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Pathways

Real Assets Outlook 2022

Macro tailwinds continue | February 2022

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Investment strategies that hold securities issued by companies principally engaged in the infrastructure industry have greater exposure to the potential adverse economic, regulatory, political, and other changes affecting such entities.

Investing in real assets securities includes the risk that the value of a fund's shares will be affected by factors particular to real assets securities and related industries or sectors (such as government regulation) and may fluctuate more widely than that of a fund that invests in a broad range of industries.

Investing in the real estate industry includes risks such as declines in real estate value, lack of availability of mortgage funds, overbuilding, extended vacancies, increases in property taxes, changes in zoning laws, costs from cleanup of environmental problems, uninsured damages, variations in rents, and changes in interest rates.

REIT investments are subject to many of the risks associated with direct real estate ownership, including changes in economic conditions, credit risk, and interest rate fluctuations.

International investments entail risks including fluctuation in currency values, differences in accounting principles, or economic or political instability. Investing in emerging markets can be riskier than investing in established foreign markets due to increased volatility, lower trading volume, and higher risk of market closures. In many emerging markets, there is substantially less publicly available information and the available information may be incomplete or misleading. Legal claims are generally more difficult to pursue.

Liquidity risk is the possibility that securities cannot be readily sold within seven days at approximately the price at which a fund has valued them.

Investment strategies that hold securities issued by companies principally engaged in the infrastructure industry have greater exposure to the potential adverse economic, regulatory, political, and other changes affecting such entities.

Infrastructure companies are subject risks including increased costs associated with capital construction programs and environmental regulations, surplus capacity, increased competition, availability of fuel at reasonable prices, energy conservation policies, difficulty in raising capital, and increased susceptibility to terrorist acts or political actions.

Fixed income securities and bond funds can lose value, and investors can lose principal as interest rates rise. They also may be affected by economic conditions that hinder an issuer's ability to make interest and principal payments on its debt. This includes prepayment risk, the risk that the principal of a bond that is held by a portfolio will be prepaid prior to maturity at the time when interest rates are lower than what the bond was paying. A portfolio may then have to reinvest that money at a lower interest rate.

Natural or environmental disasters, such as earthquakes, fires, floods, hurricanes, tsunamis, and other severe weather-related phenomena generally, and widespread disease, including pandemics and epidemics, have been and can be highly disruptive to economies and markets, adversely impacting individual companies, sectors, industries, markets, currencies, interest and inflation rates, credit ratings, investor sentiment, and other factors affecting the value of the Portfolio's investments. Given the increasing interdependence among global economies and markets, conditions in one country, market, or region are increasingly likely to adversely affect markets, issuers, and/or foreign exchange rates in other countries. These disruptions could prevent the Portfolio from executing advantageous investment decisions in a timely manner and could negatively impact the Portfolio's ability to achieve its investment objective. Any such event(s) could have a significant adverse impact on the value and risk profile of the Portfolio.

Gross domestic product is a measure of all goods and services produced by a nation in a year. It is a measure of economic activity.

A sector is a segment of the economy that includes companies providing the same types of products or services. Although companies within a sector tend to be reasonably consistent in their fundamentals, these fundamentals may differ substantially from one sector to another. For example, some sectors are cyclical, rising and falling with changes in the economy while others are defensive, maintaining their strength despite economic ups and downs.

The yield curve is a line that plots the interest rates, at a set point in time, of bonds having equal credit quality, but differing maturity dates. The most frequently reported yield curve compares 3-month, 2-year, 5-year, and 30-year US Treasury debt. This yield curve is used as a benchmark for other debt in the market, such as mortgage rates or bank lending rates. It is also used to predict changes in economic output and growth.

Inflation is the rate at which the general level of prices for goods and services is rising, and, subsequently, purchasing power is falling. Central banks attempt to stop severe inflation, along with severe deflation, in an attempt to keep the excessive growth of prices to a minimum.

Consumer Price Indices (CPIs) are measures of inflation, representing changes in prices of all goods and services purchased for consumption by households.

The Global Real Estate Fund Index (GREFI) measures net asset value performance of non-listed real estate funds on a quarterly basis. Performance is measured net of fees and other costs, and represents the aggregate investor return.

The Purchasing Managers' Index (PMI) is an indicator of the economic health of the manufacturing sector. A PMI reading above 50% indicates that the manufacturing economy is generally expanding; below 50% indicates that it is generally contracting.

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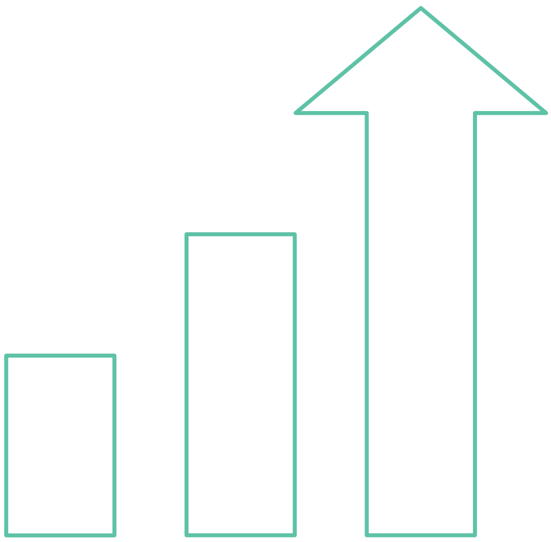
Introduction: Strong GDP growth and high inflation boost returns

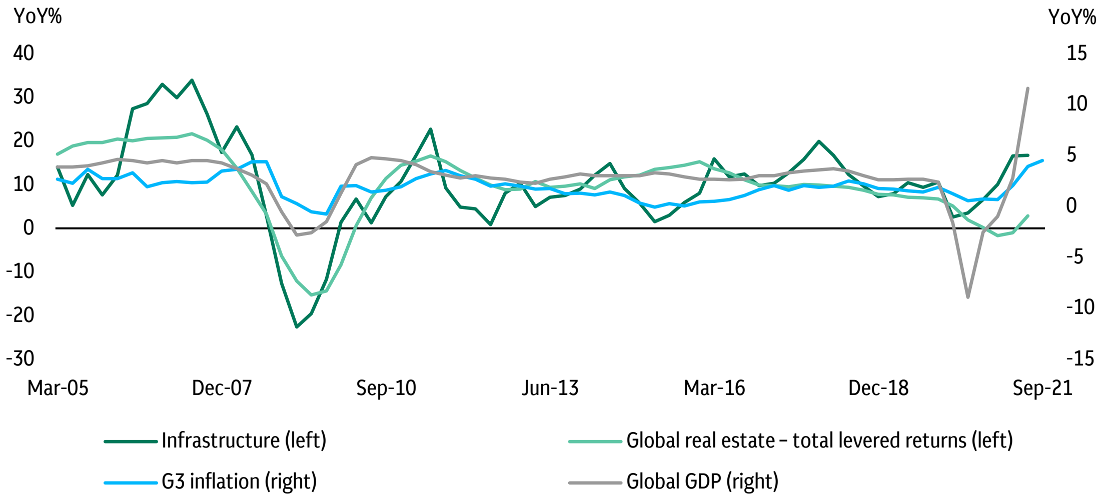


With the global economy experiencing its fastest rate of economic growth (5.9%) since the International Monetary Fund (IMF) began calculating global gross domestic product (GDP) in 1980,[1] 2021 was a year in which both property and infrastructure delivered strong returns for investors. At the time of this writing, we have performance data for the first three quarters of 2021 for infrastructure and it shows that infrastructure delivered a 10.6% annualised return[2] during that period, just above its long-run average of 9.9%. For property, global fund level (leveraged) returns were 11.6% over the past 12 months,[3] well above its 10-year average of 7.5%. For Australian agriculture, we have not yet received return data for 2021, but generally speaking operating conditions were strong during the year, with commodity prices rising and output robust.

1. https://www.imf.org/en/Publications/WEO/weo-database/2021/October.
2. These returns are excluding costs and performance fees.
3. Third quarter 2020 to third quarter 2021.

For real assets, GDP growth and inflation are key drivers of returns[4] (Figure 1). With the IMF expecting 4.4% growth in global GDP and 3.8% inflation in 2022, these two key macroeconomic variables are likely to remain a tailwind for real asset returns in the year ahead.

Figure 1:
Real estate and infrastructure returns are correlated with GDP growth and inflation

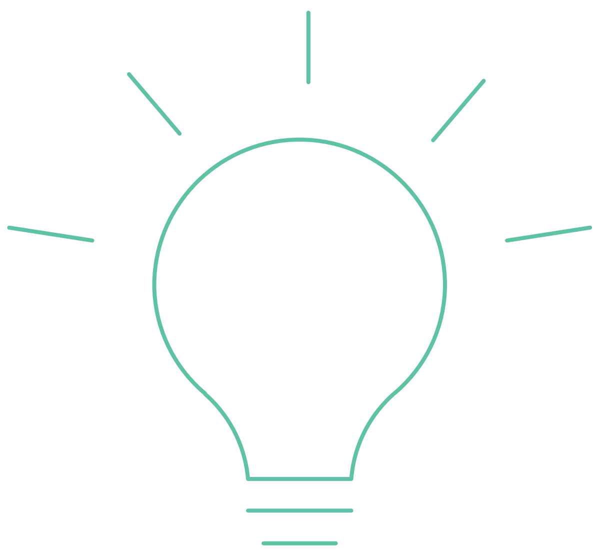


Sources: Macrobond (December 2021), IMF, European Association for Investors in Non-Listed Real Estate (INREV), Asian Association for Investors in Non-Listed Real Estate Vehicles (ANREV), National Council of Real Estate Investment Fiduciaries (NCREIF) (December 2021).

A lot may depend on what happens to the long end of yield curves. Developed-world central banks are likely to tighten monetary policy this year, led by the US Federal Reserve. One of the most interesting developments in late 2021 was the lack of response from 10-year yields over the second half of 2021 as inflation rose, central bank rhetoric became more hawkish, and market expectations for future policy rates shifted higher. We discuss this in more detail in our Outlook 2022 paper,[5] but one key reason could be that market participants believe the expected peak in policy rates didn't change much, or that the Fed will be forced to reverse any rate increases over the medium term because of financial market volatility. Whether that view continues to hold through 2022 is an open question, but neutral policy rates have shifted down to very low levels in recent years. Put simply, long-term government bond yields may not rise much in 2022, particularly if inflation peaks around midyear, as we expect. That would leave real assets with strong income return drivers from GDP growth and inflation, without much of a headwind from rising discount rates.

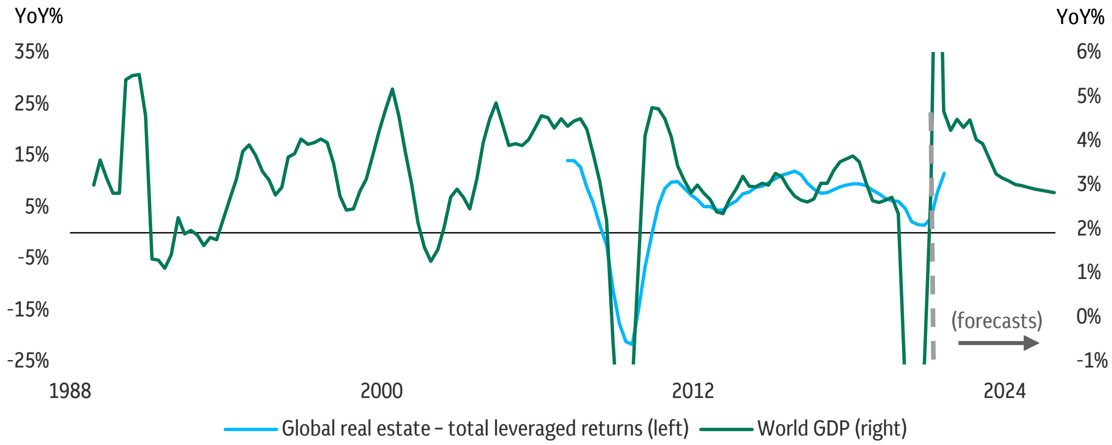
4. Note that for infrastructure, inflation is a strong determinant of returns, while for property and agriculture GDP is more important.
5. A copy of the report is available at https://www.macquarie.com/uk/en/about/company/macquarie-asset-management/outlook-2022.html.

Property: Leading indicators are flashing green



The global economy's sharp economic recovery underpinned a strong lift in property returns in 2021, after the general softness in 2020. Global fund level returns were 11.6% for the 12-month period ended 30 September 2021 (latest available data), well above 2020's return of 1.5% and the 10-year average of 7.5% based on INREV's Global Real Estate Fund Index (Figure 2). Total return momentum looks to have continued into the fourth quarter of 2021 given elevated levels of transactional activity in the final quarter of the year. By region, the strongest cyclical recovery was seen in North America, with returns accelerating to 14.4% over the same period compared with 12.1% in Europe and 10.2% in Asia-Pacific (APAC), according to MSCI.

Figure 2:
Global property returns tend to lift with GDP growth



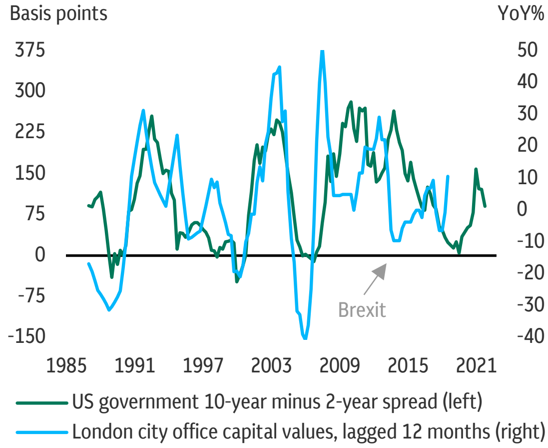
Sources: INREV, Oxford Economics (forecasts), as at January 2022.

Total returns have been supported by a combination of yield compression and healthy rental growth in those sectors with strong fundamentals such as industrial and rental housing, as well as those that are gaining increasing institutional attention such as manufactured homes, self-storage, life sciences laboratories, and data centres. Importantly, aggregate performance is no longer being dragged down by the retail sector and, to a lesser extent, the office sector, with values stabilising over the course of 2021, particularly for high-quality assets with robust cash flows.

Total returns for commercial real estate are likely to remain strong in 2022 given still above-average global GDP growth and elevated levels of dry powder to be deployed into real assets, including property. The ongoing strength of global capital markets is expected to underpin further cap rate compression, while cyclical improvements in occupier fundamentals, including in sectors that have fallen out of favour in recent years such as shopping centres and office buildings, should also support capital values and total returns.

Over the medium term, we continue to focus on the flattening of the US yield curve as a possible indicator of slower global GDP growth and weaker occupier demand and asset pricing, particularly if past relationships continue to hold and the Fed returns rates towards neutral levels over the next two to three years, as expected (Figure 3). Although unlikely, such a scenario may come sooner than expected if the US and other central banks withdraw policy support more quickly than markets expect this year in response to high and elevated inflation.

Figure 3:
The US yield curve tends to be a good leading indicator of asset pricing and global growth



Sources: Bloomberg, Property Market Analysis (PMA), as at January 2022.

Commercial real estate pricing – Still relatively attractive, despite tighter cap rates

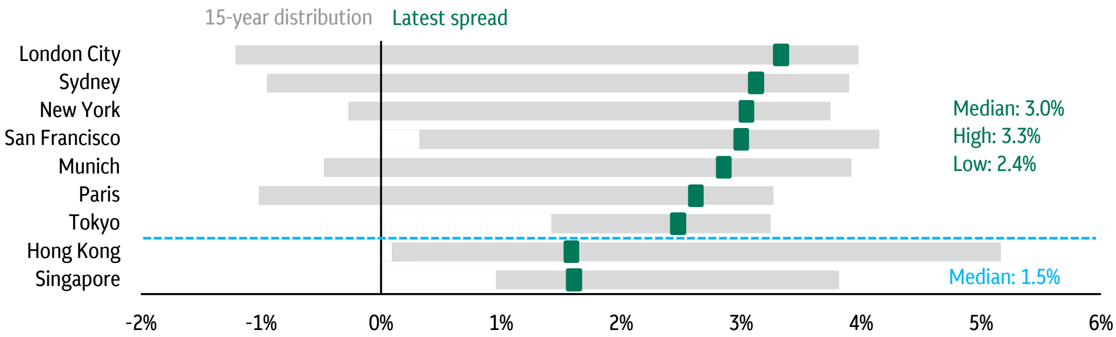
In terms of pricing, commercial real estate cap rates continued to tighten over the course of 2021 in sectors with solid fundamentals, including industrial and rental housing. Cap rates also declined sharply for specialised real estate such as self-storage and life sciences buildings, given strong capital and occupier tailwinds. In the office sector, European net initial yields tightened further in 2021 supporting overall total return performance (Western Europe), or resumed tightening in the case of the UK following Brexit-related weakness, with relatively attractive pricing in London driving strong interest from domestic and global investors searching for relative value.

Cap rate compression across Europe was particularly evident in core central business district (CBD) markets with strong investor interest for high-quality buildings with long leases and steady cash flows. Elsewhere, office cap rates were broadly stable (such as in Australia, Japan, and China) or softened marginally in US gateway markets where there was general tenant weakness, elevated levels of subleased space competing against newly developed space for occupiers, and rising vacancy rates.

Although pricing is generally tight by historical standards across markets and sectors, commercial real estate remains attractive against other income-yielding assets (Figure 4). For example, both property cap rate spreads over government bonds, and “all in” expected returns (net initial yield plus cash-flow growth expectations) relative to investment grade corporate bond yields, remain elevated compared with historical averages, underpinning capital flows into the sector from both institutional investors and high net worth individuals. Relatively attractive pricing is likely to continue to support pricing and liquidity momentum into 2022, particularly with investors looking to deploy large amounts of capital into real assets, including real estate.

Even in the CBD office space, net yields remain tight compared with 15-year distributions and averages given limited dislocation and distress in the sector during COVID-19. By comparison, cap rates have expanded for shopping centres and malls in many developed markets relative to pre-COVID-19 levels, particularly for those assets with limited exposure to non-discretionary retailers such as supermarkets, or large exposure to services-orientated retailers.

Figure 4:
Spreads (cap rate minus 10-year government bond yield) remain attractive compared with historical distributions, supporting levered strategies, developments, and alternatives investments



Sources: Bloomberg, CoStar, JLL, PMA, as at January 2022.

Leading indicators – Point to an ongoing recovery in office demand, although risks remain

Prime office values are lifting modestly again following a pullback in liquidity and sales activity across markets and cities in 2020. Further cap rate compression is expected in certain markets this year – particularly in Western Europe and the UK – given low expected returns from holding safe-haven assets such as government bonds and attractive yield spreads to "all-in" borrowing costs which are boosting cash-on-cash yields. The acceleration in capital growth is also being supported by the cyclical pickup in transactions and modest income growth, while rents are growing in line with inflation.

Key leading indicators such as Europe's composite Purchasing Managers' Index (PMI) and US office-based jobs growth point to strengthening leasing demand over the next 12-24 months given historical relationships with net absorption (Figures 5 and 6). However, any broad-based recovery remains clouded by the ongoing uncertainty around how much office space many corporate and government tenants think they will need in the future. Shifts to hybrid working environments[6] and the desire to be in higher-quality space as employers attempt to entice workers back into the office while dealing with growing environmental, social, and governance (ESG) issues, are likely to delay the recovery relative to the usual demand indicators.

In terms of sectors, while many large tech firms appear to be leaning towards a hybrid working model, these businesses should continue to grow faster than overall economies, supporting demand for office space over the medium term. Leasing activity is more robust for smaller tenants, though, as they take advantage of the attractive incentives available.

Figure 5:
White collar jobs growth points to upside to office demand – US

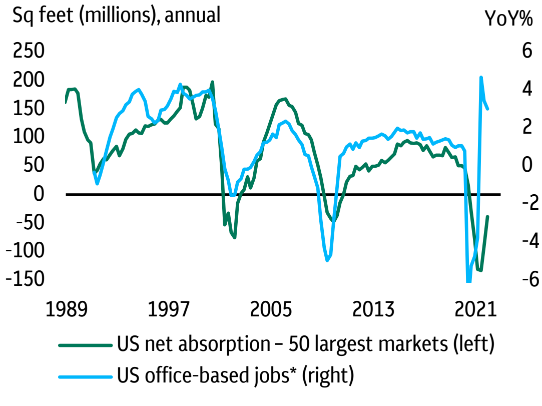
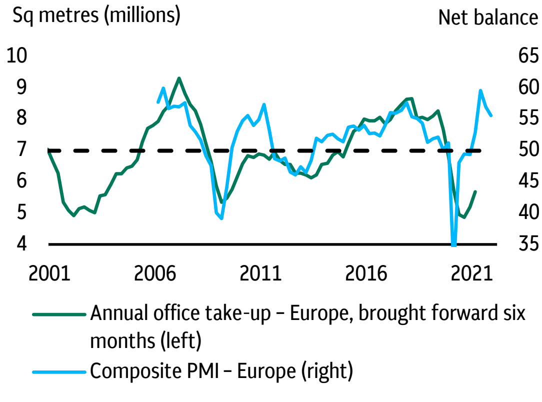


Figure 6:
European PMIs also suggest upside to office demand – Europe



Sources: Bloomberg, BLS, CoStar, PMA, as at January 2022. *Office using jobs sectors: Financial activities, professional and business services, IT, government jobs.

6. For more details, see our paper from January 2021 "Pathways: Working from home and its impact on future office demand."

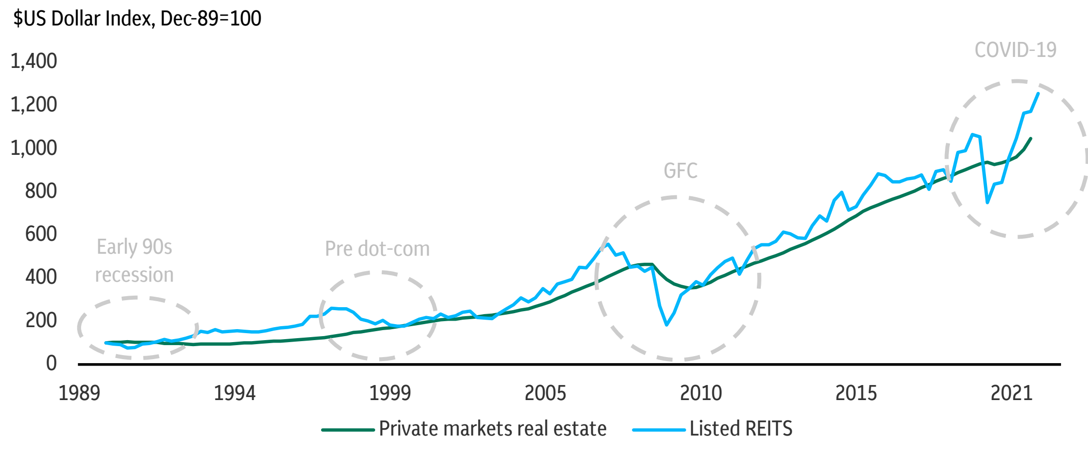
Overall, the office sector will be exposed to a high degree of disruption over the coming decades, creating opportunities to develop high-quality space that caters to the growing importance of tech-savvy millennials in the workforce and the increasing use of technology in workplaces. Broader ESG considerations will also play an important role as many occupiers and investors – led by developed markets – target their real estate portfolios and corporate footprints and implement strategies to achieve their publicly stated net zero carbon (NZC) targets over the coming decades.

Listed real estate pricing – Suggests upside to private market valuations

Other near-term signals remain positive for direct real estate pricing and capital growth momentum in 2022. For example, the historical relationship between public real estate investment trusts (REITs) and private total return indices, such as those in the US (Figure 7), suggests some potential upside to private market valuations this year, assuming public REIT markets hold up as expected.

In terms of strategies, core investments will continue to draw the bulk of investor interest this year, as they always do in commercial real estate, with institutional investors looking to deploy capital and increase allocations given the sector's healthy income returns and stable cash flows. Increasingly, though, we expect that tight cap rates will continue to support levered strategies as investors look to boost cash-on-cash yields and equity returns, development exposure in our preferred sectors with strong structural tailwinds or supported by ESG considerations will remain attractive, cross-border capital flows will continue as investors look to gain access to sectors not available in their home markets, and investments into alternative sectors and operators will continue to be popular with investors looking for additional return premiums relative to core and traditional asset classes.

Figure 7:
Listed real estate markets tend to provide an early indication of private real estate values

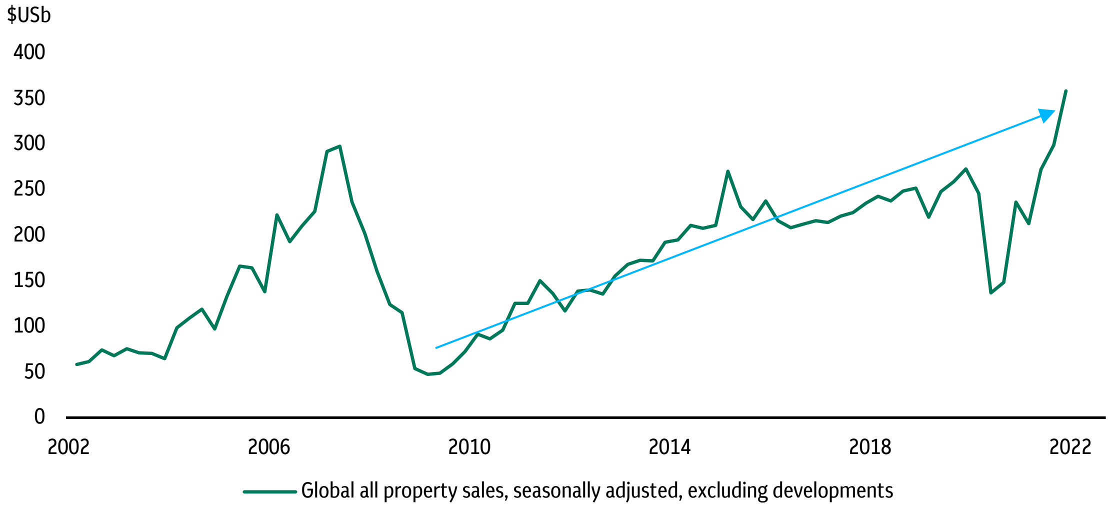


Sources: MAM Real Estate Strategy, Bloomberg, as at January 2022.

Global transactions – Recovery well under way

Real estate investment and liquidity bounced back sharply across key markets and sectors in 2021, consistent with the shape of the global economic recovery over the previous 18-24 months. On a seasonally adjusted basis, commercial real estate transactions excluding sales of land and development sites reached a post-global financial crisis (GFC) high of $US352 billion in the fourth quarter of 2021, with quarterly activity resuming the upward trend that has been evident since late 2008 and early 2009[7] (Figure 8). This suggests that both the COVID-19-related disruptions and China's softer growth patch in 2015 were temporary pullbacks in a longer-term context of increased capital deployment into higher yield asset classes and private markets, including real estate. Overall, real estate sales increased by around 40% in 2021, with fourth quarter 2021 volumes 20% higher than fourth quarter 2020 levels, according to Real Capital Analytics (RCA).

Figure 8:
Global real estate transactions have bounced sharply, resuming their longer-term trend



Source: RCA, as at January 2022.

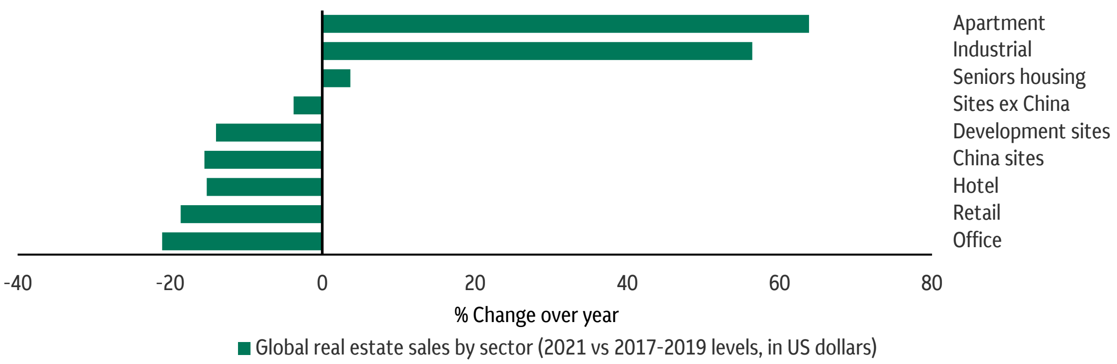
7. Land sales are excluded from the analysis as they are often large and distorted by the efforts of China's policymakers in stimulating residential construction activity.

Recovery led by industrial and apartments demand

Globally, total real estate investment in 2021 was 12% above pre-COVID-19 levels for the years 2017-2019, though the sector split has changed substantially (Figure 9). The surge in activity has been led by apartments (64% higher in 2021 compared with pre-COVID-19 averages) and industrial investment (56% higher). On an annual basis, apartment sales ($US373 billion) exceeded the office sector ($US290 billion) for the first time in 2021, reflecting a theme that has been evident for some time now as investors look to include real estate sectors in their portfolios that are supported by structural tailwinds (such as housing affordability for rental housing), less exposed to economic cycles, and have lower capital expenditure (capex) requirements.

Interestingly, sales of mid- and high-rise apartments as well as low-rise rental housing (garden apartments) have increased by similar amounts from pre-COVID-19 levels. This suggests that investors are largely indifferent between inner-city and outer suburban locations in boosting their rental housing exposure, but they are also optimistic about the long-term growth prospects of large cities in the context of economies that are bouncing back from COVID-19-related disruptions. The same recovery profile has not been seen in the office sector, with investors showing a slight preference for suburban locations over CBD locations due to investor uncertainty about the impact of work-from-home trends on future office demand. Unsurprisingly, given the strength of occupier requirements, demand for industrial property remains robust with total investment ($US244 billion) around twice as large as overall retail sales ($US123 billion) for 2021.

Figure 9:
Apartments and industrial have led the global recovery in transactions



Source: RCA, as at January 2022.

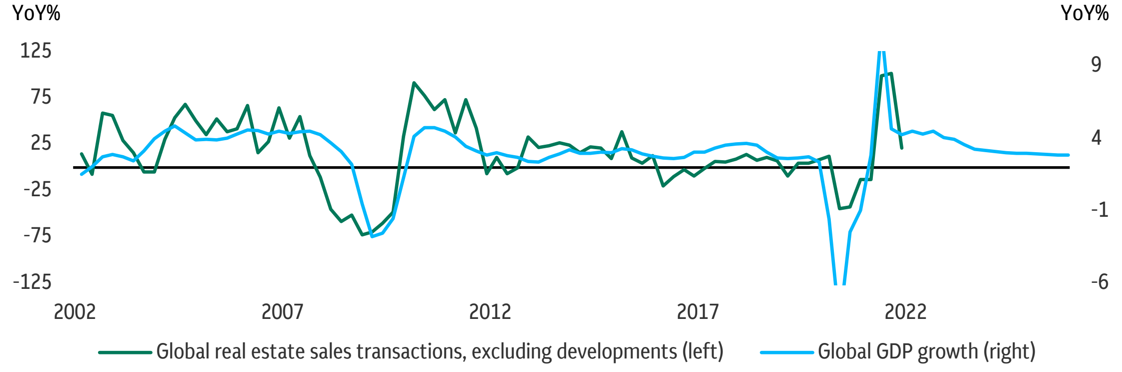
Office, retail and hotel transactional markets lagging

Overall, office volumes are 20% below pre-COVID-19 averages, with more pressure coming in the CBD space (30% lower than pre-COVID-19 levels) versus suburban locations (10% below 2017-2019 levels). Global office investments should continue to pick up modestly as health risks dissipate and workers return to offices, fundamentals recover, cross-border appetite picks up, and liquidity returns in gateway markets, particularly in those cities that were severely impacted by COVID-19, such as New York.

In the retail sector, sales of individual shops have been very resilient with overall transactions 4% higher than pre-COVID-19 levels as investors focus on assets leased to supermarkets, convenience retailers, neighbourhood centres and discretionary retailers that have benefitted significantly from the global policy stimulus and housing upswing. By contrast, sales of large shopping centres and malls have fallen 22% from 2017-2019 levels. In other COVID-19-impacted sectors, limited-service hotel sales are 26% higher than pre-COVID-19 averages compared with a decline of 30% for full-service hotels, something that reflects the nature of a global health pandemic which has severely limited business travel and international tourism.

Looking ahead, assuming the global economy grows by a further 4-5% this year, as expected by Oxford Economics, global real estate investment should rise a further 15-20% in 2022 based on historical relationships between GDP growth and transactions and long-term growth rates following the GFC (Figure 10).

Figure 10:
Global real estate transactions expected to rise further in 2022 given historical relationships with global GDP growth



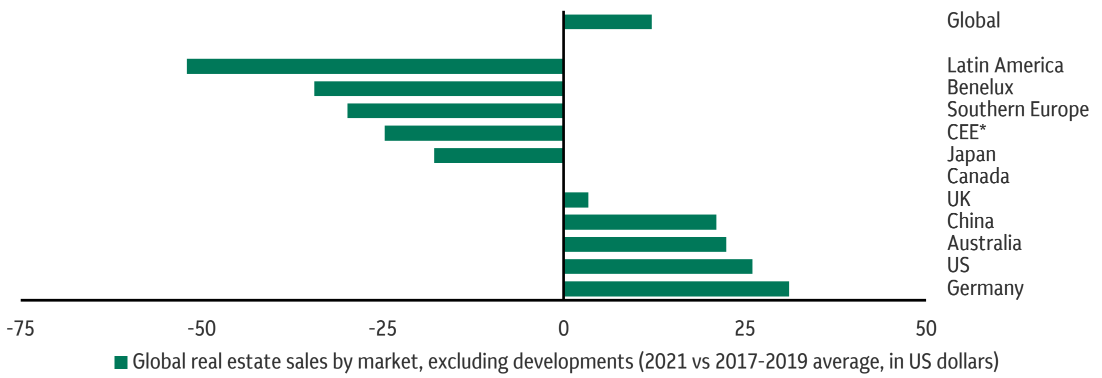
Sources: Oxford Economics, RCA, as at January 2022.

Recovery in transactions led by key developed markets

By market, the strongest transactional recoveries have been seen in key developed economies with large domestic institutional investors (Figure 11). This includes markets such as Germany where investment volumes are 31% higher than pre-COVID-19 levels (2017-2019), the US (26% higher) and Australia (22% higher). Transactions are also 21% higher in China, supported by ongoing institutionalisation of its commercial real estate sector alongside restrictions on outbound investment and repatriation of capital from overseas markets. In aggregate, Europe and the APAC region have recorded more modest recoveries, though transactions in these regions held up better in the early stages of COVID-19, supported by a few large transactions. Investment volumes remain below pre-COVID-19 levels in weaker economies or markets with low levels of real estate transparency such as Latin America and Central and Eastern Europe (CEE).

Elsewhere in Europe, UK investment volumes are now marginally above pre-COVID-19 levels, with the market being supported by a combination of domestic and cross-border investors focused heavily on the industrial sector, build-to-rent (BtR) and high-quality office buildings, although overall activity remains one-third below 2015 pre-Brexit referendum peaks. In the APAC region, Australia has seen a strong recovery, with activity being supported by both domestic capital and Asian and European cross-border investments, particularly in the industrial sector and CBD office markets. Liquidity should remain strong in key developed markets in 2022 given the buoyancy of global capital markets, with lagging markets benefitting as investors look beyond their home markets to deploy dry powder and boost income returns.

Figure 11:
Germany, US, and Australia have seen strong transactional recoveries



Source: RCA, as at January 2022. *CEE = Central and Eastern Europe.

Outlook 2022: Industrial and niche sectors to remain strong and housing rental demand to accelerate

In the industrial sector, similar trends continue to be observed around the world where demand for space in and around large consumer populations and well-connected secondary cities is at historical highs, which is in turn underpinning strong total returns for core exposures and new developments. Strong global online sales growth projections at around 10% per annum over the next decade in nominal terms – more than double overall retail spending – are expected to underpin demand for space. This should help to offset ongoing productivity gains as occupiers move into modern facilities and supply rises in some markets.

Over the medium term, industrial demand may be further boosted by:

- inventory restocking as importers look to rebuild their supplies following COVID-19 disruptions
- a shift from “just in time” to “just in case” inventory management where more stock is held in storage for a given level of sales
- potential near-shoring production efforts to diversify supply chains, particularly for pharmaceuticals and other daily essentials.

Niche asset classes – Investors are increasing their exposure, bringing forward their institutionalisation

Occupier and capital demand for niche asset classes such as data centres, life science facilities, self-storage, and innovation hubs is expected to remain strong in 2022. These sectors were inevitably going to be supported by key global structural shifts including increased use of technology, data flows, and an ageing demographic. But the nature of a health pandemic that has boosted research and development (R&D) spending and facilitated shifts towards remote working and home entertainment have brought forward the demand adjustment.

To a certain degree, the lack of pricing discounts and distressed assets that were evident in past downswings has meant that investors remain focused on alternatives. Strong investor demand and capital flows are bringing forward the institutionalisation of these asset classes and pricing is adjusting accordingly.

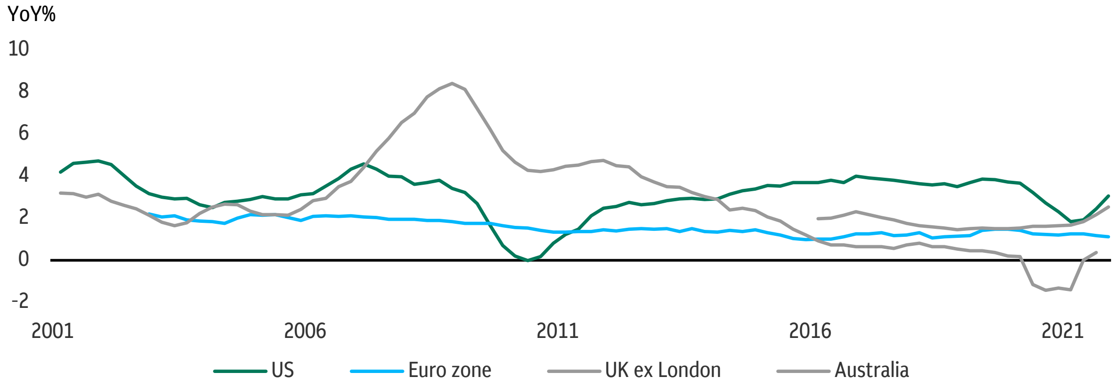
Detached housing markets underpinning demand for rental housing

Declining house prices and a general pullback in residential construction in many developed markets following the GFC were big drags on the global economic recovery during 2009-2012. In contrast, detached housing has boomed over the past two years in major developed markets including the US, UK (excluding inner-city London), Germany, Australia and New Zealand. The strength of housing has had large positive benefits for the rest of the economy, including increased construction activity and household wealth, which has flowed into consumer spending and business conditions, helping to support the cyclical recovery in economic growth and asset pricing.

This highly synchronised global upswing – supported by historically easy monetary policy, limited banking distress and government support (such as first-time buyer grants) – has pushed house prices higher relative to incomes in many markets, making it even more difficult for young people and lower- to middle-income households to scrape together a deposit to purchase a home. With potential first-time buyers renting for longer, or locked out of homeownership altogether, aggregate demand for rental housing has remained robust throughout the pandemic.

To some extent, demand initially shifted towards regional markets, lifestyle markets and sunbelt metros, although key gateway markets in the US and Australia have seen demand recover very rapidly as young people moved back into cities in 2021. London remains an exception for now, reflecting Brexit uncertainties, ongoing health risks, and work-from-home trends where many employees are benefitting from the time saved not commuting daily. In the case of major gateway markets, such as New York, housing demand is recovering quickly, as young people flock back to cities for jobs, education and lifestyle reasons. Broad measures of housing rents which are incorporated into national Consumer Price Indices (CPIs) are picking up again, reflecting improving fundamentals across markets (Figure 12).

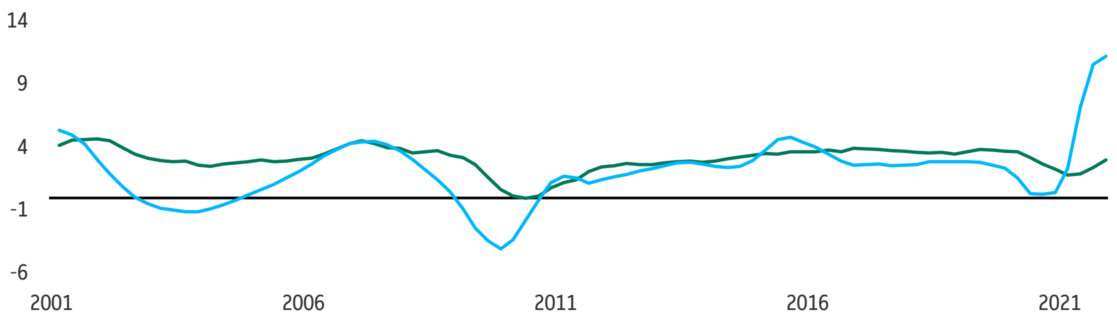
Figure 12:
Housing rental growth is picking up as fundamentals recover



Sources: ABS (Australia), ONS (UK), US Federal Reserve Economic Department (euro zone and US), as at January 2022. US reflects rent of primary residence, US city average, all urban consumers in seasonally adjusted terms.

These broad CPI housing measures appear to be underestimating the extent of the recovery that is being seen in the multifamily housing segment of the market, where rental growth has been much stronger over the past 12 months, although the multifamily series tends to be more volatile, especially during downswings and upswings. For example, US multifamily rents jumped 11% over the 12 months to 4Q21 – which is the strongest growth seen in more than two decades – reflecting a combination of unprecedented demand for rental space and tightening vacancy rates, whereas the CPI shows growth of only 3% (Figure 13). Overall, multifamily rents in the US are now 12% higher than pre-COVID-19 levels, and national vacancy rates are 4.6% compared with pre-COVID-19 lows of 6.1% in mid-2019, with net absorption reaching 714,000 units in 2021 versus a 10-year average of 246,000 units in 2010-2019.

Figure 13:
US multifamily rents have jumped sharply over the past 12 months



Sources: CoStar, US Federal Reserve Economic Department, as at January 2022.

Multifamily rental growth is expected to remain strong in 2022 as vacancy rates tighten further and wage growth recovers in many markets, supporting housing cash flows and revenues. To some extent, rental housing in the US, UK, and Australia may benefit from any sustained inflationary pressures over the medium term, given that rents can be reset annually. Of course, over the medium term, any policy tightening in response to high inflation may trigger slower employment growth, which would also have knock-on effects on real estate demand, including housing. Regulatory risks also remain elevated in some European and US cities as rental affordability disproportionately impacts key workers and low-income households.

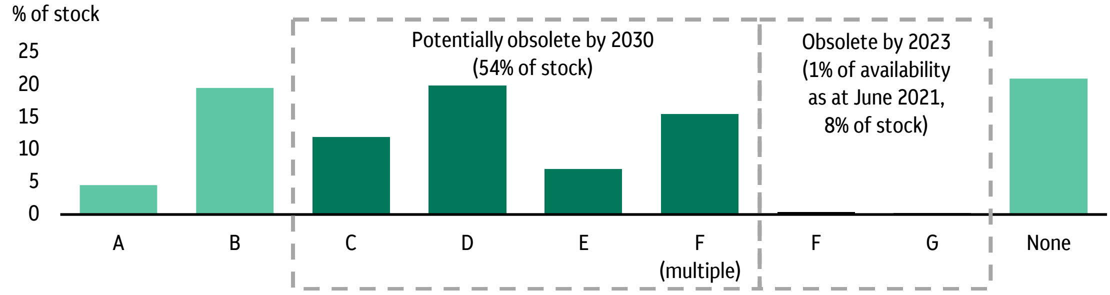
ESG momentum grows – Flight to higher-quality space across all rental pricing points continues

The flight-to-quality theme is likely to become increasingly evident over the coming years as occupiers, investors, and governments implement strategies to achieve their publicly stated long-term NZC emissions targets, including targeting the emissions of commercial real estate. Regulators will also play a significant role as offices are easy targets for governments in reducing national emissions levels relative to the housing sector, which is more politically sensitive, particularly for lower- and middle-income households given that housing affordability is stretched in many global cities. This is already happening in some European markets where office space with low energy performance certificates (EPCs) will be unlettable from 2023 onwards. Regulatory pressure is likely to accelerate modernisation efforts and increase capital expenditure requirements for the office sector in the medium term.

For example, in the UK under the Minimum Energy Efficiency Standards (MEES) it will be illegal to let an office building with an EPC below an E rating from 2023 onwards in Central London. It has been proposed that all office buildings below a C rating will be unlettable by 2027 and below a B rating from 2030 onwards (Figure 14). In the Netherlands, offices with an EPC below grade C will be illegal to let from 2023 onwards and the objective is to allow only buildings with a rating of A to be lettable by 2030 (Figure 15). Existing owners of energy-inefficient buildings in the UK and Netherlands, and increasingly other European markets, would either need to upgrade their EPCs to meet regulatory requirements, engage in complete refurbishments, or convert their office buildings for other uses.

Figure 14:
Governments are increasingly targeting real estate to reduce carbon emissions

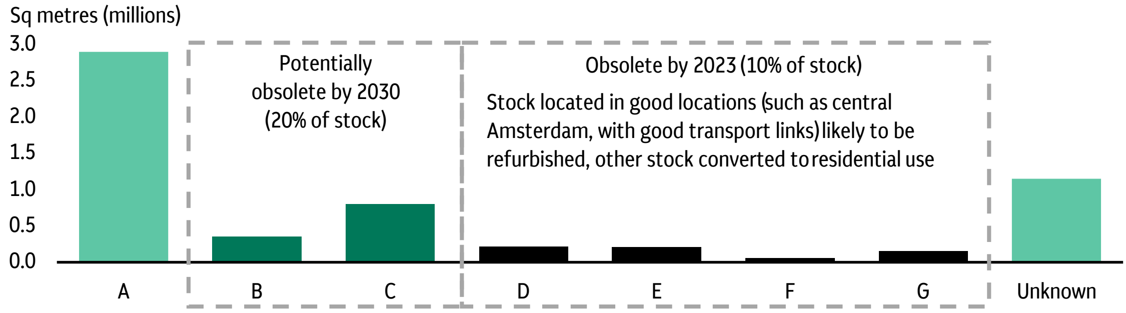
London City Office Market: EPCs % availability



Source: PMA, as at January 2022.

Figure 15:
Restrictions on leasing low-EPC office space to impact supply and liquidity, creating development opportunities over the next 10 years or more

Office Stock by EPCs in Amsterdam



Source: PMA, as at January 2022.

Low energy efficiency buildings are not all created equal

Investors will need to distinguish “green viable” office assets from “brown” buildings in assessing their existing portfolios and new investments. Green viable offices are most likely in good locations with high build quality, allowing for energy performance improvement without extensive redevelopment work. These assets are likely to generate solid income growth via higher rental uplifts and tighter occupancy rates over the medium term, assuming regulatory pressure and ESG considerations continue to gather momentum, as expected. By contrast, retrofitting brown offices is likely to be uneconomic, where yield on cost measures and expected redevelopment returns fall below hurdles, and suboptimal from an embodied carbon perspective.

From an occupier view, strategies are likely to be increasingly focused on leasing space and occupying buildings with high energy ratings and limited or no carbon emissions, though occupiers are likely to upgrade across all rental levels given the incentive packages available in many developed markets. The shift to a hybrid working model is also playing a role as many occupiers move to an environment where employees frequent the office for collaboration purposes, teamwork, and training purposes rather than independent desk work, which can often be done efficiently elsewhere.

Rising depreciation risks and increasing capex requirements are likely to create an increasing wedge between the performance of prime and secondary office space over the medium term. NZC office developments and refurbishments in expensive gateway markets are likely to become more evident, as are investments to reduce the operational carbon emissions of existing buildings.

Over the longer term, buildings with high energy ratings and NZC properties are likely to command increased focus if, as expected, institutional investors and traditional bank lenders continue to shift their portfolios away from standard investments. Costly and difficult-to-upgrade secondary office assets are likely to create opportunities to repurpose existing real estate into alternative uses, such as residential and rental housing. Owners of high-quality portfolios are likely to be rewarded by both occupiers (leading to stronger rental growth) and capital markets, both being ultimately conducive to higher total shareholder returns.

Focus on Europe – Lagging other regions

Heading into 2022, economic woes continue to hang over Europe's recovery. New COVID-19 variants pose risks especially for countries with lagging vaccination campaigns, where a clear West-East gap became apparent in 2021 (Portugal and Spain leading, CEE lagging). Progress in the DACH region – Germany, Austria and Switzerland – has also stalled, but mandatory vaccinations are already agreed upon in Austria and are being considered in Germany.

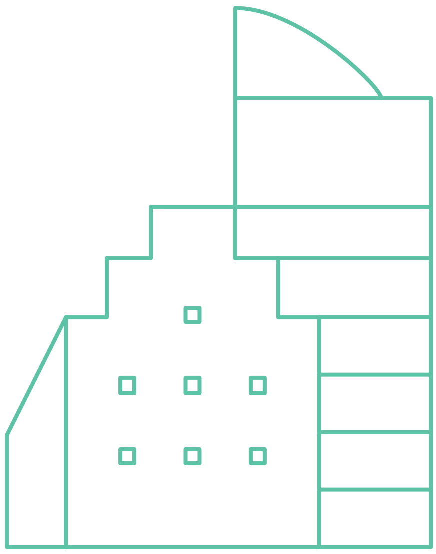
Additionally, supply chain issues are curbing prospects in manufacturing heavy countries, such as those tied to the German automotive sector, while tourism-heavy markets might finally see a sustained recovery in 2022. On the political front, presidential elections in France, Slovenia and Hungary are coming up, while worries around the erosion of law in Hungary and Poland remain.

The recovery in Europe's real estate investment markets (outside the UK) is so far lagging other regions, with the caveat that year-on-year comparisons are still influenced by a record first quarter of 2021. Going forward we expect volumes to follow the global recovery trend, while (for now) maintaining the clear preference for cash-flow-stable industrial and residential assets. The picture for offices should remain one where prime assets are highly liquid but secondaries drop away. These trends are likely to also translate into pricing, with further yield compression in the most sought-after areas of the market.

Driven by continued strong tailwinds, leasing demand for industrial remains strong across all European regions, while the additional COVID-19 boost is expected to continue in 2022. Developers have reacted accordingly with developments, as well as the share of speculative building starts, trending up. The result should be a return to demand-supply equilibrium over the medium term.

Meanwhile, office markets are expected to remain subdued, so long as larger multinational companies are still hesitant to commit to more space or longer terms. However, the picture around future work arrangements should become clearer in 2022. Higher standards and needs in terms of amenities, flexibility and ESG could also edge prime rents higher again after a quiet 2020 and 2021.

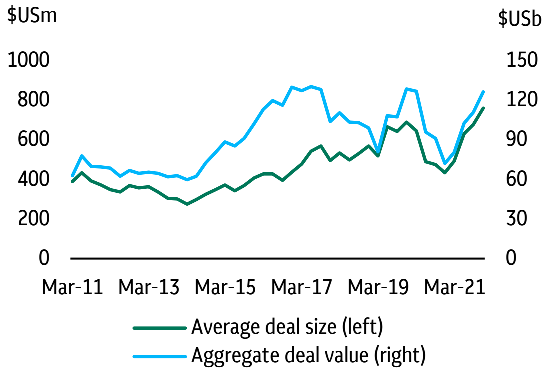
Infrastructure: Resilience through the COVID-19 crisis with macroeconomic tailwinds in 2022



Infrastructure proved resilient through the COVID-19 period, experiencing only one quarter of negative returns (the first quarter of 2021) with total returns averaging an annualised 15.2% since. The short-lived nature of the initial crisis no doubt helped investors to look through the downturn and therefore prevent a sharp drop in valuations, while the fact that debt markets remained open enabled tail risks to be avoided.

Deal activity also recovered strongly in 2021, with transaction volumes rising close to previous peaks. On a four-quarter moving average basis, total deals were $US126.6 billion in the fourth quarter of 2021, with the average deal size reaching $US763.2 million (Figure 16). This was a record-high average deal size, while total deals were only 3% below the previous high of $US130.5 million in the second quarter of 2017.

Figure 16:
Infrastructure transactions close to previous peaks



Source: Preqin (December 2021).

As with property, overall macroeconomic conditions are supportive of infrastructure returns. The close link between infrastructure's returns and inflation[8] means that it is likely to fair better than many other asset classes in the unlikely event that inflation expectations start to move higher and the inflation dynamic gains a more permanent foothold. It also means that infrastructure returns should hold up well in the face of rising bond yields, if the increase is driven by inflation and GDP growth. Historically, infrastructure returns have been better when bond yields are rising than when they are falling.[9]

The rise in inflation is likely to be particularly beneficial for infrastructure assets at the lower end of the risk-return spectrum, given that the link between returns and inflation is tighter for

8. For more details, please see our note "Pathways: Inflation risk and infrastructure as an inflation hedge," November 2020.
9. See page 21 of our paper "Pathways: Infrastructure and the stages of the economic cycle," December 2018.

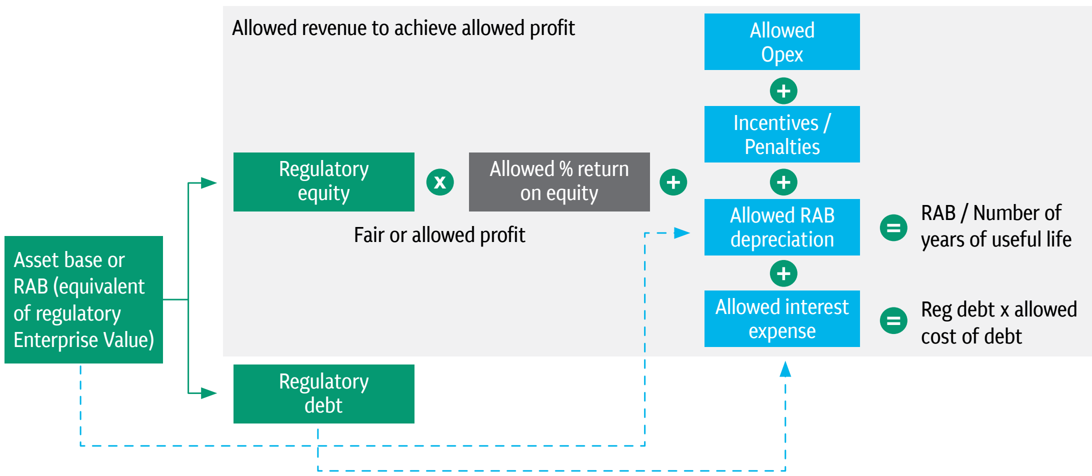
many of these assets than it is for those higher up the risk spectrum.[10] While it's harder to generalise by sector, utilities (such as electricity and gas distribution networks and generation assets) should continue to have a solid year in 2022. Digital infrastructure has grown in popularity in recent years and COVID-19 has both brought forward demand levels in this sector by a number of years and reinforced to investors and governments alike just how critical these assets are to our daily lives. Parts of the transport sector were heavily affected by COVID-19 but are now bouncing back.

Utilities – High inflation and rising interest rates are a tailwind

Core infrastructure has been growing in popularity in recent years, with many investors seeking a high yielding substitute for fixed income securities that no longer provide the return and yield they require. This part of the infrastructure risk spectrum is also the one where the link between inflation and nominal returns is tightest.[11] The prevalence of regulation among these assets, which can offer a direct real return or link allowed price increases (and therefore revenue growth) to inflation, is the key factor behind this segment's reliable inflation hedge. In the current environment, where concerns about inflation are more elevated than they have been for decades, the attractiveness of this trait has grown, further burnishing the sector's appeal.

The return model for infrastructure utilities varies by geography. In much of Europe and Australia returns are driven by regulation, which in most cases is a regulated asset base (Figure 17) or rate-based model. Volume exposure is non-existent or minimal, with owners allowed a return on the capital value of the asset, with flex for service improvements in some instances.

Figure 17:
Regulated asset base framework



Source: Macquarie Asset Management.

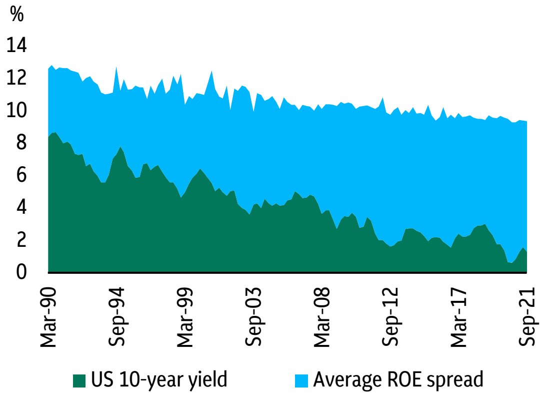
10. See "Pathways: Core infrastructure – Its inflation hedge characteristics and the search for yield," June 2021.
11. See our recent paper "Pathways: Core infrastructure – Its inflation hedge characteristics and the search for yield," June 2021 for a detailed exposition of the empirical evidence on this subject.

If bond yields were to rise, could this negatively impact the sector, either because a utility's cost of debt increases or because money shifts out of the sector and into government bonds, creating a headwind for valuations and returns?

Rising cost of debt. In a rising interest rate environment, a utility's cost of debt will increase, but so too does its allowed return. Which effect dominates will depend upon the tenor of the debt of the asset in question and the formula the regulator uses for the cost of debt and cost of equity that go into the weighted average cost of capital (WACC). In some cases this can amount to a small drag on returns, but the impact is not as large as implied by the year-on-year increase in the cost of debt and, again, varies by asset.

Fund flows back to government bonds. This is theoretically possible but, in our view, unlikely. There are two reasons for this. First, when bond yields are rising, total returns are being undermined by price declines, something which could actually see more money flow out of bond markets, not back in. Second, it may ultimately require a significant increase in bond yields to reverse the current flow of money into core infrastructure, given the size of the risk premium utility investors are currently being offered. Figure 18 below shows, for the US, the average return on equity (ROE) awarded to electric utilities compared with the 10-year bond yield. This enables a calculation of the risk premium offered to investors. At 8.1 percentage points that risk premium is almost two standard deviations above its post-1990 average of 6.4 percentage points, even if it is down from its recent peak of 8.8 percentage points.

Figure 18:
Utilities – Returns versus 10-year bond yields



Source: https://www.eei.org/issuesandpolicy/Pages/FinanceAndTax.aspx#financialdata.

In short, 2022 looks like it will be another strong year for utilities and core infrastructure. It would probably take a sharp rise in bond yields to tempt fund flows out of the sector and back into fixed income securities, while concerns about inflation are likely to continue to fuel interest in these assets as a hedge against the risk of higher inflation.

Transport sector – Fading COVID-19 risks and strong GDP growth to drive volumes

The transport sector has been heavily affected by COVID-19 and the outlook is more uncertain and more varied by subsector than it is for other infrastructure sectors. With the Omicron variant likely to impact GDP growth in the first quarter of 2022, travel volumes (particularly air travel volumes) could be adversely affected early in the year. But with global GDP growth likely to be strong again this year, and the potential for concern about COVID-19 to fade once Omicron passes, in our view we could see a robust rebound in activity from the second quarter of 2022 onwards.

Air travel – Hiccup in the first quarter, but 2022 likely to see strong volume growth

Air travel (and therefore airports, from an infrastructure point of view) has been the sector most dramatically impacted by COVID-19. As the crisis broke in March-April 2020, travel volumes ground to a virtual halt, but they subsequently recovered strongly over the second half of 2020 and 2021. This trend has been observed in many countries around the world, although the recovery has been stronger for domestic air travel than for international, primarily because formal restrictions and quarantine requirements have remained in place much longer for international travel. This has backed up into a divergence in performance by country, with the proportion of a country's domestic versus international air travel determining the strength of the overall recovery.

In the US, for example, which has a large domestic travel market, air travel has bounced back forcefully (Figure 19). As of October 2021 (latest data available), total revenue passenger miles were up 139% year over year, and just 24% below their October 2019 level. Domestic travel was just 12% below pre-COVID-19 levels. In Singapore, by contrast, where all flights are international, volumes are only about 5% of their pre-COVID-19 level (Figure 20).

Figure 19:
US air travel has recovered rapidly

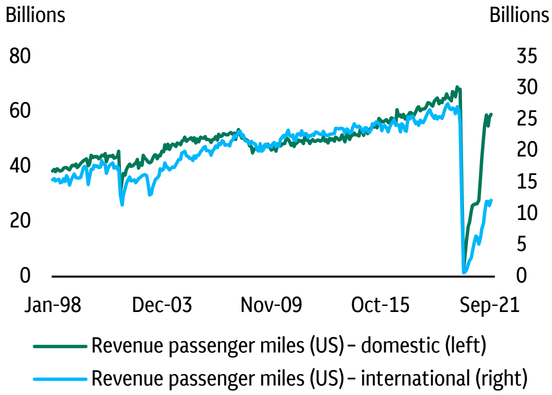
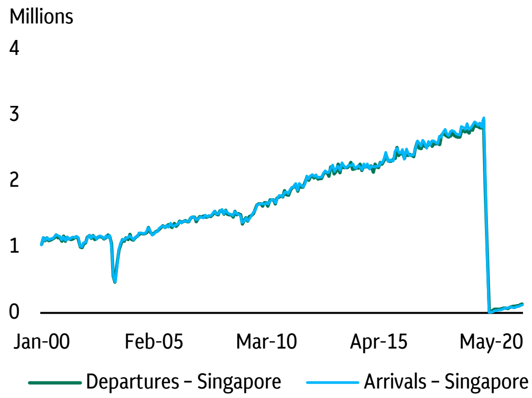


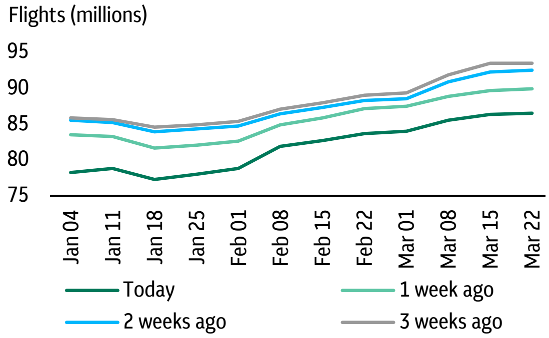
Figure 20:
Singapore air travel is still suppressed



Source: Macrobond (January 2022).

At present, with the Omicron variant raging, many airlines are cancelling flights. The most recent data show that over the course of the last three weeks the number of flights scheduled globally for the next 12 weeks fell by 7.2% (Figure 21). The number of cancellations tends to rise as the scheduled date approaches but is quite consistent across regions. Passenger miles may have dropped even more than this if load factors have fallen, which seems probable.

Figure 21:
Flights scheduled globally – cancellations have been occurring[12]



Source: BloombergNEF (January 2022).

This suggests that flight volumes in most countries around the world are likely to weaken in late fourth quarter 2021 and early first quarter 2022. Omicron has, in effect, delayed the recovery. But its overall impact may prove to be reasonably short-lived. Data from South Africa and the UK show that infection rates have already peaked, and the US and continental European countries may not be far behind. As we look to the fading of the Omicron surge, two points are worth bearing in mind:

- If 2020 and 2021 are a guide, there may be plenty of pent-up demand for air travel still unmet, so travel volumes could rebound sharply when infection rates decrease and travel conditions normalise.
- A potential consequence of Omicron is that global immunity is strengthened and confidence grows that the health risks of COVID-19 are fading. This could further boost demand.

In short, with air travel volumes still well below levels consistent with current levels of GDP, confidence growing in the lessening health risks from COVID-19, and a large amount of pent-up demand still waiting to be met, there is the potential for especially rapid growth in volumes from the second quarter of 2022 onwards.[13]

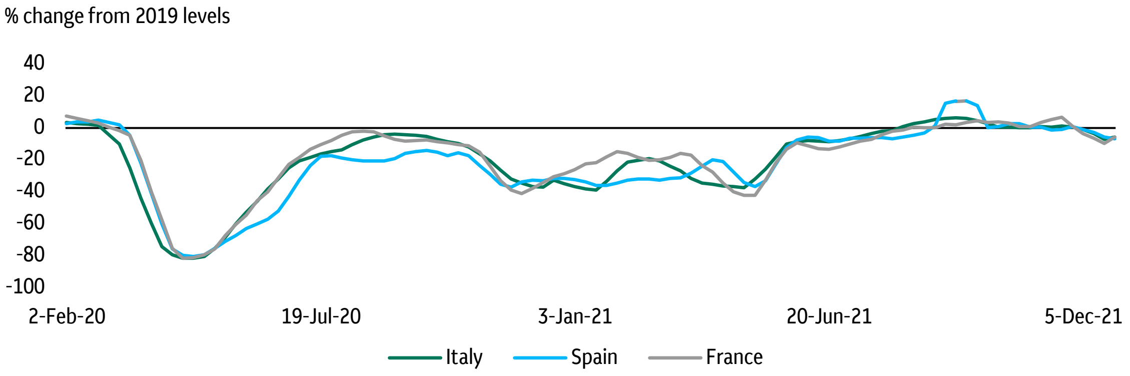
Road traffic – Following the economic cycle

Road traffic has also been affected by COVID-19, but the impact has been more in line with COVID-19's impact on overall economic activity than for air travel, which has been disproportionately affected.

The close relationship with economic activity can be seen most clearly for toll road volumes in Europe (Figure 22). There was a collapse in volumes in late first quarter 2020/early second quarter 2020 as economic activity fell precipitously amid the first COVID-19 wave, but then bounced back almost as sharply as economies reopened and economic activity recovered. There was then another pullback in late 2020 as Europe went back into recession, but volumes again recovered in early to mid-2021 as the economy did likewise.

12. The data come out with a lag, which is why January data are shown here.
13. We will explore these issues in much greater depth in an upcoming Pathways paper on air travel volumes.

Figure 22:
Road volumes have followed the economic cycle



Source: https://www.atlantia.it/performance-traffico?s=1603362609122.

The impact of the Omicron variant has been quite muted so far, in part because formal movement restrictions have been relatively limited. Volumes have moderated some, to be sure, but the drop hasn't been as sharp as in either early or late 2020. Looking ahead we don't expect to see travel restrictions of the severity necessary to induce a major drop in road volumes, and we would expect that, after further softness in the first quarter of 2022, volumes subsequently recover and then grow at a rate commensurate with GDP growth.

Trade and port volumes – An atypical response to the crisis

Trade volumes (those at ports, from an infrastructure perspective) have behaved differently again. Volumes unexpectedly surged during the early stages of COVID-19 (Figures 23 and 24) as consumer spending globally was forced (by the lockdowns) to shift from services to goods. Growth in volumes has since slowed, as capacity constraints have bitten and spending has rebalanced back to services, but volumes remain well above pre-COVID-19 levels.

Figure 23:
Growth in US port volumes surged but has since fallen back

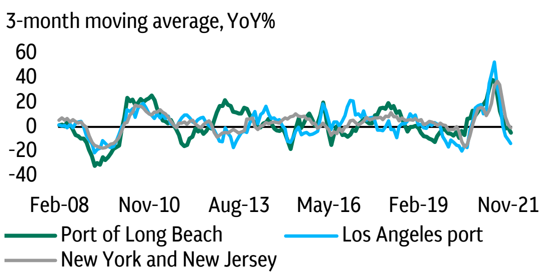
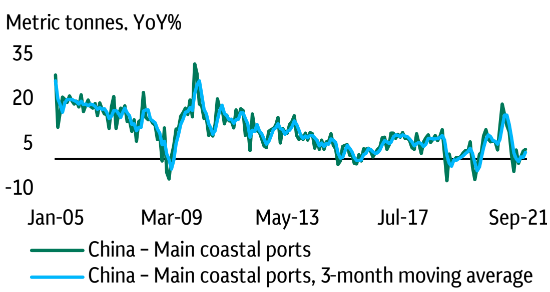


Figure 24:
A similar trend was observed in China's main ports, although less pronounced



Source: Macrobond (January 2022).

Looking ahead, it seems likely that capacity constraints will remain an issue for much of the first half of 2022. They could be quite intense in December 2021 through February 2022, due to employee absenteeism and the shutdown of some ports globally. But as we move through the year these capacity constraints should progressively ease, and growth in trade volumes should return to normal (that is, growing faster than overall GDP).

Digital infrastructure – Comes of age

The use of digital services has expanded dramatically in the past decade. Data use has increased extremely rapidly and connections have proliferated. This applies to both our work and personal lives, something that can be seen in a range of statistics. Figure 25 shows the percentage of businesses that have a website or home page. The level and speed of ascent varies by country, but in all countries the percentage has been increasing rapidly over the past 10-15 years. Our personal use of digital services has also exploded, with more than 90% of individuals (aged 16-74) in the UK and Germany using the Internet in the past three months (Figure 26).

There is generally a virtuous cycle between network capacity and speed on the one hand and use cases on the other. Expansion in the former fuels an increase in the latter, which in turn increases demand for the former. In essence the underlying demand for digital services is extremely strong and, at present, only constrained by the infrastructure's ability to deliver.

Figure 25:
Business use of digital infrastructure has grown dramatically

Businesses with a website or home page

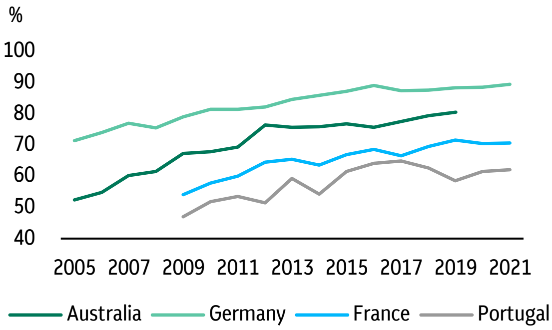
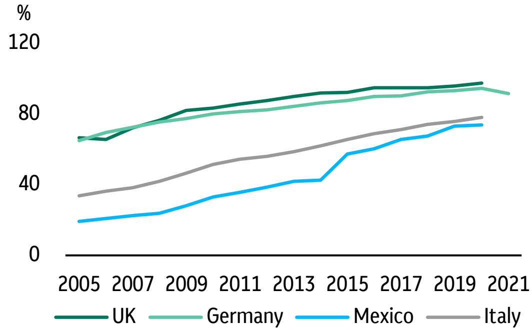


Figure 26:
Our personal use of digital services is also growing very rapidly

Individuals (aged 16-74) using the Internet in the past 3 months



Source: https://stats.oecd.org/.

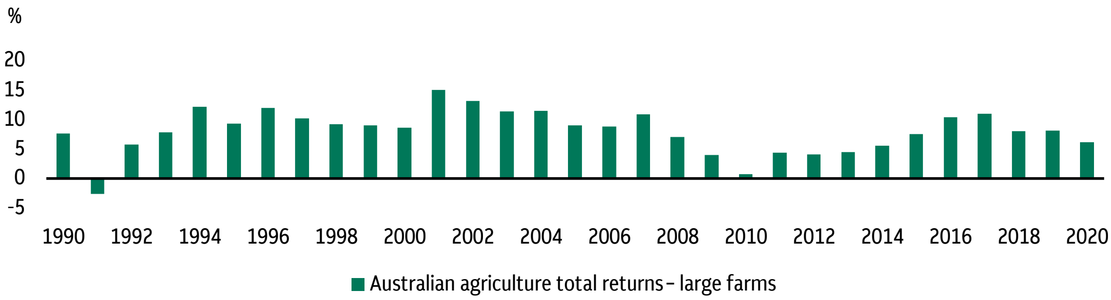
COVID-19 has served not only to intensify our use of data and digital services with more people working, playing, and learning from home, but to reinforce how reliant we are on the infrastructure that delivers them. This combination of factors – the rapid growth in use and the importance of reliable delivery – has created significant opportunities for the deployment of capital to finance the capex need in the digital infrastructure sector.

If 2022 is a year of steady return to normality, as we expect, then the COVID-19-induced surge in demand for digital services may fade somewhat. That said, COVID-19 has likely caused a level step up in demand – our expectation is that post-COVID-19 more people will work from home and older cohorts will be more active users now that they have become acclimatised to using online services. Valuations now generally reflect investors' increased confidence about growth in the sector and its resilience to GDP shocks, but we expect that 2022 will still be a year of active deal flow and capital deployment in digital infrastructure.

Agriculture: Strong operating conditions driving the asset class

Australian agriculture has been a strong performer over the past three decades, with large farms delivering an average return of 8.1% since 1990 (Figure 27). The return delivery has also been consistent, with returns turning negative on only one occasion (1991) during this period.

Figure 27:
Australian agriculture has delivered healthy returns over the long run



Source: ABARES (https://apps.agriculture.gov.au/agsurf/agsurf.asp).

Looking ahead to 2022, operating conditions for agriculture are strong, both globally and locally in Australia. Globally, food commodity prices surged in 2021 (Figure 28). Supply bottlenecks, poor climate conditions in key regions such as South America, the Black Sea area and the US, and robust demand all combined to push food prices to some of the highest levels – in both nominal and real terms – since the early 1960s. Livestock prices in Australia have also risen, as many farmers have looked to restock following the 2018-2019 drought (Figure 29).

Figure 28:
Food prices are rising globally

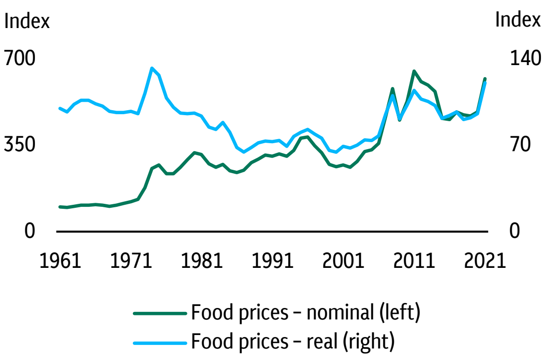
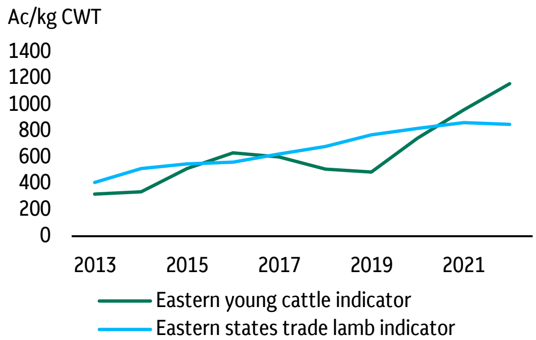


Figure 29:
Australian livestock prices are also at high levels



Sources: https://www.fao.org/worldfoodsituation/foodpricesindex/en/; http://statistics.mla.com.au/Report/List.

Australian agriculture has proved well positioned to take advantage of these propitious conditions. While the weather was challenging for other agricultural producers globally, it has been the opposite in Australia, with above-average rainfall and minimal extreme temperature events facilitating a surge in output. The result is that the value of farm production has reached its highest level in more than 30 years (Figure 30). Much of that output is being exported to take advantage of the high pricing and good market conditions globally (Figure 31).

Figure 30:
Favourable weather conditions have boosted output in Australia

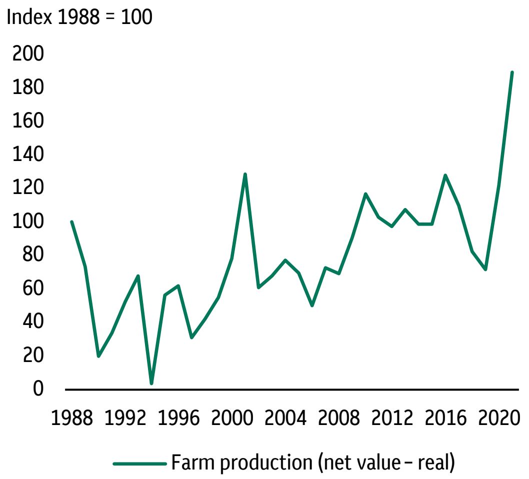
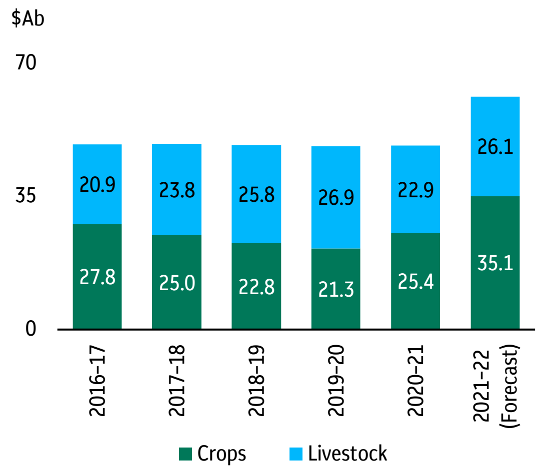


Figure 31:
Much of the increase in output is being exported to take advantage of the excellent global conditions



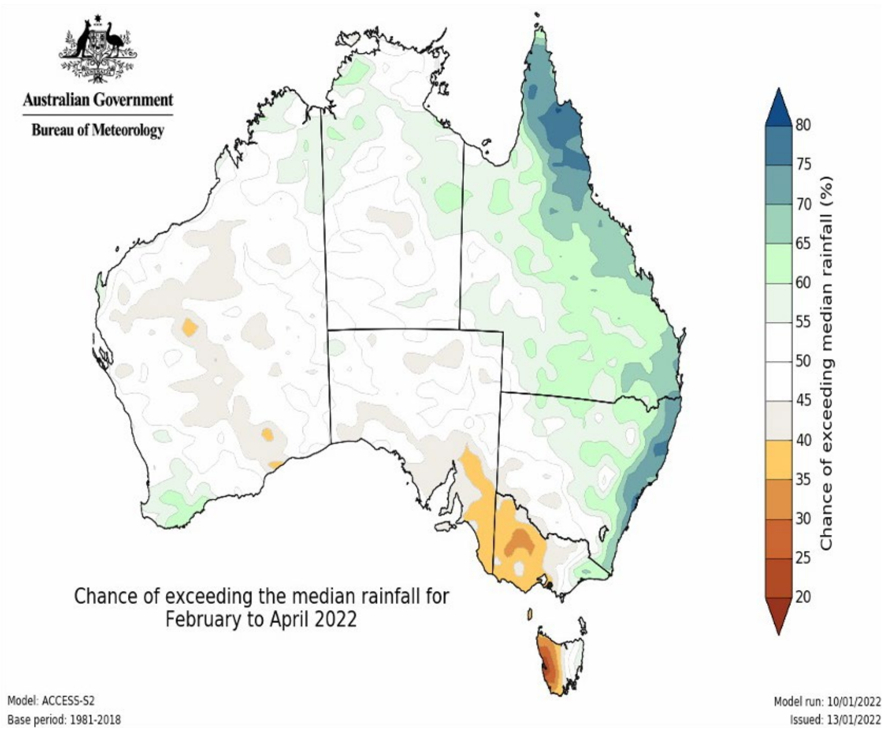
Sources: Macrobond (January 2022), Department of Agriculture, Water and the Environment (January 2022).

In short, 2022 looks like it will be a strong year for Australian agriculture from an operating point of view. Commodity prices are high, and production and exports are likely to be healthy. Australian agriculture is essentially capitalising on its relatively strong climatic and operational conditions vis-à-vis the other main agriculture-producing regions globally.

This performance will, in time, begin to be capitalised in land values. In terms of the relationship between changes in commodity prices and changes in land values, what we have observed over the past 25 years or so is that Australian land values tend to respond with a lag – the highest correlation between changes in commodity prices and changes in land values occurs with a lag of three to five years. There could be several reasons for this. First, agriculture is not as liquid as other asset classes and has less institutional ownership, which may delay the capitalisation of good operating outcomes. Second, given the volatility of commodity prices, the market may need convincing that good conditions are here to stay before capitalising them.

In addition to the strong structural demand drivers for meat and grains, there is likely to be robust cyclical demand this year, with global GDP growth expected to be 4.4%, well above its long-run average of 3.4%, according to the IMF.[14] Moreover, although weather is naturally uncertain, the good weather conditions in Australia that have been key to its current robust relative position are forecast to continue in the months ahead (Figure 32). In short, the favourable operating conditions for Australian agriculture may persist, something that would support returns directly through incomes but also increase the likelihood of capitalisation of these income gains.

Figure 32:
Australian weather conditions could remain favourable in early 2022



http://www.bom.gov.au/jsp/sco/archive/index.jsp?map=rain&outlook=median&period=season1&year=2022&month=1&day=13&y=2022&m=1&d=13.

14. https://www.imf.org/en/Publications/WEO/weo-database/2021/October.

Conclusion: Real assets maintain their appeal

Real assets have been strong performers for many years, supported by impressive fundamentals as well as capital inflows as some investors have become dissatisfied with the returns from other asset classes, most notably fixed income. Real assets' performance through the COVID-19 period has also been impressive, with property, infrastructure and agriculture seeing only small and temporary hits to capital values, although some subsectors were more affected.

For property and infrastructure, the two key drivers of total returns are global GDP growth and inflation. With these variables expected to be above average through 2022, both asset classes are likely to find strong support from the macroeconomic environment. For Australian agriculture, underlying operating conditions have improved dramatically recently, with commodity prices rising and Australia benefitting from relatively good climatic conditions from a production standpoint.

There are risks of course. If the monetary policy tightening cycle that is now clearly under way in the developed world goes too far too quickly, it could derail the recovery and place pressure on asset prices and multiples. China's housing market may also cause a greater-than-currently-expected slowdown in global growth. But no asset class would be immune from these effects. From a relative performance perspective, real assets are again likely to have a good year in 2022 in our view.

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For more information, or to speak to the author of this issue, Daniel McCormack, please contact your Macquarie Asset Management Relationship Manager.