

Strategy Matters Time for Value

- One of the most enduring features of the post-GFC period has been the secular outperformance of Growth vs. Value. There have been rotations, but these have generally been short-lived.
- The drivers of this long-term trend are well understood low rates, low inflation and low economic growth.
- We think these drivers for the most part remain in place; the secular trends still favour growth or growth-defensive stocks (such as the GRANOLAS).
- But, in the next few months we expect some policy and economic shifts that support a temporary rotation; and these rotations can be quite large.
- There have been 15 into Cyclicals and out of Defensives since the GFC, lasting on average 4 months and delivering 15% outperformance for Cyclicals. Value stocks also outperform during these shifts - albeit by less.
- These rotations occur when BYs are rising (which GS expects) and when growth is improving (which GS expects).
- While highly uncertain, our economists expect that the FDA will approve at least one vaccine this year and that large shares of the US and European populations will be vaccinated by the end of Q2-2021 and Q3-2021, respectively.
- A 'Blue wave' outcome in the US election and a rise in fiscal spend would also be supportive.
- Finally, while not a catalyst, we also factor in the extreme valuation discount of Value.
- Given this, we upgrade Banks and Autos to OW, downgrade Tech to Neutral and downgrade Food/Bev/Tobacco to UW.
- We also move to a Long on our Recovery basket (GSSTRCOV) and this joins a long on Fiscal Infrastructure (GSSTFISC).

Peter Oppenheimer

+44(20)7552-5782 peter.oppenheimer@gs.com Goldman Sachs International

Sharon Bell, CFA +44(20)7552-1341 | sharon.bell@gs.com Goldman Sachs International

Guillaume Jaisson

+44(20)7552-3000 guillaume.jaisson@gs.com Goldman Sachs International

Lilia Peytavin

+44(20)7774-8340 lilia.peytavin@gs.com Goldman Sachs International

Andrea Ferrario

+44(20)7552-4353 andrea.ferrario@gs.com Goldman Sachs International

The secular Growth outperformance

One of the most enduring features of the post financial crisis period has been the secular outperformance of Growth versus Value (Exhibit 1).

Exhibit 1: Growth has outperformed since the GFC

Relative price performance in local currency



Source: Datastream, Goldman Sachs Global Investment Research

There are three major reasons why this has occurred, in our view:

- 1. The secular decline in bond yields and inflation expectations has boosted the value of longer-duration Growth companies (while hitting Value companies most at risk of deflation).
- **2.** A secular decline in long-term growth expectations, together with greater uncertainty about growth.
- 3. The bifurcation of industry returns, with impressive growth in the returns of the Technology sector and, at the same time, a secular decline in returns in sectors such as Banks and Oil.

1. The decline in bond yields

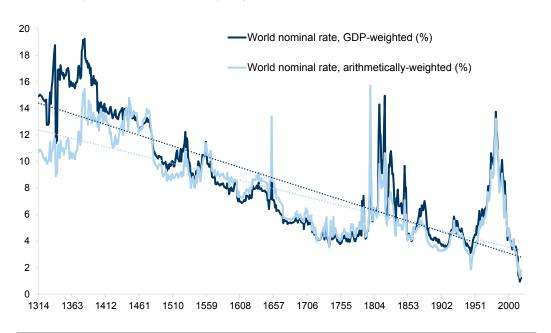
The secular decline in bonds yields globally started at the peak of inflation in the 1980s and has resulted in remarkable returns in bond markets ever since then. However, it is the declines since the start of this century, in the aftermath of the technology bubble, and even more so after the financial crisis of 2008, that have had the most dramatic impact on factor leadership within equities.

It is hard to imagine now, but on the eve of the financial crisis in 2008, 10-year Treasury yields and Bund yields were around 4%. Many people at the time thought that these yields were too low. But since then they have collapsed, with Bund yields reaching a low

of -0.9% and 25% of global debt having a negative yield.

As Exhibit 2 shows, this has resulted in global bond yields falling to their lowest levels in history (back to the 1300s).

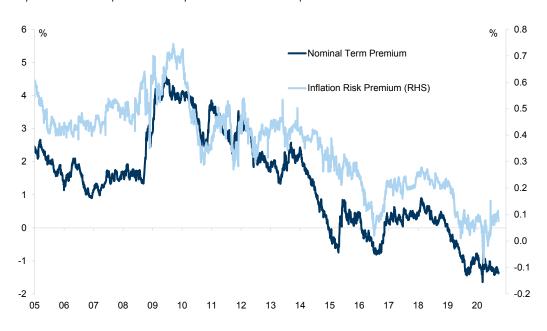
Exhibit 2: The decline in nominal interest rates has been a long-term trend Nominal bond yields, GDP- and arithmetically-weighted, 1314-2018



Source: Bank of England

Most crucially, the falls in bond yields over the past decade have reflected a collapse in term premia.

Exhibit 3: Term and inflation risk premia have gradually declined since the GFC 10y EUR inflation risk premium and 10y Euro area nominal term premium



Source: Goldman Sachs Global Investment Research

2. The decline in growth expectations

Long-term growth expectations have deteriorated since the financial crisis both for trend GDP growth and for long-term profit growth. Exhibit 4 shows the long slowdown in consensus real GDP growth 6-10 years forward in all major regions. With lower inflation, revenue growth has also slowed materially in the US and Europe, and has approached the kind of growth rates that Japan has experienced over the past couple of decades (Exhibit 5). Slower growth means that companies that are perceived to be able to achieve growth are considered more valuable, and all the more so given the collapse in the risk free rate.

Exhibit 4: Long-term real global GDP growth forecast is at a historical low

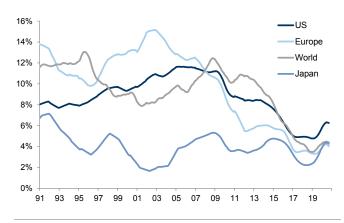
Long-term (6-10y) GDP growth from Consensus Economics



Source: Consensus Economics, Goldman Sachs Global Investment Research

Exhibit 5: Top-line growth has been falling along with declining nominal GDP

yoy sales growth (10y rolling average), Market ex Financials

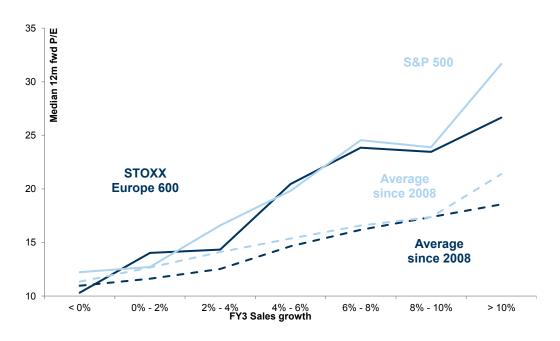


Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

Exhibit 6 shows the P/E of US and European companies in different bands of expected future sales growth. While this tends to be upward sloping (investors are prepared to pay more for higher growth), it has become steeper now than we have tended to see on average in the past. Investors are paying more now for higher expected growth, especially safe top-line growth. The scarcity of growth means that investors are prepared to pay a big premium for stable secure growth in the few areas that offer it.

Exhibit 6: Investors are willing to pay a high growth scarcity premium

Median 12-month forward consensus P/E by consensus sales growth bands (FY3 estimates)

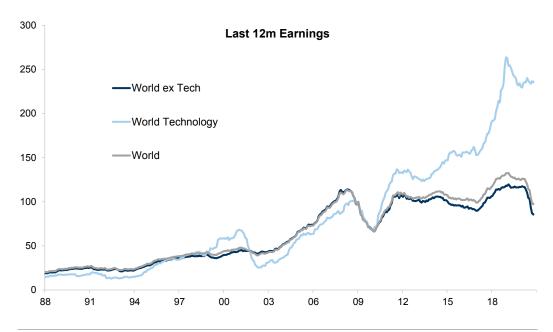


Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

3. The success of Technology

The other major development of the past 12 years has been the remarkable success of the Technology industry in driving higher ROE and EPS. As <u>Exhibit 7</u> shows, the World ex Technology has achieved no progress in terms of EPS since the 2008 crisis.

Exhibit 7: Tech earnings have outstripped those of the global market 12m trailing EPS (USD) – Indexed to 100 on Jan-2009



Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

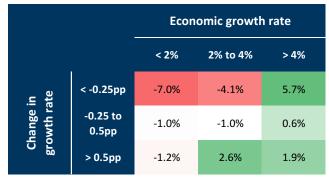
The drivers of change: Can we get a rotation?

Just as the three drivers above contributed to the extraordinary period of growth outperformance, they also have the power to reverse it. The two most important contributors to a reversal would be a rise in inflation expectations/bond yields and a rise in growth. The two typically move together.

Exhibit 8 shows the permutations under which Value tends to outperform Growth.

Exhibit 8: Value outperforms Growth when economic growth is high or accelerating

Median Value vs. Growth y/y return since 1990



Economic growth = STOXX 600 Sales-weighted CAI

Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 9: Cyclicals outperform Defensives when economic growth improves

Median Cyclicals vs. Defensives y/y return since 1990

		Economic growth rate							
		< 2%	2% to 4%	> 4%					
ate	< -0.25pp	-10.6%	-2.7%	6.8%					
Change in growth rate	-0.25 to 0.5pp	-4.3%	-1.8%	3.0%					
CP	> 0.5pp	-11.0%	1.3%	5.7%					

Economic growth = STOXX 600 Sales-weighted CAI

Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

Over the past 12 years, there have been several rotations of leadership into Value and Cyclicals (see <u>Exhibit 11</u>) but, as yet, none have lasted. They nearly all coincided with a rise in bond yields in the US (<u>Exhibit 10</u>). But bond yields did not sustain their increases and quickly reversed. Is this about to change?

Exhibit 10: These rallies into Cyclicals generally coincide with higher bond yields and better growth CAI: Current Activity Indicator

	Rallies in Europe Cyclicals vs. Defensives										
Start Date	End Date	US 10y BY (bp. change)	German 10y BY (bp. change)	US CAI (pp. change)	Euro Area CAI (pp. change)						
21-Jan-08	08-May-08	16	17	-0.3	-3.1						
20-Jan-09	11-Jun-09	152	68	9.4	9.8						
08-Jul-09	14-Oct-09	13	-6	0.8	1.2						
12-Feb-10	26-Apr-10	11	-15	2.8	1.7						
25-Aug-10	14-Feb-11	108	116	1.4	2.0						
04-Oct-11	27-Oct-11	61	45	0.0	0.0						
23-Nov-11	20-Feb-12	16	-7	1.3	0.1						
23-Jul-12	14-Jan-13	42	39	1.4	0.4						
18-Apr-13	15-Jan-14	120	59	0.6	1.5						
02-Feb-16	18-Mar-16	1	-10	0.6	-0.1						
07-Jul-16	25-Jan-17	114	57	1.9	0.9						
06-Jun-17	21-Feb-18	80	42	1.6	-0.9						
03-Jan-19	22-Apr-19	4	-13	-0.2	-0.2						
03-Sep-19	07-Nov-19	46	47	0.1	0.0						
19-Mar-20	28-Aug-20	-41	-28	46.8	45.1						
25-Sep-20	13-Oct-20	7	-3	-	-						
Aver	age	49.4	27.4	4.6	3.9						
Мес	lian	42.4	39.0	1.3	0.4						
Si	D	54.6	40.1	11.9	11.7						
Positive	Positive change		9/15	12/15	9/15						

Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 11: There have been 15 rallies into Cyclicals (vs. Defensives) of 7% or more since the GFC

Rallies in Europe Cyclicals vs. Defensives										
Start Date	End Date	Length Cyclicals vs. (months) Defensives		STOXX 600	Value vs. Growth	Financials vs. Staples	Banks			
21-Jan-08	08-May-08	4	14%	7%	-2%	4%	7%			
20-Jan-09	11-Jun-09	5	35%	16%	10%	31%	65%			
08-Jul-09	14-Oct-09	3	14%	25%	10%	21%	40%			
12-Feb-10	26-Apr-10	2	9%	12%	-1%	4%	15%			
25-Aug-10	14-Feb-11	6	12%	17%	-1%	5%	6%			
04-Oct-11	27-Oct-11	1	12%	15%	1%	10%	19%			
23-Nov-11	20-Feb-12	3	15%	22%	0%	15%	38%			
23-Jul-12	14-Jan-13	6	15%	14%	9%	25%	45%			
18-Apr-13	15-Jan-14	9	12%	18%	7%	25%	33%			
02-Feb-16	18-Mar-16	1	7%	2%	4%	5%	4%			
07-Jul-16	25-Jan-17	7	30%	14%	15%	37%	51%			
06-Jun-17	21-Feb-18	9	15%	-2%	2%	18%	4%			
03-Jan-19	22-Apr-19	4	10%	17%	-3%	1%	15%			
03-Sep-19	07-Nov-19	2	10%	7%	6%	18%	18%			
19-Mar-20	28-Aug-20	5	20%	28%	-3%	14%	11%			
25-Sep-20	13-Oct-20	-	2%	4%	0%	2%	7%			
Aver	rage	4	15%	14%	4%	16%	25%			
Мес	dian	4	14%	15%	2%	15%	18%			
S	D	2	8%	8%	6%	11%	19%			
Positive	change	-	15/15	14/15	10/15	15/15	15/15			

Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

Just as the rotations nearly always occur when the market rises, they are nearly always associated with all factors rising in absolute terms. It is unusual for the outperformance

of Cyclicals and/or Value to be associated with Growth or Defensive sectors falling; they just tend to underperform (<u>Exhibit 12</u>).

Exhibit 12: The market rose in 14 of the past 15 Cyclical rallies

Absolute price performance of styles

Rallies in Europe Cyclicals vs. Defensives										
Start Date	End Date	Length (months)	Cyclicals vs. Defensives	STOXX 600	Cyclicals	Defensives	Value	Growth		
21-Jan-08	08-May-08	4	14%	7%	13%	-1%	5%	8%		
20-Jan-09	11-Jun-09	5	35%	16%	34%	-1%	21%	10%		
08-Jul-09	14-Oct-09	3	14%	25%	33%	17%	30%	19%		
12-Feb-10	26-Apr-10	2	9%	12%	16%	7%	11%	12%		
25-Aug-10	14-Feb-11	6	12%	17%	23%	10%	16%	17%		
04-Oct-11	27-Oct-11	1	12%	15%	19%	6%	15%	14%		
23-Nov-11	20-Feb-12	3	15%	22%	29%	12%	21%	21%		
23-Jul-12	14-Jan-13	6	15%	14%	24%	8%	18%	8%		
18-Apr-13	15-Jan-14	9	12%	18%	27%	13%	21%	13%		
02-Feb-16	18-Mar-16	1	7%	2%	5%	-2%	5%	0%		
07-Jul-16	25-Jan-17	7	30%	14%	28%	-2%	22%	6%		
06-Jun-17	21-Feb-18	9	15%	-2%	5%	-8%	-1%	-3%		
03-Jan-19	22-Apr-19	4	10%	17%	22%	11%	14%	18%		
03-Sep-19	07-Nov-19	2	10%	7%	11%	1%	11%	4%		
19-Mar-20	28-Aug-20	5	20%	28%	41%	17%	24%	28%		
25-Sep-20	13-Oct-20	-	2%	4%	6%	3%	4%	4%		
Aver	age	4	15%	14%	22%	6%	16%	12%		
Мес	dian	4	14%	15%	23%	7%	16%	12%		
S	D	2	8%	8%	11%	8%	8%	8%		
Positive	change	-	15/15	14/15	15/15	10/15	14/15	14/15		

Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

The new policy mix

In <u>Inflation Implementation: How to position for a rise in expectations</u>, September 30, 2020, we argued that some of these macro dynamics are on the brink of change. In the period after the financial crisis, the emergence of QE (then widely described as "unconventional" monetary policy, but now commonly viewed as part of the permanent monetary toolkit) led many people to worry about inflation, including the ECB. Nevertheless, while the general policy mix in the aftermath of the financial crisis was to offset monetary easing with fiscal tightening, if not austerity, in this crisis governments have borrowed very large sums of money. This new approach to economic policy, involving ultra-low interest rates and forward guidance together with massive fiscal easing, is more likely to have an impact on inflation expectations.

According to our economists, a 'blue sweep' in the US election would likely result in a further fiscal package of around \$2.2trn. They estimate that the output gap in 2021-22 would be 2-2.5pp lower with unified Democratic control relative to the current baseline, and that this could bring forward the timing of a 'lift-off' in rates in the US by up to two years – see <u>A Blue Wave Through the Fed's Eyes</u>, September 21, 2020.

In this scenario, the combination of a growth boost from higher expenditures, a potential Covid-19 vaccine and an easy monetary stance would all lead to a larger drop in unemployment, but it would also likely lead to a wider dispersion and a positive skew

to analysts' forward-looking estimates of growth and inflation outcomes (relative to a divided government scenario). Our Rates Strategists' fundamentals-based term premium model suggests that the changes on net would lead to upward pressure on bond risk premia, in the order of about 30bp. The supply implications of higher budget deficits are would also likely weigh on Treasuries – see <u>US yields could trend higher post-election</u>, September 23, 2020.

Our Rates Strategists argue that a Democratic sweep would lead to a material <u>sell-off in US bonds</u>, while a divided government would imply a more modest move. The sell-off would largely reflect the possibility of substantially higher spending. In this case, our Rates team expect a cumulative 30-40bp increase in US 10yr yields over the subsequent month.

Exhibit 13: If bond yields rise, this would support Value stocks in Europe

Orange line: GIR Economics forecast



Exhibit 14: Bond yields tend to rise when Cyclicals outperform Defensives



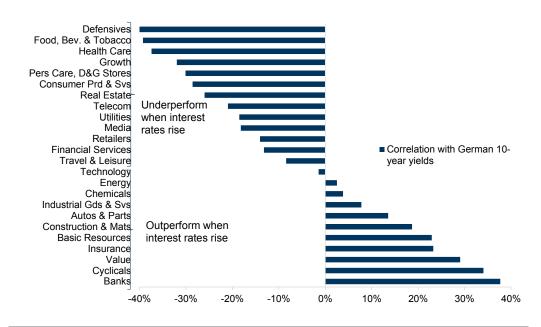
Source: Datastream, Goldman Sachs Global Investment Research

Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

Large moves in US yields would likely spill over into most other sovereign bonds—our Rates Strategists estimate by as much as 70% for UK and German yields. We show European sector correlations to yields in <u>Exhibit 15</u>: Food, Beverages & Tobacco and other Defensives, as well as Consumer Staples, would likely suffer if yield curves steepen, whereas Banks, Value and Cyclicals would likely gain.

Exhibit 15: Growth and Defensive sectors are the most negatively correlated with bond yields, while Cyclicals and Value are the most positively correlated

Correlations since 2007 based on weekly performance vs. SXXP in EUR



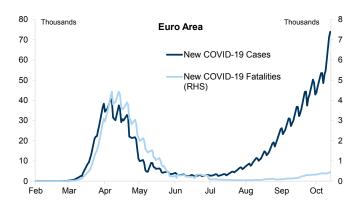
Source: Datastream, Goldman Sachs Global Investment Research

What if a vaccine is approved?

New Covid cases have risen sharply in recent weeks, with daily infections surpassing their mid-April peaks. Governments have therefore paused the reopening of their economies and, in some places, adopted renewed containment measures (<u>Exhibit 16</u>).

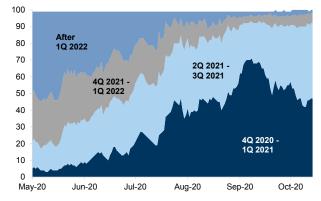
While highly uncertain, our economists assume in their forecasts that the FDA will approve at least one vaccine this year, and that large shares of the US and European populations will be vaccinated by the end of Q2-2021 and Q3-2021, respectively (Exhibit 17). We maintain our constructive view on the economy and still expect the Euro area economy to return to its pre-Covid level in Q4-2021. Our Global Economics Team estimates that a vaccine would boost US growth by 3% and Europe by 2%.

Exhibit 16: New Covid cases have risen sharply in recent weeks 7-day moving average



Source: Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 17: Vaccine optimism has risen in recent months When will enough doses of FDA-approved COVID-19 vaccine(s) to inoculate 25 million people be distributed in the US? (Superforecaster probabilities)



Source: The Good Judgement Project, Goldman Sachs Global Investment Research

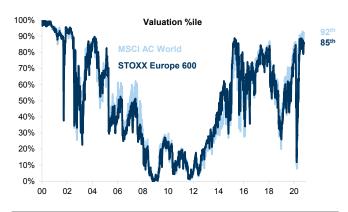
Our conversations with clients suggest that this is relatively well priced by the market as a whole. The recovery of global equities from the trough has been the fastest in history. European equities trade on their 85th percentiles compared with history – on a 24m fwd Consensus P/E basis (Exhibit 18).

While there might be less potential for strong index level returns from here, we think there is still potential for a material rotation below the market surface. If the market is really pricing an early vaccine and a quick recovery, then we believe it is pricing it in the wrong slices of the market. Indeed, with an early vaccine, we would expect some reversal of the trades that worked well during the coronacrisis, but the companies that have done well year-to-date are still holding up well relative to the market. In Exhibit 19, we show that our Digital Economy (GSSBDIGI) and 'Stay-at-Home' (GSXESTAY) baskets are not underperforming, and in the meantime the heavily hit Airlines (GSSBTRAA) and Hospitality & Leisure (GSSBHOLR) baskets have not recovered. We find a similar pattern in the US.

Goldman Sachs Strategy Matters

Exhibit 18: European equities trade on their 85th percentiles compared with history

24m fwd P/E percentile vs. history



Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

Exhibit 19: Below the market surface, there is space for a rotation Europe - YTD performance



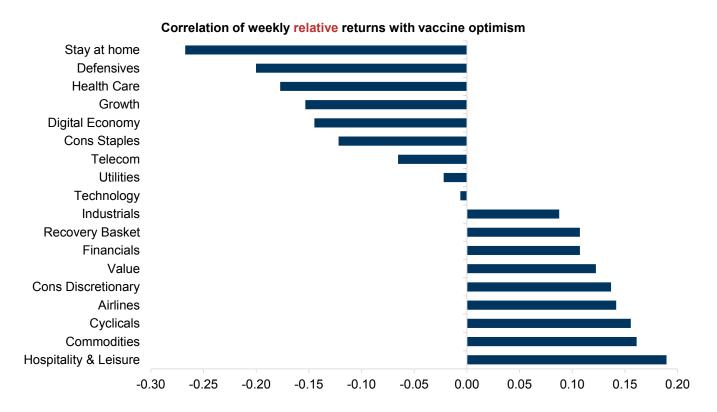
Stay-at-home: GSXESTAY; Digital Economy: GSSBDIGI; STOXX 600: SXXP; Recovery: GSSTRCOV; Airlines: GSSBTRAA; Hospitality & Leisure: GSSBHOLR

Source: Bloomberg, Goldman Sachs Global Investment Research

The correlation of equity returns with the prospects for a vaccine suggest that *Value* and *Cyclicals* should outperform *Growth* and *Defensives* in Europe if one is approved. In terms of sectors, Energy, Consumer Discretionary and Financials should outperform Healthcare, Consumer Staples and Technology (Exhibit 20)

Exhibit 20: Value and Cyclicals relative returns are positively correlated with vaccine optimism

Correlation of weekly changes in vaccine optimism with the weekly performance vs. STOXX 600 (since May-2020)



Stay-at-home: GSXESTAY; Digital Economy: GSSBDIGI; Recovery: GSSTRCOV; Airlines: GSSBTRAA; Hospitality & Leisure: GSSBHOLR

Source: The Good Judgement Project, Datastream, Goldman Sachs Global Investment Research

Indeed, a medical solution should accelerate the path to economic normalisation, which we believe would lift the earnings and prices of the most cyclical slices of the market. This potential improvement in economic growth should boost inflation and increase longer-term rates. This would penalise *Growth* stocks, which are long-duration assets (i.e., we pay today for strong future cash flows). *Value* stocks have the shortest duration, so they should outperform as the discount rates rise.

Lastly, one could expect the vaccine to be an absolute positive for the entire economy; however, we find that our Digital Economy basket (<u>GSSBDIGI</u>) and the Stay-at-Home basket (<u>GSXESTAY</u>) exhibit negative correlations of *absolute* returns with the prospects for a vaccine.

Our Recovery basket (GSSTRCOV) is a relatively well-diversified way to invest on an early vaccine boost.

Growth is key

The improvement in growth is key. Assuming a) there is a positive vaccine announcement and b) there is a 'thin' free trade deal between the UK and the EU agreed by mid-November, then we would expect 6.7% Euro area GDP growth in 2021 and 8% UK growth. Of course, both are from a very low base.

We find that the recent moves in Cyclicals versus Defensives are slightly under-pricing the improvements in the data, although the difference is not extreme (<u>Exhibit 21</u>). The big difference is for Value areas of the market, where these stocks have failed to rally despite the improvement in economic growth from the lows (<u>Exhibit 22</u>).

Exhibit 21: Cyclicals are slightly under-pricing the improvements in the data \dots

Sales-weighted Manufacturing PMI



Source: Datastream, Worldscope, Haver Analytics, Goldman Sachs Global Investment Research

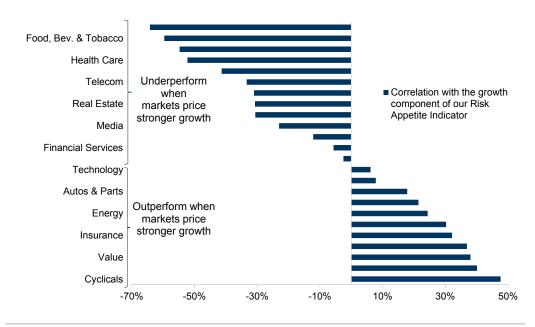
Exhibit 22: ... but the gap is wider for Value Sales-weighted Manufacturing PMI



Source: Datastream, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 23: Growth and Defensive sectors are the most negatively correlated with growth, while Cyclicals and Value are the most positively correlated

Correlations since 2007 based on weekly performance vs. SXXP in EUR

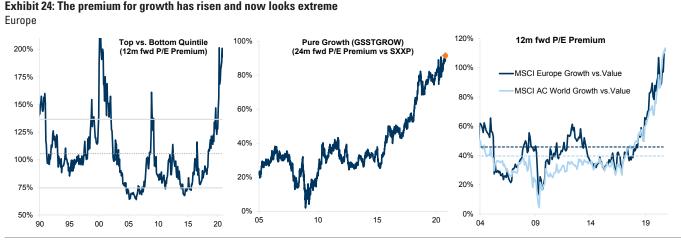


Source: Datastream, Goldman Sachs Global Investment Research

Valuation and positioning – Extreme but a catalyst is needed to see a shift

The premium for Growth companies has become more extreme than at almost any time in the past. We calculate the rating of the highest quintile of companies versus the lowest by P/E. The premium for the top quintile is around 190% (Exhibit 24).

The premium for our High Sales Growth basket (GSSTGROW) versus the market is 90%, close to an all-time high. Looking at MSCI Growth versus Value alone shows that the gap between the two has reached an extreme.

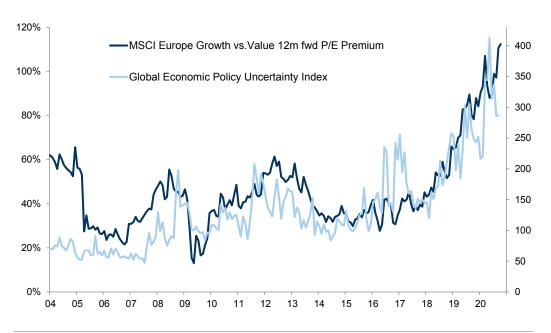


Source: FactSet, Datastream, Worldscope, Goldman Sachs Global Investment Research

The spread in valuation between MSCI Growth and Value has moved in tandem with policy uncertainty (<u>Exhibit 25</u>) – likely a reflection of the uncertainties driven by high global debt levels (especially for governments), low rates and a weak output level. That

said, the spread has continued to rise even as uncertainty has faded slightly.

Exhibit 25: The premium for Growth companies is a function of high policy uncertainty



Source: FactSet, Haver Analytics, Goldman Sachs Global Investment Research

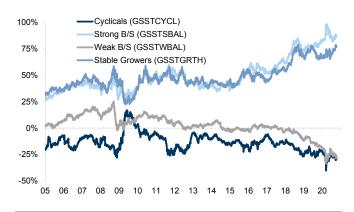
We think that for valuation differentials to narrow we would need to see a shift in uncertainty and rates. This is something we expect to happen in the next few months.

That said, more medium/longer term, we think that rates will stay relatively low. The low levels of underlying inflation and the pressures on governments from high debt burdens militate against a sustained large rise in yields. Given this, we do not expect anything more than a short-lived rotation that lasts a few months, rather than a change in the secular trend.

In terms of positioning, flows into Value funds in Europe have been very negative in recent years; the last pick-up in flows was in late 2016, which coincided with the reflation rally back then.

Exhibit 26: Valuation gap between Quality companies and non-Quality stocks is high

24m fwd Premium(Discount) vs. STOXX Europe 600



Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 27: Substantial outflows from Value-style funds; the last time we saw inflows was 2016/17

Cumulative flows into style European equity funds, USD bn



Source: EPFR, Goldman Sachs Global Investment Research

Recommendations – Upgrade Banks, Downgrade Tech

We make four sector changes: we upgrade Banks and Autos to Overweight (both from Neutral), and we downgrade Tech to Neutral and Food, Beverages & Tobacco to UW (from Neutral).

We also take off our long-held Long view on our Digital Economy basket (GSSBDIGI). We add a Long recommendation on our Recovery (GSSTRCOV) basket vs. SXXP. This joins our Fiscal Infrastructure spending basket (GSSTFISC), which we continue to recommend.

Exhibit 28: Our sector recommendations

Strategy	Strategy Sector and Subsector Recommendations										
Overweight	Neutral	Underweight									
↑ Autos and Parts (SXAP)	Chemicals (SX4P)	↓ Food, Bev and Tob (S600FOP)									
↑ Banks (SX7P)	Financial Svs (SXFP)	Pers. Care, Drug and									
Basic Resources (SXPP)	Industrial G&S (SXNP)	Grocery Stores (S600PDP)									
Construct. and Mat. (SXOP)	Insurance (SXIP)	Retailers (SXRP)									
Consumer Prods and	Media (SXMP)	Telecoms (SXKP)									
Services (S600CPP)	Real Estate (SX86P)	Utilities - Regulated									
Energy (S600ENP)	↓ Technology (SX8P)	(GSSBUTRE)									
Healthcare (SXDP)	Travel and Leisure (SXTP)										
Civil Aerospace (GSSBCIVA)	Utilities (SX6P)										
Luxury Goods (GSSBLUXG)											
Renewables (GSSBRNEW)											

Trade Recommendation

Fiscal infrastructure (GSSTFISC) vs. STOXX Europe 600 Recovery (GSSTRCOV) vs. STOXX Europe 600 DAX vs. STOXX Europe 600

Source: Goldman Sachs Global Investment Research

We downgrade **Food, beverages and tobacco** purely as a function of the sector's sensitivity to some of the macro changes we expect: rising rates and an improvement in growth. As we show above, the sector is the most negatively correlated to rises in bond

yields.

We downgrade **Technology** to reflect our expectation of a near-term bounce in Value. The sector trades on a 24-month forward Consensus P/E of 23.5x at a 60% premium to the market, versus a 5-year average premium of 30%. However, we retain a Neutral as we continue to believe that in a low nominal growth world the market will continue to pay a premium for reliable top-line and bottom-line growth, and this sector is one of the few in Europe to deliver that. Indeed, the CAGR of EPS 2019-2021 is expected by consensus to be 9% – far higher than any other sector.

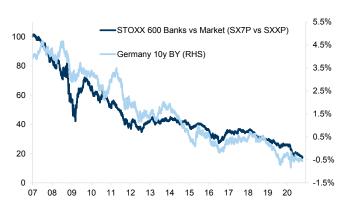
We upgrade **Banks** to OW. This is the most sensitive sector to rates and growth and, despite low underlying returns in recent years, we think it offers exceptional value. The 24-month forward dividend yield is over 7%. And while regulation prevents the payment of dividends currently, our Equity analysts expect this to change - see <u>Dividends: From "permission" to "ability" to distribute</u>, October 1, 2020.

Based purely on stock price data (not earnings or company fundamentals), we find (using weekly changes since 2007):

- A +100bp rise in the German 10yr bond yield implies a +19% rise in Banks share price (+10% against STOXX 600).
- A +100bp rise in the US 10yr Treasury yield implies a +15% rise in Banks share price (+7% against STOXX 600).

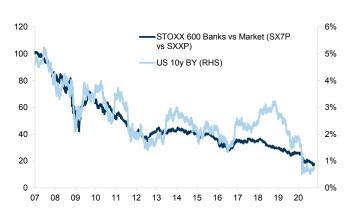
Exhibit 29: Falling German Bund yields have weighed on Banks equities

Relative total return. Indexed in 2007



Source: Datastream, Goldman Sachs Global Investment Research

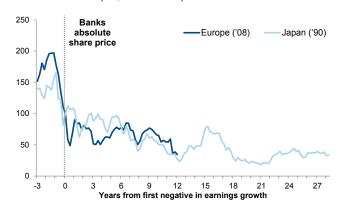
Exhibit 30: Bond yields have also fallen in the US Relative total return. Indexed in 2007



Source: Datastream, Goldman Sachs Global Investment Besearch

Exhibit 31: Japanese Banks' underperformance was sustained post the 1990s bubble, like that of European banks post 2008

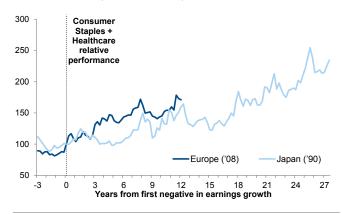
Time 0 = 4Q 1990 Japan, 3Q 2008 Europe



Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

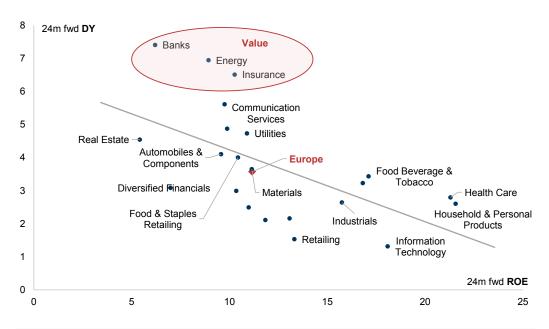
Exhibit 32: 'Growth defensives' outperformed in Japan post the 1990s bubble and in Europe post 2008

Time 0 = 40 1990 Japan, 30 2008 Europe



Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

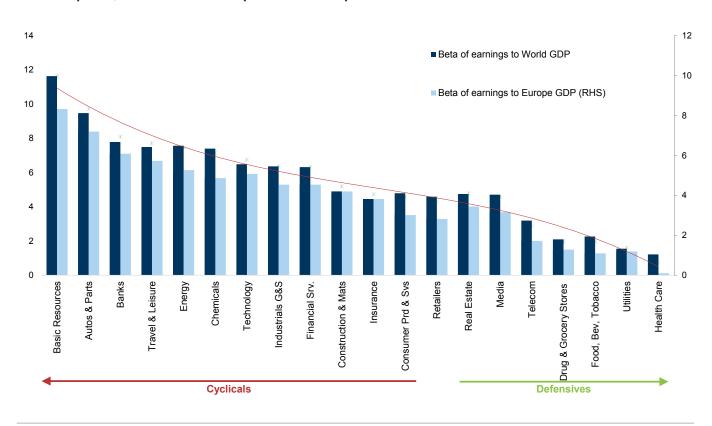
Exhibit 33: Value sectors look attractive on a dividend yield basis MSCI indices



Source: FactSet, Goldman Sachs Global Investment Research

We also upgrade **Autos** to an Overweight, also because it is one of the most sensitive sectors to economic growth (<u>Exhibit 34</u>), along with Basic Resources (where we remain OW).

Exhibit 34: Cyclicals/Defensives: The sensitivity to economic activity



Source: Datastream, Goldman Sachs Global Investment Research

Baskets: Long Fiscal infrastructure and Recovery

We reiterate our long recommendation on our Fiscal Infrastructure basket (GSSTFISC).

GSSTFISC includes companies from Europe ex-UK that generate more than 30% of their revenue in Europe and are in sectors that governments have specifically targeted for investment and/or our economists expect to be targeted:

- Renewable energy/infrastructure.
- Construction & Materials: Beneficiaries of investments in public infrastructure.
- Industrial machinery, railroad equipment, electrical components again beneficiaries of public infrastructure, housing and rail infrastructure (Germany is subsiding rail travel and recently announced spending measures on public transport).
- **Technology** stocks which already have some sales exposure to governments, given the need to "future proof" to meet technological changes (this is something the Dutch and German governments have emphasised).
- **Defence** these companies tend to be areas of high government spending.

Our Fiscal Infrastructure basket (GSSTFISC) has historically traded relatively closely with our Renewables (GSSBRNEW) and Capex Beneficiaries (GSSTCAPX) baskets. Looking at the correlation with different factors, our GSSTFISC basket is correlated with cyclical

companies and has a bias towards Industrials and Germany. Given that Germany has, in our view, most scope for additional fiscal spending, we are happy with this sensitivity.

Exhibit 35: Our Fiscal Infrastructure spending basket (GSSTFISC) trades in line with the market

24m fwd P/E Premium(Discount) vs. STOXX Europe 600

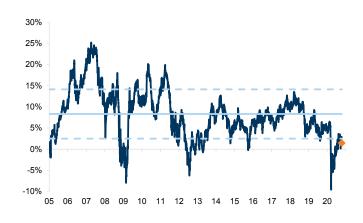
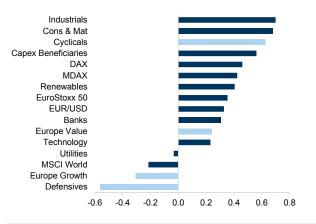


Exhibit 36: Fiscal infrastructure (GSSTFISC) is most highly correlated with industrials, capex and German indices
Correlation of w/w relative returns of our GSSTFISC with different slices of the market (3y)



Source: FactSet, Goldman Sachs Global Investment Research

Source: Bloomberg, Goldman Sachs Global Investment Research

We initiate a Long recommendation on our Recovery basket (GSSTRCOV).

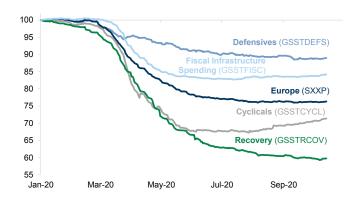
We think our Recovery basket (<u>GSSTRCOV</u>) is a relatively well-diversified way to invest on an early vaccine boost. We discuss this in our <u>Strategy Matters: Bear Essentials: Europe Q&A</u>, March 26, 2020. This basket is based on the following criteria:

- High operating leverage: 20-year degree of operating leverage (ratio of EBIT growth to sales growth) > sector median and market median.
- High financial leverage, i.e., weak balance sheets: FY0 Altman z score < sector median and market median. (For a definition and discussion of the Altman z score see here.)
- Value companies: P/E < sector median and market median.

These companies should be most levered to better economic growth. Our Recovery basket continues to look cheap – it trades at over a 30% discount to SXXP based on 24-month forward Consensus EPS (Exhibit 37 and Exhibit 38).

Exhibit 37: The EPS of our Recovery basket have been the most impacted by the Coronacrisis

2021E EPS. Indexed in January 2020



Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 38: Recovery basket (GSSTRCOV)

24m fwd P/E Premium(Discount) vs. STOXX Europe 600

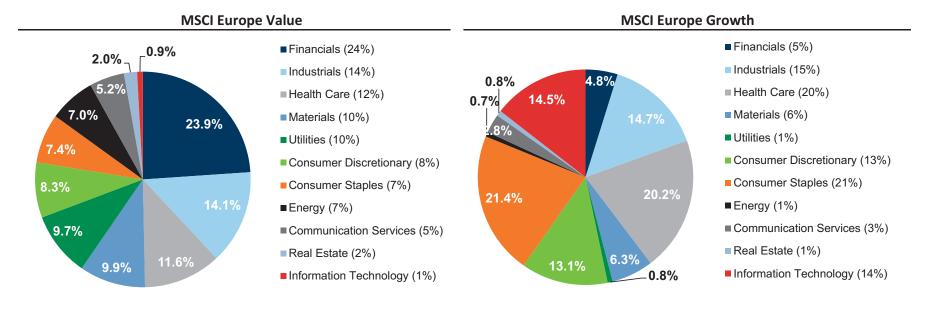


Source: FactSet, Goldman Sachs Global Investment Research

Appendix

Exhibit 39: Sector breakdown of MSCI Europe Value and Growth indices

GICS Level1 classification



Source: MSCI, Datastream, Goldman Sachs Global Investment Research

Exhibit 40: Recovery basket (GSSTRCOV)

Recovery (GSSTRCOV)													
Company Name	Basket weight	Market Cap (EUR Bn)	P/E 12m fwd	Altman z-score FY0	DOL 20y med.	P/E 2021	Company Name	Basket weight	Market Cap (EUR Bn)	P/E 12m fwd	Altman z-score FY0	DOL 20y med.	P/E 2021
Automobiles & Parts	4%						Prysmian	2%	7.1	19.7	1.7	2.4	18.0
Volkswagen Pref.	2%	28.6	7.7	1.0	5.5	6.5	Metso Outotec Oyj	1%	5.3	14.1	3.6	2.7	14.0
Renault	2%	6.6	NM	0.4	6.2	12.8	Smith	2%	4.6	11.7	1.4	2.4	10.8
Basic Resources	4%						Rheinmetall	2%	3.3	13.7	1.9	2.7	10.3
Arcelormittal	2%	13.0	NM	1.4	2.4	11.3	Rexel	2%	3.3	11.6	1.9	2.2	10.6
Voestalpine	2%	4.2	NM	1.9	3.7	15.3	Valmet	2%	3.2	13.1	2.2	3.1	13.0
Chemicals	12%						Leonardo	2%	2.8	5.2	0.9	1.8	4.8
Basf	2%	49.9	17.7	2.2	4.1	16.1	Neles Oyj	1%	1.7	27.7	1.2	1.7	26.0
Evonik Industries	2%	10.9	14.1	1.7	3.6	13.3	Media	4%					
Solvay	2%	8.2	12.6	1.6	2.5	12.1	Wpp	2%	8.9	9.7	1.1	2.0	9.0
Arkema	2%	7.2	15.4	2.1	3.5	14.3	Eutelsat Communications	2%	1.9	6.8	1.0	1.6	6.9
Covestro	2%	8.1	25.3	2.1	6.9	19.9	Oil & Gas	6%					
Lanxess	2%	4.4	13.8	1.6	2.5	13.5	Repsol Ypf	2%	10.0	8.1	1.3	1.6	7.2
Construction & Materials	6%						Aker Bp	2%	5.0	13.6	0.7	1.7	13.9
Heidelbergcement	2%	11.0	9.5	1.3	2.1	8.7	Sbm Offshore	2%	2.8	11.1	1.2	2.0	11.1
Eiffage	2%	7.1	11.1	0.9	3.3	9.8	Personal & Household Goods	4%					
Acs Activ.Constr.Y Serv.	2%	7.3	9.4	1.3	1.6	9.1	British American Tobacco	2%	68.9	7.9	1.6	1.4	7.6
Food & Beverage	4%						Electrolux B	2%	6.0	17.3	1.8	5.5	15.5
Anheuser-Busch Inbev	2%	83.7	19.9	0.9	1.9	18.7	Retail	2%					
Coca-Cola Hbc	2%	7.8	16.8	1.7	2.4	15.7	Dufry 'R'	2%	2.4	NM	0.7	2.3	NM
Health Care	4%						Technology	8%					
Glaxosmithkline	2%	79.9	12.2	1.5	2.1	12.2	Nokia	2%	19.4	12.3	1.2	2.3	11.9
Bayer	2%	44.0	6.6	1.2	1.6	6.5	Atos	2%	7.8	9.5	1.6	2.8	9.3
Industrial Goods & Services	32%						Ams	2%	5.9	25.3	1.4	2.6	14.4
Airbus	2%	49.9	27.9	0.8	3.3	23.0	Ses Fdr	2%	2.5	19.3	0.5	1.4	13.9
Deutsche Post	2%	51.4	16.8	2.0	1.5	16.2	Telecommunications	2%					
Volvo B	2%	27.7	17.1	2.0	2.8	15.5	Orange	2%	25.9	9.0	0.7	3.4	9.0
Bae Systems	2%	17.2	10.3	1.5	1.8	9.8	Travel & Leisure	6%					
Aena Sme	2%	17.5	31.2	1.9	1.5	28.3	Intl.Cons.Airl.Gp.	2%	5.4	NM	1.1	1.4	NM
Thales	2%	14.0	12.0	1.6	3.1	11.1	Deutsche Lufthansa	2%	4.5	NM	1.1	6.6	NM
Cnh Industrial	2%	9.8	21.0	1.7	5.9	16.5	Easyjet	2%	2.5	NM	1.5	2.7	NM
Smurfit Kappa Group	2%	8.3	14.2	1.9	3.4	13.9	Utilities	2%					
Kion Group	2%	9.3	21.6	1.1	3.6	20.5	Rwe	2%	23.0	17.7	0.5	2.3	17.5
Median		7.8	13.6	1.4	2.4	13.0							

Source: Datastream, I/B/E/S, FactSet, Goldman Sachs Global Investment Research

Exhibit 41: Fiscal Infrastructure Spending (GSSTFISC)

	Fiscal Infrastructure Spending (GSSTFISC)											
Company Name	Basket weights	Sub-sector	Europe exposure	Market Cap (EUR Bn)	12m fwd P/E	Company Name	Basket weights	Sub-sector	Europe exposure	Market Cap (EUR Bn)	12m fwd P/E	
Chemicals	5.8%											
Air Liquide	1.9%	Renewables	34%	64.2	25.4	Signify	1.9%	Building Materials	33%	4.6	10.8	
Umicore	1.9%	Renewables	43%	9.2	26.0	Trelleborg	1.9%	Industrial Machinery	51%	4.0	14.5	
Wacker Chemie	1.9%	Renewables	41%	4.9	29.0	Georg Fischer	1.9%	Industrial Machinery	52%	3.8	26.9	
Construction & Materials	23.1%					Rheinmetall	1.9%	Defense	55%	3.3	13.8	
Vinci	1.9%	Construction	78%	44.8	16.5	Rexel	1.9%	Electrical Components	54%	3.3	11.6	
Sika	1.9%	Building Materials	41%	31.2	40.3	Valmet	1.9%	Industrial Machinery	30%	3.2	13.1	
Crh	1.9%	Building Materials	39%	25.9	15.4	Leonardo	1.9%	Defense	51%	2.8	5.2	
Assa Abloy	1.9%	Building Materials	35%	21.7	24.5	Andritz	1.9%	Industrial Machinery	36%	3.2	12.5	
Saint Gobain	1.9%	Building Materials	67%	20.1	13.5	Oc Oerlikon Corporation	1.9%	Industrial Machinery	52%	2.3	25.0	
Geberit	1.9%	Building Materials	81%	19.1	32.2	Nexans	1.9%	Renewables	48%	2.0	14.8	
Kingspan Group	1.9%	Building Materials	53%	14.6	38.3	Oil & Gas	5.8%					
Bouygues	1.9%	Construction	77%	11.7	12.9	Vestas	1.9%	Renewables	27%	29.9	34.4	
Heidelbergcement	1.9%	Building Materials	30%	11.0	9.5	Siemens Gamesa Renew.	1.9%	Renewables	52%	17.5	58.6	
Skanska	1.9%	Construction	43%	7.4	13.9	Nordex	1.9%	Renewables	45%	1.4	NM	
Eiffage	1.9%	Construction	95%	7.1	11.1	Technology	7.7%					
Acciona	1.9%	Renewables	52%	5.3	18.6	Sap	1.9%	Technology	41%	164.1	24.1	
Consumer Goods	1.9%					Hexagon	1.9%	Technology	32%	23.0	29.0	
Hella	1.9%	Automobiles & Parts	62%	4.8	23.2	Capgemini	1.9%	Technology	59%	19.0	15.6	
Industrial Goods & Services	38.5%					Atos	1.9%	Technology	66%	7.8	9.5	
Abb	1.9%	Electrical Components	33%	49.4	25.2	Utilities	17.3%					
Safran	1.9%	Aerospace	40%	34.2	23.7	Enel	1.9%	Renewables	65%	78.4	14.5	
Legrand	1.9%	Electrical Components	35%	19.0	23.5	Iberdrola	1.9%	Renewables	51%	70.8	19.2	
Knorr Bremse	1.9%	Railroad Equipment	43%	16.8	29.4	Orsted	1.9%	Renewables	100%	58.0	50.1	
Thales	1.9%	Defense	51%	14.0	12.0	Engie	1.9%	Renewables	75%	29.4	12.2	
Worldline	1.9%	Technology	89%	13.4	38.1	E On	1.9%	Renewables	82%	25.5	14.0	
Schindler	1.9%	Industrial Machinery	45%	9.4	31.7	Rwe	1.9%	Renewables	93%	23.0	17.8	
Alstom	1.9%	Electrical Components	49%	9.4	19.1	Edp Energias De Portugal	1.9%	Renewables	83%	18.4	20.0	
Prysmian	1.9%	Electrical Components	44%	7.1	19.7	Fortum	1.9%	Renewables	71%	16.0	12.7	
Gea Group	1.9%	Industrial Machinery	37%	5.5	23.5	Verbund	1.9%	Renewables	100%	9.1	32.8	
Median		,	51%	13.7	19.2							

Source: Datastream, I/B/E/S, FactSet, Goldman Sachs Global Investment Research

Goldman Sachs

Disclosure Appendix

Reg AC

We, Peter Oppenheimer, Sharon Bell, CFA, Guillaume Jaisson, Lilia Peytavin and Andrea Ferrario, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

Disclosures

Equity Basket Disclosure

The ability to trade the basket(s) discussed in this research will depend upon market conditions, including liquidity and borrow constraints at the time of trade.

MSCI Disclosure

All MSCI data used in this report is the exclusive property of MSCI, Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced or redisseminated in any form and may not be used to create any financial instruments or products or any indices. This information is provided on an "as is" basis, and the user of this information assumes the entire risk of any use made of this information. Neither MSCI, any of its affiliates nor any third party involved in, or related to, computing or compiling the data makes any express or implied warranties or representations with respect to this information (or the results to be obtained by the use thereof), and MSCI, its affiliates and any such third party hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the data have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages. MSCI and the MSCI indexes are service marks of MSCI and its affiliates. The Global Industry Classification Standard (GICS) were developed by and is the exclusive property of MSCI and Standard & Poor's. GICS is a service mark of MSCI and S&P and has been licensed for use by The Goldman Sachs Group.

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs trades or may trade as a principal in debt securities (or in related derivatives) of issuers discussed in this report.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy generally prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director or advisor of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman Sachs & Co. LLC and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with subject company, public appearances and trading securities held by the analysts.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. Australia: Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of the Global Investment Research Division of Goldman Sachs Australia may attend site visits and other meetings hosted by the companies and other entities which are the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. To the extent that the contents of this document contains any financial product advice, it is general advice only and has been prepared by Goldman Sachs without taking into account a client's objectives, financial situation or needs. A client should, before acting on any such advice, consider the appropriateness of the advice having regard to the client's own objectives, financial situation and needs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests and a copy of Goldman Sachs' Australian Sell-Side Research Independence Policy Statement are available at: https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. Brazil: Disclosure information in relation to CVM Instruction 598 is available at https://www.gs.com/worldwide/brazil/area/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 20 of CVM Instruction 598, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. Canada: Goldman Sachs Canada Inc. is an affiliate of The Goldman Sachs Group Inc. and therefore is included in the company specific disclosures relating to Goldman Sachs (as defined above). Goldman Sachs Canada Inc. has approved of, and agreed to take responsibility for, this research report in Canada if and to the extent that Goldman Sachs Canada Inc. disseminates this research report to its clients. Hong Kong: Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. India: Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited, Research Analyst - SEBI Registration Number INH000001493, 951-A Rational House, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India, Corporate Identity Number U74140MH2006FTC160634, Phone +91 22 6616 9000, Fax +91 22 6616 9001. Goldman Sachs may beneficially own 1% or more of the securities (as such term is defined in clause 2 (h) the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. Japan: See below. Korea: This research, and any access to it, is intended only for "professional investors" within the meaning of the Financial Services and Capital Markets Act, unless otherwise agreed by Goldman Sachs. Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. New Zealand: Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for "wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests is available at: https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. Russia: Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. Research reports do not constitute a personalized investment recommendation as defined in Russian laws and regulations, are not addressed to a

Goldman Sachs Strategy Matters

specific client, and are prepared without analyzing the financial circumstances, investment profiles or risk profiles of clients. Goldman Sachs assumes no responsibility for any investment decisions that may be taken by a client or any other person based on this research report. **Singapore:** Goldman Sachs (Singapore) Pte. (Company Number: 198602165W), which is regulated by the Monetary Authority of Singapore, accepts legal responsibility for this research, and should be contacted with respect to any matters arising from, or in connection with, this research. **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union: Disclosure information in relation to Article 6 (2) of the European Commission Delegated Regulation (EU) (2016/958) supplementing Regulation (EU) No 596/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the technical arrangements for objective presentation of investment recommendations or other information recommending or suggesting an investment strategy and for disclosure of particular interests or indications of conflicts of interest is available at https://www.gs.com/disclosures/europeanpolicy.html which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan and Type II Financial Instruments Firms Association. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; Ombudsman Goldman Sachs Brazil: 0800 727 5764 and / or ouvidoriagoldmansachs@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Ouvidoria Goldman Sachs Brasil: 0800 727 5764 e/ou ouvidoriagoldmansachs@gs.com. Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9h às 18h; in Canada by either Goldman Sachs Canada Inc. or Goldman Sachs & Co. LLC; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. LLC. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, has approved this research in connection with its distribution in the European Union and United Kingdom.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates and forecasts contained herein are as of the date hereof and are subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. Goldman Sachs & Co. LLC, the United States broker dealer, is a member of SIPC (https://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

We and our affiliates, officers, directors, and employees, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research, unless otherwise prohibited by regulation or Goldman Sachs policy.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is focused on investment themes across markets, industries and sectors. It does not attempt to distinguish between the prospects or performance of, or provide analysis of, individual companies within any industry or sector we describe.

Any trading recommendation in this research relating to an equity or credit security or securities within an industry or sector is reflective of the investment theme being discussed and is not a recommendation of any such security in isolation.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options and futures disclosure documents which are available from Goldman Sachs sales representatives or at https://www.theocc.com/about/publications/character-risks.jsp and

https://www.fiadocumentation.org/fia/regulatory-disclosures_1/fia-uniform-futures-and-options-on-futures-risk-disclosures-booklet-pdf-version-2018.

Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

Differing Levels of Service provided by Global Investment Research: The level and types of services provided to you by the Global Investment

Goldman Sachs Strategy Matters

Research division of GS may vary as compared to that provided to internal and other external clients of GS, depending on various factors including your individual preferences as to the frequency and manner of receiving communication, your risk profile and investment focus and perspective (e.g., marketwide, sector specific, long term, short term), the size and scope of your overall client relationship with GS, and legal and regulatory constraints. As an example, certain clients may request to receive notifications when research on specific securities is published, and certain clients may request that specific data underlying analysts' fundamental analysis available on our internal client websites be delivered to them electronically through data feeds or otherwise. No change to an analyst's fundamental research views (e.g., ratings, price targets, or material changes to earnings estimates for equity securities), will be communicated to any client prior to inclusion of such information in a research report broadly disseminated through electronic publication to our internal client websites or through other means, as necessary, to all clients who are entitled to receive such reports.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data related to one or more securities, markets or asset classes (including related services) that may be available to you, please contact your GS representative or go to https://research.gs.com.

Disclosure information is also available at https://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282.

© 2020 Goldman Sachs.

No part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed without the prior written consent of The Goldman Sachs Group, Inc.