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WEALTH MANAGEMENT

2022 INVESTMENT THEMES

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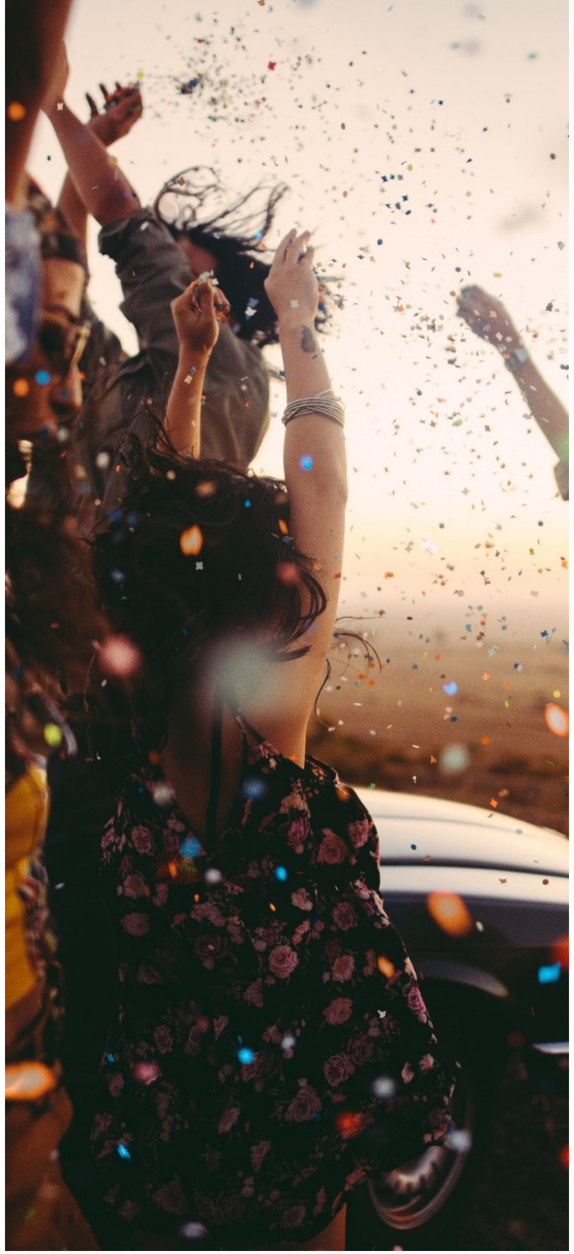
The bank
for a changing
world



Contents

Preface

ENTERING THE LATTER PHASES OF THE BUSINESS CYCLE

Rapid recovery phase over, challenging times ahead: 2021 was a tale of fast recovery in growth post lockdowns, driven by strong consumption and a surge in government spending. For 2022, we expect an inevitable slowdown in growth closer to trend, while supply chain difficulties will continue to hamper manufacturing and retailing activity. On balance, we forecast robust growth in the year ahead, driven by catch-up consumption, infrastructure spending and corporate investment.

Overblown stagflation comparisons to the 1970s: the greatest danger to global financial markets remains the threat of rising inflation. Closely linked to this is the risk of a policy mistake, should central banks feel obliged to raise rates rapidly in response. Tighter monetary policy would threaten growth, when high energy prices are already acting as an extra tax on the world economy. We would not compare today's recovery-driven inflation to 1970s stagflation, which was driven by severe oil supply shocks. But make no mistake! Persistently high inflation rates and uncertainty over central bank monetary policy could increase financial market volatility.

A new era in productivity growth ahead? The silver lining in the COVID-19 cloud could be faster productivity growth, resulting from businesses adapting to new ways of working during lockdowns. Indeed, owing to heavy investment in IT infrastructure to enable widespread remote working, and further investment to respond to strong demand and supply chain disruptions (boosting the demand for near shoring), productivity growth could improve markedly from post-2009 subdued growth levels.

Identifying winning investments and innovations theme: the surge in government and corporate investment will benefit a host of sectors including building materials, equipment manufacturers, industrial automation, healthcare, semiconductors, 5G telecoms equipment, software as a service (SAAS) and wind & solar energy. At a regional level, higher investment should be a boon for the manufacturing-heavy eurozone, Nordic countries and Asia (South Korea, Taiwan and Japan).

Riding a new inflation regime: we see a substantially larger risk today that global inflation could stay higher (than over 2009-2020) for longer on the back of a potential "perfect storm" of inflation drivers. Investors would thus be well advised to diversify their portfolios away from traditional Fixed-Income instruments and into real assets and other inflation-hedged solutions. We continue to favour the underinvested Commodities asset class for inflation diversification reasons. In particular we like exposure to miners, and both precious and renewable-energy related industrial metals, such as nickel, tin and copper.

Focus on the popular circular economy – Repair, Reuse, Recycle: while ESG investing has been in vogue in recent years, the bulk of attention has been focused on renewable energy in the pursuit of lower carbon emissions. However, beyond the need to cut carbon emissions, we must preserve our land/marine ecosystems and valuable resources, such as water. Hence our circular economy theme, which focuses on making goods and services last longer through better design and reparability, consuming fewer key resources and recycling more of what we use to reduce pollution.

The fusion of cross-media platforms with virtual worlds and augmented/virtual reality technology is the driving force behind our **Enter the Metaverse** theme. Younger generations are already embracing this area in the form of video games, such as Fortnite or Netflix in video streaming and Pokémon Go in augmented reality games. This is just the beginning of what we believe will be a multi-year technology megatrend, also encompassing teleconferencing and collaborative work platforms.

Edmund Shing, PhD

01

Macro Outlook

Guy Ertz

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Economic growth and inflation

LOOKING BEYOND TEMPORARY WEAKNESS

In a context of weakening economic growth, supply bottlenecks are hampering production. But these problems should ease in the first half of 2022. On the other hand, demand remains strong. We forecast growth rates above 5% in the main regions in 2022, and then between 2% and 3% (still well above long-term average) for 2023.

- We expect further reopenings of major economies in 2022. The main constraints relate to supply bottlenecks, but these should start to disappear in 2022.
- US GDP is now above its pre-COVID level, whereas the three biggest eurozone economies are still around 3% below.
- Fiscal policy in the US and the eurozone should remain accommodative and will sustain the economies for the coming years notably through investment in the energy transition. In 2023, growth should stabilise above 3% in the US, and above 2% in the eurozone. Powerful multiplier effects will be key.
- China's growth is also slowing. The effects of new regulation measures are fuelling additional pressures. In the medium term these measures should be positive as they will lead to more stable growth. We expect more policy support to keep growth above 5%.

BNP Paribas Forecasts

GDP Growth %	2020	2021	2022	2023
United States	-3.5	6	5.3	3.3
Japan	-4.7	2.1	2.4	1.6
United Kingdom	-9.8	7	6.3	2.1
Eurozone	**-6.7**	**5**	**5.2**	**2.3**
Germany	-5.1	2.8	5.3	2.4
France	-8	6.3	4.3	2.1
Italy	-8.9	6.3	5.1	2.8
Emerging				
China	2.3	7.8	5.6	5.4
India*	-7.2	7	11.2	6.2
Brazil	-4.1	5	1.5	2
Russia	-4.5	4.5	3.3	2.6

* Fiscal year

Source: Refinitiv - BNP Paribas - 25/10/2021

INFLATION RISKS SKEWED TO THE UPSIDE

Inflation may stay higher for longer, and above previous expectations. Over the coming months, important drivers will be the base effects and supply chain constraints. In the medium term, the key will be the job market. Risks remain low in the eurozone but need to be monitored closely in the US.

- Companies, which have been so far unwilling (or unable) to increase prices, might decide otherwise. Moreover, higher inflation could squeeze demand and trigger wage increases. This unpleasant combination can already be seen in the US, but not yet in Europe.
- The chief risk is that the high levels of inflation, expected in the coming months, could lead to higher inflation expectations and higher wages. We will closely monitor long-term inflation expectations. That said, the risks of a wage-price loop is much lower than the stagflation (low growth and high inflation) observed in the 1970s.
- Over the last few decades, trade unions have become less of a factor in most developed countries. In the US, for example, bottlenecks usually involve low-skilled workers. We expect a rising number of this category to return to the workforce. This should limit the risks of wage increases across the board.
- The key will be to monitor inflation expectations and job market developments.

BNP Paribas Forecasts

CPI Inflation %	2020	2021	2022	2023
United States	1.2	4.2	2.8	2.4
Japan	0	-0.2	0.3	0.5
United Kingdom	0.9	2.3	3.3	2
Eurozone	**0.3**	**2.4**	**2.1**	**1.7**
Germany	0.4	3	2.4	1.9
France	0.5	2	1.9	1.6
Italy	-0.1	1.9	2.2	1.4
Emerging				
China	2.5	1.2	2.8	2.5
India*	6.1	5.4	4.5	4.3
Brazil	3.2	7.8	6.3	3.6
Russia	3.4	6	5	4.1

* Fiscal year

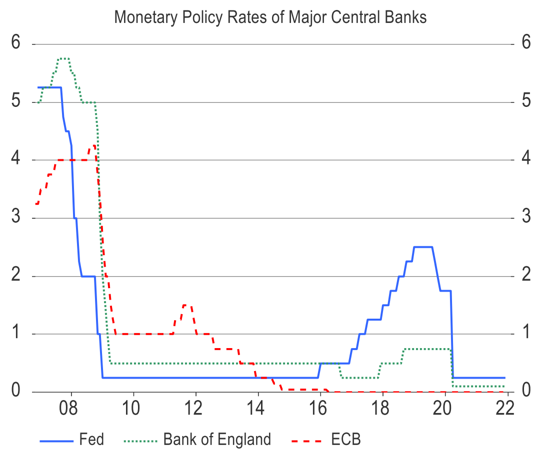
Source: Refinitiv - BNP Paribas - 25/10/2021

Central banks and bond yields

CENTRAL BANKS UNDER PRESSURE

Pressure on central banks is mounting as inflation remains elevated. As largely expected, the Federal Reserve (Fed) has decided to reduce bond purchases over the coming months. We assume that the Fed will not increase rates before mid-2022. We expect the European Central Bank (ECB) to hike the deposit rate mid-2023.

- The Fed announced on 3 November that it would reduce (taper) bond purchases over the coming months, with a view that inflation is transitory. Indeed, it stressed that there was no direct link between tapering and rate hikes and that it had adopted a patient approach to the timing of policy tightening. The first rate hike is expected mid-2022.
- The ECB should continue normalising its monetary policy over the coming months. Based on recent inflation data, we have brought forward our expectation of a first deposit rate hike to mid-2023.
- Central banks in emerging economies have already hiked rates as risks of unanchored inflation expectations were higher. There will be more rate hikes to come.

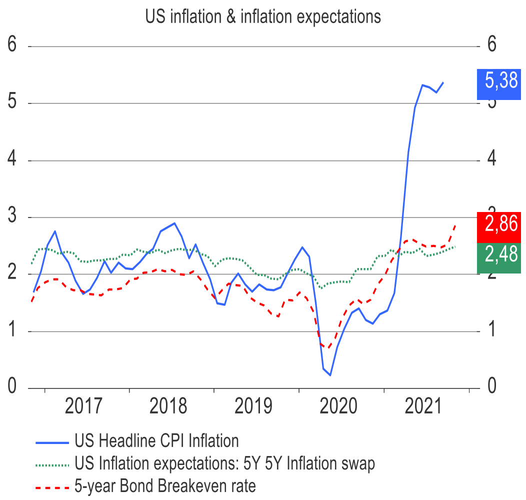


Source: Refinitiv Datastream, 19/08/2021

BOND YIELDS SHOULD EDGE UP

Bond yields fluctuated in October, reflecting growing uncertainties about future monetary policy. Long-term inflation expectations have stabilised recently. Strong economic growth and the gradual tapering of bond purchases by central banks should translate into a moderate increase in yields. This suggests low expected bond returns.

- US and German short-term interest rates rose faster than long-term interest rates as the markets changed their expectations for the first rate hikes. We expect long-term interest rates to continue rising gradually. Our targets are 2% for the US and 0% for Germany in 12 months. In a rising-yield environment, bond prices should logically fall. We thus keep our negative view on US and German long-term Government bonds. The risk of a sharper rise in yields will be limited by the underlying appetite for “safe” bonds when US yields move towards 2%.
- Inflation expectations are playing an important role. Monetary authorities need to convince investors and consumers that the current spike in inflation is transitory, and that they possess the necessary tools to intervene. At this stage, long-term inflation expectations in the US and the eurozone still appear anchored. This will be key in the coming months (see chart).



Source: Refinitiv Datastream, sept. 21

02

Riding a new inflation regime

Edouard Desbonnets
Stephan Kemper

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Riding a new inflation regime

MEDIUM-TERM, MEDIUM RISK

- We have forgotten what inflation is like! We do not expect stagflation (low economic growth with high inflation), but inflation rates could remain higher for longer.
- Nominal Sovereign and Corporate bond markets are vulnerable to a repricing of inflation expectations and higher risk premiums.
- In the non-equity space, focus on generating income and bonds with attractive yields, in addition to absolute return/flexible bond funds, long/short credit, inflation-linked products with low interest rate risks and convertible bonds.

Commodities have been the best long-term inflation hedge

	Inflation Beta	Average Annualized Real Returns		
		Total Period	Rising Inflation	Difference
Commodities	4.0	4.2%	14.6%	10.3%
Gold Spot	2.1	6.1%	15.7%	9.7%
REITs*	0.7	9.8%	1.1%	(8.8%)
1-5Y TIPS**	0.5	0.9%	0.1%	(0.8%)
High-Yield Bonds	(0.4)	5.0%	(0.9%)	(5.9%)
10Y+ TIPS***	(0.5)	6.3%	2.1%	(4.2%)
Swiss Franc	(0.6)	(4.4%)	(8.0%)	(3.7%)
S&P 500	(0.7)	7.9%	(0.4%)	(8.2%)
Corporate Bonds (Baa)	(0.8)	4.5%	(1.2%)	(5.7%)
10Y US Treasuries	(1.1)	3.3%	(3.7%)	(7.0%)

Source: verdadcap.com

Higher inflation for longer, but not stagflation

The combination of the business cycle and commodities predicts inflation well: a relatively flat yield curve (indicating a low cost of long-term borrowing), tight High Yield spreads, plus Commodity index and Gold prices trending higher are relatively reliable market-based signals of rising inflation, particularly when combined. Therefore, today's combination bodes well for higher inflation, rather than the "lowflation" observed since 2009.

Stagflation is not our central scenario, but remains a key risk for investors' portfolios: although the combination of sharply slowing growth and demand-destroying inflation rates is not our base-case scenario, it cannot be ruled out. Investment portfolios comprising Equities, Sovereign bonds and Corporate credit would not perform well in a stagflationary environment, as all these asset classes risk negative returns.

Commodities & labour market tightness are key inflation drivers: supply chain disruptions coupled with a strong rebound in final demand are powering a sharp rebound in the demand for commodities, logistics and labour, and in turn, are pushing up global inflation rates.

Above-average nominal growth (real growth + inflation) is the best outcome for governments: faster nominal growth generates higher tax revenues for governments even without raising tax rates, while savers continue to be penalised by negative real rates.

Bonds and credit offer low expected long-term returns: Bond yields have been rising on the back of inflation concerns and earlier-than-expected rate hikes by some major central banks. While Government bonds are under pressure, Corporate credit has been fairing better in the current mid-cycle environment. Yet, credit spreads are tight, which is limiting expected returns.

Inflation-protected bonds are an obvious alternative, but are already expensive: breakeven rates (i.e. market-implied expectations of future inflation) are testing historical elevated levels, but should fail to move substantially higher without a wage-price spiral. Besides, real yields are close to all-time lows and are likely to move up as the Fed tapers its bond-buying programme, which would hurt the returns of inflation-linked bonds.

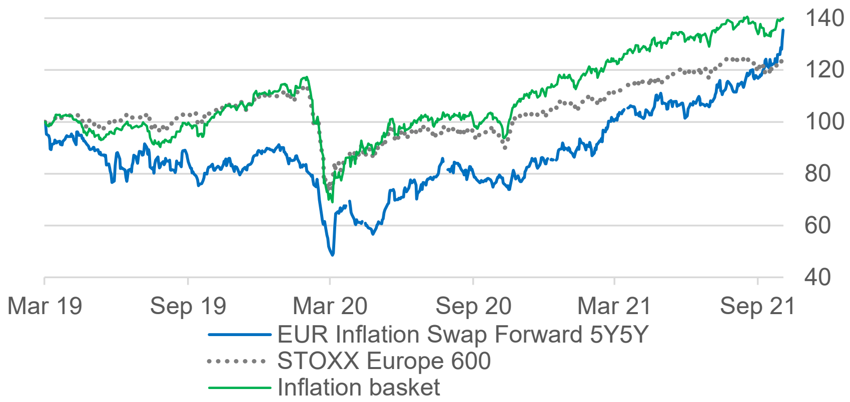
Fixed Income implementations: focus on generating income and bonds with attractive yields, such as financial credit and Emerging Market bonds. We also favour absolute return/flexible bond funds, long/short credit, inflation-linked products with interest rate risk hedging (or short duration) and convertible bonds.

Main risk to this theme: central banks change their view and no longer consider inflation as "transitory", hike policy rates harder, hurting growth and hampering the economic recovery.

Favour Real Assets, with a capital-light approach

- Favour companies with pricing power and capital-light business models
- Commodities have traditionally performed best in a higher-inflation scenario
- The current steep slope of energy and metals commodity future curves ("backwardation") adds to the current attraction of commodity roll yield products
- Real assets (commodities, real estate, infrastructure) provide a reasonable long-term inflation hedge

Inflation beneficiaries have beaten the market since the March 2020 inflation lows



Source: BNP Paribas Wealth Management, Bloomberg

A smart equity-based solution to hedging inflation

Equities generally perform well during inflationary periods. Rising inflation is usually accompanied by robust economic growth. Unless inflation hits sustained elevated levels of 5%+, businesses tend to benefit from better pricing. That said, it may be dangerous to conclude that inflation is a "tide that is lifting all boats". History shows that ultra-long duration growth companies tend to struggle when inflation picks up. But companies with pricing power and/or capital-light business models often yield superior results vs broader equity markets.

We define a "Real Asset company" as one that earns revenues primarily related to a tangible, finite asset base. Such company may benefit from i) the value of its assets being positively correlated with inflation, and/or ii) the price of the offered resource rising. A hard asset company has a similar tangible asset exposure, but through a capital-light business model. The capital-light business model requires less working capital and debt, and earns higher returns on capital. This facilitates higher compounding of capital during full business cycles, this being a key characteristic of a true quality stock.

The golden shine of inflation: gold is **probably** the world's most well-established safe-haven store of value. Thus, a period of higher inflation should support this precious metal. Beyond that, concerns about government debt loads and the medium-term effects of unconventional monetary policies on fiat currencies should provide additional demand.

Commodities also tend to benefit from the pick-up in inflation. The world is entering an energy transition phase, during which our economies are moving from fossil fuel dependence to electrification. We believe that this transition will fuel medium-term inflation pressure. Consider the increase in demand in related metals: huge amounts of copper, lithium and rare earth metals are needed to build the infrastructure for a zero-carbon economy.

Examples of inflation beneficiary business models: stock exchanges are a perfect example of capital-light businesses with high pricing power and strong operating leverage. Due to extremely low marginal costs, higher volumes will immediately boost earnings. Within financials, we like banks owing to their high correlation with rising long-term interest rates.

We include infrastructure companies, funds and Real Estate Investment Trusts (REITs) in the realm of Real Assets. These types of asset all provide a cushion during periods of higher inflation given their natural inflation hedges via tariff and rent increases.

In the more commodity-related sectors, we see value in the European Energy sector due to the recent rise in energy prices and the attractive relative valuation vs their US peers. Basic Resources and Oil & Gas companies appear attractive due to their high correlation to commodity prices, as do certain commodities such as Gold or the aforementioned metals.

02

Identifying winning investments & innovations

Edmund Shing
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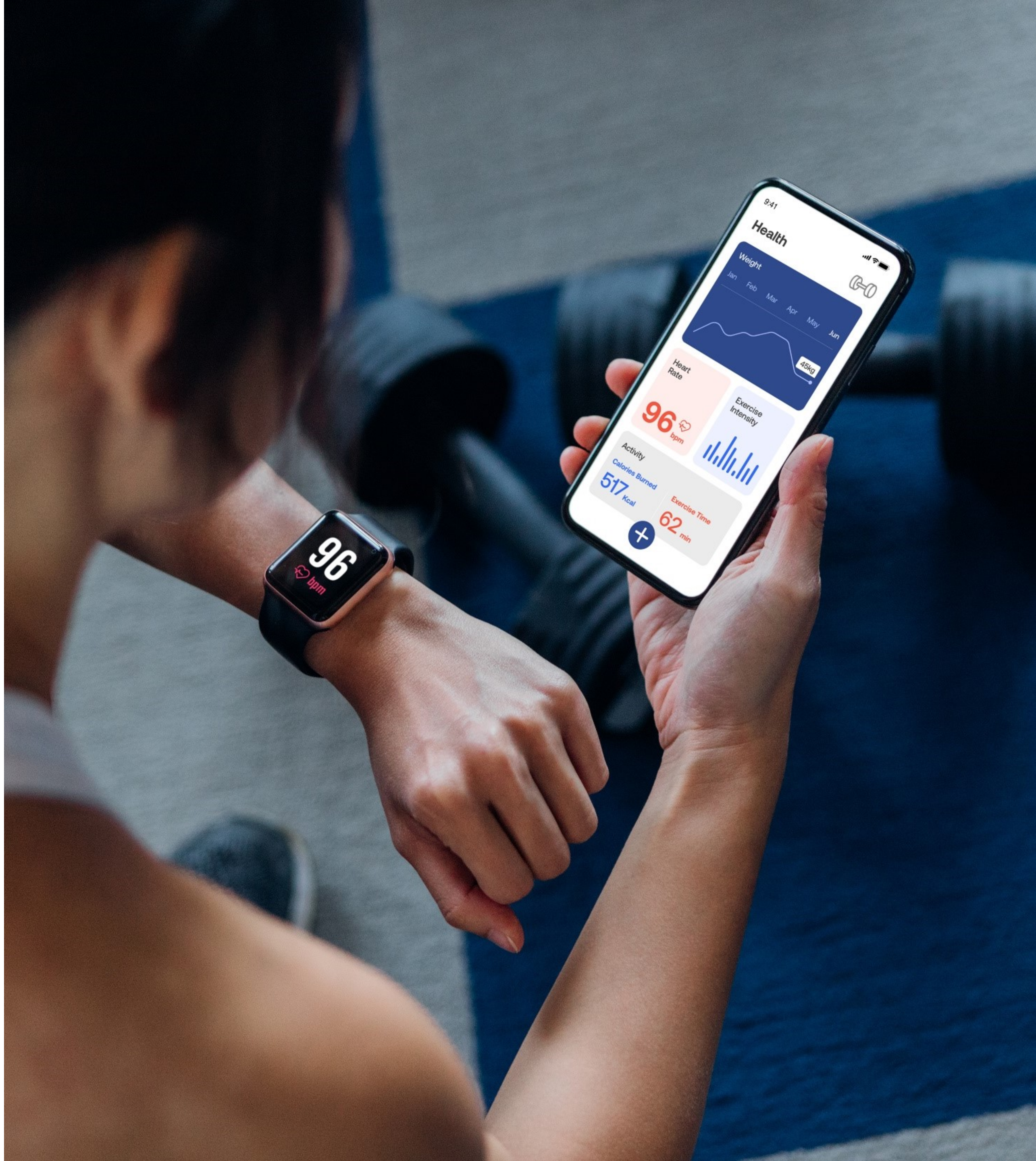
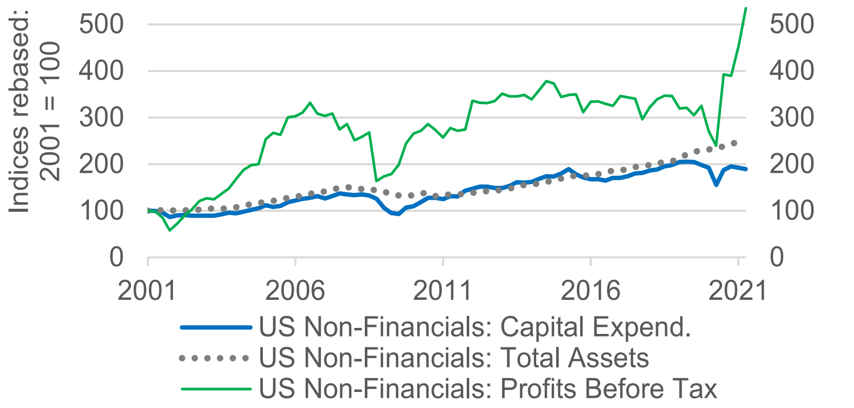


Identifying winning investments & innovations

MEDIUM-TERM, MEDIUM RISK

- The COVID-19 pandemic forced companies to radically rethink the way they and their workforce operate, potentially unleashing a wave of productivity improvements.
- Corporate investment in technology naturally accelerated as lockdowns enforced widespread remote working practices, supported by technology infrastructure upgrades.
- Faster wage growth incentivises companies to invest: for many industries, especially Services, labour represents the largest cost.

2015-, US corporate investment was flat, while assets and profits grew



Source: St Louis Fed

Creative destruction paves the way for accelerated innovation and productivity growth

COVID-19 has unleashed a huge wave of Darwinian Creative Destruction: we have seen an enormous wave of creative destruction from the pandemic and the various lockdowns.

Government spending has accelerated from pre-pandemic levels, now focusing on investment in essential infrastructure including renewable energy, transport and healthcare. The ultra-low cost of borrowing for governments lowers the threshold for spending on infrastructure investment, after years of underinvestment in the wake of the 2007-09 Great Financial Crisis.

Corporate investment has lagged profit growth: in the US, non-financial companies in aggregate grew their assets by 46% and their pre-tax profits by 53% from Q2 2015 to Q2 2021, while over the same six-year period, corporate investment did not increase at all.

The pandemic has accelerated the adoption of technologies: by July 2020, more than 60% of UK firms surveyed had adopted new digital technologies (e.g. remote working technologies or cloud computing) or new management practices since the start of the pandemic, and nearly 40% had invested in new digital capabilities. According to Be the Business, a not-for-profit organisation, and McKinsey, a management consulting firm (2020), UK SMEs carried out "3 years" worth of innovation in only 3 months of lockdown".

Companies are also obliged to invest more for the first time in a decade or more, owing to the following factors:

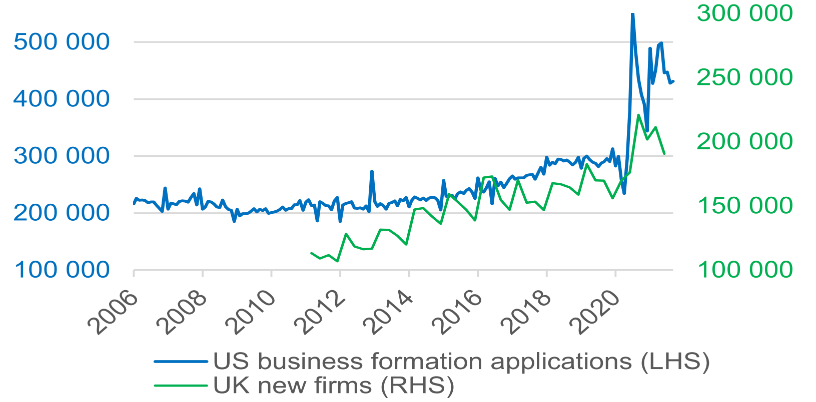
- **supply chain disruptions**, caused by the pandemic, are incentivising companies to "near-shore" more of their sourcing and production in order to make supply chains more robust;
- **investment in technology** to enable widespread remote working is a second huge area of investment;
- **burgeoning wage inflation** is emerging in a number of industries (fast food, dock workers, HGV lorry drivers) due to labour shortages, forcing companies to invest in order to offset these wage pressures with higher productivity and automation whenever possible.

Most listed companies, after reinforcing their balance sheets in the wake of the damage, suffered (to various degrees) during the pandemic, are in a much stronger position today. As a result, they plan to accelerate growth increasingly via acquisitions. Today's environment is very supportive for mergers & acquisitions, smaller companies, private equity, and thus for investment banking in general. The UK has already seen a sharp increase in private equity buyouts, and we expect this trend to continue or accelerate in the months ahead.

Productivity gains require patience

- Post-pandemic, companies are reassessing their "just in time" lean workflow methodologies to incorporate more robustness into their supply chains, and of course this all requires investment.
- Reaping the real benefits of new technologies takes longer than one might think:
- Healthcare is a key sector seeing an acceleration in innovation via Messenger (mRNA) therapeutic agents, AI in diagnosis and in drug candidate identification, and telemedicine.
- The accelerated rate of entrepreneurial innovation and start-up companies should benefit both long-term economic growth and growth private equity funds.

US and UK business starts accelerate post-lockdowns



Source: US Census, UK Government

Focus on innovation in technology and healthcare

Tech disruption is still in its infancy and continues to drive tremendous productivity gains. We are living through an industrial revolution in the form of Digitalisation. New technology adoption has accelerated by necessity during the pandemic, with huge further potential. 5G is still being deployed and not fully operational. Therefore, some top-end applications of Artificial Intelligence and other powerful computer applications e.g. (robotics, Blockchain, Internet of Things) have not yet matured. We do not yet know the full potential applications of these technologies.

However, one area where progress is very visible is healthcare. In surgery, robots are helping surgeons to operate, allowing much more stability and precision. A whole new range of other smart medical devices, equipment and research techniques have been launched and are becoming more and more powerful and precise. Think of the high quality of mRNA vaccines for instance. Genomics helps to understand and treat various diseases like never before.

Telemedicine has also made huge strides, given the need for social distancing, making people hesitant to visit a clinic or meet a doctor physically. Rapid progress in streaming and video call technologies have supported all these remote applications, thus improving doctors' productivity.

Companies are ready to invest again – how to gain from this?

Furlough and unemployment has spurred start-up acceleration: the formation of new businesses has accelerated sharply in the wake of lockdowns, as employees have reassessed their life goals. This wave of new businesses should stimulate long-term growth in general, and innovation in particular, leveraging all the possibilities that superfast internet access enable, lowering barriers to entry and enabling direct-to-consumer access.

Suggested implementations include:

- Green bonds financing sustainable corporate investment and infrastructure spending;
- Commercial real estate providing top-notch logistics and warehousing, 5G cell phone towers, and datacentres;
- Growth and leveraged buyout private equity funds, which benefit from strong growth periods;
- Equity solutions (direct stocks, funds, ETFs) exposed to Infrastructure, Capex growth, the energy transition, efficiency and storage, batteries, insulation, green mining and carbon offsetting;
- Equity solutions (direct stocks, funds, ETFs) exposed to Innovation, particularly in technology (such as AI, robotics, Blockchain) but also in healthcare (med/health tech and telemedicine).

03

Repair, Reuse, Recycle

Guy Ertz
Edmund Shing

BNP PARIBAS
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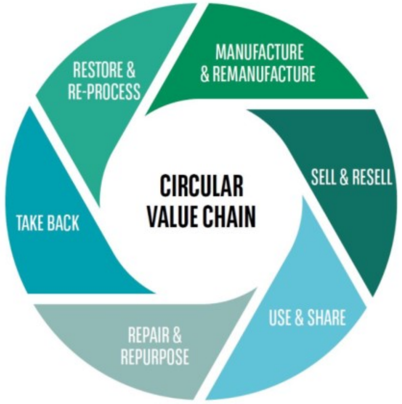
Repair, Reuse, Recycle

LONG-TERM, MEDIUM RISK

- We focus on the concept of the "Circular Economy", which works to bolster resource efficiency and introduce new business models that enable circular resource flows. We include the so-called "Blue Economy" theme which focuses more on the "sustainable use of ocean resources, improved livelihoods and jobs, and ocean ecosystem health".
- There is strong political pressure but also commitment and action seen recently. The EU Commission for example adopted in 2020 a so-called new circular economy action plan which is related to the massive public investments that were decided in 2020. We also expect massive business investments in this area. A similar trend is seen in the US.

The path towards a circular value chain



Source: BNP Paribas Wealth Management, Bloomberg

The challenge to save the planet

The average plastic shopping bag is used for only 12 minutes. It is a similar story for a coffee cup, a toothbrush, a smartphone or a pair of running shoes. Each of these products are often made with finite materials and used for short periods of time before being disposed of. This "take-make-waste" approach to production and consumption is not only unsustainable, but increasingly uneconomical — for consumers, producers and the environment.

The circular economy offers a different approach, by designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.

There is only one planet Earth, yet by 2050, the world will be consuming as if there were 3: the circular and blue economies will provide high quality, functional and safe products, which will be efficient and affordable, and designed for reuse, repair, and high-quality recycling. What's more, they will last longer. A whole new range of sustainable services, product-as-service models and digital solutions will bring about a better quality of life, innovative jobs and upgraded skills. Governments need to invest huge sums of money over the coming years.

The European Green deal targets "*no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use, no person and no place left behind*" with at least $1.1trn in sustainable investments by 2030.

The themes highlighted by the EU that relate to circular and blue economy concepts are:

- Fresh air, clean water, healthy soil and biodiversity;
- Renovated, energy-efficient buildings;
- Healthy and affordable food;
- Longer lasting products that can be repaired, recycled and reused

In the US, we expect a $2 trillion plan to rebuild infrastructure and reshape the economy, with spending spread over eight years. Not all the details are available, but at this stage, we already see the following priorities:

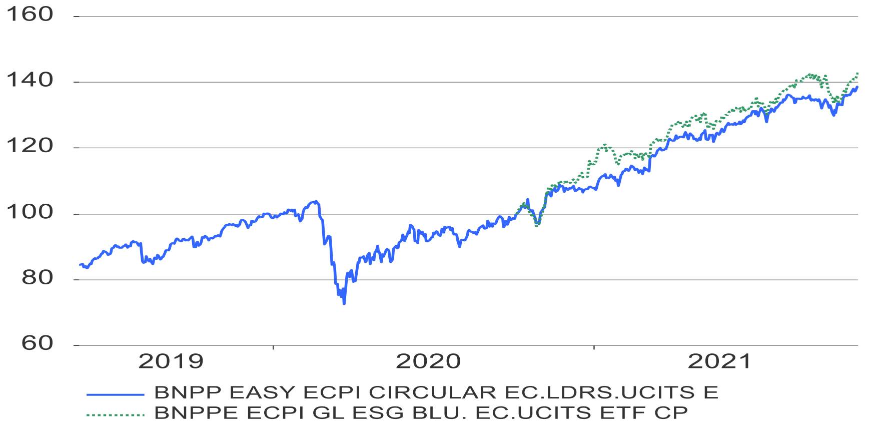
- Accelerate the fight against climate change by shifting to new, cleaner energy sources;
- $111bn for water infrastructure;
- $42bn for ports and airports

In July 2020, the **UK** launched "The Circular Economy Package policy statement", a legislative framework identifying steps for the reduction of water and a credible long-term path for waste management and recycling. **Canada** launched its Blue Economy Strategy engagement in February 2021 and strives to have 90% of electricity from non-emitting sources by 2030.

The Sharing Economy gathers momentum

- We focus on 5 sub-themes: i) Circular Supplies, ii) Resource Recovery, iii) Product Life Extension, iv) Sharing Platforms and v) Product as a Service (see below).
- We will focus our attention on equities of companies that are key players in these areas or via actively-managed funds or ETFs.
- Despite the relevance and high potential of this theme, investment solutions will be subject to fluctuations in the global equity markets.

BNP Paribas' ETF in circular and blue economy



Source: Refinitiv Datastream, 01/11/2021

Sub-themes and Investment solutions*

According to Blackrock, an American asset manager, *"the circular economy is a major transformational force that will last decades"*, leading to long-term winners and losers in companies and sectors.

1. Circular Supplies: renewable energy, bio-based or fully recyclable input materials to replace single-lifecycle inputs. In industrial sectors: Renewable Energy Generation, Renewable Energy Equipment, Biofuels and Fuel Cells.

2. Resource Recovery: recover useful resources/energy out of disposed products or by-products Industrial Sectors: companies active in Waste Management, Environmental Services & Equipment (Environmental Engineering & Consulting and Pollution Control Equipment).

3. Product Life Extension: products and services that extend the working lifecycle of products and components by repairing, upgrading and reselling. In industrial sectors: Apparel & Textile Products, Automotive, Chemicals, Construction Materials, Consumer Products, Packaging, Distributors, Electrical Equipment, Forest & Paper Products, Home & Office Products, Manufactured Goods, Metals & Mining, and Retail.

4.Sharing Platforms: products and services that enable increased utilisation rate of products by making possible shared use/access/ownership. Companies in the areas of Technology (Hardware, Semiconductors) and Shared Services (ride-sharing, house sharing, etc.).

5. Products as a Service: offer product access and retain ownership to internalise benefits of circular resource productivity. We focus on Technology (Software, Technology Services, Cloud Computer), Retail (leasing services) and Shared Goods (car, bike, etc.).

Suggested implementations include:

- Circular economy funds and ETFs;
- Blue economy and marine ecosystem funds and ETFs;
- Renewable energy funds and ETFs;
- Companies involved in recycling, repair and sharing/leasing platforms;

* Source: BNP Paribas Asset Management

04

Small is (still) beautiful

Stefan Maly
Alain Gérard

Small is (still) beautiful

MEDIUM-TERM, HIGH RISK

- Small cap companies are typically considered as those with a market capitalisation of maximum 5 billion USD or EUR, even less in some index classifications.
- Studies show long-term outperformance of this equity factor, especially during times of strong economic recovery such as the one we are experiencing presently.
- Small companies are agile, operating in niche markets where competition is less fierce.
- In a maturing bull market, large companies often look for fresh external growth opportunities, including the acquisition of smaller companies at a premium.

US small caps are cheap versus the S&P 500

Source: BNP Paribas Wealth Management, Bloomberg

A perfect context for small-caps

We believe that well-diversified stock portfolios should include an exposure to mid- and small-caps. Studies show that **small-caps tend to outperform large-caps in the long run.**

Some reasons for this lie in the nature of the company itself. Smaller companies are usually less complex, often more innovative, and able to adapt to changes in a flexible way. Many are champions in their field of play, giving them a competitive advantage and pricing power.

Other reasons for the long-term outperformance of small-caps are linked to the structure of capital markets. Companies with a low market capitalisation are often covered by few financial analysts, or none at all, and are typically not eligible for inclusion in the vast majority of index funds/ETFs due to their lower available free float and liquidity.

Harvesting the illiquidity premium: consequently, active managers have a good chance of finding hidden gems for their portfolios in this market cap category. In addition, the lower liquidity in small- and medium-cap stocks allow patient buy-and-hold investors to earn a liquidity premium, as highlighted by Ibbotson and Chen (2007) in their paper *Liquidity as an investment style*.

Why invest now?

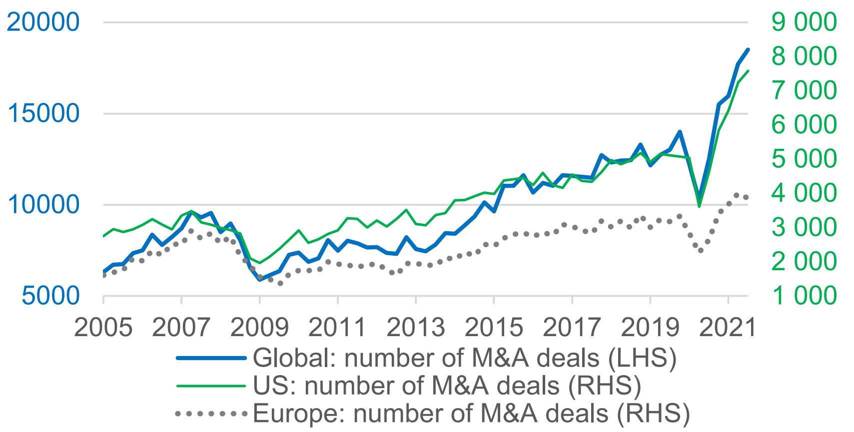
Small and mid-caps have a high sensitivity to economic growth. Economic recovery is set to continue into 2022 and the negative effects from supply chain disruptions are expected to fade. Hence, we see a favourable environment for small companies in the USA and even more so in Europe, as the recovery in this region is lagging in comparison. This equity factor is more heavily exposed to cyclical sectors: Industrials, Financials, Consumer Discretionary, Materials, and Energy together represent more than 55% of the MSCI World Small Cap Index versus only 43% of the MSCI World Index.

Two longer trends should support smaller companies. The transition towards a low carbon economy together with the ramp-up in digitalisation require huge investment. Industrial and basic resources companies as well as highly innovative technology companies should benefit from this trend. In addition, rebuilding supply chains and near-shoring production should unlock large amounts of investment in the coming years. Last but not least, we expect a surge in merger and acquisition (M&A) activity. Larger companies tend to acquire smaller companies as a way of gaining access to their technology and innovations. This enables them to pay a premium on the current stock price of the targeted company, one which is captured by the small-cap investor.

Favoured regions and investment ideas

- Regions in focus: USA, Europe and Nordic countries
- Risks: slowdown in economic growth, further supply chain disruptions, central bank tightening
- How to invest:
  - Fixed Income: Private debt funds for exposure to higher yielding unrated corporate debt in typically smaller companies
  - Other non-public equity: growth Private Equity funds, LBO Private Equity funds
  - Equity: US/European/UK/Asian small/mid-cap exposure (SMIDs) via funds and ETFs

Number of M&A deals reach record levels



Source: BNP Paribas Wealth Management, Bloomberg

Which regions to focus on?

As mentioned above, US small- and mid-caps trade at attractive levels compared with large-caps. We expect a continued economic recovery in the US, so smaller American companies should offer a decent beta to this recovery.

In Europe, small caps are dearer than mid- and large-caps. On the other hand, the cyclical momentum should be more supportive for smaller-caps, as the recovery is less mature in the Old Continent. A weaker dollar could be an additional tailwind. Finally, we should not forget the heavy additional investment that should result from (any) changes in fiscal policy.

We like small caps in Nordic countries because they are the European "powerhouse" of digital innovation. As the digital transformation is well underway and capital expenditure (Capex) is picking up on a larger scale, Nordic small-caps offer good exposure to both these themes.

Risks and how to invest?

What are the risks?

If supply chain disruptions persist or central banks overtighten monetary policy, then small-cap companies would inevitably suffer. Due to their low liquidity and high growth sensitivity compared with large-caps, drawdowns are typically greater in the small-cap space.

How to invest:

As mentioned above, the small- and mid-cap universe is under-researched. In consequence, **active fund managers** can generate outperformance if they do their "homework" properly.

Non-listed companies offer attractive opportunities. **Private Equity** gives investors access to non-quoted, earlier-stage growth companies, whether start-ups or companies that choose not to be listed, but boast a strong product portfolio.

In the current context, we should not forget **Private Debt**. Small companies shy away from the costs of credit ratings and bond issuance. An alternative is to tap the private debt market for funding. We believe that this market offers attractive premiums in the form of smaller unrated borrowers with healthy balance sheets and cash flows.

05

Enter the Metaverse

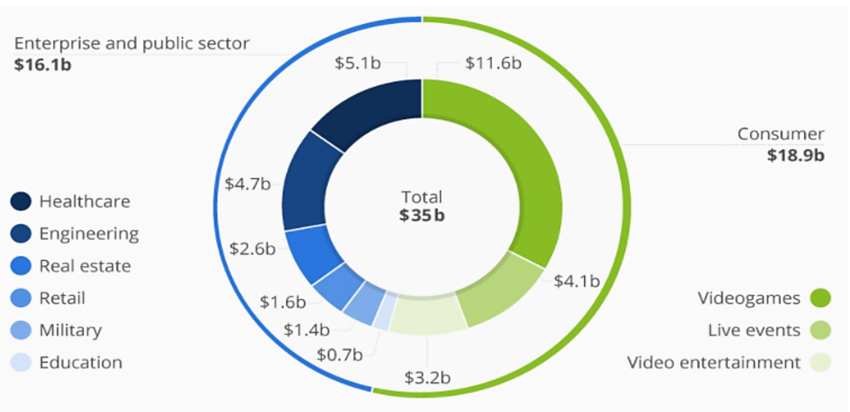
Prashant Bhayani
Grace Tam
Dannel Low

Enter the Metaverse

LONG-TERM, HIGH RISK

- The Metaverse is a universe beyond the physical world. It takes users into a virtual world which connects different digital environments, and it aims to be the future iteration of the internet.
- Adoption of the Metaverse is on the rise. People who like to spend more time at home are using such applications to connect and interact with friends and family.
- The virtual world will soon influence large swathes of our life (entertainment, gaming, lifestyle, education, financial services). Focus on virtual identities, social networks and immersive experience, likely supported by Blockchain technologies.

Predicted market size of VR/AR software for different usage cases in 2025



Source: BNP Paribas Wealth Management, Bloomberg

Step into a new cyber world: Ready, Player One?

Since the 1980s, cyberspace has been a frequent topic for science fiction authors and futurists, who dream of a convergence of data. In cyberspace, a global network, separated from everyday reality, would allow millions of users to interact, share information, make financial transactions and play games, to name but a few usages.

What is the Metaverse? It is the concept of cyberspace made real. More precisely, it is a shared virtual 3D world (or worlds) that is/are interactive, immersive and collaborative.

Just as the physical universe is several worlds interconnected in space, the Metaverse is considered to be an amalgamation of worlds. It will become the Internet of Internets, offering a seamless and immersive experience. Today, servers hosting hundreds of players, a virtual and robust economy, and in-game experiences created by other users, plus online exercise and dating apps are all protoversions of this Metaverse.

Massive online social apps and games have really taken off during the COVID-19 pandemic. Popular titles include *Battle Royale, Juggernaut, and Fortnite*, as well as user-created virtual worlds, such as *Minecraft* and *Roblox*.

In its current form, the Metaverse already encompasses the use of Virtual Reality (VR) headsets, allowing for interaction between multiple parties in a virtual space.

The pandemic has ushered in the adoption of Augmented Reality/Virtual Reality (AR/VR) in the form of games, such as Pokémon Go. Moreover, it has allowed co-workers to "meet" and communicate remotely in an online business setting. Meanwhile friends and family members can enjoy a social virtual setting that would have been otherwise impossible.

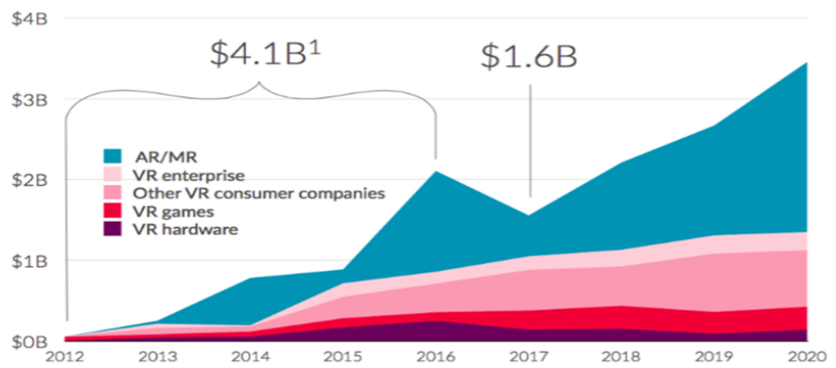
The health app *Zwift* demonstrates the potential of this megatrend, allowing users to "run" or "cycle" with people located on the other side of the world, using any programmed cycle route in the globe. Games like Roblox allow users to create "games" using the basic Roblox gaming platform, and to be incentivised as they compete with other gamers. This may eventually create a functioning economy as well as a virtual civilization.

The Metaverse is set to become a platform that is not linked to a single app or place — whether digital or real. Just as virtual places will mirror the physical world, so will the objects and identities, allowing digital goods and identities to move from one virtual world to another, and even into the real world, through augmented reality.

Technology adoption vital to the Metaverse

- The concept of Metaverse is not new. However, it has recently come to the fore given the maturity of the technology and infrastructure required to support it.
- Connectivity and authenticity will be highly important to foster consumer adoption.
- Exposure to this theme may be gained via cellular infrastructure, datacentres, the gaming industry, internet providers and Blockchain applications.

Investment in VR/AR/MR has exploded in recent years



Source: BNP Paribas Wealth Management, Bloomberg

Augmented/Virtual Reality: why now?

The concept of Metaverse is not new. The idea was made popular in 2018 following the success of a novel by Ernest Cline, and the subsequent Steven Spielberg's science fiction film *Ready Player One*, which showcased the potential of Virtual Reality.

The technology leap we have witnessed over the last 20 years has made this concept a reality.

Connectivity is at the heart of the Metaverse. As of January 2021 there were 4.66 billion active internet users worldwide – nearly 60% of the global population. This elevated internet penetration rate is a testament to the necessary technology infrastructure which is making the Metaverse concept a reality.

Apart from accessibility, speed is paramount. Hence it is no coincidence that the concept is increasingly relevant as we move towards newer and faster 5G connection.

Blockchain technologies will also play a crucial role in data authenticity and ownership. Advancement in Blockchain technology in recent years is helping to develop the Metaverse.

Importantly, consumer-facing company sponsorship is necessary to promote mass adoption. In this regard, the global social networking giant, Facebook, has recently announced a name change of its parent company to "Meta", to reflect the Metaverse theme.

Investors may gain exposure to this theme via:

Non-public equity: tech-focused private equity funds, datacentres and 5G cell phone tower real estate.

Equity: Video games**,** cybersecurity, electronic payment systems, tokenisation solution providers, Blockchain companies, superfast internet providers (including mobile 5G), e-commerce and cross-media platform companies (Netflix, Google, Amazon, Roblox, Electronic Arts, Softbank, Tencent, etc.).

A

Appendix

BNP PARIBAS
WEALTH MANAGEMENT

Our Investment Themes for 2022

Theme	Indices	Benchmarks
1: Riding a new inflation regime	BNP Paribas Energy & Metals Enhanced Roll TR index Horizon Kinetics Inflation Beneficiaries HFRX Relative Value Fixed Income Corporate Index	USD Libor 3m (cash) MSCI All Country World USD Barclays Global Aggregate Bond index USD
2: Identifying winning investments & innovations	MSCI ACWI Autonomous Tech & Industrial Innovation index Refinitiv Venture Capital Index Bloomberg MSCI Global Green Bond Index	MSCI All Country World USD MSCI All Country World USD Barclays Global Aggregate Bond index USD
3: Repair, Reuse, Recycle	ECPI Circular Economy Leaders Index	MSCI All Country World USD
4: Small is (still) beautiful	MSCI World Smallcap index	MSCI All Country World USD
5: Enter the Metaverse	Ball Metaverse Index	MSCI All Country World USD

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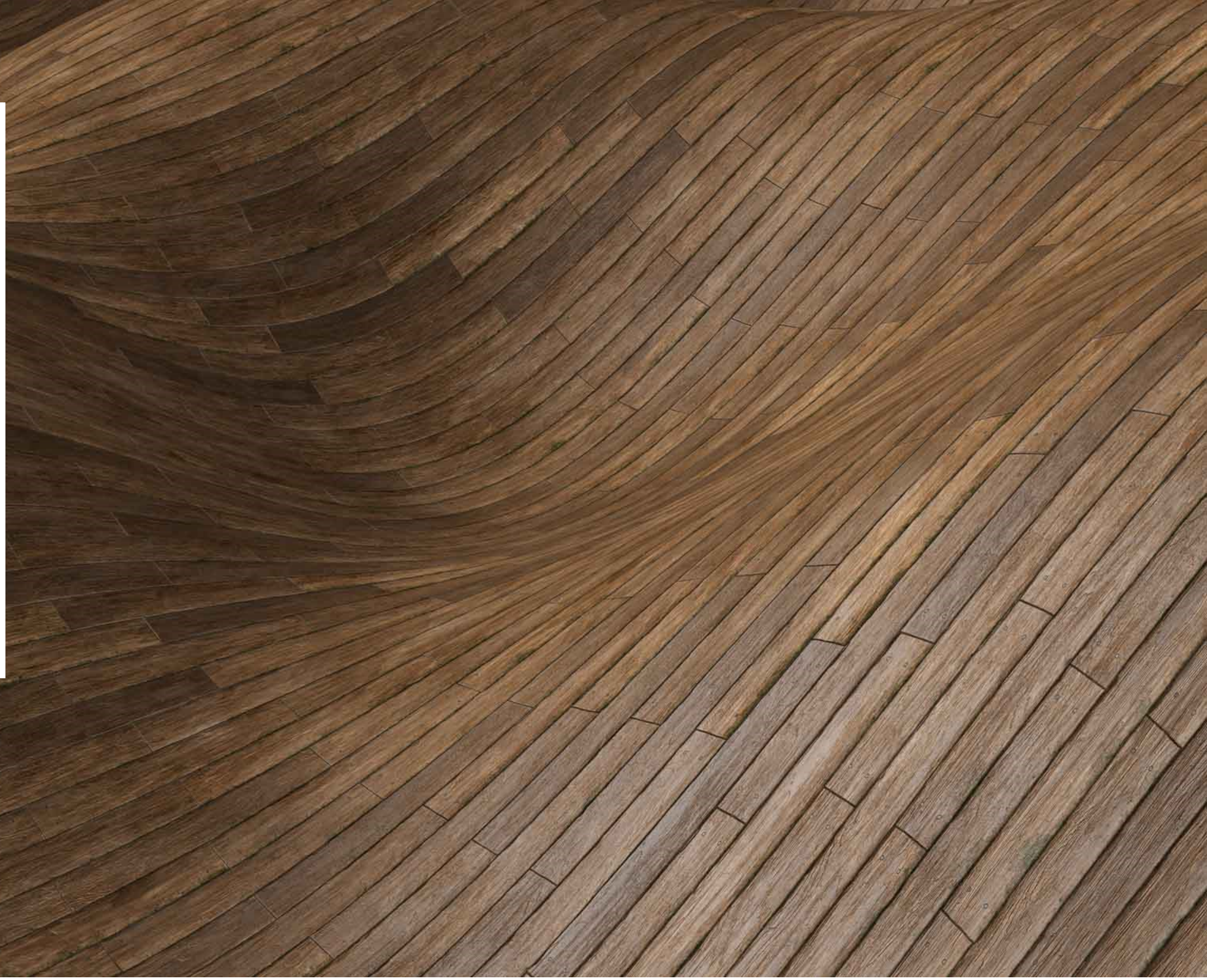

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