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Risk management research

Ineichen Research & Management ("IR&M") is an independent research firm focusing on investment themes related to nowcasting and risk management.

The V

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"The four most dangerous words in investing are 'This time it's different.'"
—John Templeton

Executive summary

- The current economic environment can be described in one sentence: "It's bad but improving."
- Economies and stock markets are off script. Q2 2020 was the worst quarter ever for many economies. It was too the best quarter for many stock markets.
- The bears have been arguing since April that the current risk-on phase is a bull trap, i.e., investors are delusional and think things are going back to "normal".
- The bulls argue this is it. It's a V, the begin of a new cycle. March was the capitulation, i.e., the lows have been set. The blow off phase is past, the low coinciding with peak fear of the virus.
- The difficulty is that the "intuition of experienced people" suggest the former, while the data implies the latter.
- Is it different this time?
- It's a V; despite the discomfort of capitalism and free markets being on a sabbatical. Central bankers are the new "masters of the universe," taking that title off the macro hedge fund managers 10-15 years ago. While the legitimacy of central bank self-righteously and undemocratically acquired powers is not only questioned by Germany's Constitutional Court, it is the regime we are currently in. It is low or below-zero interest rates policies that eliminated the risk gauge that is the yield curve and is causing malinvestment and "everything bubbles". Even if the current situation resembles a house of cards in search of a whiff of wind, timing the final collapse is difficult, to say the least.
- The risks to the bull case are high. While the data implies that it is all like in the spring of 2009, i.e., the advent of a great expansion and bull market, valuations are on opposite ends. Valuations in spring 2009 were low and sentiment was horrid. The capitulation phase was much longer then than now. There was real despair in the beginning of 2009. This is not the case this time. This time it's different.

Content

The V

"There has been loose talk from some of the banks about a "V-shaped" recovery. That prediction was wrong after 2009 and it will be even more wrong in 2020. The shape we have in mind is something like an inverted square root or a tortoise's back. Certainly, the speed of recovery will be more like a tortoise's than a hare's."
— Niall Ferguson[1]

Introduction

"'This time it's different.' I hear that a lot, but it's *never* different. It's just a different situation. Trees don't grow to the sky, stock markets don't go up forever, and high prices cut back demand… No one has ever repealed the law of supply and demand, and no one ever will… It's a law of nature…"
—Jim Rogers[2]

Markets for risky assets, economic survey data, GDP forecasts beyond Q3, earnings estimates, all imply a V-shape recovery. This report aims to add some colour.

Normally, there are bear markets for risky assets such as for example equities associated with recessions. While the correlation between economic trend and risky assets is far from clear, many investors prefer economic expansion over contraction. Economic regimes matter both from an absolute as well as relative return and asset allocation perspective.

The "script" is typically that investors "de-risk" when going into a recession, i.e., move to less risky asset classes, or rebalance from cyclicals to more defensive sectors, raise cash levels, hedge, buy Treasuries, etc.

Valuations are too typically lower at the trough of the business cycle, i.e., below the mean. Typically, earnings are revised lower and risky assets overshoot on the downside, allowing for abnormally low valuation statistics. Typically.

One question now arises whether this time is different. There is a recession, and earnings have been lowered, but valuations are not low. They are high. Many economies are in the lowest percentile when measured by GDP in SAAR (seasonally adjusted annual rate), our preferred metric for GDP. In many equity markets, valuations are the exact opposite, i.e., the top percentile in terms of valuation.

[1] Don't bet on a quick global resurrection, The Sunday Times, 12 April 2020.
[2] Rogers, Jim (1994, 2000) "Investment Biker – around the world with Jim Rogers," Chichester: John Wiley & Sons. First published 1994 by Beeland Interest, Inc., p. 26. Edits in the original.

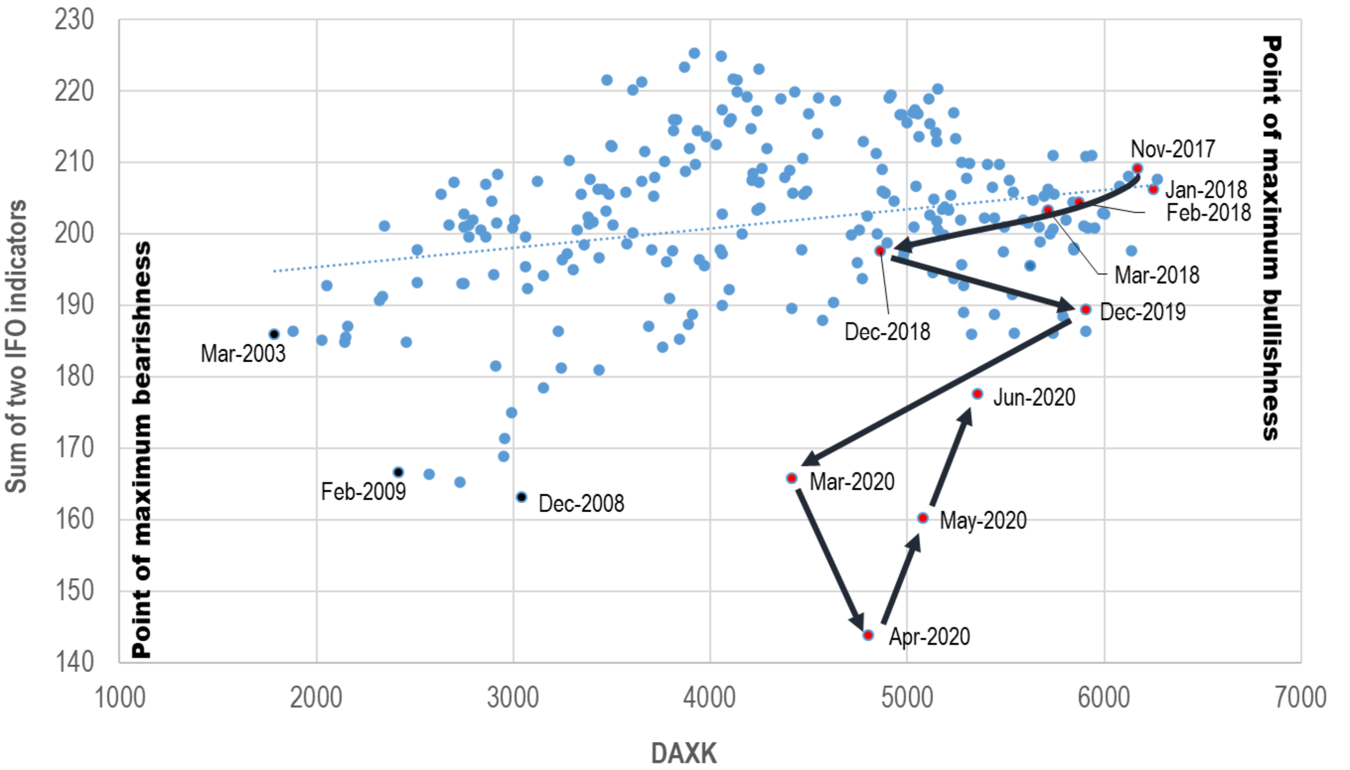
The "script" (as in history ought to rhyme) is shown in Figure 1. The chart compares the level of DAXK (the price index of the DAX, which is a total returns index) with the corresponding sum of two IFO economic indicators (IFO Business Climate and IFO Expectations for Germany) since January 2000. The script we regularly show for Germany and Japan as these two economies are very export-oriented, and cyclical and have equity markets where the weight of cyclical stocks is high. This means analysing the business cycle is more relevant for these two.

The idea of this "script" is a move from the upper right-hand corner towards the lower left-hand corner and back. Such a circular move constitutes a business cycle. The idea is loosely based on the observation that economic bliss is bad for buying risky assets and economic malaise is good for buying risky assets. This means the upper right-hand corner is the *point of maximum bullishness* where one ought to get conservative or de-risk, and the point in the lower left-hand corner is the *point of maximum bearishness* where one ought to buy as markets are in distress and valuations low. Typically. (The lower left-hand corner is low tide, i.e., the regime in which value investors typically buy risky assets from investors who have lost their trunks.)

"The time of maximum pessimism is the best time to buy and the time of maximum optimism is the best time to sell."
—John Templeton (1912–2008), American-born British investor

"Buy when the cannons are thundering and sell when the violins are playing."
—N.M. (Nathan Mayer) Rothschild (1777-1836), German banker

Figure 1: IFO survey vs DAXK



Source: IR&M, Bloomberg, IFO. Notes: the regression line was much steeper when we started to use this graph. IFO revised their indicators in May 2018 resulting in the regression line flattening, i.e., the relationship between economic trend and stock market become less clear.

- Germany (and many other economies) are "off script" in a sense that the path did not go into the lower left-hand corner, as it did in the Great Recession. The drawdowns in risky assets, sort of, were too small.
- The point of maximum bullishness was identifiable without much hindsight around January 2018. It went downhill from there, i.e., according to the script discussed here. However, in December 2018, the Fed intervened, making risky assets en vogue again. Large parts of 2019 were "off script" too, largely due to central planning activity, i.e., government intervention.

- The virus panic from February to April this year caused the script to continue its original move towards the lower left-hand corner, just at a fear-induced, much speedier, and disorderly fashion. But since the last intervention of the authorities, the move is again towards the upper right-hand corner in Figure 1.

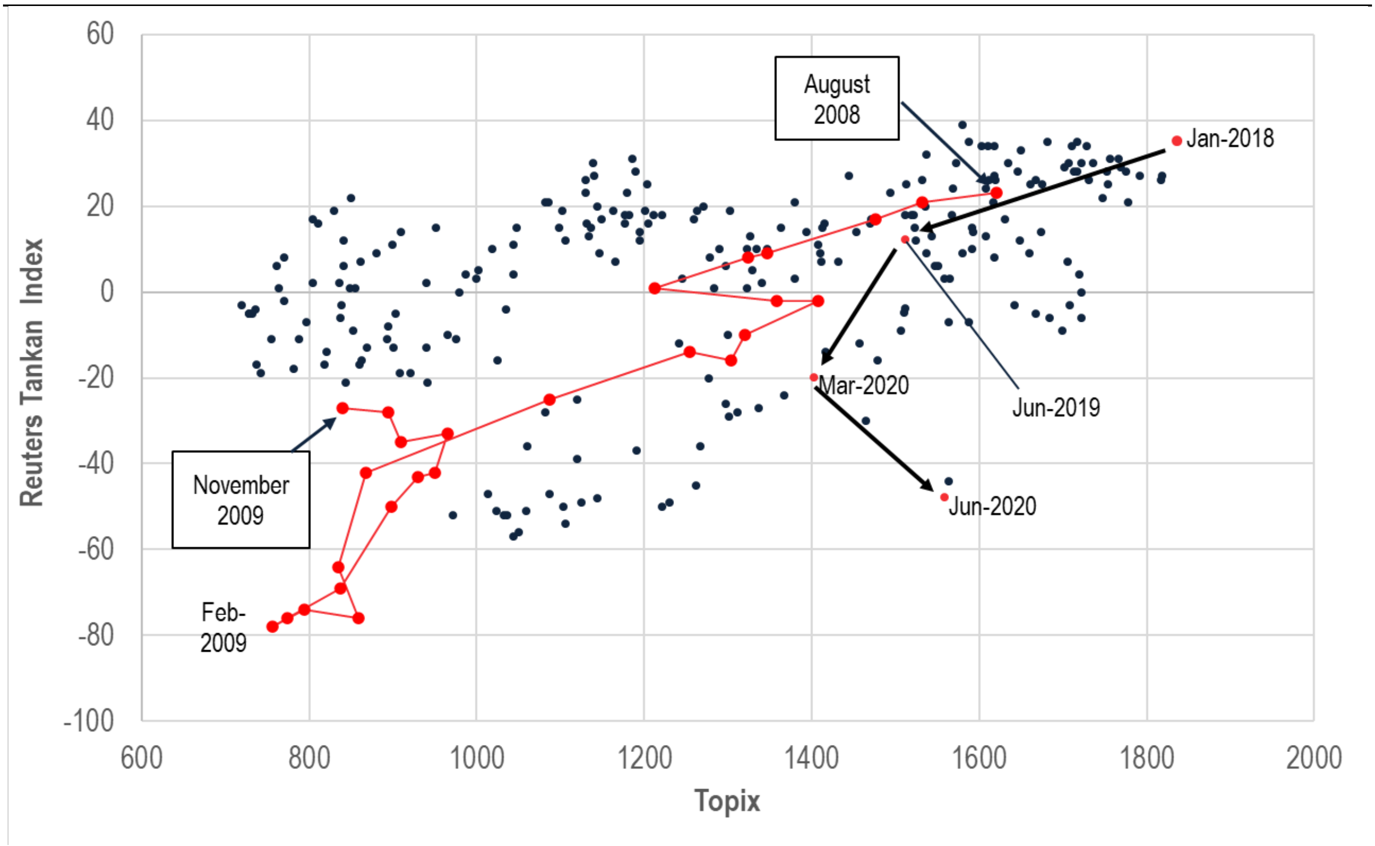
- "The V" stands for the current move towards the upper right-hand corner. This is what most economic data currently implies, even if "The V" is counter-intuitive for investors with a sense of history and/or proportion.

Japan too is off script. Figure 2 is Japan's equivalent to Figure 1 for Germany. The vertical axis shows the level of the Reuters Tankan Survey, a monthly survey that should anticipate the quarterly Tankan Survey. The horizontal axis is again a proxy for risky assets, the Topix Index in this case. The last half-cycle is highlighted in red, i.e., the period from August 2008 to November 2009. The insert on the right shows the extreme moves of the Reuters survey since 1998 measured in standard deviation with the recent past highlighted.

Extreme moves in sd since 1998			
Date	**Rise**	**Date**	**Fall**
May-09	3.3	Mar-11	-4.8
Feb-12	2.2	Nov-08	-3.8
Oct-05	2.1	Oct-08	-2.9
Jun-99	2.1	Mar-20	-2.6
Mar-02	1.9	Dec-00	-2.4

Source: IR&M, Reuters

Figure 2: Reuters Tankan survey vs Topix

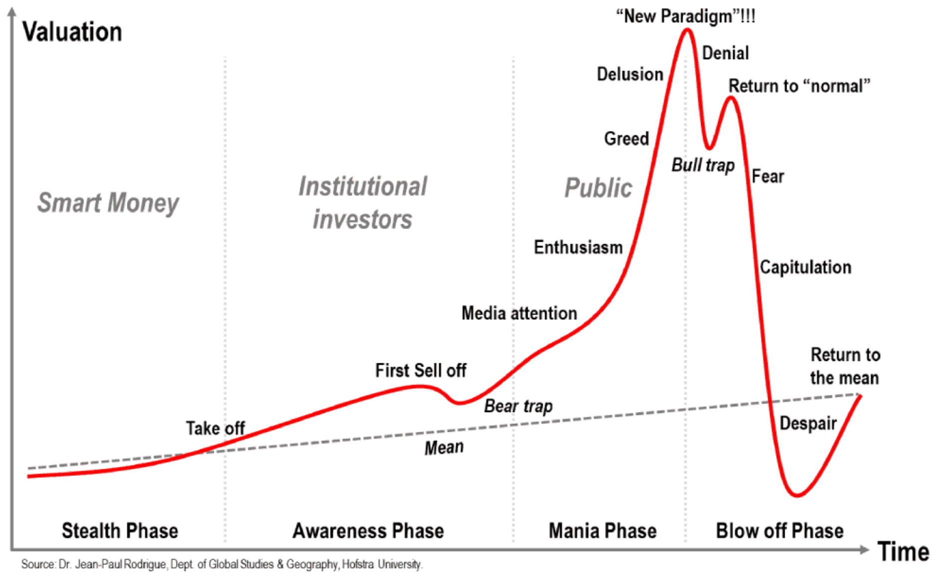


Source: IR&M, Reuters

- January 2018 was the identifiable peak in the upper right-hand corner. Then came the fall towards the lower left-hand corner, in an almost straight line. The "off script" bit is the move to June 2020 towards the lower right-hand corner, i.e., worsening macro fundamentals in combination with a rising stock market.

Another "script" is shown in Figure 3, a famous chart that is often handed around in times like these. The graph shows a stylised path of a boom-bust cycle.

Figure 3: Boom-bust cycle



Source: as in graph

- The bears have been arguing since April that the current risk-on phase is a bull trap, i.e., investors are delusional and think things are going back to "normal". FOMO and TINA applies.

- The bulls argue this is it. It's a V, the beginning of a new cycle. March was the capitulation, i.e., the lows have been set. The blow off phase is past, the low coinciding with peak fear of the virus.

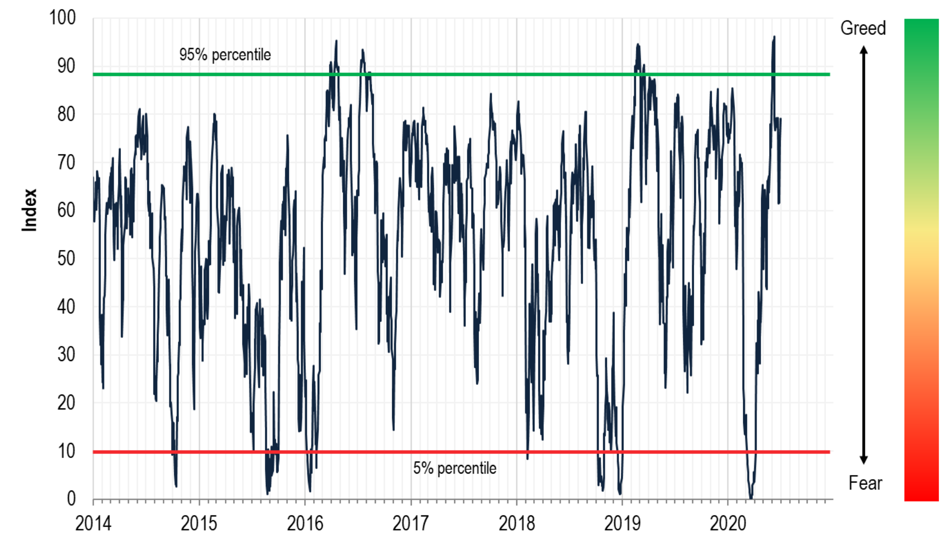
Dictionary:
FOMO: Fear of missing out
TINA: There is no alternative (to equities)

The difficulty is that "intuition" of "experienced people" suggest the former, while the data implies the latter.

Figure 4 shows our greed and fear index. The chart shows a measure for S&P 500 relative strength in percentiles based on four indicators: distance to 100-day moving average, VIX, advances vs declines, and new highs vs new lows.

"Be greedy when others are fearful and greedy when others are greedy."
—Morgan Housel, @morganhousel, 8 June 2020

Figure 4: IR&M greed and fear index as of 1 July 2020



Source: IR&M, Bloomberg. Chart since 2014 for illustration purposes. Concept curtesy: CNN.

- The greed and fear index implied an all-time extreme level of fear on Friday 20 March. From there it went straight up to an extreme level of "greed" in the second week of June. From there it fell from the 96th percentile to the 79th percentile on 1 July 2020.

Below we add some colour to The V from a macro perspective, then from a corporate earnings perspective.

Trying to explain The V

GDP 12-months forward forecasts imply V

Over the past couple of months, we looked at GDP 12-months forward forecasts based on consensus forecasts we get from Bloomberg. The methodology is the same as for 12-month forward earnings, i.e., it is a figure that is rolling and forward looking by one year. If there are 20 weeks remaining in the current year, the "12-month forward forecast" takes 20 weeks of a forecast from the current year, and 32 weeks (52-20 weeks) from the next year. This means on 1. January, the 12-month forward forecast is identical to the calendar year.

Markets respond to change, not to an arbitrary economic point forecast

The 12-month forward GDP forecasts are shown in the third last column of Figure 5. Reading help: Current 2020 estimates for the US are at -5.6% y/y and at +4.1% for 2021. This translates into a 12-month forward GDP forecasts of -0.8%. With 26 weeks left in the year, the calculation is (26 * -5.6 + (52-26) * +4.1)/52 = -0.8%. The last two columns measure by how much this GDP forecast has changed both year-to-date as well as over the past four weeks. The direction of the change is the important part, not the actual numbers.

Figure 5: GDP forecasts as of 26 June 2020

	GDP 2020 growth forecasts		2021 forecasts		12M forward GDP		
	26-06	YTD	26-06	YTD	26-06	YTD	-4W
World	-3.7	-6.8	5.1	1.9	0.7	-2.5	0.3
Eurozone	-8.1	-9.1	5.4	4.2	-1.4	-2.6	0.9
United States	-5.6	-7.4	4.1	2.3	-0.8	-2.6	0.9
Canada	-7.0	-8.6	4.4	2.7	-1.3	-3.0	0.7
Brazil	-6.5	-8.6	3.3	0.8	-1.6	-4.1	-0.1
Mexico	-8.0	-9.2	2.9	1.1	-2.5	-4.3	0.9
Sweden	-4.8	-6.0	4.0	2.4	-0.4	-2.0	0.7
Norway	-5.0	-6.8	3.8	2.1	-0.6	-2.4	0.8
Germany	-6.4	-7.0	5.0	3.9	-0.7	-1.8	0.8
Switzerland	-5.6	-6.8	4.0	2.6	-0.8	-2.2	0.6
Netherlands	-5.7	-7.2	4.0	2.4	-0.9	-2.5	0.6
United Kingdom	-8.2	-9.2	5.7	4.2	-1.3	-2.8	0.9
Spain	-9.6	-11.3	6.4	4.8	-1.6	-3.2	1.2
France	-9.6	-10.8	6.0	4.7	-1.8	-3.1	0.9
Italy	-10.5	-11.0	5.7	5.1	-2.4	-3.0	1.2
China	1.8	-4.1	8.0	2.2	4.9	-0.9	0.5
Indonesia	0.0	-5.0	5.4	0.0	2.7	-2.6	0.0
Taiwan	0.5	-1.7	3.0	0.7	1.8	-0.6	0.2
South Korea	-0.6	-2.8	3.0	0.7	1.2	-1.1	0.2
India	-4.5	-10.7	6.8	0.1	1.2	-5.6	-0.8
Australia	-4.0	-6.2	3.3	0.8	-0.4	-2.9	0.6
Singapore	-5.7	-7.1	4.6	2.6	-0.6	-2.6	0.1
Hong Kong	-5.5	-5.6	4.0	2.0	-0.8	-2.8	0.7
Russia	-4.9	-6.6	3.2	1.4	-0.9	-2.7	0.5
Japan	-4.9	-5.2	2.5	1.7	-1.2	-2.0	0.7

Source: IR&M, Bloomberg

- GDP 12-month forecasts, generally speaking, fell sharply in March/April, then the fall slowed, then the forecasts turned, and then started to rise.

While the best explanation for the extreme turnaround in equities is governmental, centrally planned help (Figure 6 on page 9), the 12-month GDP forecast has been implying a V-shape recovery; potentially supporting the liquidity-infusion-argument.

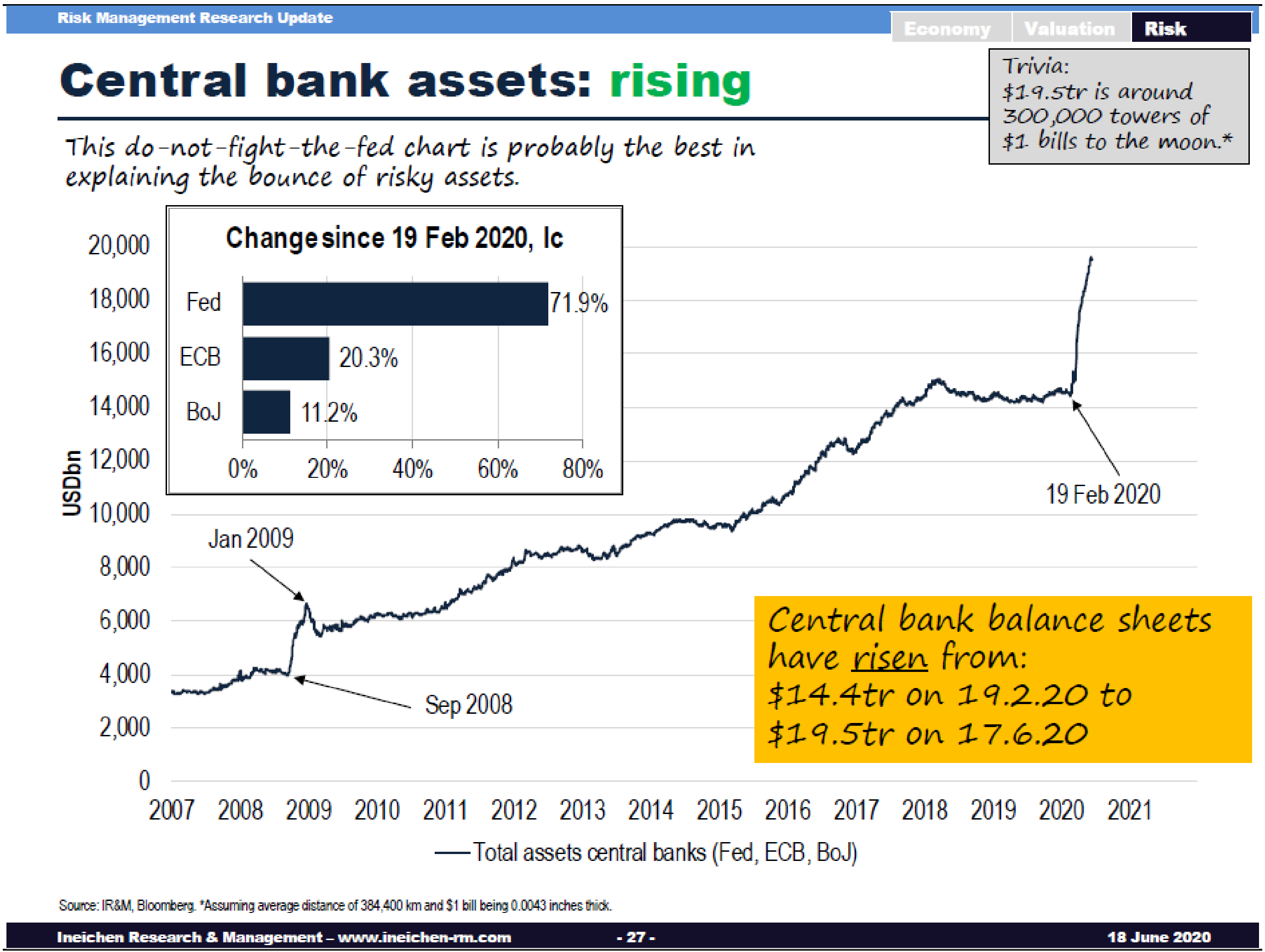
"The ten most dangerous words in the English language are "Hi, I'm from the government, and I'm here to help."
—Ronald Reagan

Or perhaps it is the other way around. Or perhaps it is a positive feedback loop with both, rising forecasts and central planners' visible hand affecting and reaffecting each other. We find it easy to identify feedback loops but trying to predict the end of a feedback loop is much more difficult.

This time could be different in a sense that the government caused the recession via lockdown and now is obliged to help get out of it.
(For Reaganites and libertarians there is an element of discomfort as to the long-term impact. For those who advocate bigger government, more debt and re-distribution of wealth, and more paternalism, the pandemic is almost a saviour.)

"Our national problems usually do not cause nearly as much harm as the solutions."
—Thomas Sowell

Figure 6: Screenshot IR&M risk management update 18 June 2020



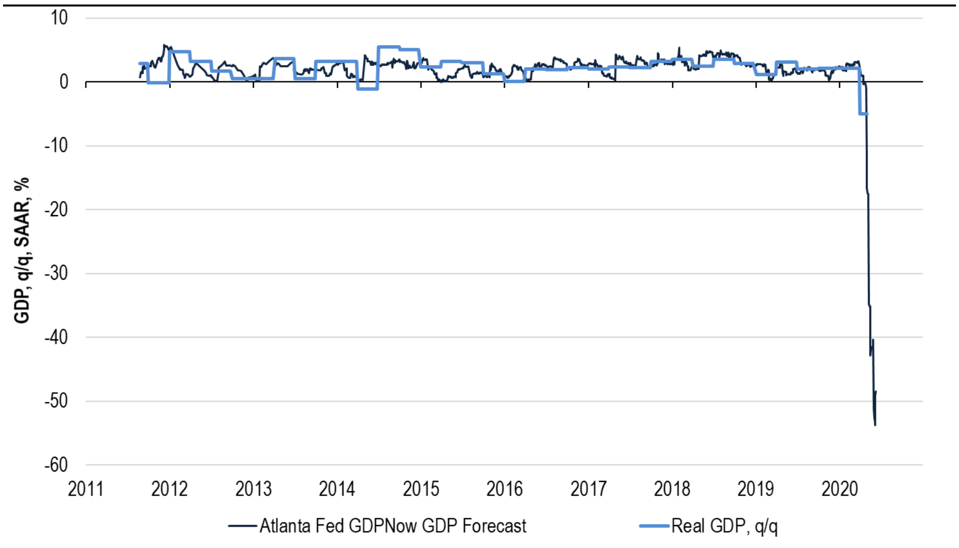
Source: IR&M

- $19.5tr is a lot of money.
- One of the funny things about excess money creation in the recent past is that it did not create consumer price inflation, as so many forecasters forecasted. Those who have been comparing current money printing with the Weimar Republic over the past 10+ years have been proven wrong so far.
- One of the funny things about excess debt, arguably the other side of the money creation coin, is that it did not cause Japan to collapse due to rising interest rates, as so many forecasters have been forecasting since the late 1990s.

"Gold is money. Everything else is credit."
—J.P. Morgan, 1912

Looking at GDP in a 12-month forward forecast fashion is a lot less scary than looking at GDP by for example looking at GDP in annualised q/q terms, such as for example in Figure 7.

Figure 7: Atlanta Fed GDPNow GDP Forecast

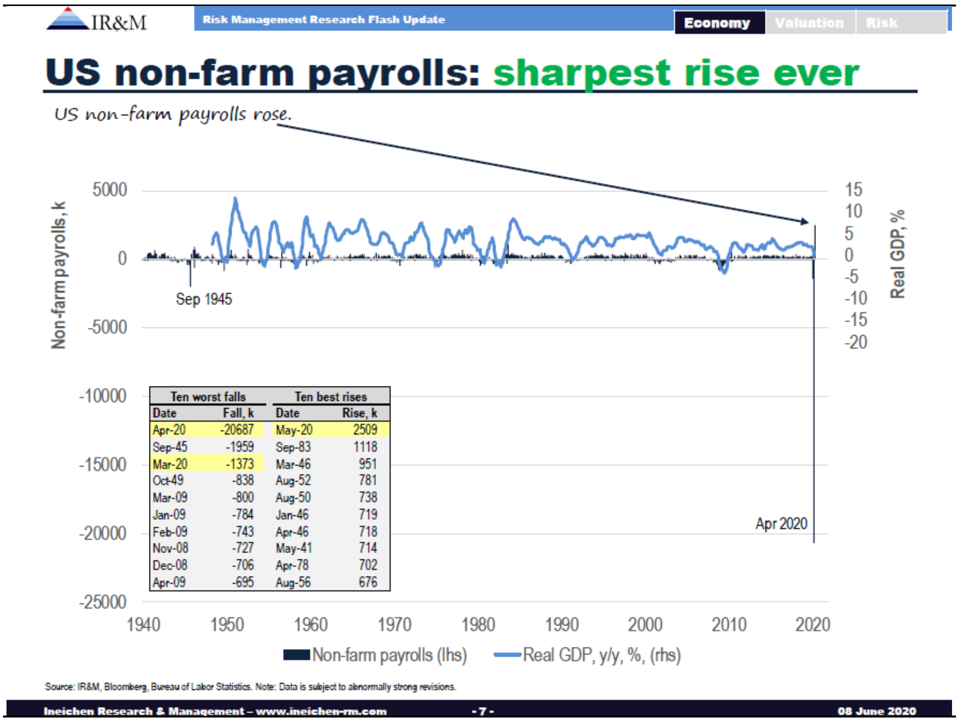


Source: IR&M, Bloomberg

- Some data just collapsed. While pointing out the negative is important, as per side text, at one stage everyone knew that it's bad. Corona fear too was worst when the virus was new. However, people adapt.

Some hard data looks quite like the above, for example US non-farm payrolls in Figure 8.

Figure 8: Screenshot IR&M Flash Update from 8 June 2020



Ten worst falls		Ten best rises	
Date	Fall, k	Date	Rise, k
Apr-20	-20687	May-20	2509
Sep-45	-1959	Sep-83	1118
Mar-20	-1373	Mar-46	951
Oct-49	-838	Aug-52	781
Mar-09	-800	Aug-50	738
Jan-09	-784	Jan-46	719
Feb-09	-743	Apr-46	718
Nov-08	-727	May-41	714
Dec-08	-706	Apr-78	702
Apr-09	-695	Aug-56	676

Source: IR&M

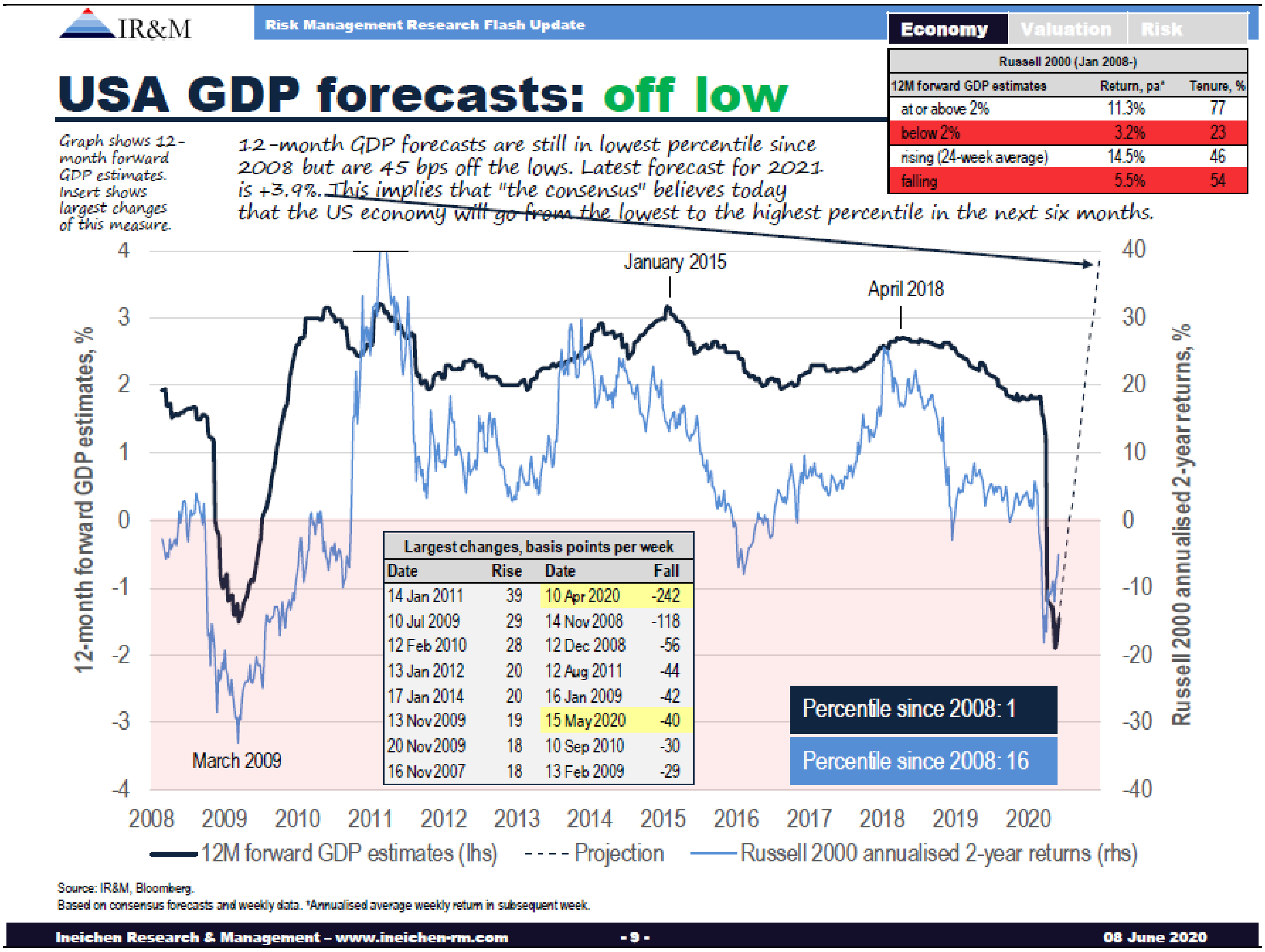
"As a scientist I do not have much faith in predictions.... When I make predictions, I am not speaking as a scientist. I am speaking as a story-teller, and my predictions are science-fiction rather than science."
—Freeman Dyson (1923-2020), English-born American physicist, mathematician, and futurist

"For most of human history, it made good adaptive sense to be fearful and emphasize the negative; any mistake could be fatal."
—Joost Swarte (b. 1947), Dutch cartoonist and graphic designer

- Figure 8 is somewhat symptomatic for the May-to-date period: Horrid recession but expected to be extremely short lived. In March/April, when fear was at its peak, comparisons with the Great Depression and WWII were made. These "downturns" lasted years. Starting May, positive outliers started to occur, and investors focus turned to the speedy recovery that was implied in the data. The "coronapocalypse" was short-lived.

These are extraordinary times and almost all investors who went through at least one bear market are somewhat surprised that the stock market recovered it's March losses so rapidly; given epic circumstances. Let's take a closer look at The V. Figure 9 is a screenshot from the 8 June flash update and shows 12-month GDP forecasts for the US together with the annualised 2-year return for the Russell 2000 Index. The three inserts show the largest changes in basis points since 2007, the latest percentiles (100th = best) of the economic indicator and 2-year stock market returns since 2008, and two regime tests in the upper right.

Figure 9: Screenshot IR&M Flash Update from 8 June 2020



Source: IR&M

- When this chart was shown on 8 June, the 12-month forward GDP forecast was in the 1st percentile since 2008. When shown on 18 June, already in 3rd. In our flash update on 29 June, it was the 6th percentile. This is important as investors care about change much more than status quo. The fact that the US, or any economy, is in recession has little impact on price. Sentiment moving from the fear of a depression to "only" a recession is positive for risky assets.

- The dotted line in the graph shows the second leg of the V, i.e., the recovery. One big assumption behind the dotted line is that it assumes that there are no more revisions. It is based on the forecasts that are available at the time the graph is updated. It takes latest forecast for 2020 and 2021 and assumes nothing changes, i.e., there are no revisions. This means the dotted line is subject to change while the bold blue line is not.

- If there are no revisions, then the 12-month forecasts will just grow to 4.0% (the dotted line in Figure 9) by year-end. For this dotted line not to materialise, something bad needs to happen, i.e., forecasts for 2021 would need to be lowered. A second wave is probably the most often cited trigger for something negative. Or a recession that double-dips or turns out to be much longer than thought today.

WEF's top 3 "greatest concerns for the world" are 1. Prolonged global recession, 2. High unemployment, 3. Another disease outbreak.

- One interesting aspect of looking at GDP like here is that this measure was falling in March and April but to a much lesser degree in May. The reason for this is that forecasts for 2020 were still falling in May but 2021 forecasts were rising. This means on a 12-month GDP forward looking basis the carnage to GDP downward revisions in most cases stopped in April.

- One of the main differences of the current recession when compared to the last one is the speed of change, or the volatility. The worst fall in US GDP 12-month forward forecasts was 242 basis points in the week ending 10 April 2020, as per the insert in Figure 9. The worst fall in 2008 was "only" 118 basis points in week ending 14 November 2008, as per insert.

"There are decades when nothing happens, and there are weeks when decades happen."
—Vladimir Lenin (1870-1924), Russian revolutionary[1]

- The regime tests in the upper right of Figure 9 will take some time to turn positive. The first regime test finds that annualised weekly Russell 2000 returns are significantly higher in the 77% of occurrences where the GDP 12-month forward forecasts is at or above 2%.

Trying the explain a strong stock market one could argue that the stock market is moving ahead on the dotted line in Figure 9, i.e., assumes and anticipates positive economic growth. The unprecedented governmental help via monetary and fiscal instruments serves as an amplifier. This causes The V not only to form a "V" but an extraordinary spiky "V" at that too.

"Maybe the V-shaped recovery will be in vol."
—Christopher Cole, @vol_Christopher, 14 May 2020

Figure 10 below is but one example showing a spiky V. The table shows 11 economic indicators that are either of daily or weekly frequency. The top line measures the average percentile for all 11 indicators since 2007.

[1] This one-liner attributed to Lenin appeared on the internet around 2005. The quote represents his thinking of around 1918 well, even if he never penned it as stated here. One original that is similar in content reads: "In the space of a few days we destroyed one of the oldest, most powerful, barbarous and brutal of monarchies. In the space of a few months we passed through a number of stages of collaboration with the bourgeoisie and of shaking off petty-bourgeois illusions, for which other countries have required decades." From "The Chief Task of Our Day," by Vladimir Lenin, Lenin's Collected Works, 4th English Edition, Progress Publishers, Moscow, 1972 Volume 27, pages 159-63, First Published: Izvestia VTsIK No. 46, 12 March 1918.

Figure 10: Screenshot IR&M flash update 2 July 2020

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High frequency indicators: V-shaped

The 11 indicators: 1. Surprise index measures macro surprises. Quite often surprises turn prior to coincident indicators. 2. US Yield curve is considered the best indicator for the next recession when it inverts. 3. Consumer sentiment by Bloomberg is weekly and is often considered a lagging indicator. 4. Relative performance of Consumer Discretionary vs Consumer Staples. During an upswing, the former should outperformer. Going into recession it should be the other way around. 5. Aruoba Diebold Scotti (ADS) is a composite index that is weekly. ADS below -0.8 means the economy is perceived to be in recession. The underlying economic indicators (jobless claims, payroll employment, industrial production, personal income, manufacturing and trade sales, and real GDP) blend high- and low-frequency information and stock and flow data. 6. US jobless claims is probably the highest frequency data point for the US economy. 7. US chain store sales is released with just 2 days delay. This means it is one of the best real time indicators of US consumer spending. 8. CRB RIND is a commodities index. It contains raw industrial commodities that are perceived to be used early in the cycle. 9. Copper, the commodity, is called "Dr. Copper" by commodities traders and trend-followers. The idea is that if the economy is expanding, copper should be doing well. 10. The Baltic Dry Index measures the demand for shipping capacity versus the supply of dry bulk carriers and is perceived as a leading indicator. 11. Container ship index is a proxy for economic activity.

	2007-				Mar				April				May					June					
High	Low	Median	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25	W26	Last	Economic proxy
80	1	58	47	49	48	46	45	35	25	25	25	28	30	36	37	40	41	49	52	55	57	58	Average percentile*
185	-145	-1	51	56	69	74	45	-1	-41	-68	-129	-102	-128	-55	-95	-81	-55	66	82	129	162	185	US Surprise Index
291	-5	148	12	24	26	47	53	43	37	49	44	38	42	53	50	49	49	69	51	51	48	51	US Yield curve (10-2Y)
67	23	36	66	64	63	63	63	60	56	50	45	41	40	37	36	35	36	37	39	40	41	41	Bloomberg Cons Comfort
1.78	0.77	1.15	1.55	1.54	1.44	1.40	1.38	1.44	1.32	1.43	1.49	1.53	1.54	1.60	1.61	1.67	1.65	1.70	1.72	1.72	1.74	1.78	Cons Discret vs. Staples
3.5	-27.4	-0.14	-4.8	-7.3	-10.7	-15.8	-21.7	-25.4	-27.1	-27.2	-25.4	-21.0	-13.9	-6.7	-1.5	1.8	3.4	3.4	3.2	3.0	2.9	2.9	Aruoba Diebold Scotti
6867	201	311	215	220	217	211	282	3307	6867	6615	5237	4442	3867	3176	2687	2446	2123	1897	1566	1540	1480	1480	US Jobless claims
5.5	-22.2	2.4	1.0	2.8	2.1	0.9	3.0	2.9	-6.7	-16.0	-22.2	-20.1	-20.4	-19.4	-17.5	-16.5	-17.1	-15.1	-12.6	-11.5	-10.4	-9.3	US chain store sales, YoY
638	316	489	458	452	454	441	422	420	418	420	409	409	412	422	419	420	416	420	420	417	417	418	CRB RIND
463	127	306	261	255	256	246	217	217	219	226	234	234	232	241	233	239	243	256	260	261	266	276	Copper
11793	290	1338	425	497	535	617	631	625	556	616	635	751	665	617	514	407	498	504	679	923	1555	1803	Baltic Dry Index
1022	237	394	415	403	399	393	390	387	385	379	374	364	355	349	340	336	324	317	313	308	308	309	Container Ship Index

Source: IR&M, Bloomberg. Table shows eleven variables that are of higher frequency and supposedly have predictive power for the US (and/or global) economic cycle. "W" stands for calendar week number. *We calculate the percentile for each variable (not shown) and then take an average to show the "average percentile".

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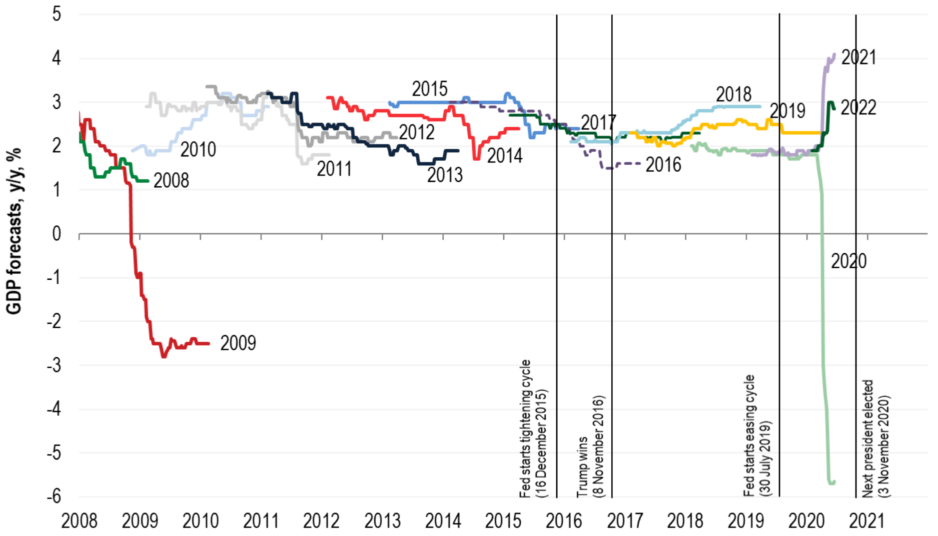
Source: IR&M

- Average percentile was 25 in weeks #14-16 and then started to rise, more or less gradually. On 1 July the average percentile was at 58, which happens to be the median since 2007.

The data used for calculating the 12-month forward forecast is from Figure 11 below which shows the calendar year forecasts as they become available. This is our standard way of showing consensus forecasts. One can see the "V" too, of course, but not as well. Rolling data is easier to read and interpret.

Figure 11: US GDP forecasts as of 23 June 2020

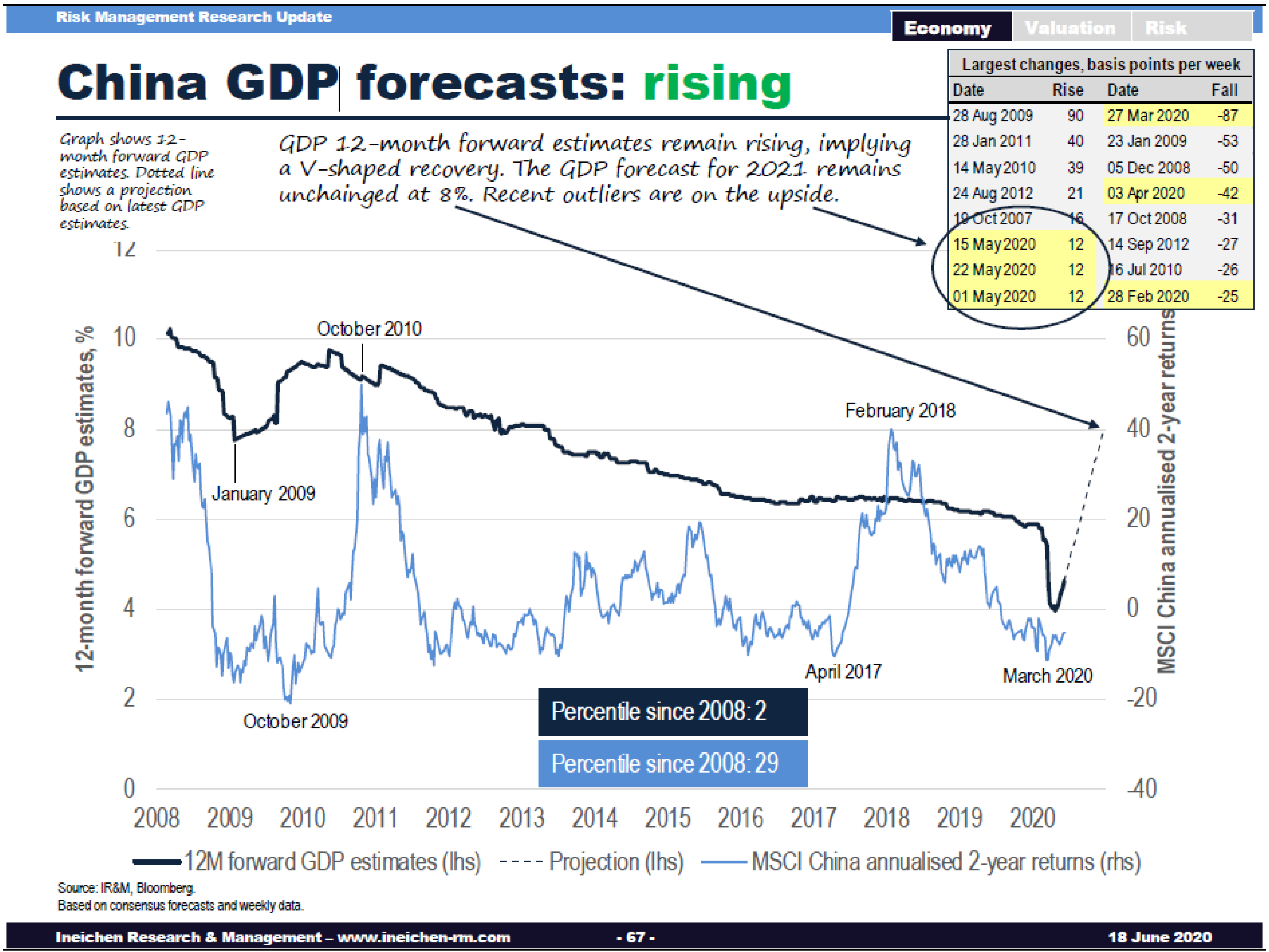


Source: IR&M, Bloomberg

- With the benefit of a healthy dose of hindsight one can argue now that investors focussed on falling 2020 GDP forecasts until 23 March, central planners announced help, investors U-turned and switched to focussing on rising 2021 GDP forecasts and never looked back.

China is ahead of the curve in a sense it had the virus first and the recovery is more advanced than elsewhere. Figure 12 shows 12-month forward GDP forecasts for China.

Figure 12: Screenshot IR&M risk management update from 18 June 2020



Risk Management Research Update

Economy | Valuation | Risk

China GDP forecasts: rising

Graph shows 12-month forward GDP estimates. Dotted line shows a projection based on latest GDP estimates.

GDP 12-month forward estimates remain rising, implying a V-shaped recovery. The GDP forecast for 2021 remains unchainged at 8%. Recent outliers are on the upside.

Largest changes, basis points per week

Date	Rise	Date	Fall
28 Aug 2009	90	27 Mar 2020	-87
28 Jan 2011	40	23 Jan 2009	-53
14 May 2010	39	05 Dec 2008	-50
24 Aug 2012	21	03 Apr 2020	-42
19 Oct 2007	16	17 Oct 2008	-31
15 May 2020	12	14 Sep 2012	-27
22 May 2020	12	16 Jul 2010	-26
01 May 2020	12	28 Feb 2020	-25

Source: IR&M, Bloomberg.
Based on consensus forecasts and weekly data.

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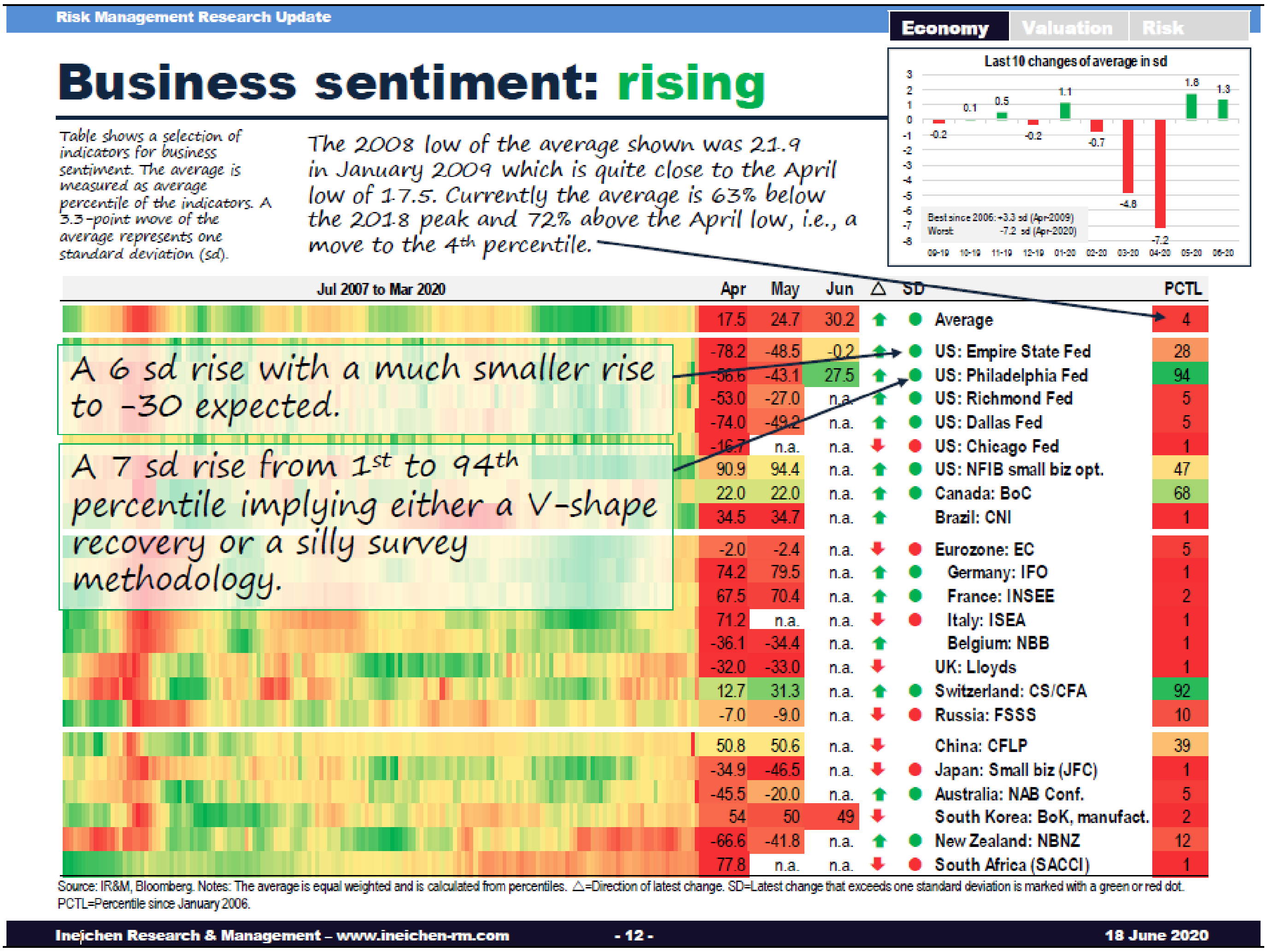
Source: IR&M

- Forecasts for 2020 and 2021 of 1.8% and 8.0% translate into a 12-month forward GDP forecasts of 4.9%. (See Figure 5 on page 8.)
- One difference to the US equivalent is that GDP forecasts do not go negative.
- One interesting aspect is that the outliers started to appear on the upside in May, as per insert in Figure 12 above, and as per number of green dots in Figure 13 on the next page.

Figure 13: Screenshot IR&M risk management update 18 June 2020


Risk Management Research Update

Economy | Valuation | Risk

Business sentiment: rising

Table shows a selection of indicators for business sentiment. The average is measured as average percentile of the indicators. A 3.3-point move of the average represents one standard deviation (sd).

The 2008 low of the average shown was 21.9 in January 2009 which is quite close to the April low of 17.5. Currently the average is 63% below the 2018 peak and 72% above the April low, i.e., a move to the 4th percentile.

A 6 sd rise with a much smaller rise to -30 expected.

A 7 sd rise from 1st to 94th percentile implying either a V-shape recovery or a silly survey methodology.

Apr	May	Jun	△	SD		PCTL
17.5	24.7	30.2	↑	●	Average	4
-78.2	-48.5	-0.2	↑	●	US: Empire State Fed	28
-56.6	-43.1	27.5	↑	●	US: Philadelphia Fed	94
-53.0	-27.0	n.a.	↑	●	US: Richmond Fed	5
-74.0	-49.2	n.a.	↑	●	US: Dallas Fed	5
-16.7	n.a.	n.a.	↓	●	US: Chicago Fed	1
90.9	94.4	n.a.	↑	●	US: NFIB small biz opt.	47
22.0	22.0	n.a.	↑	●	Canada: BoC	68
34.5	34.7	n.a.	↑		Brazil: CNI	1
-2.0	-2.4	n.a.	↓	●	Eurozone: EC	5
74.2	79.5	n.a.	↑	●	Germany: IFO	1
67.5	70.4	n.a.	↑	●	France: INSEE	2
71.2	n.a.	n.a.	↓	●	Italy: ISEA	1
-36.1	-34.4	n.a.	↑		Belgium: NBB	1
-32.0	-33.0	n.a.	↓		UK: Lloyds	1
12.7	31.3	n.a.	↑	●	Switzerland: CS/CFA	92
-7.0	-9.0	n.a.	↓	●	Russia: FSSS	10
50.8	50.6	n.a.	↓		China: CFLP	39
-34.9	-46.5	n.a.	↓	●	Japan: Small biz (JFC)	1
-45.5	-20.0	n.a.	↑	●	Australia: NAB Conf.	5
54	50	49	↓		South Korea: BoK, manufact.	2
-66.6	-41.8	n.a.	↑	●	New Zealand: NBNZ	12
77.8	n.a.	n.a.	↓	●	South Africa (SACCI)	1

Source: IR&M, Bloomberg. Notes: The average is equal weighted and is calculated from percentiles. △=Direction of latest change. SD=Latest change that exceeds one standard deviation is marked with a green or red dot. PCTL=Percentile since January 2006.

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Source: IR&M

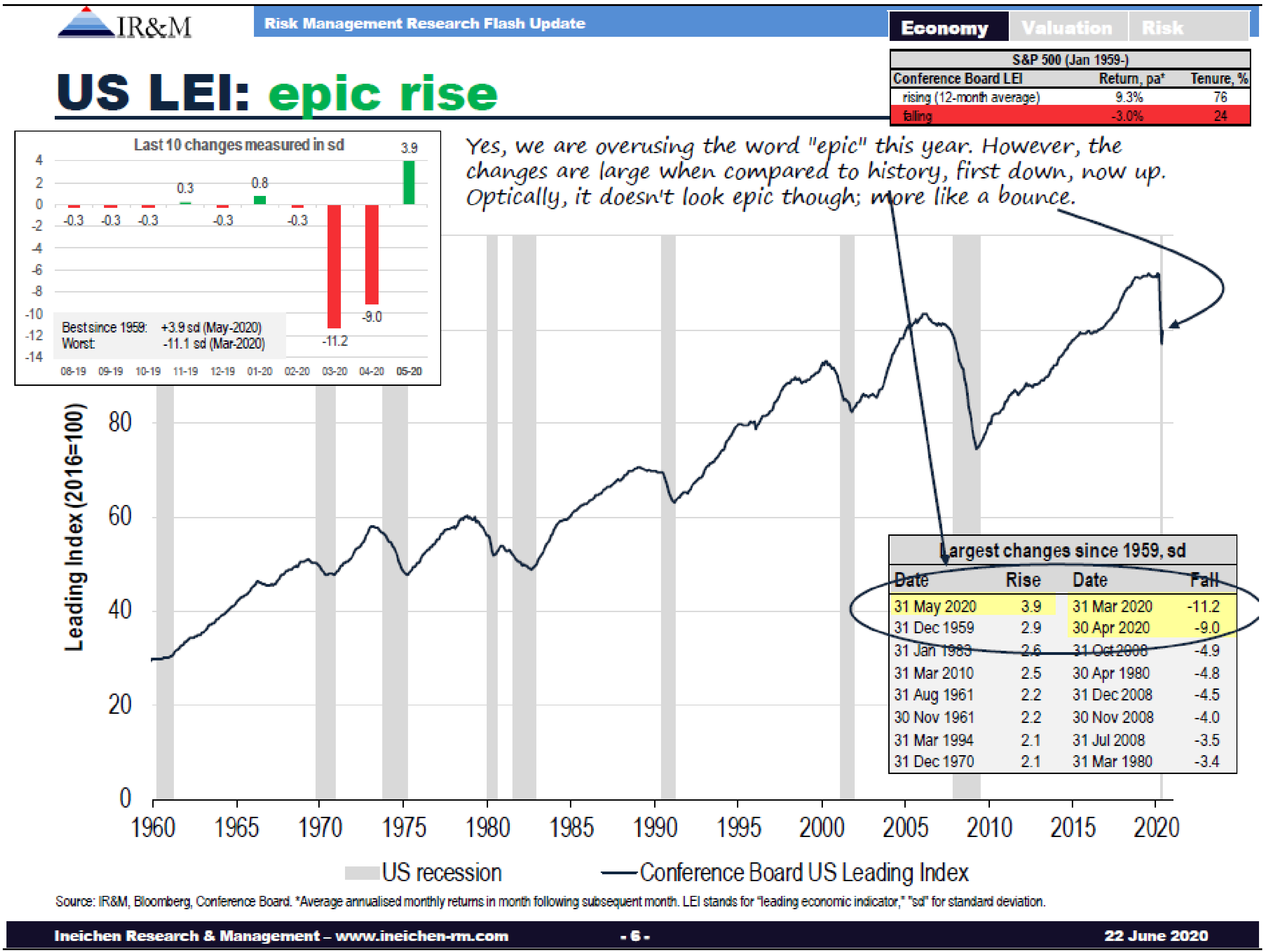
The bullish argument is the V-shape recovery. If we believe that investors respond to change, the strong performance of risky assets, including very cyclical asset categories, is easier to explain.

The bearish argument is that these changes are miniscule compared to the damage inflicted by the lockdowns. (Or that equity investors are delusional paying 50 times prospective earnings for the Russell 2000.)

"Trump can stay irrational longer than you can stay solvent."
—@modestproposal1, 12 March 2020

Figure 14 below shows one example of an economic indicator that fell *sharply* and then recovered "sharply".

Figure 14: Screenshot IR&M flash update 22 June 2020

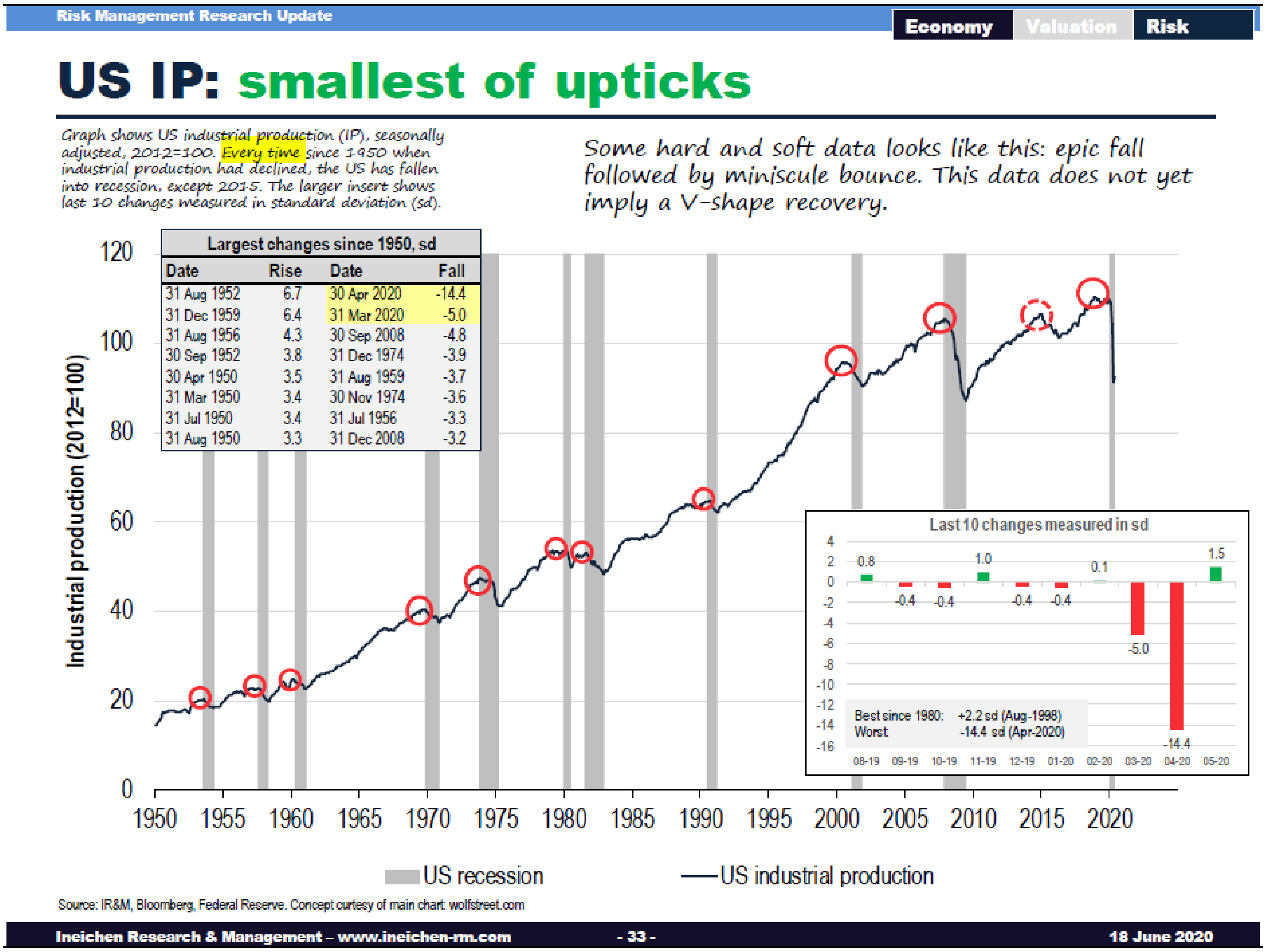


Source: IR&M

- The falls in March and April were "epic" when measured in standard deviation since 1959. The rebound in May was also "epic" when measured in standard deviation. However, optically the strong rebound is miniscule when compared to the recent falls. This type of rebound does not imply a V-shape recovery, just an improvement from the government's lockdown.

Hard data, normally slower than soft/survey data but perceived as being more relevant, more serious, also has been turning positive post peak-coronavirus panic in April. Figure 15 below shows US industrial production as an example.

Figure 15: Screenshot IR&M risk management update 18 June 2020



Largest changes since 1950, sd

Date	Rise	Date	Fall
31 Aug 1952	6.7	30 Apr 2020	-14.4
31 Dec 1959	6.4	31 Mar 2020	-5.0
31 Aug 1956	4.3	30 Sep 2008	-4.8
30 Sep 1952	3.8	31 Dec 1974	-3.9
30 Apr 1950	3.5	31 Aug 1959	-3.7
31 Mar 1950	3.4	30 Nov 1974	-3.6
31 Jul 1950	3.4	31 Jul 1956	-3.3
31 Aug 1950	3.3	31 Dec 2008	-3.2

Source: IR&M

- The negative outliers were epic. Positive outliers have not yet started to occur in this example.
  (And never might, as the economy has moved to services and tech and US industry isn't any more what it was in the 1950s, when the positive outliers occurred, as per inserted table in Figure 15, despite to make industry great again.)

"We all want to Make America Great Again. But that won't happen until we first Make America Smart Again."
—Neil deGrasse Tyson, Twitter, 19 March 2017[1]

In the section that follows we show that earnings estimates imply The V too. The section includes some sector analysis where we play around with different earnings revision assumptions. We also make/repeat the case that trees do not grow unhinged to the sky.

[1] This tweet was in response to Donald Trump announcing that he will be speaking at Liberty University; a university where dinosaurs fossils are labelled as being 3000 years old.

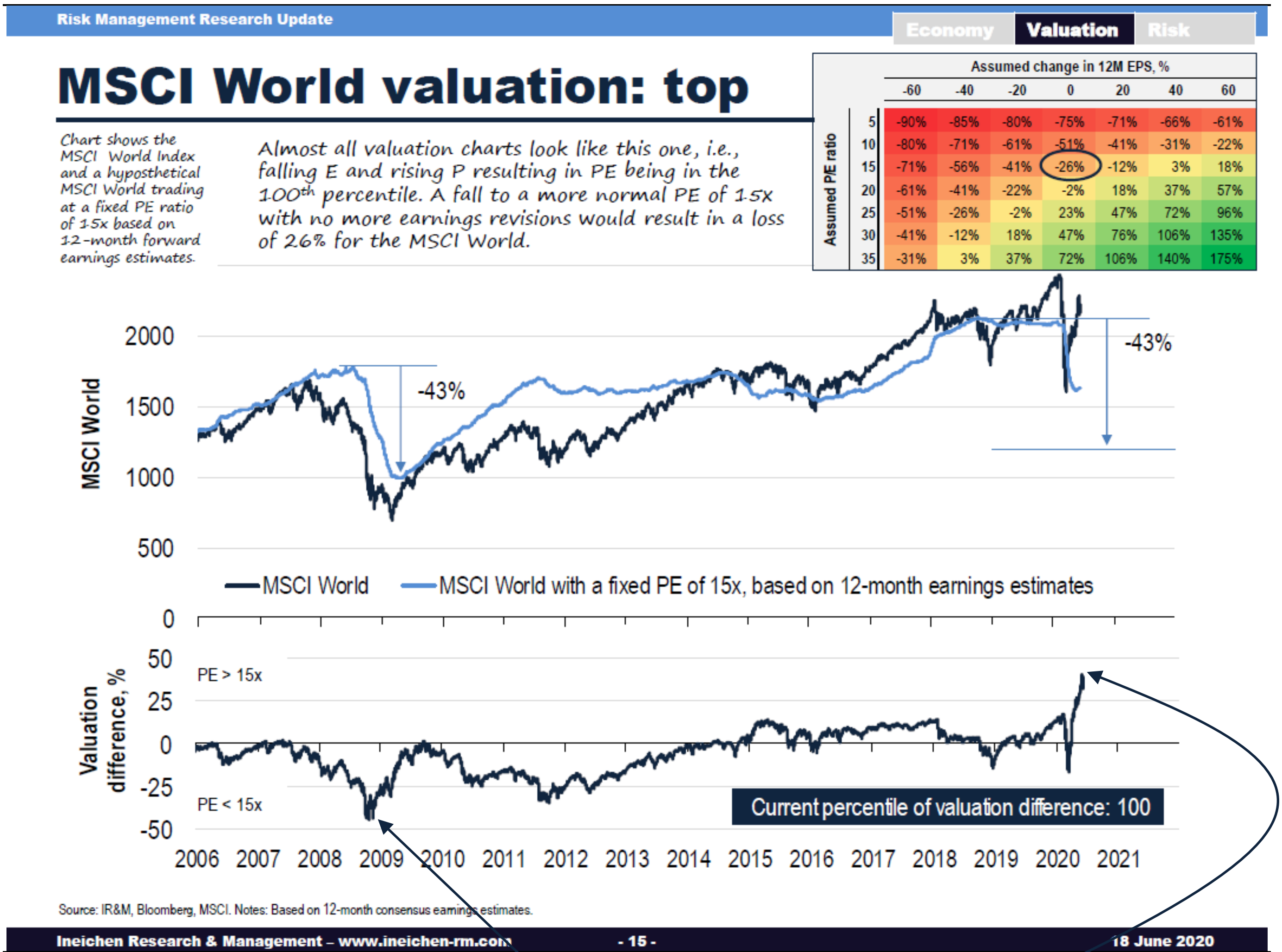
Earnings estimates too imply a V

Valuations and earnings revisions

PE ratios have risen materially since the de-risking ended in March. Equities are expensive on almost any metric.

In Figure 16 we show the MSCI World (dark blue line). We compare the path of the index with a hypothetical MSCI World trading at 15x over time. This means we multiply the 12-month forward earnings estimates by 15, to get a sense for "fair value". The 15x we get from history, i.e., a long-term average of forward-looking PE is around 15x for this particular index.
The lower part of Figure 16 shows the difference between the real index and the constant-PE index, adding a sense of proportion.

Figure 16: Screenshot IR&M update 18 June 2020



Assumed P/E ratio	Assumed change in 12M EPS, %: -60	-40	-20	0	20	40	60
5	-90%	-85%	-80%	-75%	-71%	-66%	-61%
10	-80%	-71%	-61%	-51%	-41%	-31%	-22%
15	-71%	-56%	-41%	-26%	-12%	3%	18%
20	-61%	-41%	-22%	-2%	18%	37%	57%
25	-51%	-26%	-2%	23%	47%	72%	96%
30	-41%	-12%	18%	47%	76%	106%	135%
35	-31%	3%	37%	72%	106%	140%	175%

Source: IR&M

In Figure 16 we also superimposed the fall in earnings estimates in the last recession. 12-month forward earnings estimates were revised downwards by 43% at the time. This means a constant-PE MSCI World would have fallen by 43%. The MSCI World, however, fell by around 60% as there was a double whammy: falling earnings and a fall in valuations. This time, valuations are at the opposite end from 2009. This time it's different.

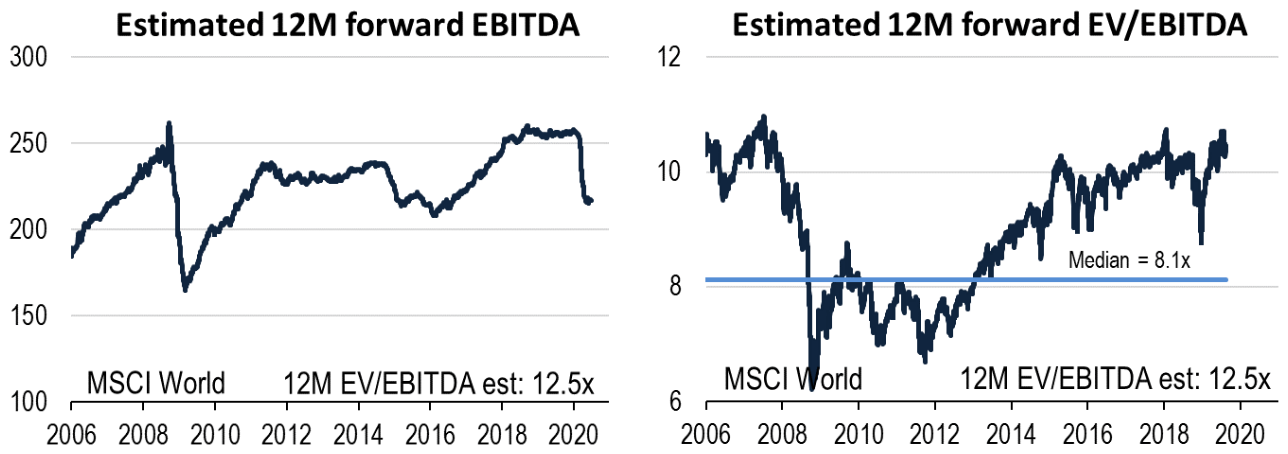
Figure 16 also shows that earnings did not fall as much as last time around. The light blue line does fall from the peak but not by as much as 43%. However, the speed of the fall was much steeper in March 2020 than normal.

Sometimes we add a scenario analysis matrix to the upper right hand corner of these valuation exhibits as the one displayed in Figure 16. It allows for some playfulness with assumptions.
For example, if the Fed were to buy the MSCI World Index like there's no tomorrow, and the PE ratio would rise to 35x, and analysts held forward earnings estimates constant, then the MSCI World Index would rise by 72%.

"Humanity has advanced, when it has advanced, not because it has been sober, responsible, and cautious, but because it has been playful, rebellious, and immature."
—Tom Robbins (b. 1932), American novelist[1]

We like PE ratios for simplicity and data availability reasons. The situation does not change if we take a "more sophisticated" valuation metric. Figure 17 shows path of 12-month forward estimates for EBITDA (left) and the EV/EBITDA ratio. The conclusions drawn are the same, equities are valued at the top of the 15-year range.

Figure 17: Forward EBITDA for MSCI World and prospective EV/EBITDA ratio



Source: IR&M, Bloomberg

- The path of MSCI World forward EBITDA estimates is different to forward EPS in a sense that the 2008 peak is quite similar to the 2018/19 peak.

In May of this year, earnings estimates stopped falling. By late June, earnings estimates were rising.

Figure 18 shows one-month revisions of 12-month forward earnings revisions for a selection of country indices and their main sectors, i.e., sectors that have a market cap of at least $100bn. The top line shows the earnings revision for the MSCI World and its 11 GICS Level 1 sectors.

[1] Still Life with Woodpecker (1980).

Figure 18: Screenshot IR&M flash update 29 June 2020

IR&M — Risk Management Research Flash Update — Economy | **Valuation** | Risk

1M earnings revisions

Best		Worst	
USA Energy	202.6	Japan Industrials	-20.6
Canada Energy	43.5	India Real Estate	-17.8
World Energy	33.5	Netherlands IT	-17.2
Canada Industrials	13.6	Japan Consumer Discr.	-9.6
UK Consumer Discr.	12.0	Japan Market	-7.2

Matrix shows one-month revisions of 12-month forward earnings estimates for a selection of countries and sectors whith a market cap that exceeds $100bn. Revisions above +5% and below -5% are highlighted.

A couple of weeks ago, Japan and South Korea were among the best in terms of revisions of earnings estimates. Now, South Korea is still among the best but Japan is among the worst.

	Market index	Cons. Discr.	Mater.	Industr.	Financ.	IT	Real Estate	Energy	Comm. Services	Utilities	Cons. Staples	Health Care	Rank
World	0.8	1.6	3.3	-2.6	1.7	-1.2	-1.7	33.5	1.3	0.7	0.8	0.2	
USA	1.4	5.3	2.3	1.7	1.7	-0.6	0.4	202.6	0.1	0.6	0.9	-0.1	6
Canada	4.7		10.4	13.6	0.7			43.5					2
Brazil	10.9				3.8								1
Europe	-0.1	1.7	2.5	0.0	1.0	-6.0	-4.5	5.8	-2.6	-1.3	-0.2	-0.7	11
UK	1.1	12.0	3.9	-1.0	1.1			6.7			-0.7	0.3	8
Germany	-1.1	-1.2	3.4	-3.3	4.6	-3.1						-0.4	14
France	-0.5	-4.5		0.3	0.8	0.3		6.2	1.7		0.3	-2.6	13
Italy	-2.9				-3.8					0.8			17
Spain	2.1									1.3			5
Netherlands	-1.7	8.0				-17.2					0.2		15
Switzerland	1.4		1.4	1.3	2.8						0.8	0.3	7
Japan	-7.2	-9.6	-4.7	-20.6	-4.5	-6.0	-5.5		10.3		-3.6	-2.7	20
China	-3.2	-5.1	-3.1	-1.3	0.9	0.5	-1.2	6.8		-0.3	2.6	-3.2	18
Hong Kong	4.7			1.0	-0.8		-3.8						3
Australia	0.6		1.1		1.5							-0.6	10
South Korea	2.1					2.3			3.6				4
Taiwan	1.0				-0.1	1.6							9
India	-4.9				-4.9	1.3	-17.8	-2.7			-0.4		19
Russia	-2.2		-1.9					-5.6					16
Emerging Markets	-0.4	-4.2	4.1	2.8	0.2	3.4	-2.3	-2.3	1.4	1.7	2.1	1.8	12
Rank		4	2	11	3	9	10	1	5	7	6	8	

Source: IR&M, Bloomberg. Based on consensus earnings estimates and MSCI indices.

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Source: IR&M

- Earnings were revised upwards over one month for the MSCI World and 8 from 11 sectors, i.e., all but Industrials, IT, and Real Estate.

Earnings too imply a V. We show this in our summary pages in our regular updates in the lower left-hand corner for the main economies. The drawn-out line in the insert in the lower left-hand corner of Figure 19 on page 22 is the 12-month forward earnings estimate for the MSCI World. (A screenshot is shown in the side text on the right for convenience.) The two triangles stand for an estimate of this measure on 1.1.2021 and 1.1.2022.

When the exhibit in Figure 19 was updated for the 18 June report, the 12-month forward estimate for the MSCI World was around $110. The first triangle was around $122. This means analysts believe the 12-month forward estimate will grow from 110 to 122 over the remainder of 2020. (The 110 figure is "harder data" as it will not change over time, while the 122 is subject to change. The 122 is a bit "fluffy," an estimate of an estimate of sort. Sometimes we think of the 110 figure as fact and the 122 number as wishful-thinking. The solid line in the insert does not change. The triangles move around throughout the year. The triangles have a tendency to fall over the year, as analysts start the year on a "high note" and then revise estimates lower throughout the year.)

On 1.1.2021 the 12-month forward estimate will be the same as the estimate for the calendar year 2021. The second triangle is the 12-month forward estimate on 1.1.2022, i.e., the estimate for calendar 2022.

Figure 19: Screenshot IR&M update 18 June 2020

FTSE World (Jan 2006 -)		
IR&M Global Model is:	Return, pa*	Tenure, %
rising (300-day average)	10.2%	58
falling (300-day average)	-1.3%	42
above 300-day average	10.1%	56
below 300-day average	-0.5%	44

	Momentum		Current
Week:	EPS	Price	drawd.
MSCI World	-34	-13	-8.9
S&P 500	-12	-12	-7.9
STOXX 600	-14	-13	-15.4
FTSE All-Share	-31	-14	-18.3
Topix	-69	-13	-9.2
MSCI EmMa	-12	-13	-14.0

	Change in 12M forward earnings			
(%)	-1M	-3M	-6M	-12M
MSCI World	0.7	-17.4	-21.7	-22.0
United States	1.2	-16.3	-18.8	-18.3
Europe	-1.0	-22.9	-29.0	-29.1
Japan	-6.2	-20.5	-21.9	-24.4
Emerging Markets	-0.6	-12.1	-18.5	-17.7

Source: IR&M

- The two triangles in the lower left of Figure 19 represent a "V" when compared to the current estimate of $110 and the recent fall.

Below we show different scenarios for country indices based on different assumptions as to how earnings are revised in the future.

Sector scenario analysis

Sector factors are more important than country factors

When I was doing derivatives research (which included index research) in the 1990s in London I was working closely with the quantitative research department and spoke at some of their conferences. I remember the discussions around 1997 as to what was more important: country or sector factors. I believe to remember that there was some form of consensus that around 1997 sector factors "overtook" country factors, i.e., sector factors becoming more important than country factors when explaining risk and return. This was true for developed markets but not for emerging markets. Today I still believe this to be the case, i.e., sector factors are more important than country factors in developed markets.

He who pays the piper calls the tune.

This means when I argue that it will be difficult for Europe to outperform the US in equities, it does not mean that I believe that the occupants of the White House have a higher integrity than the people who run Europe, i.e., the occupants of the Bundestag. (The pun was of course intended.) It means that IR&M's price and earnings momentum[1] analysis favours certain sectors which have a higher weight in US indices. The chronic underperformance of the FTSE 100 is not a function of Boris having a worse hair decade than Donald. Here too: its index sector weights. Figure 20 is one way of comparing different indices.

Figure 20: Screenshot IR&M update 8 May 2020

Risk Management Research Update

Economy **Valuation** Risk

Index sector momentum comparison

The two exhibits show four indices in terms price and EPS momentum sorted by sector index weight. This comparison allows to assess whether momentum is positive in the sectors that matter most.*

US is always the best in this exhibit, as long as we can remember. The ratio of positive vs negative data points has always been most favourable in the US. IT+Health Care is 28.7% for the S&P 500 and those are the strong sectors, both in the recent bull market and the current bear market. In the STOXX 600 that weight is 24.5%, in the FTSE 100 its 13.2%, and in the Nikkei 225 its 20.1%.

S&P 500	Index weight	Momentum* Price	Momentum* Earnings
Information Technology	24.4	-2	34
Communication Services	14.9	-6	-6
Health Care	14.3	-5	154
Consumer Discretionary	10.4	-6	-21
Financials	10.2	-7	-8
Consumer Staples	7.9	-6	-2
Industrials	7.0	-7	-22
Utilities	3.0	-5	45
Energy	2.9	-78	-67
Real Estate	2.7	-7	-4
Materials	2.3	-8	-74

Positive/negative ratio = 3:19

STOXX Europe 600	Index weight	Momentum* Price	Momentum* Earnings
Health Care	16.3	-3	98
Consumer Staples	15.0	-8	-5
Financials	13.8	-7	-7
Consumer Discretionary	12.4	-8	-69
Industrials	12.2	-7	-6
Materials	7.9	-8	-40
Information Technology	6.2	-6	-4
Utilities	5.1	-3	-2
Energy	4.7	-40	-28
Communication Services	4.5	-10	-94
Real Estate	1.9	-6	-43

Positive/negative ratio = 1:21

FTSE 100	Index weight	Momentum* Price	Momentum* Earnings
Consumer Staples	19.5	-8	-16
Energy	15.3	-36	-28
Financials	15.2	-9	-25
Materials	13.2	-36	-29
Health Care	12.0	-7	41
Industrials	8.5	-7	-6
Consumer Discretionary	6.4	-8	-65
Communication Services	4.0	-10	-54
Utilities	3.3	-2	-4
Information Technology	1.2	-32	n.a.
Real Estate	1.0	-6	n.a.

Positive/negative ratio = 1:19

Nikkei 225	Index weight	Momentum* Price	Momentum* Earnings
Consumer Discretionary	19.4	-8	-8
Industrials	19.2	-8	-73
Communication Services	13.1	-5	-68
Health Care	11.8	-3	48
Financials	10.2	-8	-63
Information Technology	8.3	-5	19
Consumer Staples	7.8	-9	-8
Materials	5.3	-8	-67
Real Estate	2.5	-8	n.a.
Utilities	1.4	-52	-39
Energy	0.9	-9	n.a.

Positive/negative ratio = 2:18

Source: IR&M, Bloomberg. *Long-term momentum based on IR&M methodology measured in number of weeks since signal. Sector index weights are based on market cap and are approximations.

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Source: IR&M

This and similar comparisons allowed for high conviction that the S&P 500 Index is "unbeatable" as long as IT is doing well, despite country-specific factors potentially suggesting otherwise. The exhibit above has its limits of course, namely in extreme bull or bear markets, i.e., when "everything" is either red or green. Over the years we found that most of the time the S&P 500 is "greener" in the heavily weighted sectors than most other indices.

[1] IR&M earnings momentum is measured in weeks since signal. A positive /negative signal occurs when the 10-week moving average of the 12-month forward earnings estimate crosses the 40-week moving average from below/above.

The S&P 500 is not the US, you say. That is true, but when the S&P 500 is compared to the STOXX Europe 600 it does not matter. Index weights matter. Investors do not invest in countries but in securities that are domiciled in those countries, normally. (Some country equity indices are not "pure" in a sense that they include non-domestic stocks.)

Figure 21 shows a comparison of index sector weights. We mostly use the GICS (Global Industry Classification Standard) Level 1 sectors. The order of sectors is not by alphabet but by cyclicality, i.e., most cyclical (Consumer Discretionary) first, least cyclical (Health Care) last. (This order of GICS Level 1 sectors is based on an analysis we did many years ago.) The order of the selection of equity indices is also by cyclicality, i.e., the sum of weights of the six most cyclical sectors. Topix is most cyclical, SPI (Swiss Performance Index) least. Sector weights with a double-digit weight are highlighted.

The last five rows show the sum of weights for cyclicality, defensiveness, "techy" (sum of IT and Communication Services), exposure to commodities (Energy plus Materials, that includes Mining), and Financials + Real Estate. The four indices with the largest weight in those five "themes" were highlighted.
Reading help: Australia's S&P/ASX 200 index has a 72% weight in the 6 most cyclical sectors, the third highest from the selection shown, and also has a 30% weight to "Energy + Materials," which is the second highest from the selection. It also has a 30% weight in "Financials + Real Estate," the fourth highest from the selection.

Figure 21: Approximate index sector weights in June 2020

	Sector weights, %															
	Most cyclical ←															→ Least cyclical
Sector	Topix	DAX	S&P/ ASX 200	Hang Seng	Kospi 200	S&P/ TSX 60	CAC 40	MSCI Brazil	MSCI China	Euro Stoxx	MSCI World	S&P 500	FTSE MIB	Stoxx Europe	FTSE All-Share	SPI
Consumer Discretionary	19	20	6	4	9	4	28	11	29	19	11	11	13	13	8	4
Materials	7	14	26	0	7	11	5	16	2	7	4	2	0	8	13	7
Industrials	21	11	7	5	11	11	17	7	5	12	11	7	7	13	10	12
Financials	10	13	23	51	8	31	8	28	18	12	14	10	31	14	20	15
Real Estate	2	2	7	11	0	1	1	1	6	2	4	3	0	2	3	1
IT	14	13	3	1	35	10	6	0	3	10	17	25	5	6	2	2
Energy	1	0	3	4	2	14	6	15	3	4	4	3	9	4	12	0
Communication Services	3	6	0	15	0	0	0	2	0	5	9	15	0	4	4	0
Utilities	0	3	2	5	1	3	3	5	2	7	4	3	28	5	3	0
Consumer Staples	10	5	5	3	7	6	16	10	4	12	9	7	1	15	16	22
Health Care	12	13	12	2	10	1	7	4	5	9	14	13	4	15	10	35
6 most cyclical	74	73	72	72	70	69	64	64	64	63	61	58	56	56	56	41
3 most defensive	22	21	19	9	18	10	26	19	11	29	26	24	33	35	29	57
IT + Comm. Services	17	19	3	16	35	10	6	2	3	15	26	40	5	11	6	2
Materials + Energy	7	14	30	4	9	25	11	32	5	10	8	5	9	13	25	7
Financials + Real Estate	13	15	30	61	8	32	9	29	24	14	18	13	31	16	22	16

Source: IR&M, Bloomberg

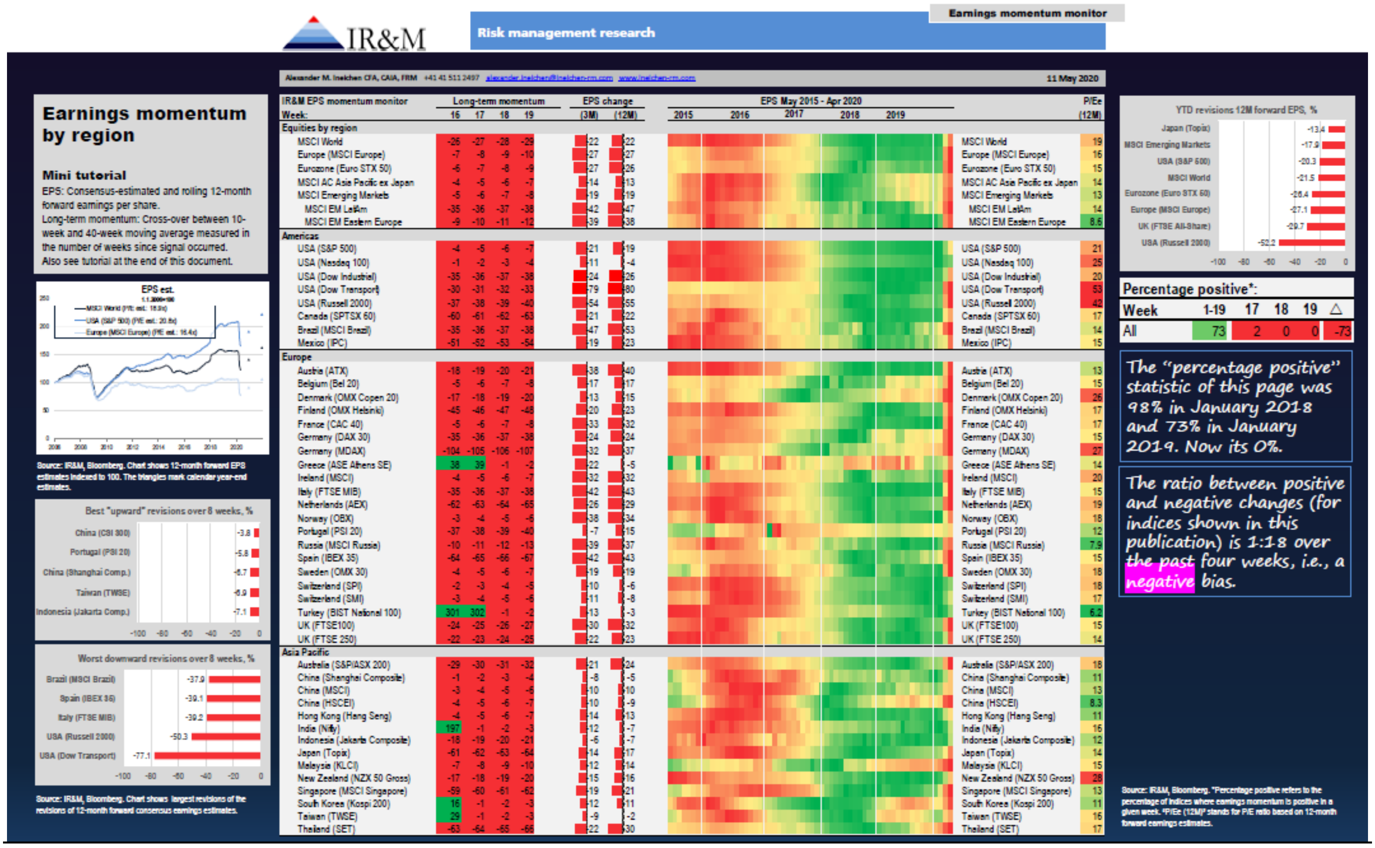
- The year-to-date local currency returns for the S&P 500, STOXX Europe 600, and FTSE All-Share on 24 June were -6%, -18%, -19%. We claim that the ranking is to a large extent based on sector weights. IT + Communication Services is 40% with the former, only 11% and 6% with the latter two. If country factors, like for example how the covid-19 pandemic is mastered, were a contributing factor, the ranking would look different.

- As high as our conviction is that sector weights are more important than country-specific factors; sectors do not explain 100% of variance. Especially when emerging markets are involved. South Korea, for example, has been an underperformer in equities for many years despite having a large weight in IT. Country factors still matter.
  (South Korea and Taiwan are still "officially" emerging markets according to MSCI. The two countries are "fighting" to not be re-classified as developed markets. If they would fall out of the MSCI Emerging Markets Index, their equity markets would be sold off sharply from all investors that benchmarked or indexed to the MSCI Emerging Markets Index. Their index weight would be much smaller in the World DM indices than it is in emerging markets indices.)

Apart from earnings momentum, we pay close attention to earnings revisions. The earnings momentum measure is either positive or negative. We measure earnings momentum in weeks since the last signal. The metric for this analysis is the consensus 12-month forward earnings estimate we get from Bloomberg. Figure 22 is an example, page 1 from our earnings momentum monitor ad-on publication. (Reading help: Earnings momentum in Turkey's BIST National 100 Index was positive for 302 weeks to week #17 of 2020 and turned negative in week #18. It's PE ratio was 6.2x at the end of week #19.)

"Intelligence is characterised as the ability to adapt to change."
—Stephen Hawking[1]

Figure 22: Screenshot IR&M earnings momentum monitor 11 May 2020



Source: IR&M

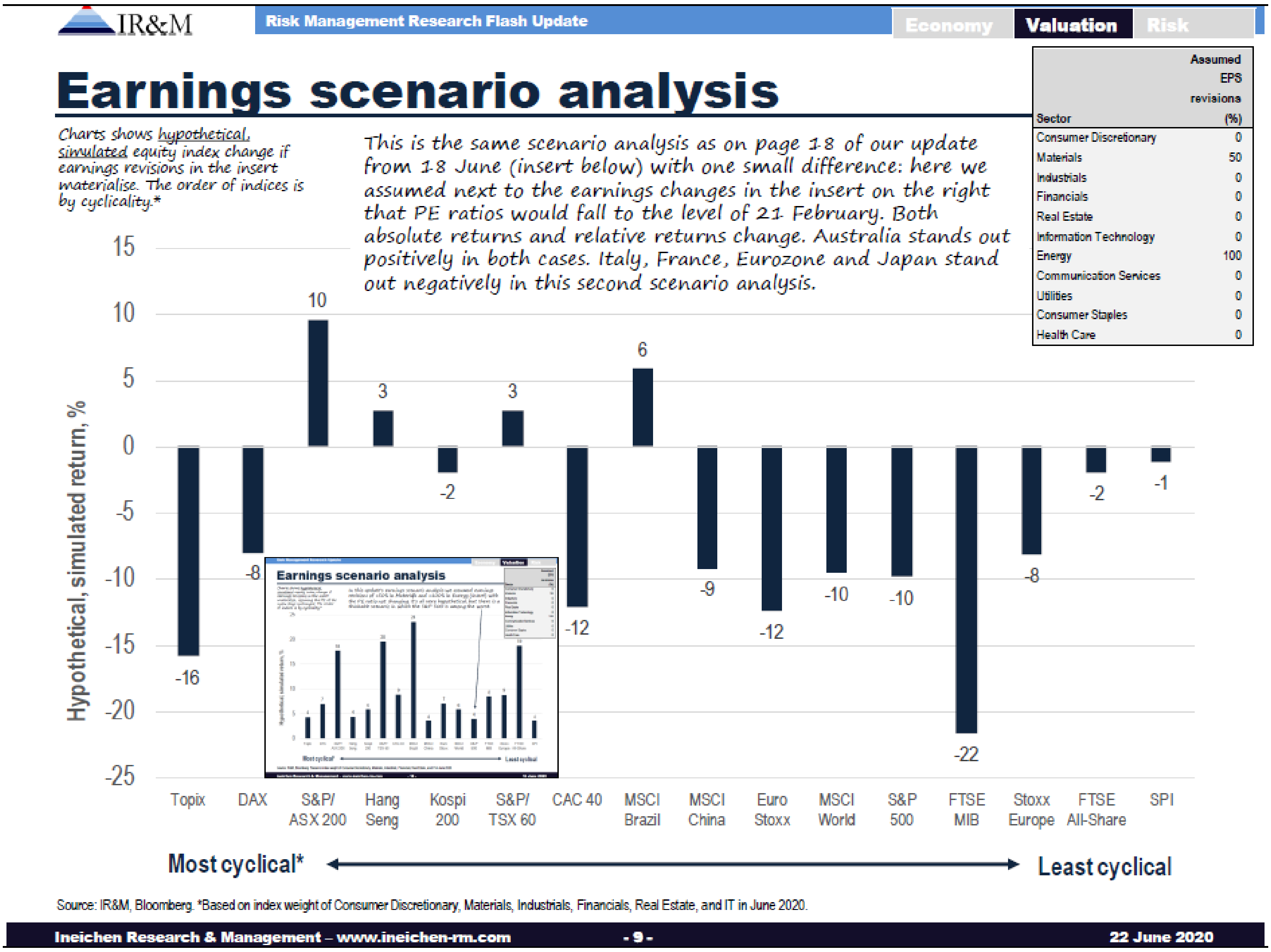
Earnings revisions are shown in the main table under "EPS change, 3-month, and 12-month". Extreme earnings revisions we highlight in the inserts. In the upper

[1] Hawking, Stephen (2018) "Brief answers to the big questions," London: John Murray (Publishers), p. 195.

right we show year-to-date earnings revisions, best first. In the insert on the left we show best and worst earnings revisions over the last eight weeks. (The eight-week period was chosen arbitrarily, one-week change being not meaningful, and three-month change being shown in the main table.)
Note that we show five indices for the US, also a function of index sector weights. (The five indices also differ strongly in terms of small vs large cap, and value vs growth.)

The sector weights discussed earlier, and the earnings revisions allow us to be "playful" with the data. This is where scenario analysis comes in. Figure 23 is an example how this can look in our updates.

Figure 23: Screenshot IR&M flash update 22 June 2020

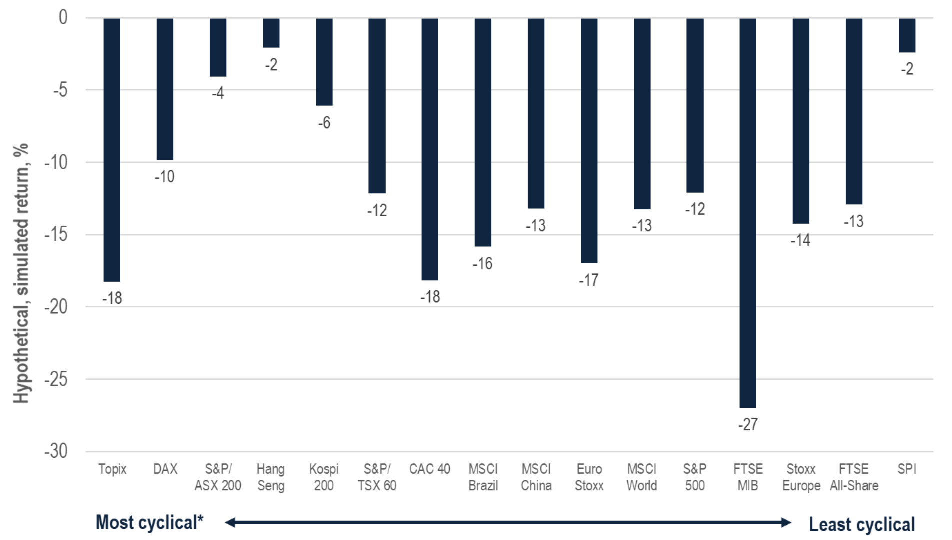


Source: IR&M, Bloomberg

In the exhibit above we combine different assumptions, for example a fall in PE in combination with earnings revisions in certain sectors (insert). The bars in the chart measure the hypothetical index change given the assumptions, and all other variables held constant.

In Figure 24 below we show the hypothetical index changes if all the PE ratios were to fall to the level they had on 21 February 2020:

Figure 24: Hypothetical index change if PE ratios were to mean revert to 21 February 2020 levels

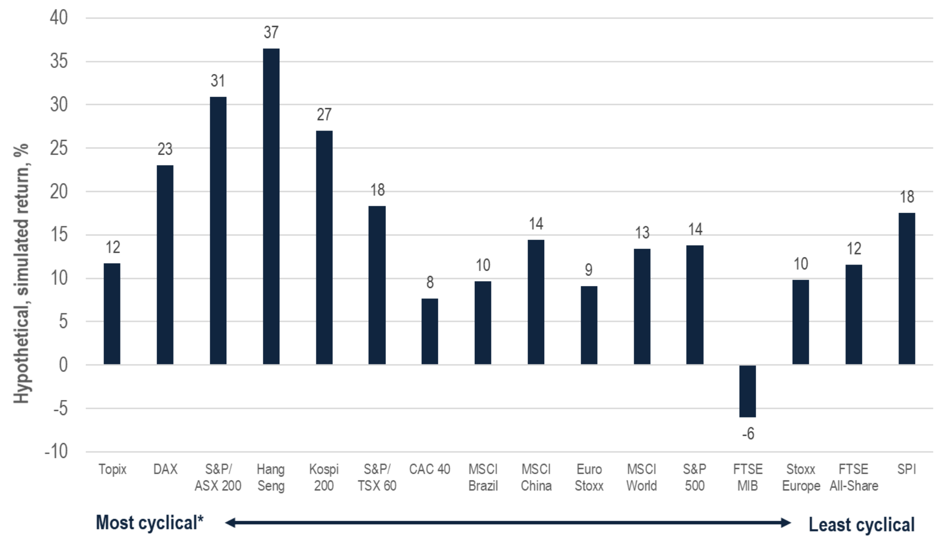


Source: IR&M, Bloomberg

- Italy's FTSEMIB Index had a PE of 12.2x on 21 February 2020 and a PE of 16.6x on 24 June. A fall from 16.6x to 12.2x with no changes to earnings would result in a fall of the index of 27%. The time frame does not matter, i.e., fall could be in a day or month, it is not specified. The change just shows the hypothetical change if the PE falls from 16.6x to 12.2x.
- Switzerland's SPI had PE ratios on those two dates of 18.5x and 18.9x, i.e., the implied fall is much smaller, given the assumptions.

Figure 25 shows the same scenario analysis with a further assumption. We assumed that 1. PE ratios would fall, like in the previous analysis, but 2. earnings in the six most cyclical sectors would rise by 50% each, as per insert in the side text.

Figure 25: Hypothetical index change with falling PE and positive earnings revisions in cyclicals



Source: IR&M

Sector	Assumed EPS revisions (%)
Consumer Discretionary	50
Materials	50
Industrials	50
Financials	50
Real Estate	50
Information Technology	50
Energy	0
Communication Services	0
Utilities	0
Consumer Staples	0
Health Care	0

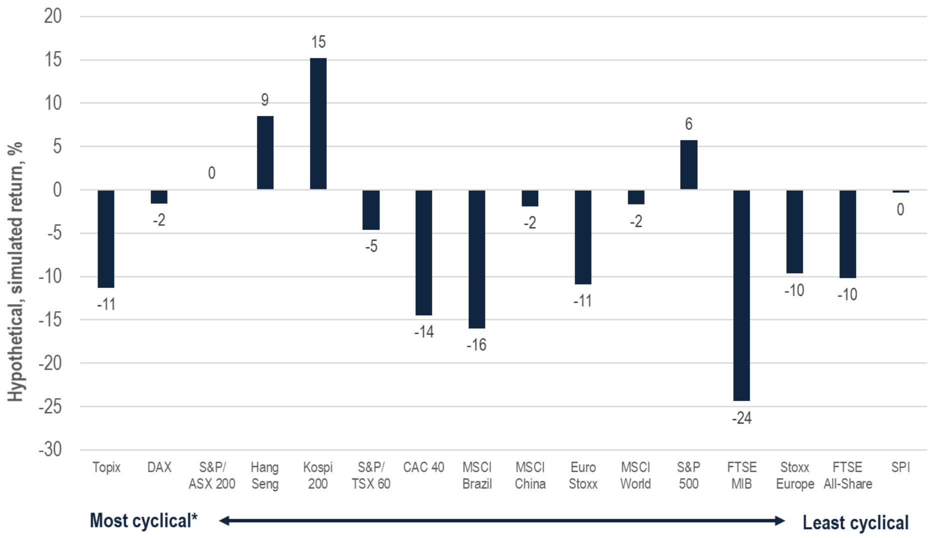
- Equity indices on the left perform better, as one would expect, given that they have larger weights in cyclicals.

- Hong Kong's Hang Seng stands out because its troubles started long before the coronapocalypse. The PE ratio on 21 February and 24 June were almost identical. Its weight in cyclicals is 72%. This means no fall in PE in combination with earnings rising for 72% of the index by 50% results in an index gain of 37%.

- The S&P 500 does not stand out in this scenario. However, in the next scenario it ranks 3rd.

For Figure 26 we assumed again mean reversion for the PE ratios (based on 12-month forward consensus earnings estimates) and 50% earnings revisions in IT and Communication Services, as per insert to the right of the bar chart.

Figure 26: Hypothetical index change with falling PE and positive earnings revisions in IT + ex-Telecom



Sector	Assumed EPS revisions (%)
Consumer Discretionary	0
Materials	0
Industrials	0
Financials	0
Real Estate	0
Information Technology	50
Energy	0
Communication Services	50
Utilities	0
Consumer Staples	0
Health Care	0

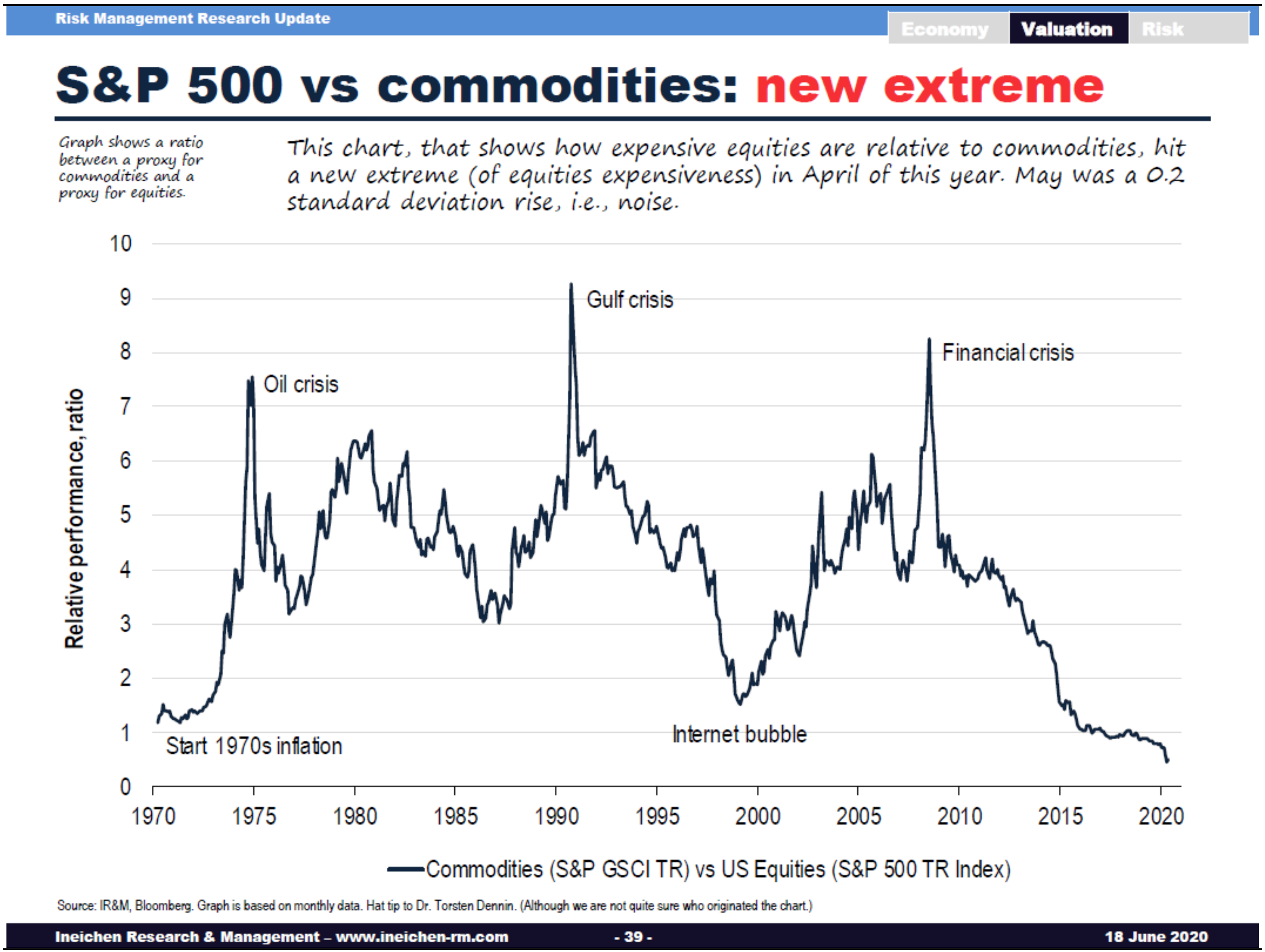
Source: IR&M

- S&P 500 PE ratio falling from 21.3x to 18.8x in addition to earnings revisions of +50% in IT and Communication Services would result in a gain of 6%, all other factors held constant. The same assumptions would result in a fall of 24% for Italy and a 2% fall for MSCI World.

- South Korea benefits from digitalisation and 5G euphoria. From the selection of indices shown, South Korea ranks 2nd in terms of local currency year-to-date returns, beating Switzerland and runners-up to China.

Many investors are waiting for commodities to mean revert and a 10 or 20-year bull market to commence. Gold made a start, but the commodities vs SPX relative performance metric just recently was at an all-time low, i.e., implying an epic underperformance vs FANGMAN et al., i.e., the S&P 500 Index. Figure 27 shows the degree of equities expensiveness relative to commodities.

Figure 27: Screenshot IR&M risk management update 18 June 2020

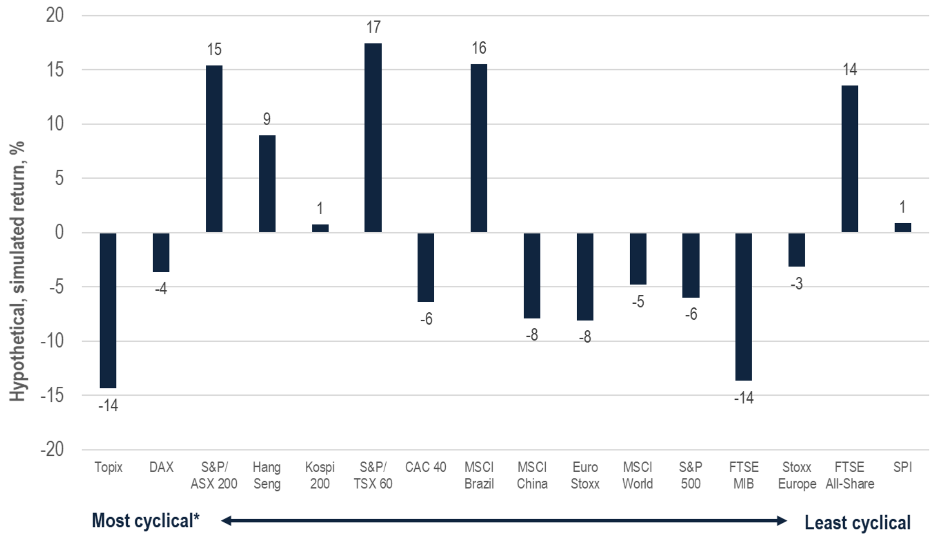


Source: IR&M

- The idea of this chart in 2017 and 2018 was that the line should mean revert as it did in the 1970 and 2000s. However, it didn't. It went to new lows instead.

Figure 28 shows a scenario analysis where we assume PEs fall in combination with positive earnings in Materials and Energy, as per insert.

Figure 28: Hypoth. index change with falling PE and positive earnings revisions in Materials and Energy



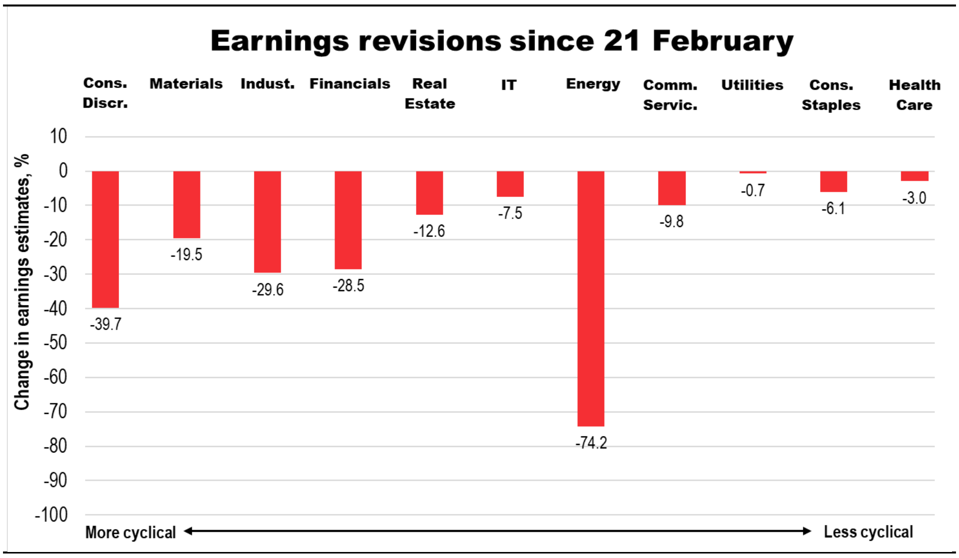
Sector	Assumed EPS revisions (%)
Consumer Discretionary	0
Materials	50
Industrials	0
Financials	0
Real Estate	0
Information Technology	0
Energy	200
Communication Services	0
Utilities	0
Consumer Staples	0
Health Care	0

Source: IR&M

- The winners of such a scenario are well known, they have large weights in Energy and/or Mining, i.e., Canada, Brazil, Australia, and the UK.
- It is difficult to make Italy look good.

In the next scenario we assume "The V," i.e., mean reversion. First, Figure 29 shows earnings revisions for the MSCI World sector indices since 21 February.

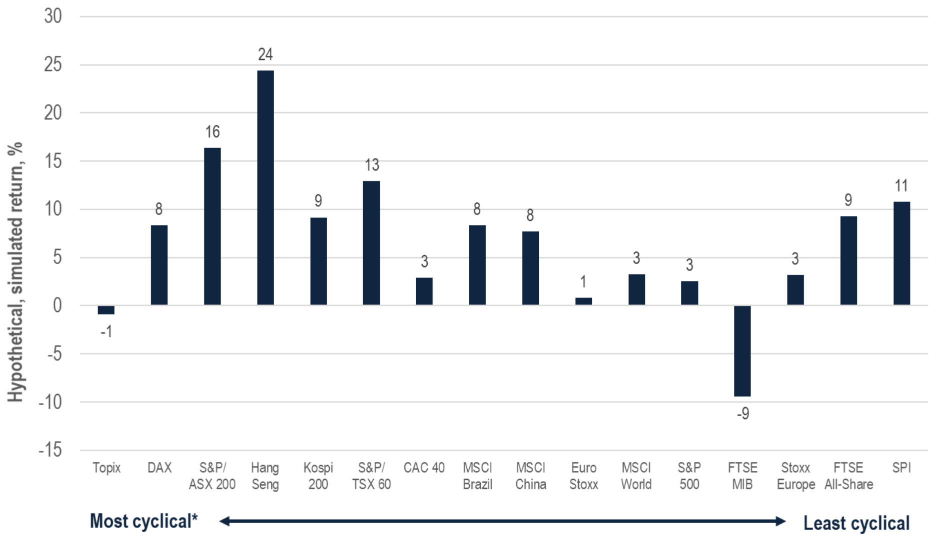
Figure 29: Earnings revisions from 21 February to 24 June 2020



Source: IR&M, Bloomberg.

In the next scenario we assume the mirror image from the above, i.e., a mean reversion process of sort. Figure 30 shows the mean reversion in PE, as in the scenario analyses before, plus a mean reversion in earnings estimates. The positive earnings revision assumptions in the insert below are the mirror image of the falls in Figure 29. (We just changed the sign from negative to positive.)

Figure 30: Hypothetical index change with falling PE and mean reversion in earnings



Source: IR&M, Bloomberg.

Sector	Assumed EPS revisions (%)
Consumer Discretionary	39.7
Materials	19.5
Industrials	29.6
Financials	28.5
Real Estate	12.6
Information Technology	7.5
Energy	74.2
Communication Services	9.8
Utilities	0.7
Consumer Staples	6.1
Health Care	3.0

- And the winner is? Yes, the most beaten up benefits from mean reversion most: Hong Kong.[1]
- It is difficult to make Italy look good.

In all scenario analysis shown on the previous pages, there is no scenario in which the Euro STOXX outperforms the S&P 500 Index. This is very consistent with the narrative of IR&M research, as long-term clients will attest. The title of our inaugural research report dated 3 October 2011 was called "Europe doubling down". The report might have lost a bit of shelf life but not all. The first paragraph on the front page reads:

> "*The financial landscape is a mess. Europe is levering up, i.e., doubling down. The investment discipline that addresses macro uncertainty, drawdowns, negative compounding, capital erosion, governmental malfeasance and unsustainable Ponzi-like pyramid schemes is active risk management. This is arguably a big task that reaches far beyond the mathematically elegant mean-variance space or the insidious world of VaR.*"[3]

"The European single currency is bound to fail, economically, politically and indeed socially, though the timing, occasion and full consequences are all necessarily still unclear."
—Margaret Thatcher[2]

At one level, not much has changed.

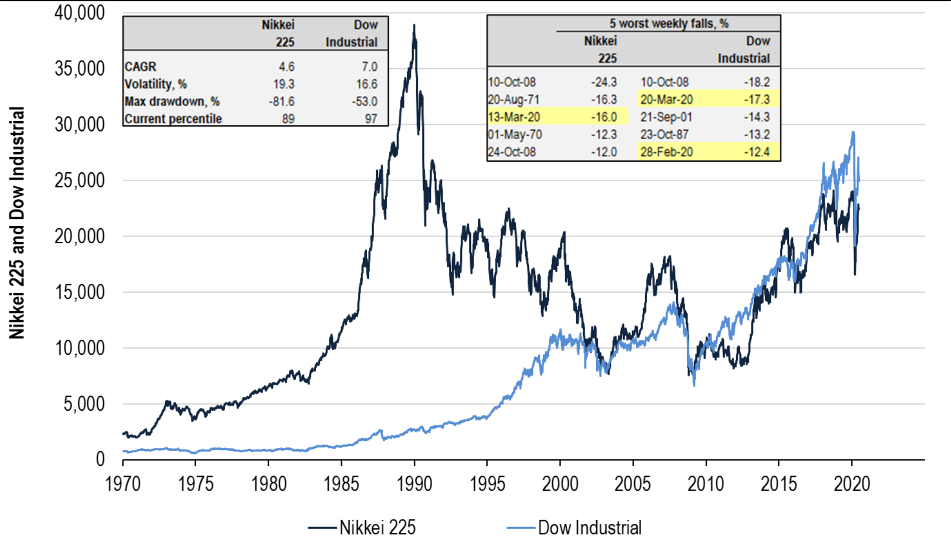
In all fairness, there are of course possible scenarios in which Europe and/or the Eurozone can outperform the current maestro of equity indices, the S&P 500. Imagination is required though.
When your analyst started out in the industry in the late 1980s, the Nikkei 225 was the "maestro of equity indices," i.e., the index to beat. No more.

"Imagination is the highest kite one can fly."
—Lauren Bacall (1924-2014), American actress and singer[4]

[1] Stop press: It's interesting that the latest pictures from China's iron fist welding in Hong Kong has no negative impact on the Hang Seng. It seems Hong Kong has fallen and life goes on.
[2] Thatcher, Margaret (2002) "Statecraft—Strategies for a changing world," New York: Harper Collins, p. 355.
[3] Europe doubling down, IR&M risk management research, 3 October 2011, p. 1.
[4] Lauren Bacall By Myself and Then Some (2005).

Figure 31 compares the Nikkei 225 not with the S&P 500 but with the Dow Industrial Index that has been trading at around the same number of index points like the Nikkei 225 since the early 2000s.

Figure 31: Nikkei 225 vs Dow Industrial as of 26 June 2020

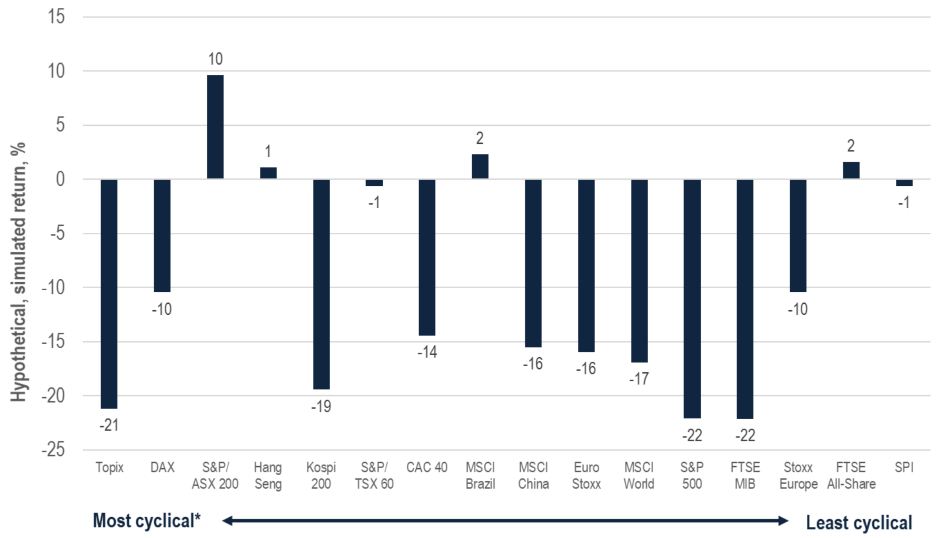


Source: IR&M, Bloomberg. Based on weekly data.

- Even maestros can fall from grace, i.e., lose their "halo".
- The "Japanification" of the rest of the world is a topic for another day.

Back to sectors. In Figure 32 we assume 1. PE ratios mean revert, as in the scenarios before, and 2. the digitalisation reverses and the commodity complex mean reverts too, as per insert.

Figure 32: Hypoth. index change with falling PE, reversing digitalisation, and commodities mean reversion



Sector	Assumed EPS revisions (%)
Consumer Discretionary	0.0
Materials	50.0
Industrials	0.0
Financials	0.0
Real Estate	0.0
Information Technology	-50.0
Energy	100.0
Communication Services	-20.0
Utilities	0.0
Consumer Staples	0.0
Health Care	0.0

Source: IR&M, Bloomberg.

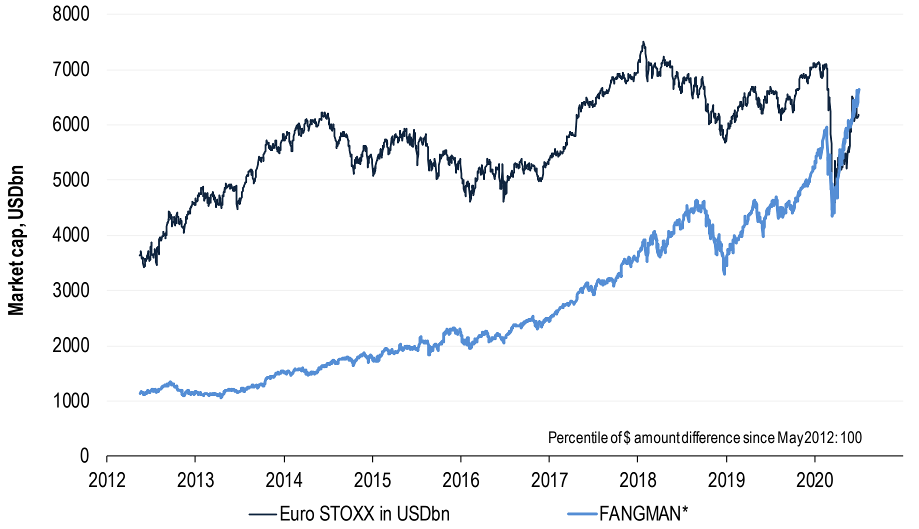
- In this scenario, the S&P 500 is worst, together with Italy.

- One of the comical aspects of scenario analysis in risk management is that something completely different to the scenario analysed happens.

For the S&P 500 to underperform, something bad needs to happen to FANGMAN, the glorious seven that contribute strongly to the S&P 500 Index' outperformance. Figure 33 compares the market capitalisation of the glorious seven with the market cap of the Euro STOXX Index in USD.

"The air goes out of the balloon much faster than it went in."
—Sheldon Stone, Principal and portfolio manager at Oaktree[1]

Figure 33: FANGMAN vs Eurozone



Source: IR&M, Bloomberg. Notes: FANGMAN stands for Facebook, Apple, Netflix, Google, Microsoft, Amazon, Nvidia.

- On 1 July 2020, FANGMAN had a market cap of $6,6tr which compares to $6,2tr for the Euro STOXX index, an index with the 295 largest stocks within the Eurozone.

Another case in point: Tesla vs the rest.

"New concepts and ideas are particularly prone to errors of optimism."
—Marc Faber (b. 1946), Swiss Asia-based newsletter writer and author[2]

Figure 34: Tesla vs German car industry

Source: IR&M, Bloomberg

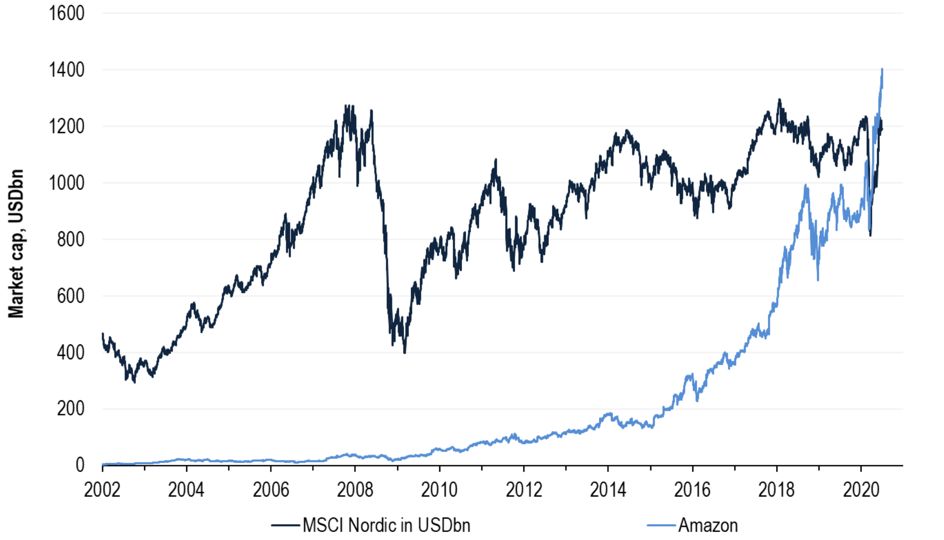
[1] "Yet Again?" by Howard Marks, Memo to Oaktree Clients, 7 September 2017.
[2] Faber, Marc (2002) "Tomorrow's Gold – Asia's age of discovery," Hong Kong: CLSA Books, p. 101.

- Telsa's market cap exceeded that of Germany's big three by $50bn on 1 July, the day it overtook Toyota as largest car manufacturer.
- Tesla cars have flappy wings and can make various flatulence sounds either on command or when making a turn. This clearly must explain the difference in valuation.

"To air is human."
—Elon Musk[1]

Another case in point:

Figure 35: Amazon market cap vs market cap of MSCI Nordic



Source: IR&M, Bloomberg

- Market cap of Amazon on 1 July 2020 exceeded market cap of MSCI Nordic Index by $214bn.

FANGMAN and Tesla are unbeatable, no? They are excellent companies. They even have a halo. If "this time it's different," mean reversion might never occur.

[1] Twitter, @elonmusk, 12 February 2019.

Excellence is mean reverting and halos don't last

Investment life would be much easier if good companies were good investments and that was the end of it. Remember the book "In Search of Excellence" in the 1980s? The book was widely read by anyone remotely interested in business. It was one of the biggest selling business books ever, selling three million copies in its first four years. The book "defined" corporate excellence. The subtitle was "Lessons from America's Best-Run Corporations." Tom Peters and Robert Waterman, the two authors, identified companies that were a blueprint for corporate excellence. Some of the companies that fit the bill and still have name recognition today are GE, Boeing, Disney, IBM, Intel, Johnson & Johnson, McDonalds, and Merck, just to name a few.

"Reversion to the mean is the iron rule of the financial markets."
—John C. Bogle (b. 1929-2019), Founder of the Vanguard Group[1]

In the book, the authors (business consultants) took a list of companies regarded as innovative by a group of informed businesspeople and screened them on the following six measures of long-run financial superiority: rate of growth in corporate assets, rate of growth in book value, average ratio of market price to book value, average return on corporate assets, average return on book value, and average ratio of net income to sales. Peters and Waterman identified 36 publicly traded "excellent companies" based on outperformance in six criteria, measured from 1961 to 1980. The list of companies they came up with was regarded as fundamentally the best companies.

"A dedicated value investor like me eats, breathes and dreams mean reversion. It's very hard to see when the world has changed. But my job description is to think about markets and not to be a member of a cult."
—Jeremy Grantham (b. 1938), British investor and co-founder of GMO[2]

In 1987, Michelle Clayman, a fellow Chartered Financial Analyst (CFA) and founder, Managing Partner & Chief Investment Officer of New Amsterdam Partners LLC, an institutional money management firm in New York, published an article in which she tracked the performance of the stocks of these companies in a period following the ranking, 1981-1985.[4] These firms had established strong records of performance prior to 1980. By 1980 they had become growth stocks. If the market overreacted and overpriced them, their performance after 1980 should have been poor as the market corrected, and the prices of the stocks fell to more reasonable levels.

1. Markets tend to return to the mean over time. 2. Excesses in one direction will lead to an excess in the other direction.
—Rule #1 and #2 from Bob Farrell (b. 1932), American financial analyst[3]

Clayman compared the performance of the 'excellent' companies with another group she called 'unexcellent'. These were the 39 companies in the S&P 500 Index population that had the worst combination of the six characteristics as of the end of 1980.

"The excessive increase of anything causes a reaction in the opposite direction."
—Plato, paraphrasing Bob Farrell

Clayman revealed that the stunning characteristics of the excellent companies quickly reverted towards the mean in the years that followed their 1980 screening. Rates of growth in assets and book value nearly halved. Significant reductions were experienced in the other four categories as well. The excellent group rose from 100 to 181.6 over the five-year period while the unexcellent group rose to 297.5. The unexcellent companies had also reverted towards the mean. They showed substantial improvement in their median values for all six categories. The market did not anticipate the mean reversion.

"Many shall be restored that are now fallen; and many shall fall that are now in honour."
—Horace (65-25BC), Roman poet, on mean reversion[5]

In 1994 Michelle Clayman repeated the methodology of her previous work and found that 'excellent' companies again outperformed as a group during 1988–

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[1] Speech given at the University of Missouri, 22 October 2002.
[2] "Grantham says higher valuations will persist," by Robin Wigglesworth, Financial Times, 1 June 2017.
[3] "Ten rules to remember about investing in the stock market," by Jonathan Burton, marketwatch.com, 11 June 2008.
[4] See Clayman, Michelle (1987) "In Search of Excellence: The Investor's Viewpoint," Financial Analysts Journal, Vol. 43, No. 3 (May–June), pp. 54–64, and Clayman, Michelle (1994) "Excellence Revisited," Financial Analysts Journal, Vol. 50, No. 3 (May/June), pp. 61–65.
[5] Ars Poetica.

1992. Financial ratios of both 'excellent' and 'unexcellent' companies were again found to regress toward the mean. Other research at the time has shown that this phenomenon also exists outside the US stock market.

Phil Rosenzweig, a professor of strategy and international business at IMD in Lausanne and a bestselling author, in *The Halo Effect* made a similar comparison as did Michelle Clayman. He examined the companies from a book titled *Built to Last* by Jim Collins and Jerry Porras. Like In Search of Excellence in the 1980s, Built to Last became a business book classic in the 1990s. Collins and Porras were in search not of excellence but developed "timeless principles" that separates the wheat from the chaff. These principles allowed them to name eighteen Visionary companies and set them apart from eighteen Comparison companies.

"Enduring greatness is neither very likely, or, when we find it, does it tend to be associated with high performance."
—Phil Rosenzweig[1]

You can guess what happened; "timeless" was rather short lived. The fate of the Visionary companies in the period after the book was also pretty much the same as with the "excellent" from the 1980s: mean reversion. It's as if there's an iron law of failure.[3] This is how two experts on creative destruction put it:

"There is no safety. Only varying states of risk. And failure."
— Lois McMaster Bujold (b. 1949), American fiction writer[2]

> *Managing for survival, even among the best and most revered corporations, does not guarantee strong long-term performance for shareholders. In fact, just the opposite is true. In the long run, markets always win.*
> —Richard Foster (b. 1942) and Sarah Kaplan (b. 1964), formerly with McKinsey & Company[4]

Most investors know all this. But this knowledge is what makes the long stretch of FANGMAN et al. so amazing. Based on the mean reversion idea, investors are delusional as to the longevity of success. Rosenzweig calls this the *Delusion of Lasting Success*:

"[T]ip-of-your-nose delusions can fool anyone, even the best and the brightest—perhaps <u>especially</u> the best and the brightest."
— Philip Tetlock and Dan Gardner[5]

> *Almost all high-performing companies regress over time. The promise of a blueprint for lasting success is attractive but not realistic… Lasting business success, it turns out, is largely a delusion.*
> —Phil Rosenzweig (b. 1955), American business school professor and author[6]

Gravity is a powerful concept. Halos vanish. What goes up, eventually can go down too. Excellence, too, is mean reverting. Reversion to the mean is an iron rule of financial markets. Chance matters too, though.

Luck matters

The idea that an excellent company is an excellent investment is fraught with danger. Behavioural finance theorists apply a phenomenon called *representativeness heuristic*, where most investors think that good stocks are the stocks of good companies. The evidence indicates that the opposite can be true too. Stock picking would be much easier, if good companies were good investments and bad companies were bad investments. A further consequence of the representativeness heuristic is a tendency for people to see patterns in data

"I'd compare stock pickers to astrologers, but I don't want to bad-mouth astrologers."
—Eugene Fama (b. 1939), American economist[7]

[1] Rosenzweig, Phil (2007, 2014) "The Halo Effect – How managers let themselves be deceived," London: Simon & Schuster, p. 102. First published 2007.
[2] Brothers in Arms (1989).
[3] The "iron law of failure" is a reference to Ormerod, Paul (2005) "Why Most Things Fail …And how to avoid it," London: Faber and Faber Limited, a book that we cherish and discussed in many previous reports.
[4] Foster, Richard and Sarah Kaplan (2001) "Creative Destruction: Why Companies That Are Built to Last Underperform the Market—and How to Successfully Transform Them, New York: Currency, Random House, pp. 8-9. The term 'creative destruction' was coined by Joseph Schumpeter.
[5] Tetlock, Philip E. and Dan Gardner (2015) "Superforecasting – The Art and Science of Prediction," New York: Crown Publishers, p. 52. Emphasis in the original.
[6] Rosenzweig, Phil (2007, 2014) "The Halo Effect – How managers let themselves be deceived," London: Simon & Schuster, p. xii and 101. First published 2007.
[7] Fortune, 6 July 1998.

that is truly random. Some, therefore, argue randomness plays a big role determining success:

> *Everything in life is luck.*
> —Donald Trump (b. 1946), American TV personality[1]

[1] "Donald Trump and Robert De Niro: in their own words," The Telegraph, 27 April 2011.

Summary

H2 2020 in a nutshell

Much top-down as well as bottom-up data implies a V-shaped recovery, The V.

Markets were saved by the authorities. Various tools were used: rhetoric, promises, funding, credit lines, fiscal stimuli, etc. Monetary authorities assured investors that interest rates will stay low for a long time. This impacts the economy positively in the long-term and the stock market in the short-term. Announced fiscal stimuli also takes time to have a positive impact on the economy, but the market's response was quick.

"Permit me to issue and control the money of a nation and I care not who makes its laws."
—Mayer Amschel Rothschild (1744-1812), German banker

There is scepticism. The bears argue that the Nasdaq recovering its 30% drawdown in February-March by early June does not seem right. In many ways, the economic data implies depression, bankruptcies, astronomic unemployment rates, for quite some time. Given the severity of the depression or recession, drawdowns in risky assets ought to be as least as severe as in the Great Recession twelve years ago. But they weren't. So far.

The bull's argument is that the "bad news" was priced in by March, around the time of "peak fear" and before the authorities started to announce the various forms of monetary and fiscal help. The recovery is the response to positive developments.

- First, the extreme fear of the virus fell rapidly when average daily deaths started to fall, when mortality charts went from convexly shaped to a more concave curve. Hundreds of thousands of deaths was scary only a couple of months ago, but no more. 500k people die just from falling alone. Per year. Investors had put the death rate into perspective by May.
- Second, the extraordinary money printing market-saving plans were designed when fear was at its peak. This means they are very generous, resulting in a don't-fight-the-Fed attitude by investors, front-running the monetary authorities. The Fed announcing to buy high-yield ETFs caused investors to fantasise that eventually they will buy equities too, like the BoJ and SNB. This was an additional amplifier, a "kicker".
- Third, when economic data is viewed from a rate of change perspective, like in this report, almost everything is positive. The situation is "bad but improving." The negative outliers were in March and April. Positive "bounces," and even positive outliers occurred in May and June.
- Fourth, lockdowns and virus fear affect smaller companies stronger than larger ones. This is the reason for corporate earnings of listed companies not falling as much as was feared during March. Furthermore, structural change via accelerated digitalisation is benefiting larger corporations more than smaller corporations. This means the recession will affect mum and pop shops much stronger than listed large caps. This means the impact of the recession on human misery could be huge, but with a much smaller effect on corporate earnings of listed companies.
- Fifth, the potential for an earlier-than-expected virus vaccine adds some positive optionality, another "kicker".

Who will win the year, the bulls or the bears?

"Being right too early is often indistinguishable from being wrong."
—Howard Marks[1]

We side with the most recent data, i.e., the bulls; despite the discomfort of capitalism and free markets being on a sabbatical. Central bankers are the new "masters of the universe," taking that title off the macro hedge fund managers 10-15 years ago. While the legitimacy of central bank self-righteously and undemocratically acquired powers is not only questioned by Germany's Constitutional Court, it is the regime we are currently in, whether one likes it or not. It is low or below-zero interest rates policies that eliminated the risk gauge that is the yield curve and is causing malinvestment and "everything bubbles". Even if the current situation resembles a house of cards in search of a whiff of wind, timing the final collapse is difficult, to say the least.

The risks to the bull case are very high though. While the (rate-of-change) data implies that it is all like in the spring of 2009, i.e., advent of great expansion and bull market, valuations are on opposite ends. Valuations in spring 2009 were low and sentiment was horrid. The capitulation phase was much longer then than now. There was real despair in the beginning of 2009. This is not, or was not, the case this time. This time is different.

[1] Marks, Howard (2011) "The Most Important Thing – Uncommon Sense for the Thoughtful Investor," New York: Columbia University Press, p. 176.

Publications

Publications below are available upon request.

Selected publications

IR&M's risk management research consists of 15-25 risk management updates, 25-50 flash updates, 45-50 momentum monitors and around 2-4 thematic reports per year. A pitch-book-style introduction can be found here.

IR&M publications	Frequency per year	Page count
Risk management update	15-25	60-100
Flash update	25-50	1-25
Earnings momentum monitor	25-40	3
Price momentum monitor	45-50	7
Special report	2-4	20-80

Recent updates	
Cross currents	18-Jun-20
Learning by doing	28-May-20
Perfect time to do outrageous things	08-May-20
Bazooka returns	17-Apr-20
Whatever it takes moments	26-Mar-20
Overestimating the shock	05-Mar-20
Overdone rally	20-Feb-20
Saving Earth	30-Jan-20
What are you doing wrong?	09-Jan-20
New decade to commence	19-Dec-19
Simply unsustainable	28-Nov-19
Mad world	14-Nov-19
There is some risk out there	17-Oct-19
No sense	20-Sep-19
Stealth expropriation galore	22-Aug-19
Better safe than sorry	26-Jul-19
Explosive drama	04-Jul-19
Confidence with downside risk	14-Jun-19
Getting bubbly	24-May-19
Momentary policy inertia	03-May-19
Appropriately timed monetary help	10-Apr-19
Pervasive undertainty	14-Mar-19
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Early indicators continue to deteriorate (inaugural update)	05-Aug-11

Recent reports	
Earnings momentum	13-Dec-19
At the edge of chaos	01-Nov-19
2018 Roundup	21-Dec-18
Freedom, rough patches and the five Bs	19-Sep-18
Regime testing	09-May-18
Checklists	12-Dec-17
Peaks	25-Jul-17
Bubblecoveries and lie watching	10-Mar-17
Winter is coming	12-Oct-16
Negative outliers	24-Jun-16
Sector rankings	04-Jan-16
IR&M earnings momentum monitor (inaugural report)	14-Dec-15
Going in cycles	14-Oct-15
Sector momentum	25-Jun-15
Nowcasting and financial wizardry	13-Jan-15
The 4% rule applied	26-Sep-14
Economic World Cup 2014	06-Jun-14
Sleeper pins	11-Apr-14
Walking a tightrope	06-Nov-13
Change spotting	19-Sep-13
Highly accommodative	17-Jul-13
IR&M momentum monitor (inaugural issue and tutorial)	03-May-13
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Europe doubling down (inaugural report)	03-Oct-11

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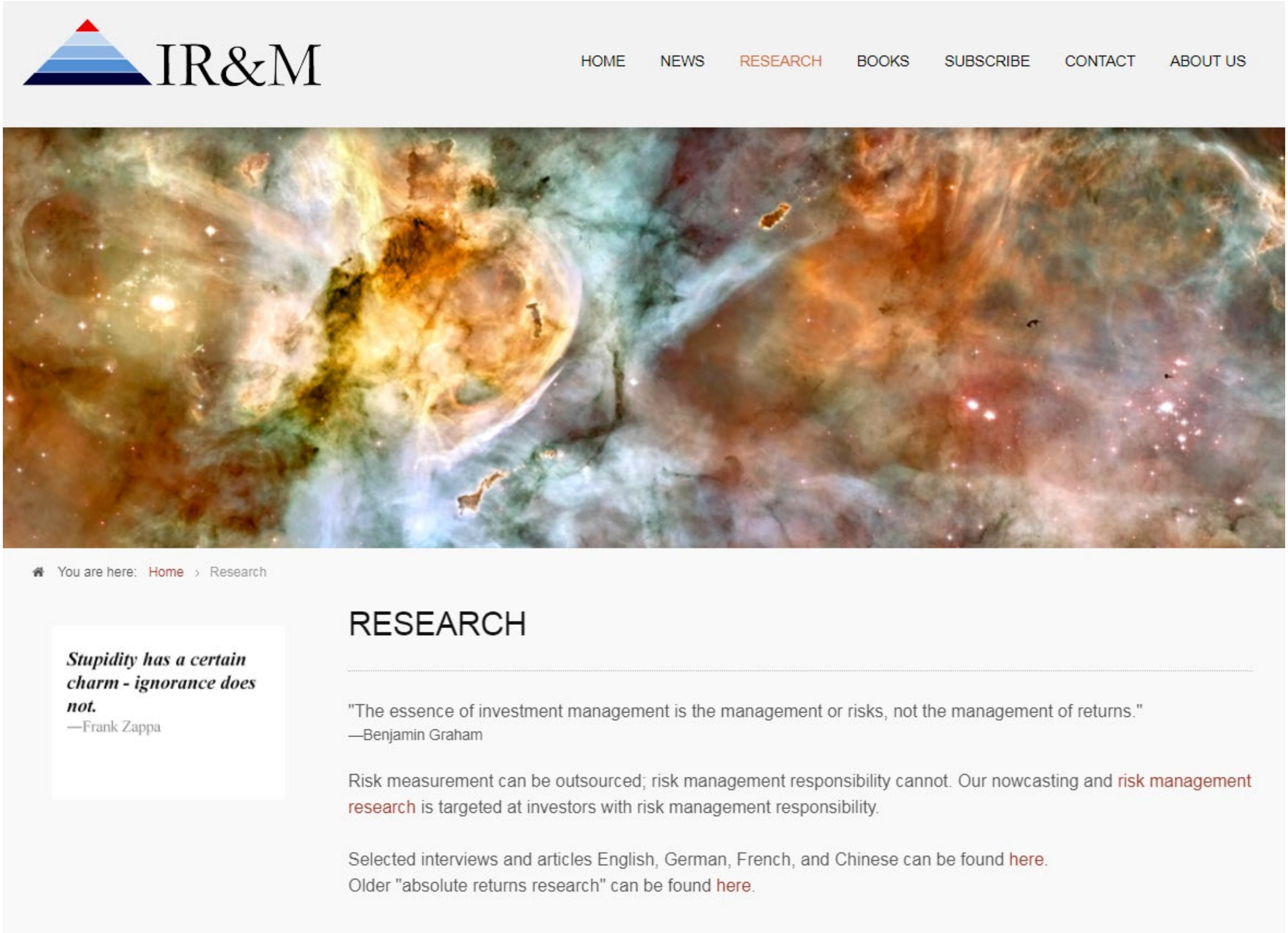
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