INTERNATIONAL EQUITY MARKETS HYPER-VOLATILITY THE NEW NORMAL?

OM

Foreword by Shamik Dhar

I am delighted to introduce this review by Oxford Metrica. Ten years can feel like eternity in financial markets. This report provides a timely snapshot of global stock market performance over the past tumultuous decade, giving us a valuable perspective on market reactions to the worst financial crisis in seventy years.

It's hard to remember the mood back in early 2009. There was talk of the end of capitalism, that many of our great financial institutions were potentially worthless. What we got were revolutionary, well-coordinated responses from the world's central banks: first, the aggressive cutting of interest rates, followed by successive rounds of quantitative easing (QE). And it worked to an extent. The world avoided a second great depression. Economies began to grow again, though that growth has been pretty anaemic in some countries.

FOREWORD
BY
SHAMIK DHAR
CHIEF ECONOMIST
BNY MELLON
INVESTMENT
MANAGEMENT

In the US we've seen a remarkable recovery. The S&P 500 plummeted to a low of 676 in 2009. From that low we've seen fairly uninterrupted progress until this year. The US market has risen by 178% in the decade and, even after 2018's final falls, cumulative annual growth (CAGR) of the S&P over this 10-year period has been 10.74%. Intervention went beyond the US. China embarked on one of the largest peacetime monetary and fiscal stimulus programmes ever seen, while the euro area, facing its own existential crisis, also came aggressively to the party. Stock markets everywhere rose, but the European experience has been patchier than that of the US. The Euro Stoxx 50 has seen much larger setbacks, notably in 2011 and 2012 at the height of the euro crisis, and in 2015 when Greece's travails presented their existential threat. Moreover, euro area banks did not benefit from the fundamental capital restructuring that US banks enjoyed under the TARP (Troubled Assets Relief Programme). Euro area bank stocks are not significantly higher today than they were at the start of 2009.

QE undoubtedly accounts for much of the US market's rise in the past decade. Some critics see this as a bad thing. The analogy I prefer is that of a patient suffering cardiac arrest. Without the adrenaline shot of QE they might not have made it. The patient is recovering now, but progress is slow. But another analogy I often hear is that of the market as junkie, addicted to monetary easing and facing a painful period of 'cold turkey' once that support is withdrawn. After a decade-long bull run markets are getting nervous once again. The past quarter has been the worst for the S&P since the first quarter of 2009. There is talk of monetary policy error and of the damaging impact the transition globally from QE to QT (quantitative tightening) could have. Many worry that we are on the brink of a bear market. But that's by no means a done deal. We'll have to wait for future editions of this report to find out.

2018: a new era for equities dawns?

The most troubling development emerging from this Equity Review is the exceptional degree of volatility it identified - the highest for the last ten years. This presages a new and uncertain phase in equity markets, one that results from equally new and increasing uncertainties in the world order. Most markets were down for the year, and all exhibited increases in volatility, many of these large enough to the point of becoming alarming. Three factors were at work here: the overall outlook for business, geo-political factors - principally the risk of trade wars - and divergent central bank policies. However, these factors are pulling in different directions, and it is difficult to predict which will prevail.

Table 1 and figure 3 present a performance review of sixty-two of the world's equity markets for 2018 and for the decade since the great financial crisis of 2008. Three trends above all stand out from the performance data: most markets experienced a negative return in dollar terms; volatility massively increased; and currencies had a much greater influence on returns than previously. Individually or together, these trends will have major investment implications if continued.

Only five micro markets showed a positive return in 2018. The US, ranked ninth, was the only major market with negative returns in single figures. China and the major European markets all recorded losses in excess of 20%. Argentina was the worst performer, with a loss of over 50%, all of which was attributable to a collapse in the value of the Peso (the Argentine market was slightly positive for the year in local currency terms). Bizarrely, the Ukraine was the leading performer, helped by a recovery of its currency from a low base.

Figure 1 underlines the negative performance of equity markets in the top five economies. Two features are apparent. Firstly, the range of values shows the powerful effect of uncertainty on volatility. Secondly, 2018 was a year of two halves; most damage was incurred in the second half of the year and, in the case of the US, in the last quarter.

US exceptionalism

The divide between the US and the rest of the world is starkly illustrated in Figure 2. In the past ten years the US has led the rest of the major markets with a return of over 177% during the period. The US market has also outstripped the rest of the world as measured by the MSCI ACWI Ex US. US dominance emerged in mid-2011 and has persisted ever since. Incidentally, although the US experience may look like a 10-year bull market, the S&P only regained its pre-crisis levels in 2013, so one could argue that first half the decade was spent making good the losses from the crisis.

That said, 2018 was the worst year for US equities since the financial crisis. The US has experienced only one other negative return in the intervening period. However, the US's "worst year in a decade" experience was not the pattern in forty-five of the markets under review. 2018 was the only the third worst year of the decade for the MSCI Emerging Market Index. In fact, the average number of negative years for the decade has been four for the sixty-two markets. Moreover, although in seventeen markets 2018 was the worst year in dollar terms, it was only the worst in local currency terms for eleven of these.

In this and other significant ways the US is at odds with the rest of the world. President Trump's foreign policies are causing considerable alarm, and this is shaking equity mar-

kets around the world. His aggressive tariffs against China and Europe, the deconstruction of NAFTA, his contradictory approach to Russia – hard sanctions but soft talk - and his criticism of other NATO members, all contribute to the unease. However, his domestic policies such as tax reforms are bearing fruit, with excellent recent employment numbers and robust corporate earnings.

Meanwhile, as central banks around the world continue to try to come to terms with the consequences of their loose policies since the crisis (in Europe the ECB is continuing to pump €30 billion a month into the financial system) the Federal Reserve is embarked on a programme of increasing interest rates and further tapering (nevertheless also criticised by the President). The combination of these contradictions and contrasting policies has ushered in a unique interval in world equity markets performance.

Emerging markets: time for a rebound?

Emerging markets outperformed in the first half of the decade but have made little progress since. As a whole, they lost 16.64% in 2018. The strengthening US dollar was the key factor. Portfolio flows have diverted cash from the emerging markets to the US. Secondly, the US dollar debt burden in these markets has dampened prospects and, finally, with the US dollar the reporting numeraire, local returns have been further discounted in measurement terms. The BRICs fared almost as poorly, with an aggregate loss of 15.44%, while the MSCI ACWI as a proxy for all markets lost 11.18%.

Given the likelihood of further increases in the dollar as the US increase rates, this trend is set to continue. That said, this may signal opportunity in the future. In the words of Sir John Templeton, 'trouble is opportunity'.

Hyper-volatility the new normal?

2018 appears to have ushered in a new era of extreme volatility in international equity markets. As Figure 2 shows, 2018 broke the pattern significantly, with most markets exhibiting unusually high levels of volatility. By contrast, the first nine years of the decade since the crisis of 2008 had seen equity markets rise with a relatively low variance in returns.

Table 1 includes a new metric, the Risk Multiplier which measures the extent to which volatility increased in 2018 relative to the previous nine years (with volatility measured as the relative standard deviation in returns for the relevant period). The risk multiplier is a standardised metric designed to evaluate the change in volatility.

Overall, the scale is unprecedented, with the US market for instance eleven times more volatile in 2018 than in the preceding nine years. Overall, the MSCI ACWI was three times more volatile, mostly due to volatility in the US. The UK had a risk multiplier involving a twofold increase in volatility, perhaps reflecting the uncertainty surrounding BREXIT - just behind the average (fourfold).

However, it was not until the last quarter that this volatility caused a major sell-off in equities. This degree of fluctuation in equity prices may not only portend a readjustment, but in retrospect, come to be seen as the 'new normal'.

Currency now a major driver

Table 1 reports the changes in currencies against the dollar which illustrates the powerful impact of currency movements on equity returns in the sixty-two markets. It will be seen that only Ukraine and Japan were tangibly affected positively by exchange rate movements against the dollar. Considering the scale of the currency impact by comparing equity and currency returns it is clear that currency movements account for a major element of equity returns in an international portfolio. The overall average equity loss for the sixty-two markets was 13.50%, with the attendant average exchange rate loss being 6.21% - which implies that on average almost 50% of equity losses were attributable to exchange rate losses versus the dollar. This has implications for both passive and active asset managers.

The outlook

Equity markets have entered into uncharted waters with respect to the geo-political forces determining expectations. The effects could result in a major repricing in 2019. That said, many economic signals remain positive, and a recovery in 2019 cannot be entirely ruled out. What is clear is that the market has assigned a high likelihood to a full-on trade war. However, if that were to change, markets could rebound. Such finely balanced odds between upsides and downsides will likely see a continuation of the increased volatility experienced in 2018.

> 2018 PRESAGES A NEW UNCERTAIN PHASE FOR INTERNATIONAL EQUITIES

Investment implications

The review has three overriding lessons for investors:

1. Avoid domestic bias: Many investors outside the US have suffered from overweighting their home market and underweighting the US dollar. This has been costly in the last decade, firstly because returns have been typically low in local currency terms and, secondly, because most currencies have lost ground to the dollar. UK investors have incurred a significant cost by overweighting UK equities. These policies are worth reviewing in a post-BREXIT world.

2. Actively manage currency risk: Given the increasing influence of currency movements on equity returns, international investors should consider developing an explicit hedging policy. Although a policy of diversification counters currency risks to an extent both active and passive investors should consider hedging. Especially where forward rates are at a premium there seems little reason for not doing so. Hedging is likely to become a natural element in equities investing as it is in fixed income investing presently. The data suggest a shift in the underlying covariances among equities and currencies. This should inform hedging policy for both index investors and stock pickers alike.

3. Concentrate on focussed stock picking: The increased volatility witnessed in 2018 together with directionless returns overall makes passive investing a lot less attractive. Careful stock selection combined with active currency hedging could prove an eminently worthwhile strategy.

FIGURE 1. Major equity markets performance for 2018 ($ returns) SOURCE: Oxford Metrica.

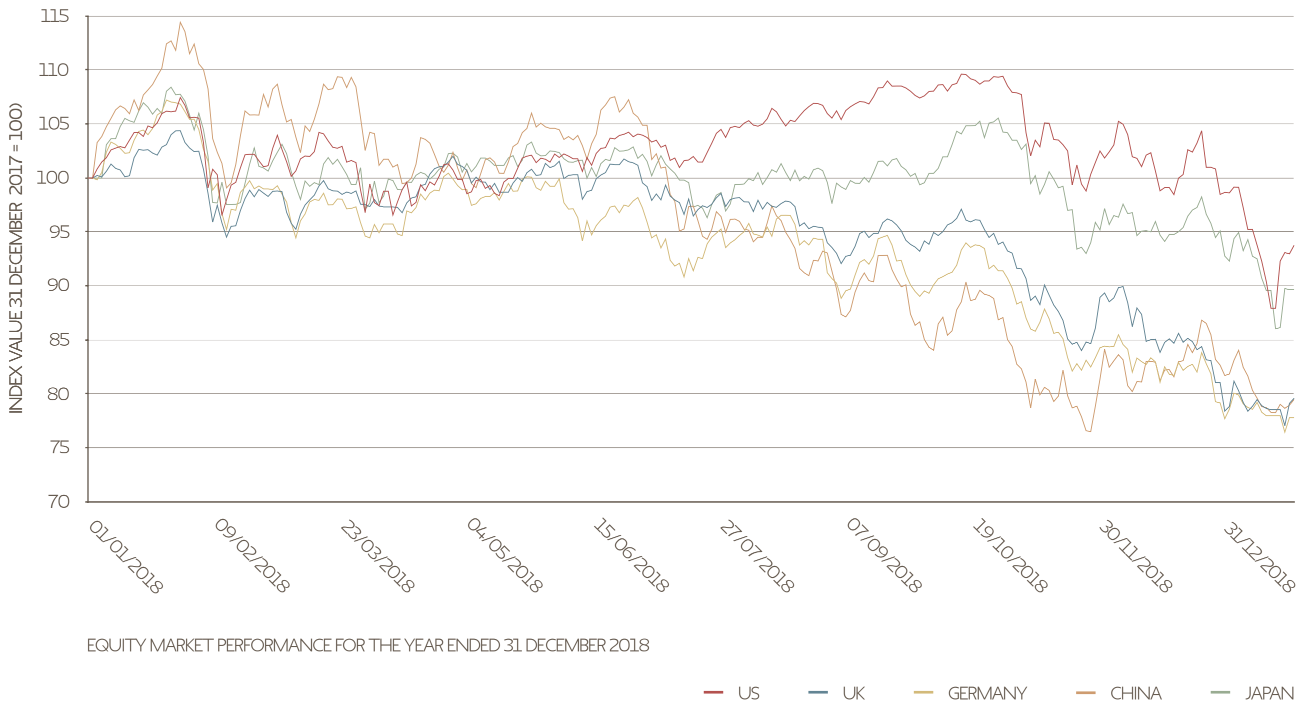

FIGURE 2. The US versus the rest of the world and emerging markets ($ returns) SOURCE: Oxford Metrica.

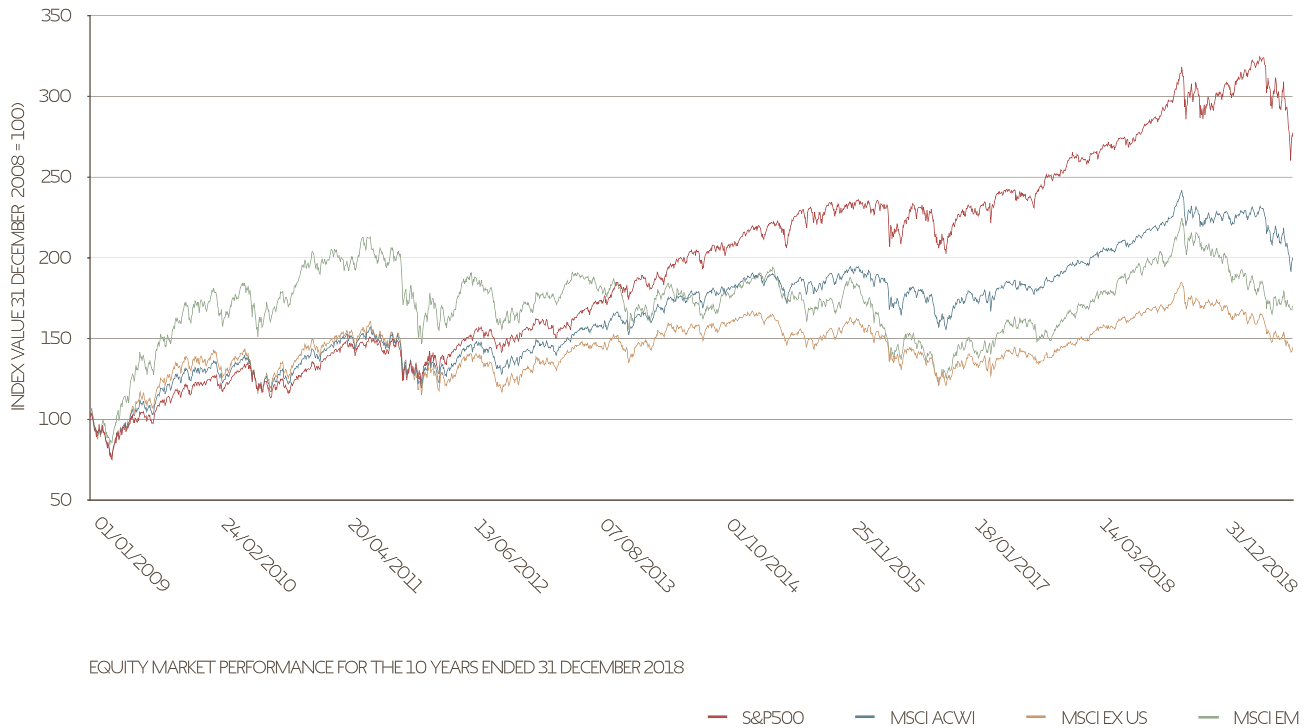

FIGURE 3. International equity markets performance ranking ($ returns)

SOURCE: Oxford Metrica.

Country	Equity return
UKRAINE	21.5%
QATAR	21.3%
UAE	11.8%
KUWAIT	4.2%
BAHRAIN	2.4%
NEW ZEALAND	-0.8%
BRAZIL	-1.8%
INDIA	-5.5%
USA	-6.2%
NORWAY	-6.7%
KAZAKHSTAN	-7.0%
PERU	-7.0%
MALAYSIA	-7.6%
CYPRUS	-8.5%
HUNGARY	-8.5%
FINLAND	-8.5%
INDONESIA	-8.8%
ROMANIA	-9.0%
JAPAN	-10.4%
JORDAN	-10.6%
THAILAND	-10.8%
BERMUDA	-11.0%
SWITZERLAND	-11.2%
VIETNAM	-11.2%
TAIWAN	-11.2%
SINGAPORE	-11.6%
NAMIBIA	-13.4%
CZECH REPUBLIC	-13.6%
ICELAND	-13.8%
HONG KONG	-13.8%
EGYPT	-13.9%
POLAND	-14.6%
THE NETHERLANDS	-14.7%
LEBANON	-15.0%
FRANCE	-15.2%
MEXICO	-15.5%
RUSSIA	-15.9%
PORTUGAL	-16.4%
AUSTRALIA	-16.5%
PHILIPPINES	-17.0%
ZAMBIA	-17.1%
DENMARK	-17.4%
CHILE	-17.8%
SPAIN	-17.8%
SWEDEN	-18.5%
NIGERIA	-18.6%
CANADA	-18.8%
COLOMBIA	-19.6%
ITALY	-20.2%
UK	-20.4%
CHINA	-20.5%
KOREA	-20.6%
GERMANY	-22.2%
BELGIUM	-22.3%
LUXEMBOURG	-23.4%
AUSTRIA	-23.6%
SOUTH AFRICA	-23.6%
IRELAND	-25.8%
GREECE	-26.5%
PAKISTAN	-27.2%
TURKEY	-43.4%
ARGENTINA	-50.2%

EQUITY RETURN (%) FOR 2018

EQUITY RETURN

TABLE 1. International equity markets performance ranking SOURCE: Oxford Metrica. 62 markets with shares traded in international exchanges.

Rank	Country	Return ($) 2018	Return ($) decade	Risk-multiplier	Currency v ($) 2018
1	Ukraine	21.50%	-40.39%	0	6.65%
2	Qatar	21.27%	48.99%	0	0.40%
3	UAE	11.75%	105.67%	2	0.01%
4	Kuwait	4.21%	-21.52%	1	0.67%
5	Bahrain	2.44%	-25.87%	3	0.04%
6	New Zealand	-0.76%	271.26%	98	-5.41%
7	Brazil	-1.79%	41.17%	8	-14.63%
8	India	-5.49%	156.39%	7	-8.38%
9	USA	-6.24%	177.54%	11	0.00%
10	Norway	-6.69%	168.26%	6	-6.21%
11	Kazakhstan	-6.95%	-25.59%	1	-12.69%
12	Peru	-6.96%	155.16%	5	-3.96%
13	Malaysia	-7.56%	61.39%	3	-1.76%
14	Cyprus	-8.48%	-95.02%	1	-4.74%
15	Hungary	-8.51%	116.68%	4	-7.95%
16	Finland	-8.54%	169.95%	5	-4.83%
17	Indonesia	-8.80%	244.64%	8	-6.42%
18	Romania	-9.01%	77.72%	3	-4.45%
19	Japan	-10.35%	84.83%	3	1.97%
20	Jordan	-10.55%	-31.01%	1	-0.08%
21	Thailand	-10.75%	271.11%	7	0.08%
22	Bermuda	-11.04%	-42.67%	2	0.00%
23	Switzerland	-11.16%	63.44%	2	-1.12%
24	Vietnam	-11.19%	113.24%	5	-2.07%
25	Taiwan	-11.21%	127.68%	4	-2.86%
26	Singapore	-11.57%	83.59%	3	-1.94%
27	Namibia	-13.37%	53.76%	2	-13.84%
28	Czech Republic	-13.58%	-3.88%	0	-5.55%
29	Iceland	-13.76%	150.40%	4	-11.26%
30	Hong Kong	-13.83%	77.76%	2	-0.25%
31	Egypt	-13.86%	-12.69%	0	-0.77%
32	Poland	-14.61%	0.35%	0	-7.68%
33	The Netherlands	-14.66%	62.82%	1	-4.74%
34	Lebanon	-14.96%	-17.10%	0	0.00%
35	France	-15.17%	20.66%	1	-4.74%
36	Mexico	-15.53%	31.51%	1	0.12%
37	Russia	-15.94%	43.22%	1	-17.24%
38	Portugal	-16.35%	-38.76%	0	-4.74%
39	Australia	-16.54%	55.94%	1	-9.84%
40	Philippines	-16.98%	260.86%	6	-4.83%
41	Zambia	-17.09%	-15.59%	0	-15.84%
42	Denmark	-17.41%	191.22%	4	-5.13%
43	Chile	-17.76%	112.07%	3	-11.33%
44	Spain	-17.81%	11.95%	0	-4.74%
45	Sweden	-18.52%	84.44%	1	-8.79%
46	Nigeria	-18.61%	-61.59%	1	-0.96%
47	Canada	-18.75%	42.39%	1	-8.05%
48	Colombia	-19.56%	7.67%	1	-8.17%
49	Italy	-20.20%	-23.67%	0	-4.83%

Rank	Country	Return ($) 2018	Return ($) decade	Risk-multiplier	Currency v ($) 2018
50	UK	-20.41%	140.62%	2	-5.75%
51	China	-20.52%	72.45%	2	-0.25%
52	Korea	-20.55%	110.84%	2	-3.95%
53	Germany	-22.21%	77.94%	1	-4.83%
54	Belgium	-22.32%	39.48%	1	-4.74%
55	Luxembourg	-23.43%	10.19%	1	-4.74%
56	Austria	-23.60%	27.13%	1	-4.83%
57	South Africa	-23.64%	60.48%	2	-13.84%
58	Ireland	-25.83%	91.94%	1	-4.74%
59	Greece	-26.45%	-85.84%	1	-4.74%
60	Pakistan	-27.15%	260.28%	6	-20.46%
61	Turkey	-43.35%	-1.28%	1	-28.42%
62	Argentina	-50.18%	157.06%	4	-50.55%
	Average	-13.50%		4	-6.21%
	MSCI	-11.18%	100.13%	3	
	MSCI EX US	-16.45%	44.50%	1	
	MSCI EM	-16.64%	70.30%	2	
	MSCI BRICS	-15.44%	61.22%	2	

BNY MELLON
INVESTMENT MANAGEMENT

BNY Mellon Investment Management is one of the world's largest investment managers. We focus on what matters most to each of our clients. As a firm relentlessly investor driven and committed to helping people reach their financial goals, we are invested in a multi-boutique model. We bring together world-class investment specialists, global distribution and operational excellence, to connect investors in 35 countries with opportunities across every major asset class.

OXFORD
METRICA

Oxford Metrica is a strategic advisory firm, offering informed counsel to boards. Our advisory services are anchored on evidence-based research in risk and financial performance. Our work includes statistical analysis and index construction for banks and insurers, risk and performance analytics for asset managers, due diligence support in mergers and highly customised services for corporate boards.
Dr Rory Knight, is Chairman of Oxford Metrica and a member of the Board of the Templeton Foundations. He was formerly Dean of Templeton, Oxford University's business college. Prior to that Dr Knight was the vize-direktor at the Schweizerische Nationalbank (SNB) the Swiss central bank.

oxfordmetrica.com