not. There are two dimensions to the chart. In the first, we have graphically illustrated the expected shift in regime for our first risk factor, inflation; in the second, we have depicted the projected regime shift for real economic growth.

IV. Working framework for calculating expected returns from asset classes

For the purpose of calculating prospective returns from asset classes over the next ten years, we have formulated a methodology rooted in an approach based on risk factors.

As a reminder, readers can download background material on the method at <http://perspectives.pictet.com/category/publications/horizon>.

Taking a strategic investment time-frame, our research work has enabled us to pinpoint two risk factors. These are fundamental factors and not market factors: they are real GDP growth in a given economy and the rate of inflation in that same economy.

Model employed

For calculation purposes, we formulated scenarios envisaging how these two crucial risk factors of real GDP growth and inflation would develop over the next decade. Our analysis was centred on three major economic blocs: Europe, the US and emerging economies.

Relevant scenarios for these twin risk factors are based on a reasoned assessment of likely regimes. We restricted our working framework to three main regimes for growth and three for inflation (see the table below). Our estimates of returns from asset classes are, therefore, founded on scenarios formulated for growth and inflation for each of the three selected economic blocs.

With no innovation shock: inflation and growth running on normal regimes

Formulating regime scenarios for our two selected risk factors requires us to define starting-point and end-point regimes for each of our three chosen economic blocs. In our models, the starting-point regimes govern our calculations covering 2014 to 2016, with end-point regimes extending over the 2017-2024 period.

ECONOMIC REGIME GRID

	Weak growth $g_t = 1\%$	Normal growth $g_t = 2.5\%$	Innovation shock $g_t = 4\%$
Disinflation $\pi = 0.5\%$	Deflationary climate Europe, 2010s	Unlikely	Unlikely
Normal inflation $\pi = 2\%$	'The New Normal' US, 2000s	'Goldilocks' US, 1990s	'The Golden Age' US, 1980s
Inflation $\pi = 4\%$	Stagflation US, 1970s	Inflationary climate Emerging economies, 1970s	Overheating climate China, 2000s

Source: Pictet WM - AA&MR

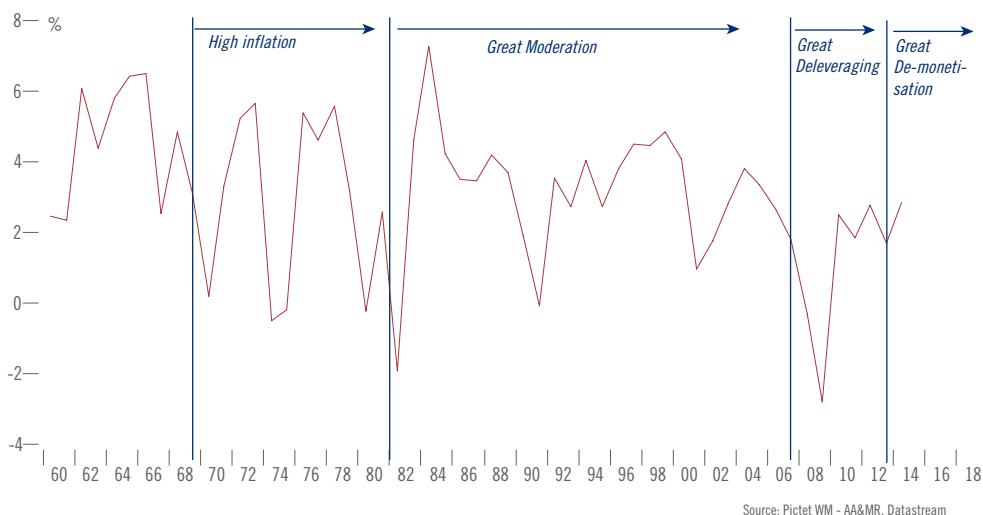
US:

- **Starting-point regimes:** The normalisation process we outlined in our inaugural edition of *Horizon* is materialising through a concomitant upturn in cycles for the housing market, lending and jobs. After running at an average of around +2.0% over the last three years, GDP growth in the US is reverting to normal and hovering stably at close to 3%. Inflation, in contrast, remains very subdued, pitched at around the 1.2%-mark. The starting-point regime for US GDP growth is in line with the one we have described as 'normal growth' whereas the inflation regime remains anaemic.
- **End-point regimes:** normal inflation and normal growth. Tell-tale signs of US growth turning increasingly self-sustaining are beginning to mount. The US Federal Reserve has embarked on tapering its third round of quantitative easing (QE3) - which we have dubbed the 'Great De-monetisation' - after its unprecedentedly laxist monetary stance in response to the sub-prime crisis of 2008. According to this scenario, the world's largest economy will be experiencing end-point growth and inflation regimes matching rates we would describe as 'normal', i.e. annual real GDP growth of around 2.5% and inflation at 2%.

Europe:

- **Starting-point regimes:** disinflation and weak growth. Real economic growth has been averaging 1.5% over the last three years with a rate of close to 1% in 2013 and inflation decelerating to close to 0.8%, so we would put the European bloc's economy into the 'weak growth' category in a disinflationary climate. European economies remain trapped in a disconcerting downward spiral that we refer to as the 'Great Divergence' where public debt is travelling on an uphill trajectory, but economic growth is on a downward path, a combination that might force some governments into defaulting on payments.
- **End-point regimes:** normal inflation and normal growth. Our scenario for Europe also foresees this economic bloc continuing to advance along the normalisation route. The pledge made by ECB President Mario Draghi in late July 2012, exemplified by his "*whatever it takes*" assertion, backed up by news of the Outright Monetary Transactions programme in early September, brought about a significant and lasting driftdown in long-term yields on sovereign debt issued by peripheral eurozone governments. Although deflationary pressures have not evaporated, the ECB may well push through fresh measures in the coming months to counteract them, such as: one last cut in the

US: REAL GDP GROWTH (ANNUAL Y-O-Y CHANGE)



refinancing rate; new long-term financing operations (LTRO); buying of private-sector assets. Benefiting from the impetus of the US economic upswing, Europe too should gradually shift back into growth and inflation regimes matching rates we would classify as 'normal', i.e. annual real GDP growth of around 2.5% and inflation at 2%.

Emerging economies, China first and foremost:

- **Starting-point regimes:** normal inflation and strong growth. Inflation regimes throughout most of the emerging world can also be described as 'normal'. In contrast, greater freedoms for entrepreneurship and the expansion of capitalism have produced a 'strong growth' regime, particularly in Asia. Economies are generally expanding at almost twice the speed of economies in the developed world, averaging rates of growth of 4%-5% (6% in Asia), compared to 2.5% for the likes of the US. This is the most striking feature of emerging economies, which we have dubbed the 'Great Dynamics'. Inflation regimes in the emerging world are, on average, running at rates pretty close to those in evidence in developed economies.
- **End-point regimes:** normal inflation and normal growth. China serves as both the perfect illustration of what is happening in emerging economies and the locomotive driving them forward, especially those in Asia. The Chinese economy is going through a transition phase. Its GDP growth is reverting to a more 'normal' rate, with its growth and inflation regimes gradually stabilising and locking into the 'normal' mode. Its rate of GDP growth has been coming down from 13% p.a. on average over the last 15 years towards an expected rate of 6% p.a. for the next decade. Inflation might well be forced upwards by the increasing cost of labour, with the inflation regime heading towards a rate of 6% or so.

With an innovation shock: growth likely to speed up in the developed world

End-point regimes for all three economic blocs would be thoroughly changed if an innovation shock were to occur. In our calculations, we

kept exactly the same starting-point regimes as outlined above, but end-point regimes would be different as outlined below.

US: inflation under control and strong growth. The chart on pages 10 and 11 graphically illustrates the likely impact an innovation shock, arising from a sector of the economy like biotechnology, could have on growth and inflation regimes for the US economy. The US economy would gradually move into the regimes of strong growth, running at around 4%, and inflation under control, at around 2%, under the dual influence of the shock itself and a watchful approach being adopted by the Fed.

Europe: inflation under control and strong growth. Following in the US slipstream, economic growth would also accelerate in Europe, shifting into the 'strong growth' regime as well, at around 4%. Inflation should stick in the 'normal' regime with a rate close to 2% thanks to the ECB's policy of inflation targeting or even targeting asset prices.

Emerging economies, China first and foremost: normal inflation and strong growth. Economies in emerging countries should also experience accelerating growth rates in response to the innovation shock. Growth of the order of around 7% seems quite plausible. Inflationary pressures should remain subdued for the same reasons as for developed economies. We consider inflation is likely to remain in a regime we would describe as 'normal' for emerging economies, i.e. price rises of close to 4%.

Our calculations of expected returns from asset classes, as presented in the opening section of this issue of *Horizon*, duly take account, in quantified numbers, of growth and inflation regimes in the case of an innovation shock or without one. ■

BACKGROUND TO THE DECADE

After the end of the Yom Kippur War in **1973** between Israel and a coalition of Arab states led by Egypt and Syria, OPEC forced the price of crude oil upwards. The price per barrel trebled from 3 to 10 dollars in the space of less than three months.

THE ECONOMIC SHOCK

OPEC's manoeuvring triggered an oil crisis, giving rise to an economic phenomenon never before encountered in the developed world: stagflation, a toxic cocktail of pedestrian growth and annual inflation galloping along at 12%.

ASSET OF THE DECADE

1970

US cash

▶ **6.3%***

This high return on US cash resulted from the spike in interest rates as they soared from 5% at the outset of the 1970s to 14% by the start of the 1980s.

Ronald Reagan's election as US President in **1981** led to new fiscal policies being instigated involving a whole raft of tax cuts and implementation of very restrictive monetarist policies geared to bringing inflation down.

Ronald Reagan's supply-side economics, dubbed 'Reaganomics', coupled with Fed Chairman Paul Volcker's strict inflation targeting, served to energise the US economy to average growth of 3.5% a year and to lower inflation to close to 2% by the end of the decade. This sent US equities and, by transatlantic transmission, European shares on bull runs.

1980

European equities

▶ **22.7%***

Steadily declining interest rates fed through into unprecedentedly impressive returns from shares.

The invention of the Internet in **1990** brought about a blossoming of myriad new technologies during the decade that followed, making innovation and investment the twin dynamos driving economic growth.

Boosted by investment and consumer spending associated with the new technologies, real GDP growth in the US and Europe sustained a robust tempo, averaging rates of over 3% and 2%, respectively. Inflation-targeted monetary policy helped to keep the trend on price increases steady at around 2%.

1990

US equities

▶ **18.2%***

Bull markets on Wall Street and in Europe reflected market expectations of very strong corporate earnings growth.

The bursting of the dot.com bubble in **2000**, followed by the terrorist attacks on 11 September **2001** in New York and the sub-prime crisis in **2007-2008**, brought a period of low volatility in economic variables (like inflation or real GDP growth) to an end, eventually triggering a systemic crisis on peripheral eurozone member states' sovereign debt.

Two shocks, in effect, occurred during the decade. These were: (1) bursting of the US housing bubble, with an ensuing worldwide crisis, culminating in the collapse of Lehman Brothers investment bank in September 2008; and (2) the pressing need for emergency packages to be devised to bail out troubled European states unable to raise financing on financial markets.

2000

10-year German Bunds

▶ **10.3%***

Quantitative easing and non-conventional monetary policies prompted a sustained rise in prices of sovereign bonds.

After the spate of one crisis after another during the 2000s, growth in the world's leading economy is steadying at around 3%. An innovation shock could boost that to a higher-tempo regime.

We could see three types of potential shocks in the decade ahead: 1. **technological** shocks; 2. **regulatory** shocks; 3. **cognitive** shocks (see page 8).

2010

Developed-mkt. equities

▶ **7.8%***

The estimated return expected from equities on markets in the developed world looks the most attractive considering the risks inherent in emerging economies.

*Average annualised nominal return over 10 years (projected for the 2014-2024 period), in local currencies, with dividends and coupons reinvested

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