OCBC Bank

Singapore Credit Outlook 2022

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- **2021 was a stand-out year for the Singapore corporate bond market, with total issuances of SGD25.3bn hitting a nine-year high and only eclipsed by 2012's record-high issuances of SGD31.3bn. Overall, the jump in issuance size can be attributed to a stronger macroeconomic outlook due to a largely successful vaccination rollout in Singapore, deep liquidity in the market with investors flushed with cash, and relatively low interest rates. Of note was not only the quantity of bonds issued but also the quality with several firsts and other positive developments in terms of issuers and issuance structures that highlight the growth and maturation of the SGD corporate bond market.**

- **This was despite an evolving operating environment with investors keeping a close eye on inflation readings and any significant developments on the COVID-19 front. These key influences will likely be a recurring theme in 2022. While we expect a broader potential range of outcomes versus the beginning of 1H2021, we look towards 2022 with a stronger sense of optimism with developed and middle-income countries better prepared against the pandemic. As such, we continue to prefer taking some credit risk and subordination risk over interest rate risk to generate returns whilst staying at the shorter end of the curve for higher quality credits.**

- **ESG-related developments continued to accelerate through 2021 recognizing not only an improvement in knowledge and increased familiarity but also some increased urgency to address weather related events and the impact of climate change. While this trend will undoubtedly continue in 2022, we expect further transition from the multitude of principles and agendas that have established the 'what' to a network of regulations focused on the 'how' to achieve a carbon neutral world. While the devil is in the detail, Sustainable Finance Disclosure Regulation is expected to help the journey through promoting responsible and sustainable investments and discouraging greenwashing. Knowledge is power in the ESG space and in an effort to improve this, we look at several key developments and opportunities in the sustainability space including the unlabelled universe of bonds, the sustainable bond market and sustainability linked bonds and regulations for Financial Institutions to weather the storm.**

- **Financial Institutions' fundamentals continue to be broadly stable from past actions by themselves and regulators, timely and explicit government support, and the essentiality of their services and systemic importance. While global and industry developments in 2022 are likely to keep the pressure on regulators to ensure that Financial Institutions maintain adequate capital and liquidity buffers to ensure ongoing financial system resilience, we expect a few regional nuances to influence the Financial Institutions we cover. We continue to be overweight bank capital instruments in a rising or volatile interest rate environment and with solid credit profiles and regulator pragmatism, we see write-down risk as low.**

- **Asset values for Commercial REITs have held up, with property prices largely rising despite the pandemic. We expect companies in Singapore to gradually move towards a hybrid working format although do not expect significant reduction in footprints. For retail properties, tourist-reliant downtown shopping malls were more negatively impacted versus suburban malls catering to locals. Structural changes to retail properties that sped up during the pandemic has heightened the existential question for mall owners on how they should adapt. Industrial REITs have been resilient, and we expect this to continue into 1H2022. The nature of Industrial REITs is changing, with each extra dollar of capex spend going into data centres. Hospitality REITs continue to be plagued by uncertainty from the pandemic, though leisure travel demand is strong. Instead of waiting out the storm, the largest hospitality REIT listed in Singapore is busily diversifying into student accommodation.**

- **Private residential property prices rose 7.8% y/y in 3Q2021, in-line with our forecast. Factors which drove the growth in 2021 (increasing wealth of Singaporeans, aspirations to upgrade, looming supply crunch) may remain in 2022 to drive prices higher by 5-7% in 2022. The property cooling measure announced in mid-Dec may nip the revival of enbloc cycle and foreigner demand in the bud but will have limited impact on first-time homebuyers and HDB upgraders who are a significant source of demand in the housing market.**

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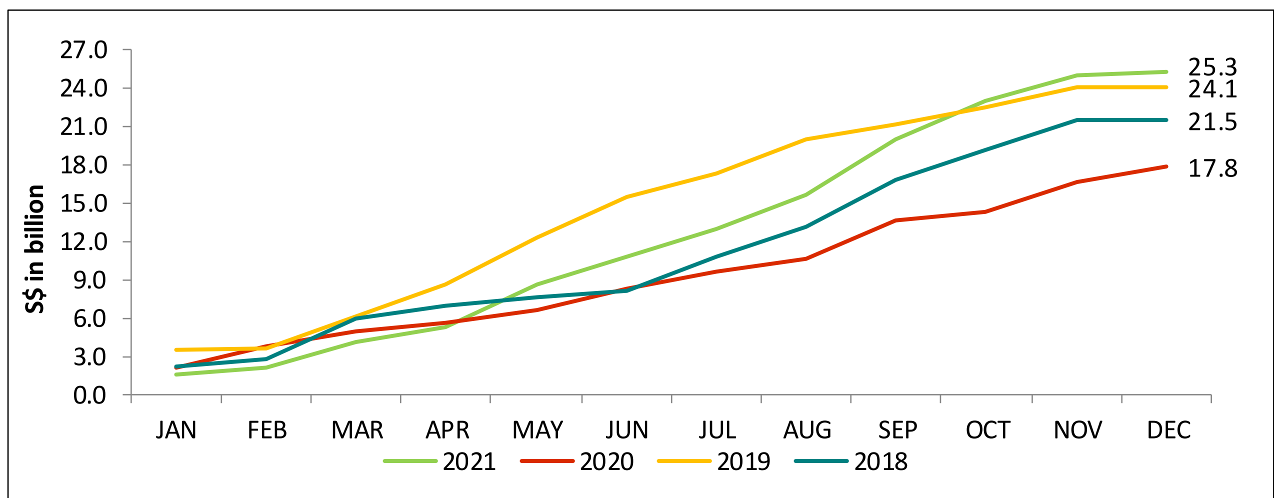
2021 Singapore Corporate Bond Market Review

Stronger overall issuance volume y/y amidst stronger fundamentals and deep liquidity

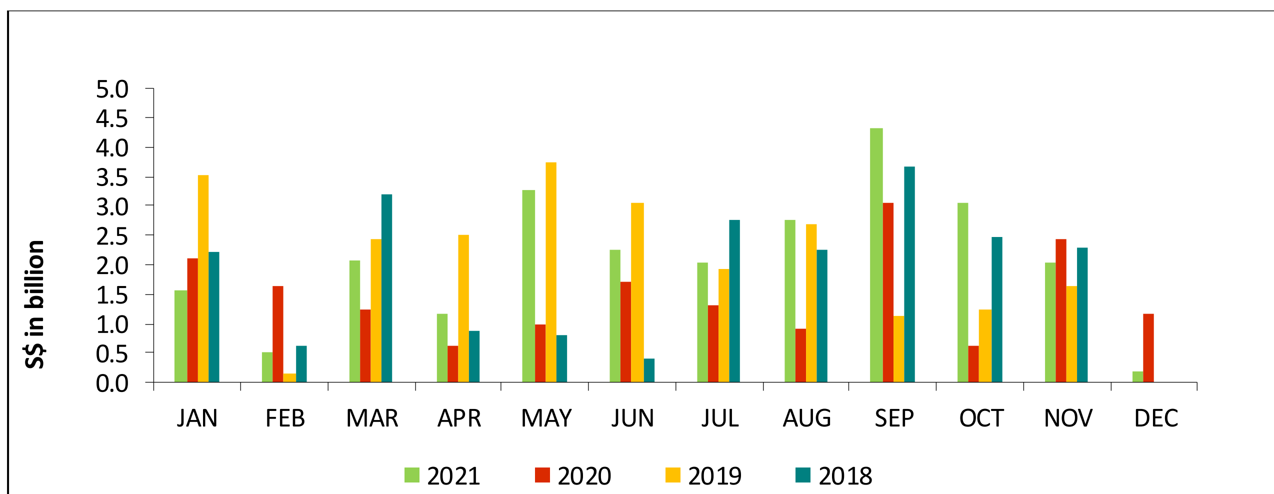
2021 has been a stand-out year for the Singapore corporate bond market, with total issuances of SGD25.3bn hitting a nine-year high and only eclipsed by 2012's record-high issuances of SGD31.3bn. Total new issuances in 2021 were at SGD25.2bn across 80 issues, up 43.7% y/y compared to the new issuance volume in 2020 of SGD17.5bn across 79 issues. Overall, the jump in issuance size can be generally attributed to a stronger macroeconomic outlook due to a largely successful vaccination rollout in Singapore, deep liquidity in the market with investors flushed with cash, and relatively low interest rates as global central banks maintained their accommodative monetary policies till the end of the year.

Figure 1: SGD bond issuances monthly volume (cumulative)



Source: Bloomberg, OCBC Credit Research

Figure 2: SGD bond issuances monthly volume by individual months (non-cumulative)

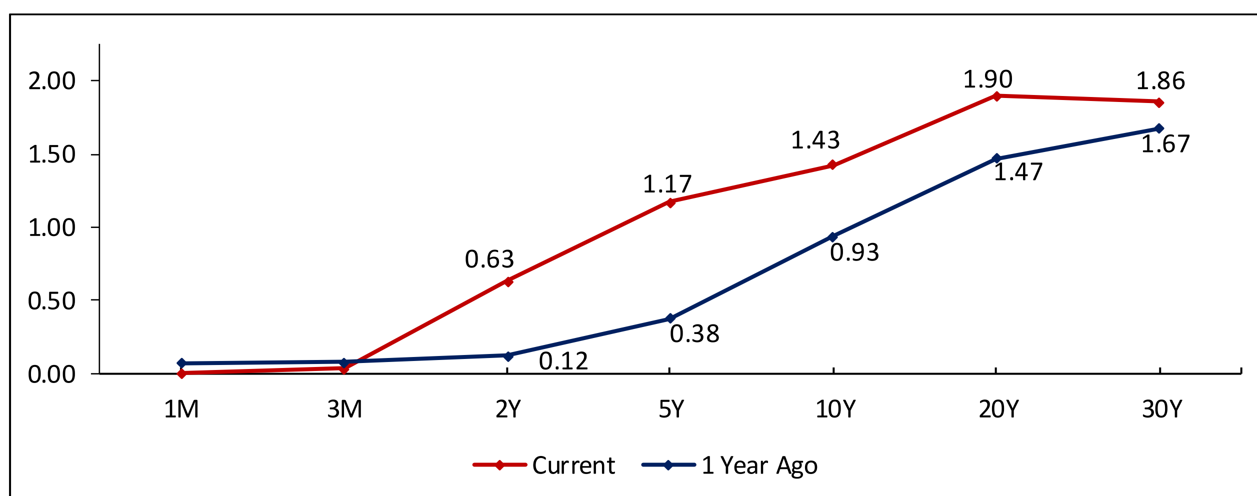


Source: Bloomberg, OCBC Credit Research

As mentioned in our Singapore Mid-Year 2021 Credit Outlook, rising inflation expectations through the first half of 2021 continued to weigh heavily on investors' minds through the rest of 2021, especially as headline Consumer Price Index ("CPI") readings continued to defy the Fed's expectation that it will peter out by the end of the year. From **Figure 3**, the UST yield curve generally saw an upward shift as inflation concerns plagued the markets, with the UST 10Y Yield rising 50bps y/y. As economies started to reopen in 2021, the demand for goods started to see a resurgence especially as consumers spent their pandemic savings through e-commerce avenues, causing the demand for goods to outstrip the

market's ability to produce the necessary amount required. Adding oil to the fire, supply chains remained a mess as bottlenecks started to pile up across the globe with major economies bouncing in-and-out of pandemic restrictions. With both demand and supply pressures, prices started to creep up as seen in November's US Headline CPI coming in hot at +6.8% y/y, the fastest increase since November 1982. As the end of the year approached, so did a new variant of COVID-19. Identified in South Africa, the Omicron variant raised alarm bells across the markets as investors worried about renewed restrictions, potentially impeding economic growth just as the world was gradually loosening travel restrictions. Both these themes of high inflation and impending lockdowns weighed heavily on investors' minds, causing yields to see-saw in the fourth quarter of the year. The Singapore economy was not spared from these macro events, with SOR yields mirroring the movements in UST yields. Recapping the year in two halves, we will further dive into the macro events that drove the markets, as well as how the Singapore credit market performed throughout the year.

Figure 3: US Treasuries Yields



Source: Bloomberg, OCBC Credit Research

The first half of the year can be split into two distinct timelines, with the period of January to March marked by a spike in the UST yield curve as worries of runaway inflation spooked the markets, while yields generally hovered around 1.60% from April to June as the US Federal Reserve maintained their dovish stance and reinforced the view that they will refrain from interest rate hikes to allow for further economic growth. As market sentiments turned risk-off, both the Investment Grade and High-Yield markets saw credit spreads tighten as investors carefully positioned themselves to look for optimal risk-adjusted returns. The switch in risk sentiments subsequently set the tone for the rest of 1H2021 as investors were increasingly looking for more yield-generating opportunities, evidenced by the oversubscription of corporate credit across various bond offerings.

In the SGD bond market, as seen from **Figure 2**, the first few months of the year saw a relatively lower issuance volume as compared to the rest of 2021. January's issuances were less robust as compared to the prior few years, with SGD1.6bn priced, down 24% y/y. The bulk of issuances was contributed by the Housing & Development Board's ("HDB") SGD800mn offering at an all-time low coupon rate of 0.635%. Two perpetuals were also issued, with United Overseas Bank Ltd ("UOB") pricing SGD150mn of additional tier 1 ("AT1") capital securities and Olam International Limited ("Olam") pricing a SGD250mn perpetual NC5.5. Notably, the UOB issuance was the first ever AT1 capital instrument in the SGD bond market to reference the Singapore Overnight Rate Average Overnight Indexed Swap ("SORA-OIS") rate, instead of the commonly used benchmark, the Singapore Swap Offer Rate ("SOR"). February's issuances were particularly low with only SGD500mn priced, mainly anchored by ESR Cayman Ltd.'s SGD200mn 5.65%'PERP and Surbana Jurong Pte. Ltd.'s SGD250mn 2.48%'31s sustainability-linked bond ("SLB"). Notably, Surbana Jurong's SLB was the first ever from a Southeast Asian based company, and was more than six times oversubscribed, drawing over SGD1.7bn in orders. Per historical norms, issuances were likely lower in February due to the Chinese New Year holiday.

In the global arena, family office Archegos Capital Management defaulted on margin calls from lenders after its leveraged long positions on stocks headed south. Eventual liquidations of Archegos' positions placed stress on the balance sheets of lenders such as Goldman Sachs Group Inc., Nomura Holdings, Inc., Deutsche Bank AG, and Morgan Stanley, with Credit

Suisse Group AG ("CS") raising a CHF4.43bn provision for losses tied to Archegos which placed stress on its credit profile. Fortunately, albeit being an Additional Tier 1 issuer in the SGD bond market, the effects of the banking mishap was mostly contained in the U.S. markets. The SGD Corporate bond market saw higher issuance volumes in March with SGD2.0bn priced. The biggest issuances came from HDB (SGD900mn 7Y bond at 1.37%) and CapitaLand Integrated Commercial Trust ("CICT") (SGD460mn 7Y bond at 2.1%).

In the month of April, a total of SGD1.2bn was priced, mostly anchored by Singtel's SGD1.0bn PerpNC10 3.3% bond. Notably, this was the first time that the SGD market has seen such a structure, with 25bps step-up at 10Y and another 75bps step-up at 30Y. May marked the busiest month for SGD Credits in 1H2021 with SGD3.3bn of deals printed more than doubling y/y. Key issues included National University of Singapore's ("NUS") SGD300mn 10-year senior unsecured green bond at 1.62% and Changi Airport Group (Singapore) Pte. Ltd.'s ("CAG") debut SGD500mn 10-year senior unsecured bond at 1.88%. On the flipside, due to market uncertainties, June issuance was relatively muted in the SGD space, anchored by UOB's SGD600mn AT1 PerpNC7 at 2.55% which was the bank's second SORA-linked AT1.

The second half of the year was similarly plagued by inflation concerns. Through the four FOMC meetings (July, September, November, December), the US Federal Reserve kept its target for the Federal Funds Rate ("FFR") steady at a range of 0% to 0.25%. However, with inflation steadily inching higher since the start of the year, the central bank was eventually forced to move its hand by announcing the tapering of its USD120bn asset purchasing program in its November FOMC meeting and doubling the pace of the taper in the December FOMC meeting. Notably as well, Fed Chairman Jerome Powell dropped the word "transitory" in a November 30 appearance before Congress, indicating the central bank's pivot on its inflation outlook. With the ramped-up pace of tapering, the Fed's emergency quantitative easing ("QE") program will now end several months earlier than expected, paving the way for the central bank to raise rates next year. With regards to the Singapore bond market, the second half of 2021 was relatively stronger with a total of SGD14.2bn priced, as compared to the SGD10.9bn issued in the first half of the year. With December being the exception as companies wind down their operations for the year, no less than ~SGD2.0bn was issued in any single month through the second half of the year.

In July, China continued its crackdown on Chinese corporates, impacting the private education industry in China with new regulations banning companies that teach school curriculums from making profits, raising capital or going public. Such moves were seen as fulfilling two main themes in the credit space in 2021 - reducing financial risk from valuation bubbles that have been built in China's investment landscape as well as apparently addressing social challenges for China such as a declining birth rate. In the Singapore bond market, a total of SGD1.98bn was priced through the month. Key issues include the HDB's SGD750mn 1.865% 12-year bond, China Eastern Airline's SGD500mn 2.0% 5-year bond backed with a SBLC by the Industrial and Commercial Bank of China, as well as Vertex Venture's SGD450mn 3.3% 7-year bond. Pushing its status as one of the sustainable leaders in the REITs sector, Frasers Logistics & Commercial Trust ("FLCT") priced a SGD150mn 2.18% 7-year sustainability bond, the first in the SGD bond market.

August saw a higher issuance volume with SGD2.75bn priced, ~39% above July volumes despite a lower number of issues. The month saw some interesting developments that tested the SGD bond market for its appetite to take on interest rate risks. The issuance of Mapletree Investments Pte. Ltd.'s SGD600mn fixed-for-life ("FFL") perpetual securities ("perp") was the first FFL perp priced in the SGD bond market since the redemption of Cheung Kong's FFL perp in 2016. Despite expectations that interest rates will rise, demand has held up with prices above par despite 3.7% distribution rates. Temasek Holdings (Private) Pte Ltd followed suit with the issuance of a SGD1.5bn 50Y bond with a 2.8% coupon rate, Singapore's longest ever bond sale in its credit market that has similarly traded higher. Another notable deal was AIMS APAC REIT's SGD250mn perpNC5 subordinated bond, the first non-financial perpetual to be benchmarked off SORA. This could signify the start of corporate perpetuals being priced directly off SORA, as the SORA benchmark becomes increasingly well-traded.

The SGD space saw significant issuance volumes with a total of SGD4.14bn priced in the month of September. For comparison, the last time issuances surpassed this month's total was in May 2016 with SGD4.5bn priced then. The larger-than-usual volume was anchored by The National Environment Agency's maiden SGD1.65bn dual-tranche green bond issuance to fund infrastructure, with the largest corporate issue coming from Sembcorp Industries Ltd in the company's first sustainability-linked bond.

The SGD bond market was relatively robust in October, with a total of SGD3.1bn priced. An interesting issuance was Nanyang Technology University's SGD650mn sustainability-linked bond, which included a 50bps payment based on its outstanding principal amount if the university failed to meet its sustainability performance targets. Other notable deals included HDB's SGD900mn 7-year bond, Tuan Sing Holding Ltd.'s SGD200mn 3NC2 bond, AIA Group Ltd.'s SGD105mn 40-year bond, and GuocoLand Ltd.'s ("GUOL") SGD300mn 5-year bond.

The final stretch of 2021 saw a significant development in the global fight against the pandemic, with a new variant named Omicron disrupting holiday plans and causing heightened restrictions in numerous countries. While early data from South Africa, Denmark, England, and Scotland showed that the individuals infected with the Omicron variant are 50% to 70% less likely to be admitted to the hospital, governments are worried that the sheer number of cases could still overwhelm the health system. Singapore has also taken pre-emptive measures, temporarily banning the sale of Vaccinated Travel Lanes ("VTL") flights until 20 January 2022. In the SGD bond space, November saw lower issuances m/m with SGD1.93bn, and with businesses winding down their operations for the holiday season and much uncertainty in the market, only Cagamas Global PLC came to market in December with a SGD200mn 2-year senior unsecured bond at 1.25%.

Government-linked issuers come in first place, followed by Real Estate

2021 saw a larger amount of issuances y/y from the Government-linked sector, with a total issuance of SGD9.9bn across 12 issues (FY2020: SGD3.2bn across 5 issues). This accounted for 39% of the total issuance in the SGD Corporate space. The largest issuance came from Temasek Financial I Ltd. with its SGD1.5bn 2.8% 50-year bond, also one of the longest tenor bonds in SGD space. Following the success of its inaugural green bond in 2020, the National University of Singapore ("NUS") tapped the credit market in 2021, pricing a SGD300mn 10Y green bond under its Green Finance Framework to fund key green infrastructure projects. Other government-linked issuers of sustainable debt include the National Environment Agency which priced a SGD300mn 1.67% 10-year green bond and a SGD1.3bn 2.5% 30-year green bond, as well as Nanyang Technology University which priced its inaugural SGD650mn 2.185% 15-year sustainability-linked bond. Dominating the bulk of government-linked issuances, HDB issued a total of SGD5.3bn in 2021 across 6 bonds, all under its SGD32bn Multicurrency Medium Term Note ("MTN") Programme.

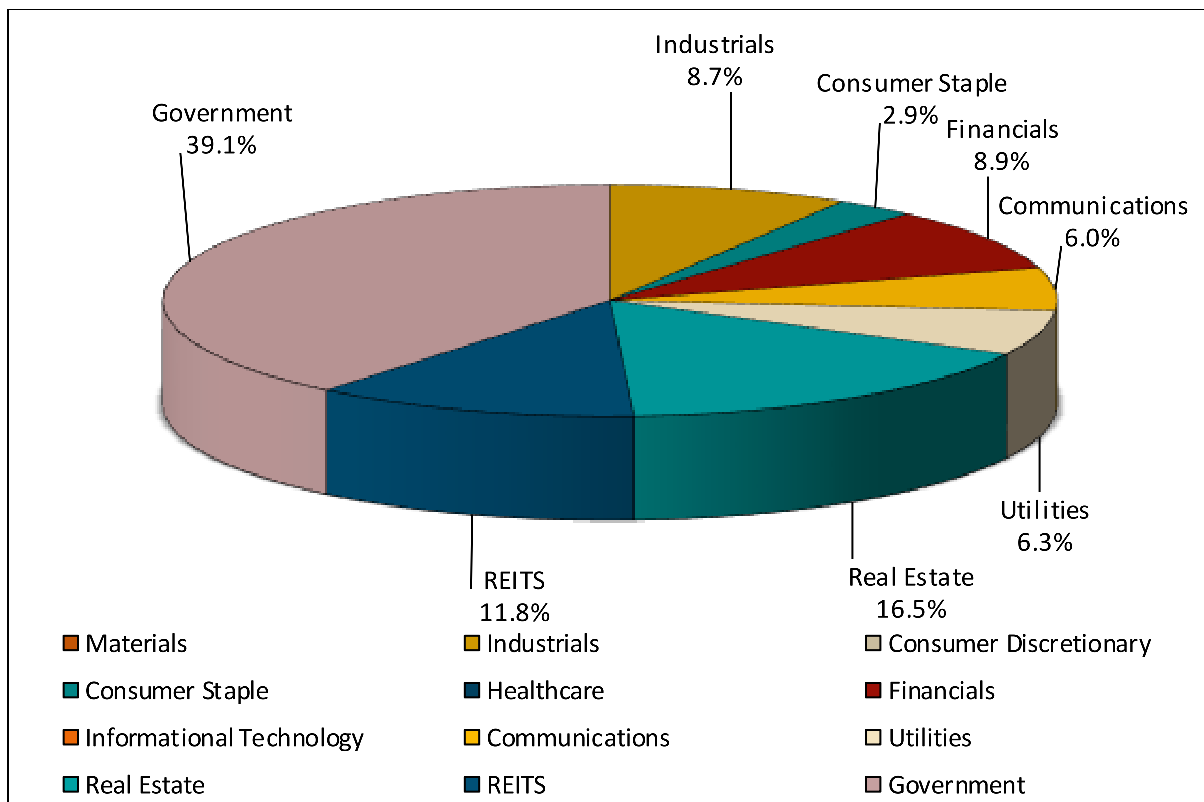
The Real Estate sector reclaimed its position back from the Financials sector as the second largest contributor (16.5%) in 2021, with issuance volume of SGD4.15bn across 24 issues (2020: SGD3.9bn across 21 issues). Notable high yield real estate issuers included Indonesia-based PT Ciputra Development Tbk (SGD100mn 5-year bond at 6%) in January (followed by two additional re-taps of the same tranche in February), ESR Cayman Ltd (SGD200mn junior subordinated PerpNC5 at 5.65%), Tuan Sing Holdings Ltd (SGD200mn 3-year at 6.9%), and Hotel Properties Ltd. (priced a SGD125mn 7-year bond at 3.75%). The largest issuance came from Mapletree Investments Pte. Ltd.'s SGD600mn fixed-for-life ("FFL") perpetual securities ("perp") and was the first FFL perp priced in the SGD bond market since the redemption of Cheung Kong's FFL perp in 2016. The next two largest issuances came from GuocoLand's SGD300mn 3.29% 5-year bond and Panther Ventures Ltd. (CK Asset Holdings) SGD300mn 3.38% PerpNC3 bond.

S-REITs performed well with SGD3.0bn of bonds priced across 14 issues in 2021 (2020: SGD2.1bn across 13 issues), growing 42.7% y/y, and was the third largest issuing sector. The largest issuance came from CapitaLand Integrated Commercial Trust, pricing a SGD460mn 7-year senior unsecured bond at 2.1% under its trustee CMT MTN Pte Ltd. Out of the 14 debt offerings priced in the S-REITS sector, 7 were perpetual issuances dispersed across different issuers from numerous sectors. Notable perpetual issuers included Mapletree Industrial Trust (SGD300mn PerpNC5 at 3.15%), Lendlease Global Commercial REIT (SGD200mn PerpNC5 at 4.2%), Mapletree North Asia Commercial Trust (SGD250mn PerpNC5 at 3.5%), Suntec Real Estate Investment Trust (SGD150mn PerpNC5 at 4.25%), and Keppel Infrastructure Trust (SGD300mn PerpNC10 at 4.3%), a known issuer in the SGD perpetual space.

Issuances from the Financial Institutions sector were relatively thinner as compared to prior years, amounting to only 8.9% of total issuance volume (2020: 22.4%). The largest issuance was by United Overseas Bank Ltd., which priced a SGD600mn perpNC7 at 2.55%, tightening 30bps from its IPT of 2.85%. For Financial Institutions under our coverage, UOB was the only local bank which tapped the markets, pricing a SGD150mn PerpNC5 at 2.25% and a SGD600mn AT1 PerpNC7 at 2.55%. Lacklustre SGD issuances in the Financial Institutions sector could be attributed to their ability to issue bonds in different currencies which allows them to be opportunistic issuers in different currencies in order to minimise their cost of capital. In addition, capital buffers for the Financial Institutions remain well above minimum requirements on regulatory support

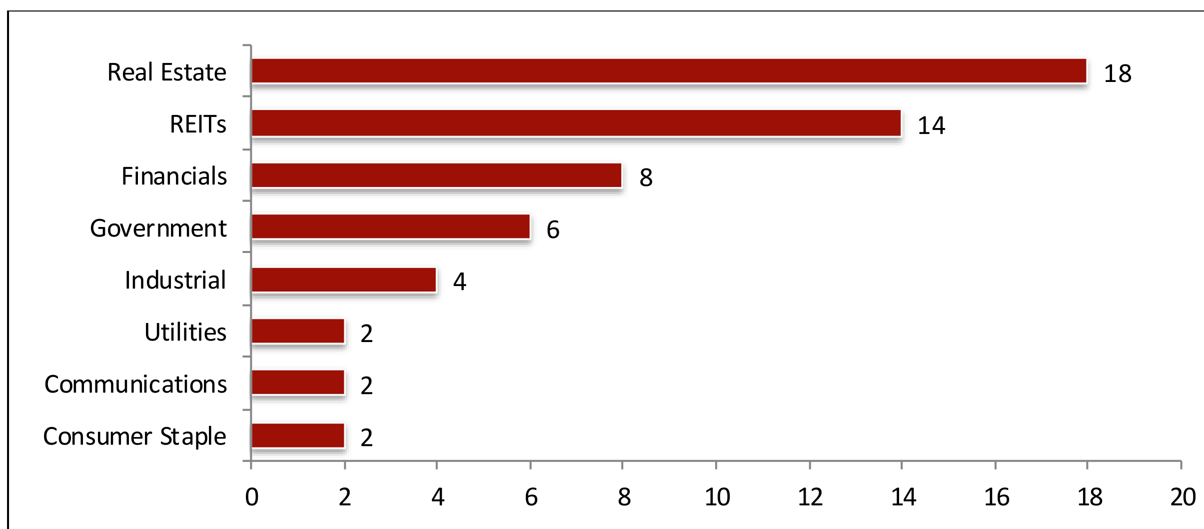
and with earnings performance hitting record highs on fee income and trading performance as well as write-backs of credit provisions raised in 2020 at the height of the pandemic, offsetting net interest income pressure from lower interest rates and net interest margins. This may have reduced their need to tap the credit markets. Other notable issuers include Vertex Venture Holdings Ltd (SGD450mn 7-year bond at 3.3%, Temasek-owned company), Boustead Industrial Fund (SGD236mn 10-year subordinated bond at 7%) and Cagamas Global PLC (SGD130mn 1-year bond at 1% and SGD200mn 2-year bond at 1.25%). The deal by Vertex was its maiden issuance and is also the first ever SGD bond issued by a global venture capital investment holding company, offering fixed-income investors exposure to the VC industry.

Figure 4: Breakdown of FY2021 issuance size by sector



Source: Bloomberg, OCBC Credit Research

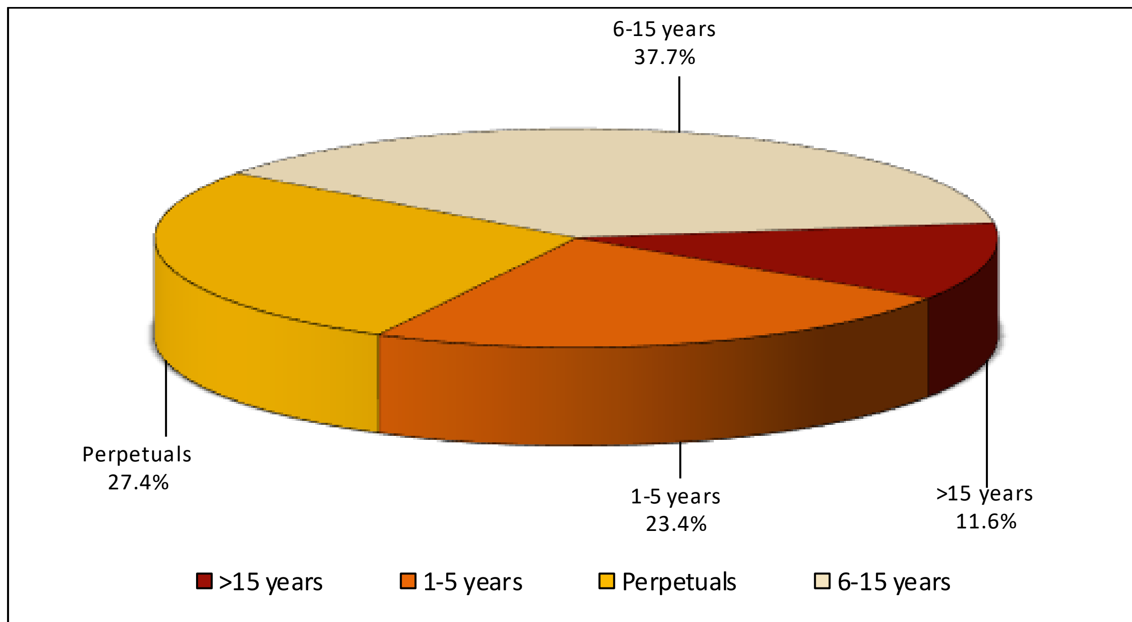
Figure 5: Breakdown of FY2021 issuers by sectors



Source: Bloomberg, OCBC Credit Research

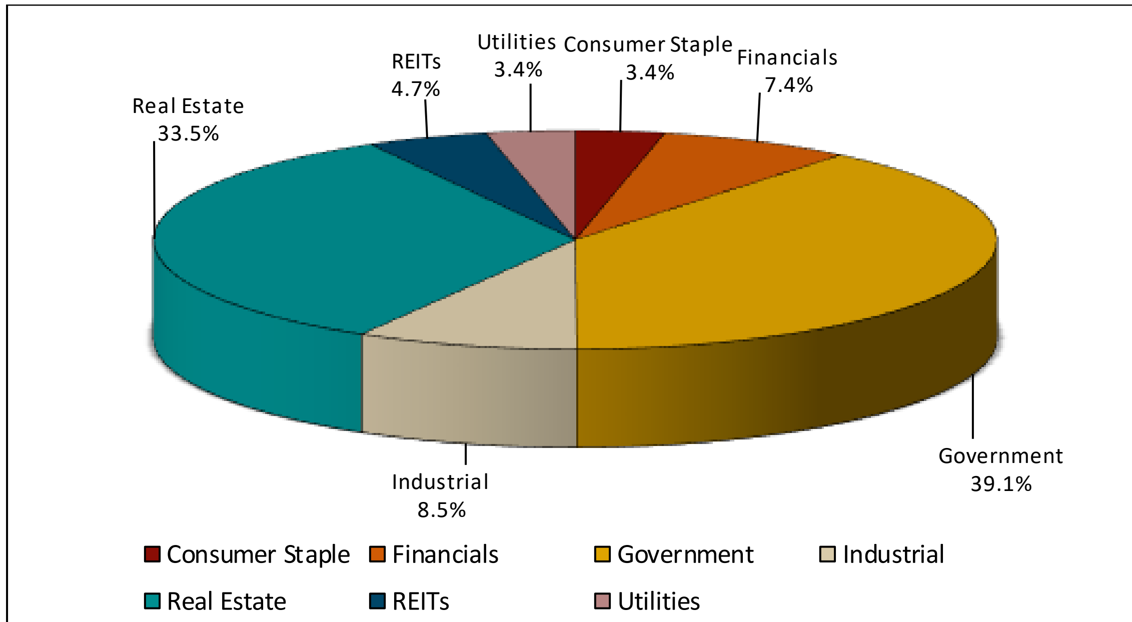
In 2021, issuance volume was still largely contained within the belly-to-long end of the curve. Issuances in the 6-15 years bucket contributed 37.7% of total issuances. Through the second half of 2021, there was an increase in deals for tenors longer than 15-years, with issuances from Temasek (SGD1.5bn 50-year bond at 2.8%), National Environmental Agency (SGD1.3bn 30-year bond at 2.5%), and AIA (SGD105mn 30-year bond at 3%). Overall, there was a drastic shift in issuance behaviour, with perpetual issuances comprising 27.4% of total issuances by deal size, up ~2.5x y/y (2020: 10.8%). The increase in perpetuals could be due to a few reasons: (1) issuers want to lock in cheap funding for a longer duration in view of the rebound in long-term rates, (2) as perpetuals are equity-like, they allow issuers to improve their capital structure while maintaining their credit health, especially when the operating environment remains challenging, (3) the suppressed interest rate environment coupled with lack of supply has starved investors of alternatives, driving yield-hungry investors to chase down the capital structure, which allows issuers to opportunistically tap the corporate perpetual market. Furthermore, SGD perpetuals are also generally structured with resets which helps holders of perpetuals to take advantage of the rising rate environment. Meanwhile, short-dated bonds made up only 23.4% of total issuance volume, but when we look back at 2020, shorter tenors made up 36.4% of total issuance size as the uncertainty from COVID-19 discouraged investors to visit the longer end of the curve. This could be attributed to the issuers' unwillingness to reissue bonds at higher rates in the future due to uncertainties in the rates environment.

Figure 6: Breakdown of FY2021 issuance size by tenor



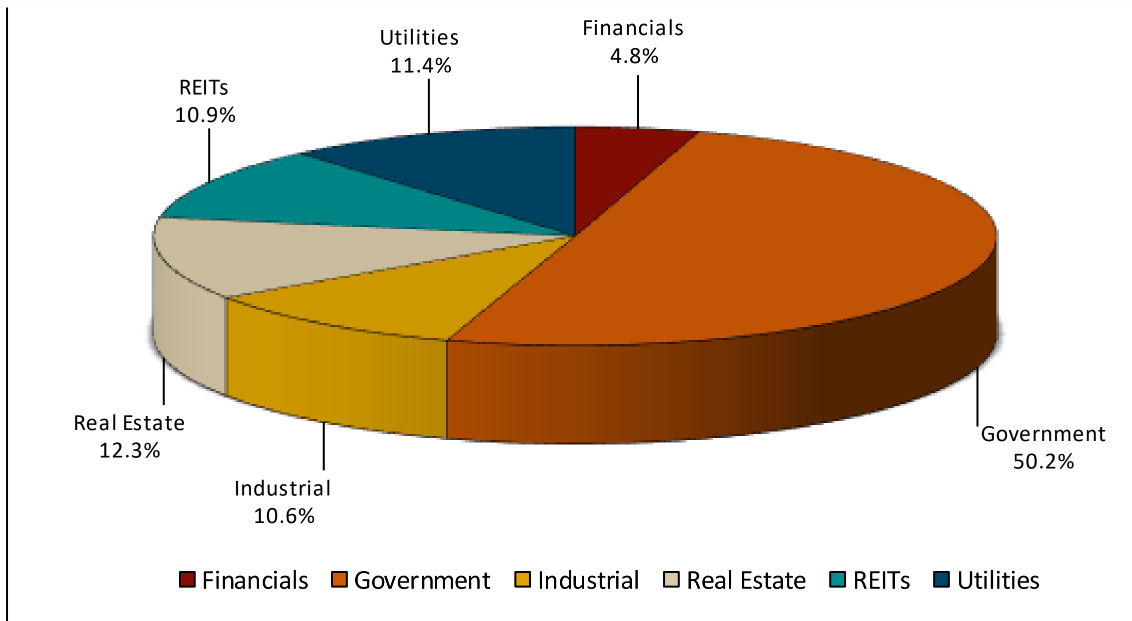
Source: Bloomberg, OCBC Credit Research

Figure 7: Breakdown of FY2021 issuance size by sector for 1-5Y tenor



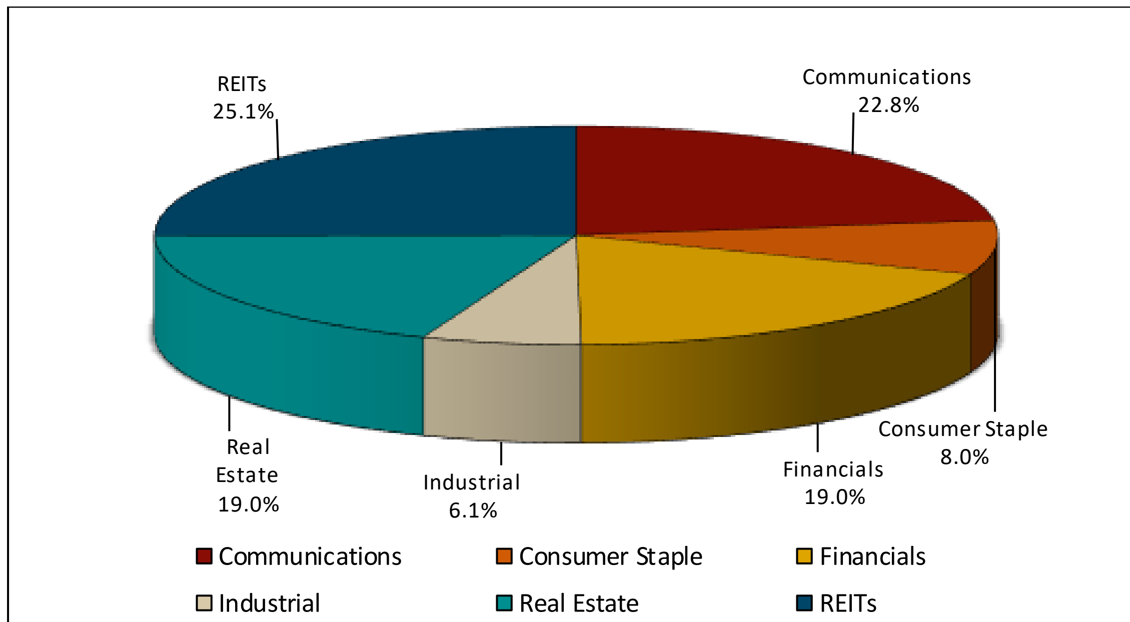
Source: Bloomberg, OCBC Credit Research

Figure 8: Breakdown of FY2021 issuance size by sector for 6-15Y tenor



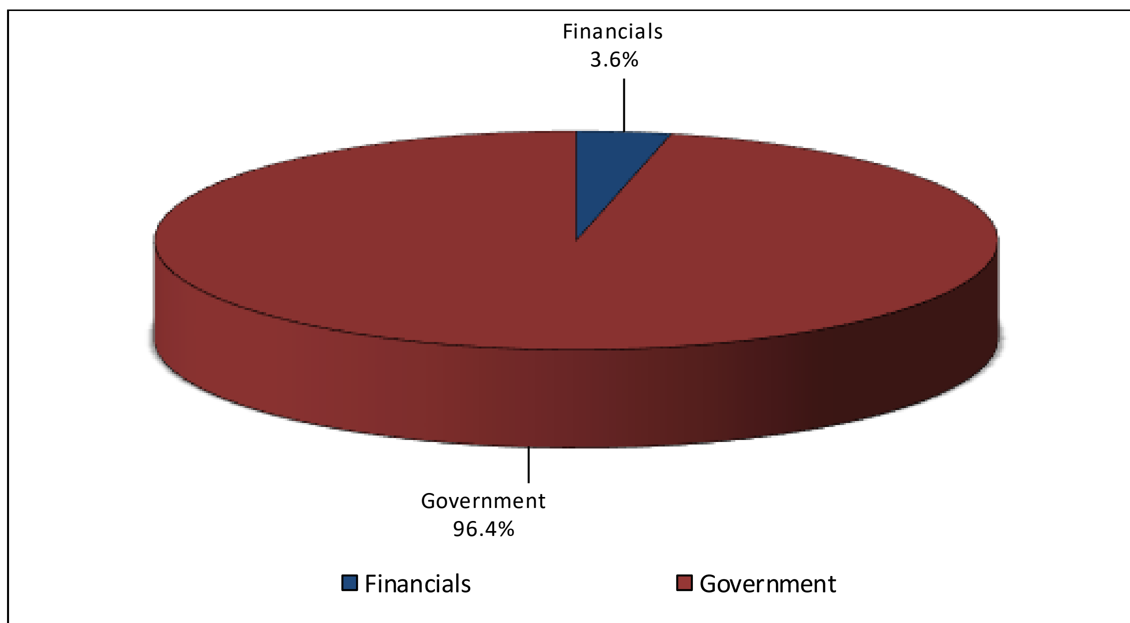
Source: Bloomberg, OCBC Credit Research

Figure 9: Breakdown of FY2021 issuance size by sector for perpetuals



Source: Bloomberg, OCBC Credit Research

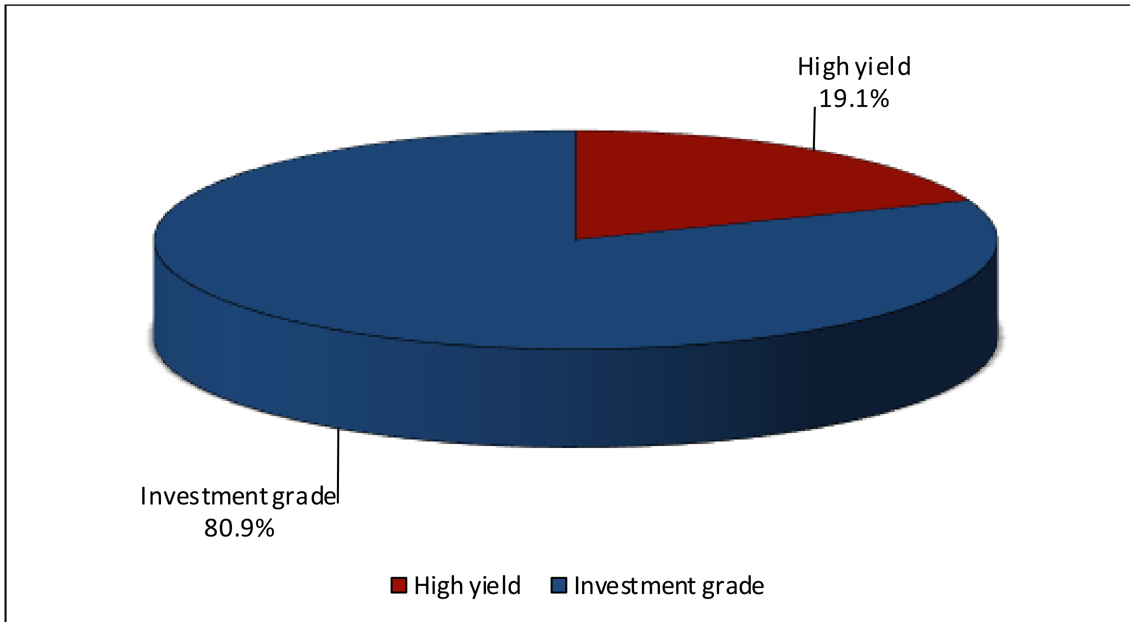
Figure 10: Breakdown of FY2021 issuance size by sector for >15Y tenor



Source: Bloomberg, OCBC Credit Research

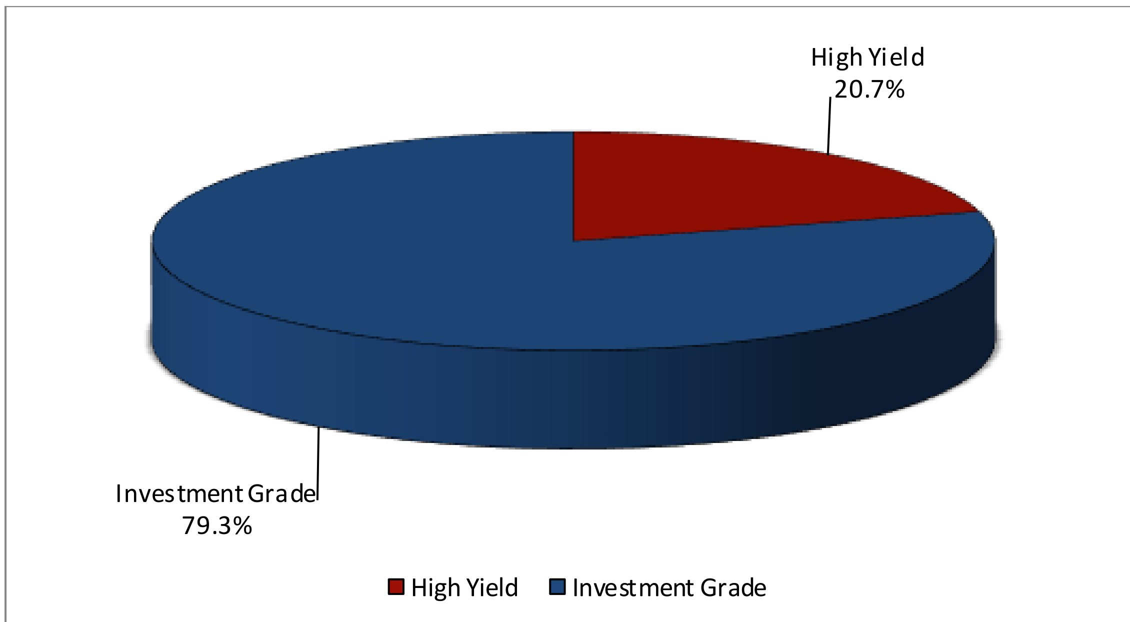
Keeping in line with our Mid-Year 2021 Credit Outlook, we maintain our definition of High Yield as papers with yields higher than 3.5% given how rates have remained at similar levels since then, with the current 10Y SGD Government Yield at 1.65% (1H2021: 1.55%). Under this definition, the proportion of high-yielding papers decreasing marginally to 19.1% in 2021 (2020: 20.7%) of total SGD bond issuances, while on an absolute basis 2021 high yield issuances of SGD4.8bn is around 31% higher as compared to 2020 high yield issuances of SGD3.6bn. This increase in high yield issuances can primarily be attributed to a general improvement of credit fundamentals and the operating environment, strong liquidity in the market, and companies rushing to lock in low yields amidst a rising rate environment. That said, the 31% increase lags the overall 43.7% y/y increase in new issuance volumes indicating a still somewhat cautious stance towards higher yielding credits.

Figure 11: Breakdown of 2021 High-Yield issuances (>3.5% coupon rate)



Source: Bloomberg, OCBC Credit Research

Figure 12: Breakdown of 2020 High-Yield issuances (>3.5% coupon rate)



Source: Bloomberg, OCBC Credit Research

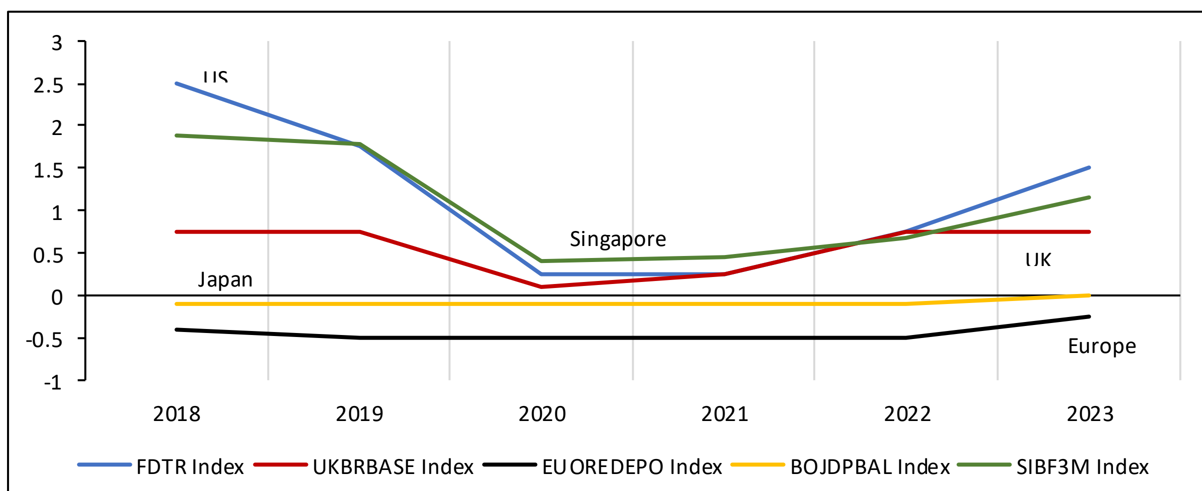
Credit Outlook for 2022 – A Tug of War

As the end of 2021 approached, volatility in the market reared its head as seen from the CBOE VIX Index reaching the 30-point mark at the start of December, levels not seen since January 2021. The key events that influenced this will likely be a recurring theme next year, with investors keeping a close eye on inflation readings and any significant developments on the COVID-19 front such as the recent Omicron variant. As a prelude to the type of swift market changes that we may see in 1H2022, the CBOE VIX has sharply fallen as of writing on 28 December 2021 to 18-points. Playing a large role in shaping our views, the key themes for 2022 are as follows:

Moderate growth in the global economy: As the global economy has rebounded from its pandemic lows, we expect a period of moderate growth in 2022 as the tailwinds from supportive fiscal and monetary policies start to ease, and the headwinds of rising inflation and COVID-19 variants continue to be in the spotlight. Although the ECB has maintained its dovish stance to start the year, other major central banks such as the US Federal Reserve and the Bank of England have started to show their hawkish claws with inflation readings consistently creeping upwards through 2021. This will likely lead to a rising interest rate environment and lower liquidity in the market as the Fed quickens the pace of tapering of its asset purchasing program. Furthermore, the combination of winter and a more transmissive COVID-19 variant has led to a spike in cases in various parts of the world. As of writing, the Netherlands had entered a snap Christmas lockdown to prevent its healthcare system from being overwhelmed while France, which reported a high of 100,000 cases a day, has announced tightened restrictions on mask wearing and mandatory work from home where possible. Other countries are also looking likely to introduce stricter restrictions to prevent an exponential spike in cases. With these headwinds in place as the year begins, downside growth risks persist, and it is unlikely that the global economy in 2022 will see strong growth unless we see significant positive developments in the fight against COVID-19 or supply chain bottlenecks materially ease through the year.

Higher cost of borrowing: The cost of borrowing is closely linked to the yield of a bond, which is composed of two parts: underlying interest rates and the credit spread. As mentioned above, interest rates are expected to rise in the coming year. With the US Federal Reserve announcing their intention to double the pace of tapering in their December FOMC meeting from USD15 billion to USD30 billion per month, accommodative policies are set to ease next year with several rate hikes expected through 2022. Based on the forecast of our rates strategist, two rate hikes are expected in 2022, and the curve is likely to steepen during the early part of 2022 before flattening back near/upon the start of the hiking cycle in the second half of the year. Specifically, the 10Y UST yield is expected to reach 1.85% by end 2Q2022, and the upper end of the Fed Funds Target Rate is expected to hit 0.75% by the end of 2022. SGD interest rates are expected to follow in kind as seen in Figure 13 below as 10Y SGS-UST yield spreads narrow. Major central banks are expected to go through a period of rates normalisation over the next two years. This means that the interest rate component of the cost of borrowing will be pushed higher, making it more expensive for companies to tap the debt capital markets.

Figure 13: Global yields forecast



Source: Bloomberg, OCBC Treasury Research

A tussle for control of credit spreads: While investment grade Asiadollar credit spreads widened in November 2021 due to the emergence of the Omicron variant, current SGD credit spreads still remain tight compared to historical levels. This is despite the strong issuance volumes in 2021 on strong market liquidity and the safe haven status of the SGD corporate bond market. Going forward, credit spreads in the SGD space and globally will likely be driven by a race between two contestants: (1) the economic recovery - as mentioned above, downside growth risks persist against moderate economic growth expectations and fundamentals may not be as robust as 2021; and (2) the pace of inflation and rising interest rates, particularly if they drive heightened market volatility, tighter funding conditions and increasing difficulty to service debt. Whether one is faster than the other will determine the influence on credit spreads. Overall, we expect SGD credit spreads will likely remain at current levels or slightly widen in 2022. All things being equal, we expect the overall cost of borrowing to rise for corporates in 2022 with rising interest rates and credit spreads stable to slightly wider.

Lower issuance volumes in the SGD and global primary market: With rising borrowing costs, we expect lower issuance volumes next year both in the SGD space and globally in 2022 across both investment grade and high yield bonds as higher rates reduce low-yield opportunistic issuances that drove volumes in 2020 and 2021. With central banks' increasingly hawkish pivot and potential rate hikes in 2022, the increase in borrowing costs for issuers who are generally holding more debt than in the past consequently will reduce the incentive for corporates to engage in bond issuances. In particular, we expect to see a larger fall in the number of investment grade bond issuances relative to high-yield bonds, given that high-yield bonds typically have a shorter duration and are hence less sensitive to rate hikes. Other influences on bond issuance volumes in 2022 include:

- **Frontloading of issuances:** Expectations of upcoming rate hikes have seen many borrowers frontload their issuances and complete the bulk of their refinancing in 2021 in order to take advantage of lower yields. For example, while US high-yield bonds reached a record-high of USD516.7bn in primary market issuances, this was primarily driven by issuance for debt repayment or refinancing which accounted for close to 60% of these issuances. We believe that significant frontloading of issuances for essential refinancing could mean that primary market issuances may have already peaked in 2021.
- **China's deleveraging campaign:** The Chinese government's intention to reduce debt reliance through its sector-wide deleveraging policies could serve as another potential headwind. Accounting for close to two-thirds of global bond issuances in the international public finance sector and approximately a quarter of global financial and non-financial issuances over the past 5 years, Chinese companies contributed significantly to global bond issuances. While prior attempts had rather minimal impact on total global issuances, more active scrutiny to correct imbalances in certain sectors such as property, technology, tuition, food delivery, and commodities highlight the increased regulatory risk, and it can be difficult to fully predict the impact of these policies.

While the aforementioned factors are likely to pose significant headwinds to primary market issuances, some bright spots remain nonetheless:

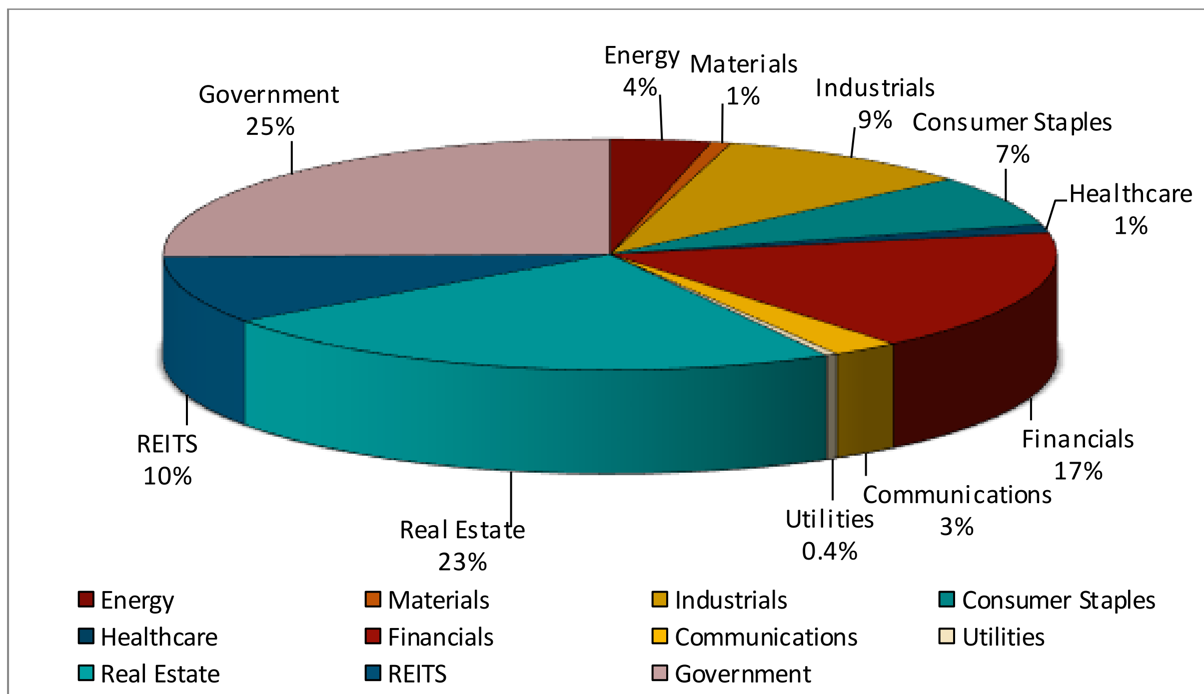
- **Possible uptick in mergers and acquisitions:** While the aforementioned factors are likely to pose headwinds, we expect merger and acquisition ("M&A") activities to serve as a key driver for issuances across investment grade and high-yield bonds. With many companies having covered much of their refinancing needs in 2021, corporate priorities may begin to shift towards long-term growth, business diversification and supply chain strengthening strategies – furthering merger and acquisition deals and driving the potential need for more debt issuances in 2022. Sector-wise, we expect key pandemic demand-driven sectors such as technology, media and telecommunications ("TMT") and healthcare to take the lead in terms of deal activity and potential issuances. While not all M&A activities have to be funded with bonds, the need to finance potential costly M&A opportunities alongside the lower cost of debt relative to equity financing may support bond issuances moving forward, particularly if global economic growth continues at a moderate pace as expected or exceeds these expectations.
- **Growth of the GSSSL market:** As countries and organisations pledge to make their economy carbon-neutral, various sustainable capital instruments have sprung up to aid this transition. The four main bond instruments used by organisations are Green, Social, Sustainability, and Sustainability-linked ("GSSSL") bonds (see "***Getting to Know the Sustainable Bond Market and Sustainability Linked Bonds***"). For the GSSSL market, 2021 was an exceptional year as total issuances surpassed USD1 trillion, with both nations and companies tapping the sustainable debt capital markets to fund their investments. However, GSSSL bonds only represented approximately 4.5% to 5% of total global bond issuances in 2021. With more countries and companies pivoting towards a more sustainable

model as societal pressure piles on, and GSSSL debt showing a visible greenium for issuers, the tailwinds for this market are strong and records can similarly be expected to be broken in 2022. As more issuers tap the GSSSL market for funding, we can also expect more innovation as well as regulation of these instruments further develops. In terms of regulation, we can look towards the European Union for an indication of how the governance of the GSSSL market will evolve (see **Europe – The Regulatory Frontier** in "***Financial Institutions – A Cruise to Nowhere?***" and "***Disclosures in Sustainable Finance – Addressing Words that Speak Louder than Actions***"), as the EU sustainable debt market is at a more mature stage than other countries.

2022 Singapore Bond Market Supply Outlook

We expect approximately SGD23.4bn of SGD bonds to mature/become callable in 2022 (excluding Certificate of Deposits, amounts smaller than SGD50mn, and MAS or Singapore Treasury and government bonds) with the largest contributions from the Government, Real Estate, and Financial Institutions as seen from Figure 14. This is nearly three times the amount expected for 2021. Yet, conditions for SGD bond issuances in 2022 will be less conducive as compared to 2021 due to rising nominal yields and tighter liquidity in the primary market. As mentioned above, with major central banks turning hawkish to deal with the growing inflation threat, yields across the curve are much likelier to rise with the cost of borrowing for companies to edge higher. Furthermore, bonds in the primary market are generally becoming less well-bid, showing signs of tightening liquidity. Companies may have also pushed forward their refinancing plans to lock in a lower cost of funding in 2021. Combined, these factors will be potential headwinds for issuances and the SGD primary market will likely be relatively less robust in 2022 as compared to 2021. We expect the favourable technical influence from lower estimated net supply in 2022 will be overshadowed by the prospect of rising rates and the current tight spreads in the SGD corporate bond market.

Figure 14: SGD Bond Maturities breakdown by sector for 2021



Source: Bloomberg, OCBC Credit Research

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Conclusion

Until we have higher level vaccinations globally or other medical breakthroughs that help stem the virus spread and possibility of new variants, further uncertainty from the pandemic is likely to continue. Aside from public health disruptions, supply chains disruptions and rising commodity prices may amplify current inflationary pressures. Despite the many attempts by central bankers to append a transitory label to the inflationary pressures of 2021 (perhaps to moderate inflation expectations), this was unconvincing versus lived experiences by businesses and individuals. The Fed itself dropped the transitory label by end-November 2021, setting the stage to begin normalisation. Normalisation is critical to ensure that the Fed has a policy tool to combat the next slowdown and in our view it's a question of timing, not if.

Going into 1H2022, we expect a broader potential range of outcomes versus the beginning of 1H2021. Investors would need to contend with the continuing threat of higher inflationary expectations on one end and the looming possibility of a policy misstep, leading to financial market pullback such as 4Q2018 when the market viewed that the Fed was rising rates and tightening too quickly. Complicating the picture, should Omicron prove to be more manageable, inflation and growth expectations may also adjust rapidly, with implications to longer term interest rates. In sum, as cliché as it may be, this points towards heightened volatility in interest rates at the very least.

For 1H2022, we hone our focus on preserving capital. Depending on risk appetites, this may mean reducing allocation to bonds on a top-down basis, holding more short-term securities (eg: money market funds) to be redeployed down the road when all-in-yields for bonds are higher. More risk-taking investors may consider a higher allocation into equities instead though not all equities will react the same way, with those able to pass on costs likelier to be more defensive versus growth stocks.

Within the bond portfolio, we continue to prefer taking some credit risk and subordination risk over interest rate risk to generate returns. Ideally, we would put money to work in a basket of true high yield bonds, diversified across industry sectors as such bonds tend to be less rates sensitive. However, true high yield bonds form a small part of the SGD bond market, concentrated among property-related issuers with sporadic secondary market liquidity in times of stress whilst there is a lack of subordinated bullet papers in the market. As such, in our view, a defensive portfolio in SGD would include perpetuals issued by financial institutions and select corporates, with the higher distribution rates providing a buffer during this period of market uncertainty. Within very high-grade bullets, we prefer short-dated bonds over long dated bonds. The 3Y SOR has increased 36bps in the past six months to 1.12% as at 28 December 2021 while the 10Y part of the curve has only increased by 14bps during this same time period. This in our view suggests that the shorter end has partly priced in the possibility of rate hikes. We would stay away from long dated very high-grade bullet bonds and perpetuals with poor structures.

Two years into the pandemic, 2021 continued to be highly challenging with the destruction led by Delta and natural disasters that have brought to the fore the critical issue of climate change. We hope that vaccine and other medical support will be extended to sorely needed geographies. With developed and middle-income countries better prepared against the pandemic, we look towards 2022 with a stronger sense of optimism despite the impending challenges to financial markets. We continue to be ever grateful for our readers' support and feedback and hope you find our publications useful in the rest of the year ahead. We hope you and your close ones stay healthy in mind and body.

With appreciation, OCBC Credit Research

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Model Bond Portfolio

Decent portfolio performance in 2021 (+5.11% y/y) despite rates volatility: The model portfolio which was incepted in Jan 2021 has returned 5.11% y/y. This is mainly due to carry (portfolio yields have averaged ~4%) and some net capital gains. Although rates have been volatile, our perpetual-tilted portfolio which is less sensitive to rates (for more information see "***Perpetuals: Are rising rates friends or enemies?***") has provided the stability in delivering both higher carry and capital returns. Similarly, crossover names and selected true high yield bonds delivered net positive returns as they are less sensitive to rates.

Continue to stay in perpetuals and high yield, with short duration if possible: Given expectations that rates will rise (our rates strategist expects 10Y UST yield to reach 1.85% by end 2Q2022), we prefer taking credit risk and subordination risk over interest rate risk to generate returns. By breakdown, our portfolio is 58.5% in perpetuals with most of the remainder in crossover or true high yield names (38.8%). We keep cash (2.6% of the portfolio) to the minimal as we believe that the portfolio should still generate total positive returns given the average yield to worst at 3.97%. The portfolio duration is kept short with average duration to first call or maturity at 3.6 years (though this increases to 8.0 years if we look only at yield to maturity and assume the duration of perpetuals as 10Y).

Higher risks but potentially more opportunities ahead: Retrospectively, the easier monies have already been made given the benign rates and credit spreads environment in 2021. Aside from rates volatility, it may be difficult to repeat the same or better portfolio performance in 2022 as we expect credit spreads to remain stable or slightly widen. However, expanding credit spreads should open opportunities to invest as spreads and yields that had been somewhat tight, especially in the investment grade segment. If economic growth continues, profitability should recover, and credit profiles may be restored to pre-pandemic levels.

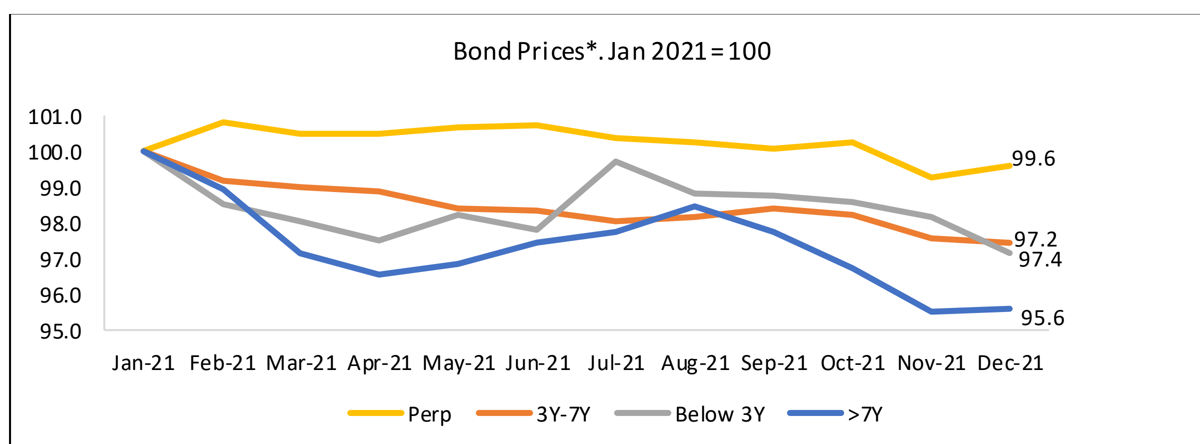
Issue Name	OCBC Issuer Profile Rating	Yield to Worst	Maturity / First Call Date	Cost of investment (incl. acc. interest)	Current Value (incl. acc. interest)	Total coupons received	Total Gain/Loss
Property Developers							
WINGTA 3.68 01/16/30	4	3.47%	16/01/2025	$256,613	$255,704	$4,638	$3,729
METRO 4.3 04/02/24	4	3.52%	02/04/2024	$254,397	$255,364	$10,750	$11,717
SPHSP 3.2 01/22/30	Unrated	3.23%	22/01/2030	$250,194	$252,200	$4,033	$6,039
GUOLSP 4.6 PERP	5	3.78%	23/01/2023	$253,989	$256,249	$5,750	$8,009
GUOLSP 3.4 08/10/25	5	2.93%	10/08/2025	$261,304	$255,983	$4,285	-$1,036
HFCSP 4.2 03/28/22	5	2.49%	28/03/2022	$254,502	$252,221	$5,207	$2,926
REITs							
AAREIT 5.65 PERP	4	4.38%	14/08/2025	$258,838	$263,900	$7,063	$12,125
SUNSP 3.8 PERP	4	4.06%	27/10/2025	$253,046	$248,699	$9,500	$5,152
OUECT 3.95 06/02/26	5	3.46%	02/06/2026	$253,562	$253,951	$4,924	$5,313
CERTSP 5 PERP	Unrated	5.65%	24/11/2026	$248,181	$248,181	$0	$0
MAGIC 3.5 PERP	4	4.05%	08/06/2026	$248,692	$248,692	$4,375	$4,375
Financial Institutions							
UBS 5 7/8 PERP	3	3.14%	28/11/2023	$265,397	$262,037	$14,688	$11,328
SOCGEN 6 1/8 PERP	4	4.35%	16/04/2024	$264,948	$261,729	$15,333	$12,115
CS 5 5/8 PERP	4	4.16%	06/06/2024	$264,341	$256,958	$14,063	$6,679
STANLN 5 3/8 PERP	4	3.91%	03/10/2024	$262,020	$260,642	$13,438	$12,060
Others							
SIASP 3 1/2 12/02/30	5	3.20%	02/12/2030	$257,057	$255,178	$4,363	$2,485
OLAMSP 4 02/24/26	5	3.84%	24/02/2026	$253,341	$254,053	$10,082	$10,794
OLAMSP 5 3/8 PERP	5	5.19%	18/07/2026	$255,125	$256,226	$6,719	$7,819
ESRCAY 5.65 PERP	Unrated	5.33%	02/03/2026	$255,577	$256,430	$7,063	$7,916
ARASP 5.2 PERP	Unrated	5.24%	19/07/2022	$255,839	$254,674	$6,500	$5,335
Total Gain/Loss since portfolio inception							$255,726

Statistics	Simple Avg, Issuer Profile	Simple Avg, Yield	Simple Avg, Tenor	Total, Invested Amount	Cash Balance	Unrealised Profit	Portfolio Value
	4.4	3.97%	3.6Y (8.0Y*)	$5,126,963	$139,006	-$10,243	$5,255,726

Perpetuals – Are Rising Rates Friends or Enemies?

Inflation and rates are the bane of bonds – their inverse correlation is well understood. However, the relationship with perpetuals is not straightforward. While there is an intuition to shun perpetuals in a rising rates environment due to its 'perpetuity' (with no fixed maturity term), prices of perpetuals have held up well since Jan 2021, relative to vanilla bonds, despite rates trending up. Given that the average perpetual's distribution rate is around ~4%, the average perpetual holder should come out ahead in total returns.

Figure 15: Perpetuals holding up better than bonds. Long-dated bonds are the worst performers



Source: Bloomberg, OCBC
* Excludes (1) issuances in 2021, (2) issue size below SGD75mn, (3) defaulted bonds, (4) government bonds

We believe that perpetuals have held up better despite rising rates for **three key reasons**:

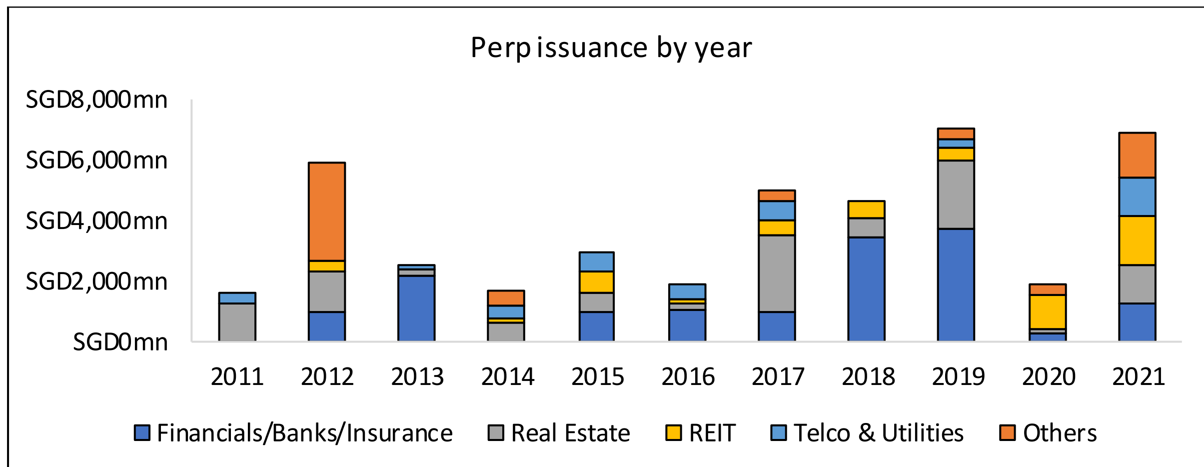
(1) Higher rates reduce the likelihood for distribution rates to be reset lower. It should still be in the memories of investors that several issuers took advantage of the lower rates environment previously to reset the distribution rates of their perpetuals lower. This includes Ascott REIT (from 4.68% to 3.07%), First REIT (from 5.6% to 4.9817%) and Lippo Malls Indonesia Retail Trust (from 7% to 6.4751%). As today's rates are closer to levels prior to the pandemic, the room for distribution rates to be reset lower is reduced.

(2) The likelihood of the call being exercised increases with higher rates. If distribution rates could not be reset lower, we think issuers may not find cost savings by retaining their perpetuals. With higher confidence that the call will be exercised, yield-to-call should converge closer to that of vanilla bonds with similar expected maturity (though we acknowledge that prices of vanilla bonds have been falling). Also, rising certainty that the call will be exercised should limit the effective duration of perpetuals, thereby reducing sensitivity to rates.

(3) Perpetuals offer a larger spread and higher carry over vanilla bonds of the same issuer. This cushions the impact from rising interest rates to keep total returns positive. This is especially more so as spreads have not expanded together with rising rates. Elaborating on this point, an issuer who is targeting to tap the market today may be able to price a replacement perpetual at an overall distribution rate that is lower as spreads are currently tighter. We think perpetuals remain in favor as they remain demanded by investors seeking absolute yields in the 3%-5% region, supporting issuances in 2021 with total issuances recovering to SGD6.88bn in 2021 (2020: SGD1.90bn).

Rising rates have also not dampened the variety of issuers. Diversity increased in 2021 as supply expanded beyond real estate and financials to include more issues from REITs (maiden perpetuals issuers include Lendlease Global Commercial Trust, Frasers Logistics & Commercial Trust, Mapletree Industrial Trust, Mapletree North Asia Commercial Trust, Cromwell European Real Estate Investment Trust), Telco & Utilities (maiden perpetual issue from Singapore Telecommunications Ltd) and maiden perpetuals issuers such as Keppel Corp Ltd and Panther Ventures Ltd (guarantor: CK Asset Holdings Ltd). While the background of issuers may remain diverse, rising rates may nip the growth of fixed-for-life issuance in the bud.

Figure 16: Perpetuals issuance in 2021 has been strong with diverse background of issuers.



Source: Bloomberg, OCBC

Overall, perpetuals look attractive relative to straight bonds given the rising rates environment, however we remain **Neutral** on perpetuals as an asset class and favour perpetuals which are structured with resets. While historically (including recent history) perpetuals have delivered higher total returns than vanilla bonds, certain issuers may see perpetuals as part of the permanent capital structure and investors should be prepared to hold perpetuals perpetually.

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Inflation – Getting Less for Your Buck

Betwixt and between: Inflation and stagflation - which camp are you in?

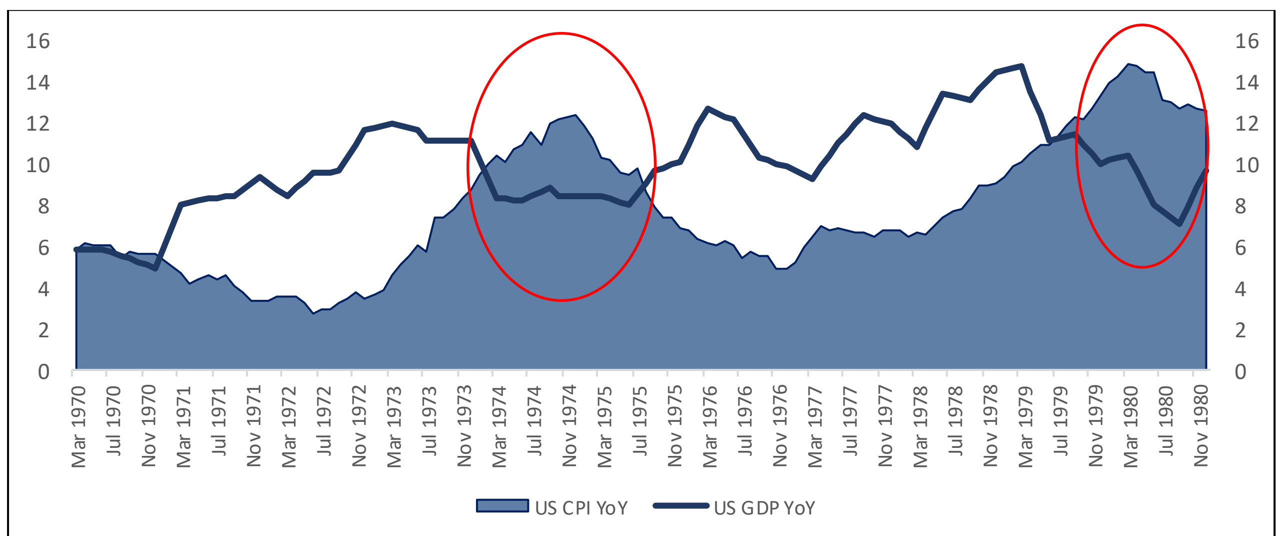
Central banks employ monetary policy to ensure healthy economic growth and employment rates. It is a mandate given to them to promote maximum employment, stable prices, and moderate long-term interest rates. Central banks will usually have a specific target for inflation and manoeuvre interest rates to influence the general economy to achieve these goals. For example, the Federal Reserve Bank and Bank of England both have a long-term inflation target of 2%. For MAS, the central bank does not have an explicit inflation target though MAS has concluded, on average, a core inflation rate of just under 2% is appropriate.

In short, inflation is a general increase in prices and fall in the purchasing power of the dollar or any currency for the matter, and stagflation is the scary combination of rising prices and rising unemployment. The term stagflation is derived from stagnation and inflation. It was coined by Paul Samuelson, an American economist, who won the Nobel Prize in economics for explaining the simultaneous and accompanying rise of inflation and unemployment rates in the US during the 1970s and 80s. In an inflationary economy, as mentioned, central banks will use monetary policy tools like rate hikes to curb the problem. However, with stagflation, measures to reduce inflation may further stump economic growth and increase unemployment.

As there is no universally accepted definition of what level of GDP and consumer price index ("CPI") constitutes stagflation, we define it as any month that has a lower GDP growth and higher CPI and thus translates to a stagflationary period.

The world experienced stagflation when the oil crisis occurred in 1973. It was a period of poor economic growth coupled with rising prices and unemployment. As depicted in the graph below, we can see that in the decade between 1970-1980, there were instances where CPI, as a key measure for inflation rate, exceeded GDP growth.

Figure 17: US CPI and GDP Growth Index (1970 – 1980)



Source: Bloomberg

Coming back to 2021, similarly the world is in a crisis – the ongoing Covid-19 pandemic. Although the factors that drove the previous episode of stagflation is less meaningful in our current situation, overall the public sentiment is one of worry. Over the last 12-month period, interest in the word "stagflation" peaked at the highest point of 100 per Google Trend data. In a stagflationary period, there is no straight forward solution, and it is a snag for policy makers. Historically, the inflation rate has been below the Fed's expectation of 2%. However, in its latest print for November 2021, inflation rose by 6.8%, the highest y/y inflation rate in the U.S. in over 39 years.

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There are mixed views amongst economists and analysts as psychology around inflation expectation is hard to gauge. This is especially so when the general economy has been experiencing a relatively stable inflation rate in the past three decades and the idea of high inflation is relatively foreign to younger cohorts of the population in developed markets. Currently, some are of the opinion that the inflation we are experiencing now may just be transitory while others are in the camp that inflation is more permanent with the worst fear that current conditions may be a déjà vu of the 1970s. Nonetheless, this divergence in views amidst higher inflation prints have drawn investor's attention of late with jitters seen across all asset classes. We expect this jitter to continue into 1H2022 as the market oscillates between the prospects of inflation and fears of an economic slowdown. In Singapore, consensus GDP growth forecast among economists is 4% for 2022 and headline CPI forecast of 3.2%. Unemployment rate has also been held steady at 3.4% for residents in October 2021. In our view, stagflation is a low risk for Singapore though inflation could very well continue to rear its head in 2022.

Factors causing this inflationary environment: In a recent congressional meeting, Fed Chairman Powell commented that the high inflation rate seen may no longer be transitory and may linger much longer than expected as we enter 2022. Several factors are seen to have caused the inflationary environment.

- Asset purchase programs by central banks around the world to stimulate pandemic laden economies have increased money supply in the system. With government subsidies and the long duration of lockdowns, consumers' demand for goods have outstripped supplies that have caused shockwaves throughout the economy with sharp increases in prices.
- Apart from the supply-demand mismatch, the situation has been exacerbated by supply chain bottlenecks where ships are stuck at ports for as long as 54 days before they finally get to unload their cargos. According to a Business Insider report, transit times from Shanghai to Chicago had increased from 35 days to 73 days due to port congestion and delays in handling for the containers amongst other factors. Aside from ship congestion causing supply chain bottlenecks, the semiconductor industry has also come under the spotlight with shortages in production causing companies like Apple, Volkswagen, Ford and Daimler to cut back on manufacturing or shut down assembly lines affecting the supply chain. Interestingly, droughts and water stress aggravated by climate change is also emerging as one of the factors impacting the world's largest semiconductor country – Taiwan. Due to a severe drought over 2020-2021, the Taiwanese government authorized water restrictions on municipal and agricultural use to allow chipmakers to continue their production lines. The three largest semiconductor foundries -Taiwan Semiconductor Manufacturing Corp ("TSMC"), United Microelectronics Corp ("UMC") and Vanguard International Semiconductor account for approximately 66% of global market share according to data from Bloomberg.
- Labour shortages is another factor that has affected the supply side. As more workers re-evaluate their life goals during this pandemic, the baby boomer generations are opting for early retirement. For the younger group, everything from skills mismatch to difficulty in getting childcare or other care needs are delaying their return to the workforce. There are also some workers who are living off savings and various government stimulus aid biding their time to land themselves in a better job with higher wages. Border restrictions due to the pandemic also intensified the problem as migrant workers, who have decided to return home to be with their family, have not returned. Notably in Singapore, labour shortages have caused delays in housing project completion causing price increases in the real estate market.
- In addition to these, energy crunch around the world had seen prices skyrocket in commodities. For example, in Singapore, several small-scale electricity providers exited the market when the wholesale electricity prices fluctuated materially, where the average wholesale market rate went up almost 50cents per kilowatt-hour in October from 16cents per kilowatt-hour a month ago. This translates to more than a two-fold increase in electricity bills. For consumers who had signed up with electricity providers for a fixed-rate electricity tariff plan previously that exited the market due to volatile market conditions had to bear the brunt of higher electricity tariffs with a new electricity provider. A spike in coal and crude oil prices also contributed to inflation fears. Meanwhile, according to a UN report in November 2021, reduced harvests in major exporter countries which may have been affected by floods or drought and destroying farmlands have sent global food prices to its highest in a decade. For example, in Australia, cattle farmers had to cull livestock during a drought causing beef prices to increase by more than 50%.

Though some issues like supply chain disruption may be resolved over time with higher productivity and removal of movement controls, inflationary pressure caused by factors that are indirectly implicated by climate change may have a

longer-lasting effect. We think this may continue to impact food security and semiconductor production and continue to inflate prices in these sectors.

Will the high inflation go away? To curb labour shortages, companies are increasing wages to attract talent. This in turn further adds on to inflationary pressure. Also, there are some countries, mostly in Europe that have adopted wage indexation policies where wages are automatically increased in tandem with the rise in inflation if the inflation rate exceeds a certain percentage. For example, in October 2021, employees in Luxembourg saw their wages increased automatically by 2.5% as the cost of living increased by 2.7% in the previous month. As wage increases are sticky in nature, higher prices for goods and services may persist or continue to see an uptrend for sectors with inelastic demand like healthcare and education.

However, demand for goods may ease off as we expect consumers to have a major shift in consumption patterns from goods to services with more relaxation on the Covid-19 restrictions. This may relieve pressures on the supply chain and possibly weigh down on high inflation. Similarly, with the Fed and other global central banks cautiously removing stimulus and pre-emptively forewarning the market on raising rates, this may abate inflationary pressures although any policy missteps may bring us back to 1970s.

What can we do? Rising inflation erodes the real returns received by bond investors. Coupon payments received are of lesser value with inflation, causing investors to expect higher yields that is at least above the inflation rate. The rise in bond yields would in turn cause falling prices for existing bonds. This phenomenon makes inflation a bond investor's worst enemy.

Treasury Inflation-Protected Securities ("TIP") provides protection against inflation. Depending on the CPI, upon a TIPS maturity, the investors receive an adjusted principal or original principal, whichever is greater. In Singapore, though we do not have an equivalent TIPS instrument, the Singapore Savings Bond ("SSB") may be a good alternative if held to maturity for risk averse investors who may be more concerned about absolute returns than relative returns. The average 10-year rate of return for SSBs is seen to be on an upward trend in its recent issuances since Oct 2021. The ability to hold to maturity is important in an inflationary environment to "lock-in" expected absolute returns as prices of low credit risk bonds generally trades down when rates rise in the secondary market.

Figure 18: Singapore Savings Bond

Bond Code	Issue date	Maturity date	Average p.a. return at Year 10
GX22010S	03-Jan-22	01-Jan-32	1.78%
GX21120H	01-Dec-21	01-Dec-31	1.71%
GX21110E	01-Nov-21	01-Nov-31	1.45%
GX21100W	01-Oct-21	01-Oct-31	1.39%

Source: MAS

For investors with larger risk appetites, we think that higher yielding bonds may still be worth considering in this environment. However, investors would need to monitor the economic trajectory as a slowdown (e.g.: driven by inflation or otherwise) may lead to bond defaults. High yield bonds with their higher levels of credit risk tends to be more susceptible to economic weakness. While the recent spate of Chinese high yield property bond defaults was not due to inflationary concerns per se, it is instructive on how a swift slowdown can affect the high yield market. Bonds that pay higher coupons maybe worthwhile too. These bonds tend to fare better since more payment is received before maturity. In our recent podcast, we highlighted opportunities as we head into 2022 where investors would need to exercise caution and be extremely selective. Commodity-linked credits which are considered high yield due to their cyclical and volatile nature of revenue, are seen as a positive in the global energy crunch and inflationary situation. That said, with the ongoing focus on environmental, social and governance ("ESG") issues, investments in commodity and energy sectors will require investors to take environmental effects amongst other social and governance factors into the investment consideration. Historically, commodities such as gold as well as real estate were seen as attractive alternatives given their inflation-hedging potential. However, as investment in real estate involves a large initial outlay and physical gold involves storage costs, investors may go for REITs and commodity underlying ETFs/ bonds instead.

Apart from the asset classes previously mentioned, industry sectors that are more resilient to inflationary pressures would be those who are able to pass on the cost to consumers and may continue to generate decent returns. In our view, this includes food, real estate, and banks within the SGD bond market. For example, Olam International Limited who is a diversified, agri-commodities producer and trader, issued a SGD perpetual bond with an inflation-adjusted YTD return of 2.34%. In the REITs sector, AIMS APAC REIT and ESR REIT have also generated positive inflation-adjusted YTD returns in the range of 2.5% to 6%. Inflation-adjusted YTD returns are calculated using Singapore's current inflation rate of 3.2%. Financial Institutions also benefit from inflation through rising interest rates that should improve net interest income. That said, the benefit may only last to a point and be eventually impacted by other factors including a higher cost on their own borrowings (which may put pressure on net interest margins and earnings) and a potential slow-down in demand for credit and loan volumes as rising interest rates impact the ability to service borrowings.

Even so, with the uncertain path of inflation and the macro environment at large, actual real yield performance from the respective asset classes in 2022 may differ from what we have observed currently.

Figure 19: YTD Inflation-Adjusted Return

Sectors	Issuer Name	ISIN	Maturity/ Call Date*	Inflation Adjusted Rtn	YTD Rtn
REITS	ESR REIT	SG7IC6000006	03/11/2022*	2.48%	5.76%
	AIMS APAC REIT	SGXF72350378	14/08/2025*	6.30%	9.70%
	ARA LOGOS Logistics Trust	SG7MA2000006	01/02/2023*	1.34%	4.58%
Agriculture	Olam International Limited	SGXF39597590	18/07/2026*	2.34%	5.62%
		SGXF63577419	24/02/2026	1.12%	4.36%
		SG7DJ3000005	11/07/2022*	1.41%	4.65%

Source: Bloomberg, OCBC Credit Research
Data extracted on 17 Dec 2021
Examples above are meant to be illustrative and not exhaustive of the sectors

Stepping Up the Transition from SOR to SORA

Perpetuals most impacted by SOR-SORA transition: 2021 saw the transition from Swap Offer Rate ("SOR") to the Singapore Overnight Rate Average ("SORA") stepping up. The usage of SOR is already reducing as we write as the market prepares for the discontinuation of the SOR by end June 2023. In the SGD bond market, the main impact of the transition is on both corporate and bank perpetuals (ie: the Additional Tier 1 bank capital instruments). Variable bonds are rarely issued by corporates and banks in the SGD bond market. Assuming perpetuals are not called, distribution rates would be reset to a rate that is linked to a benchmark rate. Historically, the market accepted benchmark rate was SOR.

More an operational matter with SORA-linked papers already in issuance: A number of perpetuals issued in 2019 and the bulk of those issued in 2020 have included contractual provisions that specify trigger events for a transition to a replacement rate and a spread adjustment to align the replacement rate with the benchmark being replaced (i.e. fallback language) in their documentation. This means that legally there is a framework in place on what will happen to the perpetuals when SOR ceases. In January 2021, United Overseas Bank Ltd ("UOB") priced a SORA-linked Additional Tier 1 capital instrument (i.e. the UOBSP 2.25%-PERP). This was the first SORA-linked perpetual as far as we are aware and was followed up in June 2021 with UOB's second SORA-linked Additional Tier 1 instrument (UOBSP 2.55%-PERP). Of note is the issue size of UOB's SORA-linked issues with the first one for SGD150mn and the second for SGD600mn indicating perhaps to an extent greater awareness and acceptance of the new reference rate. Since August 2021, all the new perpetuals in the primary market have been priced with a reset linked to SORA at the outset. This significantly removes potential future complications from the cessation of SOR. We have also seen issuers update fallback language in their documentation in 2021. For example, in 4Q2021, perpetual holders approved ARA Asset Management's Consent Solicitation Exercise to update the fallback language on two out of three of its outstanding perpetuals while HSBC Holdings PLC held noteholder meetings in late September regarding a consent solicitation for the HSBC 5.0%-PERP and HSBC 4.7% 'PERPc22s to replace the SOR linked swap rate with the SORA linked swap rate and implement an adjustment to reflect the difference between the SOR and SORA rates as the reset spread remains the same. Other changes were the inclusion of fallbacks to SORA if a "Benchmark Event" occurs. Earlier in 2021, CapitaLand Integrated Commercial Trust in April updated its Medium-Term Note Program to incorporate fallback provisions and benchmark replacement provisions amongst other amendments.

Market is able to adapt: In the secondary market, aside from very high-grade bonds (which are rates dependent), other bonds and perpetuals tend to trade with reference to cash prices and all-in-yields as the primary comparison across issues. Spreads over SOR are used as well, although certain market participants use this as an ancillary reference point. As of writing, spreads over SOR are still being used although we expect that within 1Q2022, we will likely move to refer to spreads over SORA.

……however, issuers need to update documentation that are still silent: In practice, if it is certain that a perpetual will be called before its reset date, then the reset language is moot since the instrument gets redeemed. However, the right to call is held by issuers. Investors in perpetuals do not know with full certainty whether or not a perpetual would be called. This means that for perpetuals with a call date beyond end-June 2023, it is uncertain what will happen to the perpetuals if the documentation is still silent on this matter. The earlier the perpetual was issued, the higher the risk of documentation being silent. Already we observe more questions asked over the transition and expect that investors may stay away from perpetuals with no fallback language in place. Overall, we expect more issuers to update their documentation in 2022.

Adjustment spread to be dealt with later: Reset mechanisms stay in place when documentation gets updated (i.e. timing when reset kicks in, initial margin, step-up margin). However, an adjustment spread will apply as SOR does not equal SORA and there is a SOR-SORA basis spread. In our view, this adjustment spread is likely to be small for the bulk of the perpetuals. However, the basis spread is not insignificant for low-yielding perpetuals issued by high-grade issuers. We note that the median basis spread between the 5Y SOR and 5Y SORA was 13bps year to date (1 January 2021 to 13 December 2021) and 22bps since 1 October 2022 to date. The adjustment spread decision will be done in conjunction with independent financial advisers. We understand that there is no legal requirement for the adjustment spread to be decided upfront. This is likely to be decided along with the decision on whether to call the perpetual nearer to call date.

OCBC Bank

The State of Play of the SGD High Yield Market

Background of the high yield market: In the past, high yield bonds (also termed as junk bonds or speculative grade bonds) mainly consisted of bonds issued by former investment grade issuers who lost their investment grade status - what was typically known as "fallen angels". Starting from the 1980s, bonds issued as high yield from the outset were launched and heavily marketed by US investment banks, becoming a fast-growing segment of the bond market. Early high-yield bonds were instrumental in financing the mergers and acquisition frenzy during that time period. The Asiadollar (excluding Japan) high yield bond market is a large and liquid market with a significant institutional investor following. Using Bloomberg data and taking into account those externally rated as high yield by at least one of the Big Three international rating agencies, we calculated the amount of high yield bonds outstanding in the market at USD286.6bn (~SGD391.6bn) as at 14 December 2021. The market though, is highly concentrated with 44% of these bonds issued by property developers with their main operations in China. Another 19% are issuers from India and Indonesia.

The SGD high yield market – where perceptions may drive yields over actual credit risk: The SGD corporate credit market is mainly an unrated market. This means a lack of explicitly available credit ratings to guide the market on what should be considered high yield versus those that are higher grade. In practice, institutional investors in Singapore maintain an internal credit rating on issuers, though these are not publicly available to the rest of the market. As such, variations exist in terms of yields and secondary market liquidity, reflecting the difference in perceptions of credit risk among market participants. For example, certain bond issuers with weaker credit metrics would very likely be rated as high yield or "crossover" (issuers that straddle between high yield and high grade) if rated externally. However, they may trade at yields that are tighter than what their standalone credit strength may imply. Such perceptions can stem from various reasons, usually name familiarity and the belief that shareholder support may be available even if there are no explicit guarantees. At OCBC Credit Research, we maintain a framework in assessing fundamental credit profiles on issuers who are part of our official coverage, assigning them a 1-7 issuer profile score ("IPS"), with one being the strongest and seven the weakest. We factor shareholder support on a case-by-case basis, looking to the existence of explicit guarantees and/or actual track record of support provided.

The sub-categories within SGD high yield: Over the past few years, we defined high yield as instruments yielding higher than 4.5%. However due to the compression in rates through 2020, we revised our definition at the beginning of 2021 to instruments with yields higher than 3.5%. Using this definition, longer-dated senior unsecured bullet bonds issued by "crossover" issuers who would need to pay up for duration would also be considered as high yield. We see four main sub-categories of instruments that make up the SGD high yield market: (1) crossover belly-to-longer-dated bullets, (2) crossover perpetuals, (3) high-yield bullets and (4) high-yield perpetuals.

Figure 20: SGD High Yield Sub-Categories

Sub-Categories	Characterisation	Examples[2]
Crossover bullets	▪ Belly to longer tenor bonds with fixed maturity date issued by crossover issuers with manageable credit risk ▪ Active primary market issuance ▪ Large and liquid market ▪ Higher yields from taking credit risk and interest rate risk	▪ Keppel Corp Ltd ▪ Olam International Ltd ▪ GuocoLand Ltd
Crossover perpetuals	▪ Subordinated securities with no fixed maturity date issued by crossover issuers with manageable credit risk ▪ Active primary market issuance ▪ Large and liquid market ▪ Higher yields from taking credit risk, subordination risk[1] and interest rate risk (ie: affecting call and mark-to-market)	▪ Frasers Property Ltd ▪ AIMS APAC REIT ▪ Suntec REIT
High yield bullets	▪ Bonds with fixed maturity issued by issuers with higher credit risk ▪ We expect these to be rated at high yield if rated externally	▪ Oxley Holdings Ltd ▪ Hotel Properties Ltd

	▪ Small part of the SGD bond market ▪ Wide variation on yields and secondary market liquidity ▪ Higher yields from taking higher credit risk, liquidity risk and some interest rate risk	▪ Thomson Medical Group Ltd ▪ OUE Commercial Trust
High yield perpetuals	▪ Subordinated papers with no fixed maturity date issued by issuers with higher credit risk ▪ Only a handful of issuances in the market ▪ Riskiest part of the high yield market in our view ▪ Wide variation on yields and secondary market liquidity ▪ Higher yields from taking higher credit risk, subordination risk[1], liquidity risk and interest rate risk (both on whether the perpetual will be called and mark-to-market)	▪ ESR Cayman Ltd ▪ Lippo Malls Indonesia Retail Trust ▪ First Real Estate Investment Trusts

Source: OCBC Credit Research
Note: (1) Subordination risk as set out by the legal contractual terms at the issue-level
(2) Examples are meant to be illustrative and not exhaustive of the SGD corporate bond market

The SGD true high yield bond market is small: Taking bullet bonds that have an ask yield to worst of above 3.5%, we counted only 23 high yield bullet bonds with amount outstanding at SGD3.8bn (excluding defaulted bonds) based on Bloomberg data as at 14 December 2021. This represents less than 5% of total SGD corporate bonds outstanding (excluding issuances from statutory boards). At OCBC Credit Research, we also refer to this part of the market as "true high yield", to differentiate them from the more prevalent and growing structural high yield market (including both corporate perpetual and bank capital instruments). For the purpose of this piece, we refer to subordination risk as set out by the legal contractual terms at the issue-level. In the SGD market, perpetuals are typically subordinated to senior unsecured bonds issued by the same entity, where senior unsecured bondholders are typically paid first in a liquidation though not always, particularly when the issuer has bank loans and/or secured borrowings. Taking only bullet bonds with a coupon of 3.5% cut-off point at issuance, we counted only SGD2.4bn of true high yield bonds priced in the SGD market since 2020 to date out of total primary market corporate issuance of SGD43.6bn (excluding issuances from statutory boards).

……and dragged by past defaults: While we are of the view that defaults are part and parcel of any functioning corporate bond market, the defaults in the SGD market were particularly felt in our view, given the high concentration by industry sector and issuer. As captured in our piece from 3 January 2020 on "Will we see more defaults in the SGD space in 2020?", between 2015 to 2017, defaults were concentrated mainly among issuers in the offshore marine sector. Since then, there have been no new primary issuances from the offshore marine sector. In 2018, unlike earlier defaults which affected mainly institutional and private bank investors, Hyflux Ltd ("Hyflux")'s default led to losses among retail investors and was widely covered by the press. Hyflux had SGD265mn of bonds and SGD900mn of perpetuals outstanding at time of default.

Which bonds are likelier to be considered true high yield? Broadly, the factors that contribute to an issuer's high yield status are the industry sector of its operations, its financial profile, and the management's approach to its capital structure. Taking the offshore marine sector as an example, the common characteristics of the many bond issuers that defaulted over 2015 to 2017 were (1) exposure to a highly cyclical industry sector that was vulnerable to volatile oil prices; (2) a small and concentrated balance sheet with weak internal liquidity; and (3) a financial policy that favoured growth in assets almost entirely through debt as opposed a balanced mix of debt and equity. With the rise of companies pursuing "growth at all costs" strategies, bonds issued by such companies would also be true high yield, given the lack of attention of these companies towards cash flow generation. Where more than one of these factors may exist, this would indicate a higher credit risk issuer. Conversely, exhibiting only one of these traits would indicate lower credit risk for the issuer, and hence higher yields required by investors. In many instances, senior unsecured bonds issued by high yield issuers will be considered as true high yield.

Figure 21: Brief Description of the Types of True High Yield Issuers

Sub-Categories	Brief Description	Examples
Industry: High cyclicality	▪ Industries that are highly sensitive to business cycles ▪ Higher cash flow during expansionary phase, but contracts when demand falls during recessions, leading to variability in cash flows	▪ Gaming and leisure ▪ Oil and gas exploration ▪ Airlines
Industry: Declining sector outlook	▪ An industry that may have historically been stable but is currently facing significant competitive threats ▪ Example of competitive threats include new direct competitors, new alternatives, changes in regulations and consumer habits	▪ Internal combustion engines vehicles ▪ Department stores ▪ Postal services
High leverage: By necessity	▪ Companies that face high capital expenditure and working capital requirements ▪ Low margin companies in industries with overcapacity	▪ Property developers ▪ Steel producers ▪ Commodity traders
High leverage: By choice	▪ Management seeking to accelerate equity returns by using leverage and/or selling prized assets ▪ Companies who raise debt to pay shareholders dividends ▪ Companies funding inorganic growth	▪ Private equity-backed companies ▪ Matured companies buying growth via mergers & acquisitions ▪ Companies whose management are incentivised mainly with equity returns
"Growth at all costs"	▪ Companies scaling up market share aggressively with much less focus on profitability and cash flow generation	▪ Early-stage technology companies backed by venture capital

Source: OCBC Credit Research
Note: Examples are meant to be illustrative and not exhaustive of the industries where true high yield bonds exist

SGD true high yield issuers concentrated in one industry sector: Despite different industry sectors and issuer characteristics that make up true high yield bond issuers globally, these tend to be property-related in the SGD bond market since the fallout of the offshore marine sector. In our view, the high concentration of property-related true high yield bonds reflects the overall SGD bond market which tilts towards the property sector (including REITs). Financial institutions, the other main issuing sector in the SGD market, are predominantly high grade, where bank perpetuals are also high grade or "crossover" perpetuals.

What are the common characteristics of SGD true high yield bonds? Like "crossover" and high-grade bullet bonds, SGD true high yield bullet bonds tend to be senior unsecured securities with a fixed maturity date. Non-payment of coupon and principal is an event of default, unlike structural high yield where issuers legally get to choose whether or not to redeem the security at call dates and sometimes can defer coupon payments. There is no standard set of high yield bond covenants in the SGD market though given the higher credit risk associated with true high yield bond issuers, investors would be well served to demand an issue structure that would keep overall risk more manageable.

Some protection through covenants: Unlike high grade bonds which typically lack issue structure protections, we note that Change of Control ("CoC") and cessation puts were included in a number of true high yield bonds priced since 2020 to date. CoC puts provide an option for bondholders to sell the bond back to the company in the event that shareholding of an issuer changes to new owners that are deemed to be less bondholder friendly. For example, new owners with a propensity to dispose assets without due compensation to bondholders and pushing the issuer further into high yield territory.

Cessation puts are useful as investors can opt to exit from their investment when an issuer is taken private. It is easier for issuers who are listed to raise new equity from financial markets while listed issuers offer a higher level of transparency due to on-going disclosure requirements. True high yield bonds may come with financial covenants that aim to keep credit metrics in check and provide even stronger protection to bondholders, though we have not seen this being prevalent in recent issuances. Negative pledges also typically feature where the issuer and/or guarantor promises that so long as the bond is outstanding, none of the subsidiaries will create or have any outstanding mortgages, charges, liens, pledges, encumbrances or other security interest, unless they get the bondholders' approval. Carve outs usually apply for this clause and "subsidiaries" is also typically a defined term and may not cover all subsidiaries. Non-disposal clause which restricts issuers from disposing material assets may also exist. However, similar to other clauses that protect bondholders, the clause may be worded differently in different information memorandums. In more customisable situations, security package and cashflow waterfall that prioritise certain bond investors may improve protection for that class of investors.

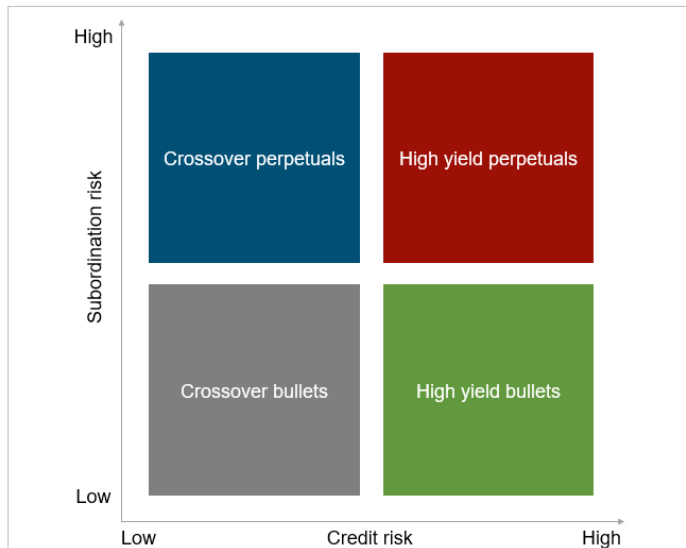
Shorter tenor high yield versus high grade bullet bonds: Investors face higher credit risk when they invest in a bond over a longer period of time. This is rooted in uncertainty over a company's future trajectory. All things equal, investors would be more comfortable lending on a longer-term basis to high grade issuers over high yield issuers. In the SGD space, true high yield issues typically have a tenor of 3-years. 5-year tenors are only available for those that are more creditworthy versus high yield issuers. With less permanent capital (borrowings of only three to five years) and lower excess cash flow after servicing debt repayments, true high yield bond issuers generally face higher refinancing risk versus high grade issuers and rely heavily on the bond market being available for continued access to capital.

Lower liquidity versus high grade bonds: Few institutional funds in Singapore focus on the true high yield bond space, with the main demand coming from private bank clients. This means that in contrast to high grade bonds which are actively followed by institutional investors, the limited demand pool means that issuance sizes in true high yield would tend to be smaller. In the secondary market, liquidity may also be patchier for true high yield bonds. In a highly stressed liquidity scenario such as what the market went through in March 2020, investors are better able to sell their most liquid holdings (typically high-grade bonds) rather than high yield bonds. This illiquidity means that in our view, true high yield bonds are more suited for investors with higher holding power.

Possibility for equity-like returns: At the riskier parts of the true high yield space, sizeable capital gains may exist, bringing total returns closer to required returns more commonly seen in equity. True high yield bonds that are trading below par do not immediately translate to a good deal as there could be credit fundamental reasons why that is the case. That being said, information asymmetry tends to exist, given that this market segment is less efficient than the market for higher grade bonds. Similar to investing in single-name equities, a solid bottom-up understanding of an issuer would be important (for example whether or not an issuer has access to alternative funding sources and valuation of their assets). In the case of true high yield bonds, bottom-up analysis also allows investors to exit deteriorating investments earlier where secondary market liquidity is still available.

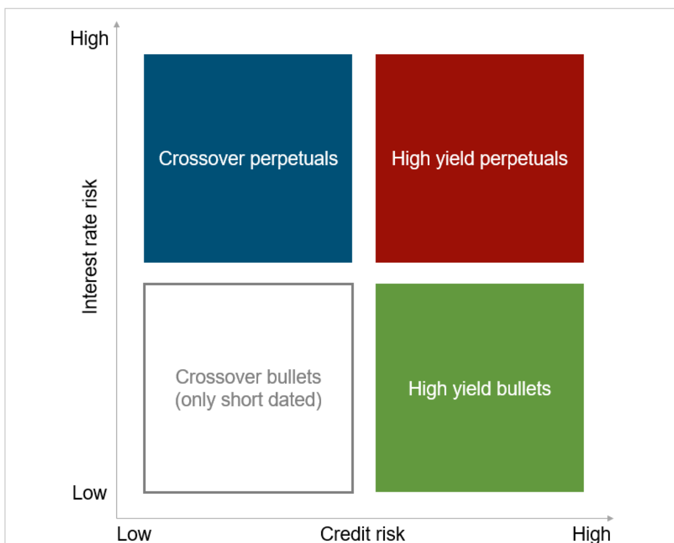
Limited options in true high yield though investors should protect against rise in interest rates: In a rising interest rate environment with the economy emerging on a stronger footing out of the pandemic, true high yield bonds would be an ideal segment to put money to work versus very high-grade bonds which would be plagued by price falls. True high yield is less sensitive to interest rate rises as investors are being compensated by higher yields for taking credit risk and liquidity risk, while bond tenors tend to be shorter. To build an optimal diversified high yield portfolio where yields can also compensate for potential bond defaults, investment targets should be plentiful and come from a diverse range of industry sectors that benefit from the stronger economic outlook. However, the SGD market is not deep and liquid enough for such a portfolio. Furthermore, unlike the more mature US high yield market, there are no reliable default rate indicators in the SGD space with defaults since 2015 highly concentrated. That said, the opportunity set significantly expands when we add "crossover" bullets and perpetuals into the mix. In our view, sufficient investment targets exist to own a portfolio that is less tilted to high grade in this environment.

Figure 22: Illustration of the Subordination Risk and Credit Risk Trade-Off



Source: OCBC Credit Research

Figure 23: Illustration of the Interest Rate Risk and Credit Risk Trade-Off



Source: OCBC Credit Research
Note: Short dated crossover bullets trade akin to high grade bonds

Fractionalisation the way forward for the development of the SGD true high yield market: In our view, the SGD true high yield market would continue to be a niche part of the SGD bond market and the purview of select investors who are able to take the risks associated with such bonds. However, we think the move towards fractionalisation would allow more true high yield issuers to tap the bond market for funding and simultaneously allow a larger pool of investors to construct portfolios based on risk-return considerations that are more optimal than what is available currently. For an individual investor, investing a million dollars in four true high yield bonds (at current minimum size of SGD250,000 each), all from the property sector or historically all from the offshore oil and gas sector, is significantly riskier versus the ability to invest across 20 bonds from different issuers in different industry sectors. We assume minimum ticket sizes of SGD50,000 each. One example where fractionalisation is happening is in the digital bond space. ValueMax Group ("ValueMax"), a pawnshop operator and true high yield bond issuer whose most recent SGD bond matured in April 2021, launched a SGD100mn commercial paper programme in October where papers are targeted to be launched on a digital asset exchange in Singapore by year end.

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Case Study: China Evergrande Group ("EVERRE") - Towards a Debt Restructuring

Asiadollar high yield market under stress: After a relatively benign 12-month period in the Asiadollar market that started from July 2020, spreads on the Asiadollar high yield market started rising on the back of news reports that two local governments had suspended sales of EVERRE's development projects. This was followed by a gradual widening of spreads in August, accelerating since the middle of September 2021 as EVERRE announced a number of updates highlighting the liquidity challenges it was facing, including two subsidiaries that had failed to discharge guarantee obligations on wealth management products ("WMP").

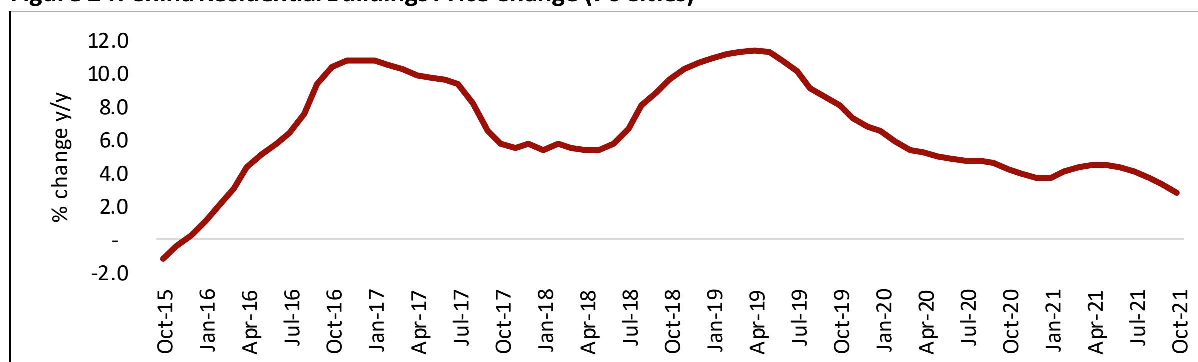
In 2021, the Bloomberg Barclays Asiadollar High Yield Index spread reached 1,255bps on 9 November 2021 and is nearing 1,200bps as of writing. At the start of the year, this was 632bps. The Asiadollar high yield market consists of a high concentration of bonds issued by China property developers where developers are facing a slowing property market and significantly higher refinancing risk. The Investment Grade index spread did not reach the heights as per when COVID-19 broke out although has been volatile in the past few months. This was not entirely related to EVERRE, with underlying rate changes impacting investment grade spreads.

Asiadollar high yield modified duration is short: To get an indication of what was happening in the market over the past few years, we look to a popular exchange traded fund that attempts to track the broad Asiadollar high yield market. ~28% of the holdings are in real estate. We also estimate that up to ~55% of holdings are issuers whose main operations are in Greater China even if they were legally incorporated elsewhere. We find that the median modified duration for the portfolio had been on a downtrend since 2014 from ~3.6 years to a median of ~2.7 years from the beginning of January 2021 to 6 December 2021 ("YTD"). As a comparison with the US high yield market, effective modified duration was 3.3 years YTD, just somewhat short of the 3.6 years in 2014. In our view, this may point towards (1) Higher percentage of weaker credit profile issuers in the portfolio and/or (2) Investors becoming more aware of credit risks and demanded shorter maturities (to be paid back faster) and/or (3) Issuers agreeing to shorter maturities to get access to offshore bond financing at acceptable rates.

Sector wide issue though China Evergrande is emblematic of the situation: What started at EVERRE in terms of liquidity stress has snowballed to the rest of the market. In part, the industry challenges afflicting EVERRE are also the same ones that are affecting other property market issuers, namely a slowing property market and tighter financing. China started stepping up property market cooling measures since 2016 and the message that houses are for living in, not for speculation, has been consistent for the past five years. However, despite property curbs, house prices continued to grow with housing affordability becoming a concern. In August 2020, media reports of a deleveraging campaign named "Three Red Lines" emerged as a way to contain the financial risk of the property sector. In theory, the plan would see credit risk of the industry reduce over a multi-year horizon as developers de-lever. However, in the short term, some developers would have had little ability to meet liquidity needs if they were unable to borrow more. Despite heightened liquidity risk, spreads in Asiadollar high yield tightened.

Property market started slowing: Compounding the restriction in policy, the pace of house price increase slowed during the pandemic and in 2021 was exacerbated by reports of price discounts offered by developers to homebuyers and rising concerns over the credit health of property developers. As property units in China tend to only be fully constructed after purchase, buyers face the risk that their units would be uncompleted. Bloomberg reported that contracted sales (takes into account both house prices and area sold) by China's top 100 developers fell 38% y/y in November 2021, wider than the 32% y/y drop in October 2021 per preliminary data compiled by China Real Estate Information Corporation, a research firm focusing on the Chinese property market. Whilst credit fundamentals of certain bond issuers had been weak even before "three red lines", a change to an adverse industry outlook accelerated the decline in credit profiles in our view.

Figure 24: China Residential Buildings Price Change (70 Cities)



Source: National Bureau of Statistics

What we can glean from the situation: Aside from an adverse industry outlook, certain company-level characteristics have exacerbated the situation. While EVERRE is the largest issuer with ~USD19bn of bonds outstanding (including those issued by Scenery Journey Ltd, an indirect wholly-owned subsidiary of EVERRE), certain of the credit considerations leading to its vulnerabilities in an adverse situation are shared by other bond issuers. Aside from USD-bonds, EVERRE also has onshore bonds issued by Hengda Real Estate Group Company Limited ("Hengda") where Hengda is 59.9%-owned by EVERRE as at 31 December 2020.

What you see may not be what it is: EVERRE's latest available unaudited consolidated balance sheet as at 30 June 2021 showed total liabilities of RMB2.0 trillion. However, various media reports have surfaced that EVERRE had financed certain parts of its business through wealth management products ("WMP") mainly sold to retail investors including employees. It is still unclear to us what are the exact terms of such WMP and whether these are outright guaranteed by subsidiaries. We do know however that we were unable to find much disclosure on the WMP in the company's consolidated financials even if these financials were audited by well-known auditors. In early-September 2021, we opined in our Special Interest Commentary piece that the company also has various other obligations that may still materialise if certain conditions are unfulfilled.

"Private bonds" and other liabilities have caught market by surprise: In end-September 2021, bondholders of Jumbo Fortune Enterprises ("Jumbo"), an entity said to have issued bonds guaranteed by EVERRE, claimed that they were unpaid. While there was some mention of guarantees in relation to cooperation parties, joint ventures and associates, there was no explicit mention of a Jumbo in EVERRE's disclosures. Around the same time, a smaller developer Fantasia Holdings Group announced that it had not repaid bondholders who had exercised a put option on a private bond guaranteed by the company. This was then followed by Kaisa Group Holdings Ltd who announced that it had missed payments on WMP. This points towards the possibility that publicly available disclosures used by investors to track the credit health of property developer issuers may understate the actual level of liabilities. While certain private debt funds (with their higher demands on information rights) may still be willing to provide bilateral financing for developers, it is hard for us to imagine traditional bond investors gaining comfort around the opacity. In October 2021, regulators announced that they were investigating the company's recent financials and the external audit that was done. We understand that information furnished to the international rating agencies may be incomplete as well, given that information of off-balance sheet liabilities may not be forthcoming.

Large maturity wall when market conditions have tightened: Assuming EVERRE's on-balance sheet liabilities were all there is, this is still a very large amount relative to the reported total assets of RMB2.4 trillion, where 54% consist of uncompleted properties. As at 30 June 2021, EVERRE's on-balance sheet short term debt was RMB331.7bn, representing 58% of total debt due. Another RMB951.1bn was recorded as trade and other payables, a short-term liability. Large liabilities itself was unlikely insurmountable if financing was freely available to roll-over debt. This is especially more so if assets can fetch more in the open market than what was recorded on balance sheet. However, the Chinese property sector is plagued with an oversupply situation in certain regions. The company had been trying to sell non-land assets for months to generate cash but there was little notable progress. As liquidity tightening also affected other developers, this constrained the pool of potential buyers, particularly as the company had to raise funds in a short amount of time. Ordinarily, property developers

would have the highest strategic fit since they are able to take over property projects, however we note some other developers were also shedding assets to shore up their own balance sheets

When cash needs to be used for something else: In certain industries, it is a common practice for companies to receive cash upfront before goods and services are rendered and so is the case for Chinese property developers. Such cash appears on balance sheet. Subject to regulations which may differ by project location, this cash is allowed to be used by developers for other purposes such as paying lenders and shareholders and buying new land for expansion. However, when such cash is used elsewhere, the cash to build houses needs to be replenished. Historically, when property markets and financing markets were robust, the answer was simpler. Sell more unbuilt houses, receive presales proceeds and raise money from banks and investors. However, the industry is facing a property slowdown (both policies induced and resulting also from slower demand). We note also that certain local governments have tightened the use of such funding for other purposes to ensure that such funds are used for construction. This means the ability for developers to upstream such cash for debt repayment purposes may be hampered. As at 30 June 2021, EVERRE's contract liabilities which would be where such obligations are likely to sit was reported at RMB215.8bn (11% of total liabilities).

When minority interest may be "debt-like": Company assets can be funded in many ways and in the case of Evergrande, minority interest amounted to RMB220bn as at 30 June 2021. Selling stakes in subsidiaries and welcoming new minority investors is a common business practice and often this is a smart way to mitigate business risk which may be fraught in a property development project. However, it is worth noting that minority interest makes up 54% of Evergrande's already thin total book value of equity, begging the question of why a company as prominent as Evergrande needed so much money from business partners and what is the specific nature of such minority interest. While we do not have the full answers, minority investors in Hengda had terms which were "debt-like" as these investors had rights to redeem their stake in Hengda (or obtain more shares in Hengda for no consideration). These were subsequently waived, averting potential liquidity stress in January 2021, though it is yet unknown what the company offered in lieu of the waiver.

Structural subordination comes into the fray: All lenders are not necessarily equal and how much each group of lenders can get back in a negotiated debt restructuring significantly depends on their bargaining power. Such bargaining power is in part dependent on the specific entity that lenders have lent their money to and the corporate structure of the whole group. Evergrande's USD bonds are issued out of offshore entities (of which, USD14 billion is issued out of the Cayman Island incorporated listed entity). Similar to other Asiadollar bond issuers, EVERRE's main assets are located in China. While this arrangement is market practice and familiar to investors active in bond markets, it does mean that in an adverse situation, being far from assets would mean lower bargaining power versus other lenders, especially against other lenders who have direct claims over assets. It is also worth noting that the total USD bonds of USD19bn represent only 6% of reported total liabilities and likely even smaller when off-balance sheet liabilities are properly accounted for. In our view, it is plausible to imagine offshore investors facing lower recoveries versus domestic creditors and homebuyers.

Acceleration of negative credit rating actions: We note that negative rating actions for the Chinese high yield property sector have stepped up since October 2021, with hampered liquidity and heightened refinancing risk cited as key reasons. We note that historically, the lack of flexibility in internal liquidity is a structural feature of this market. High yield developers have little cash on balance sheet they can use for debt repayment, especially if these are locked up in escrow. This means that continued market access to external financing is critical to meet obligations, especially as asset sales are not an easy solution in this market environment. While it is better to be late than not reacting, we think the spate of negative credit rating actions is leading to a vicious cycle. Investment mandates and internal credit processes specify minimum credit requirements. In our view, the more negative rating actions that are taken, the harder it is for property developers to access the public bond markets for refinancing. This points towards further defaults for the sector. Among the limited number of high grade and "crossover" Chinese property developers, refinancing costs have increased even if access is still available.

What next for Evergrande? On 3 December 2021, EVERRE announced that it may not have sufficient funds to perform its financial obligations given the group's current liquidity situation and planned to work with creditors on a restructuring plan for its offshore debt. On 6 December 2021, the company announced that it has received a demand to perform its obligations under a guarantee amounting to ~USD260mn (likely on the Jumbo bond). The company subsequently announced that it has set up a seven-person risk management committee where five members comprise of non-company representatives. These five members include a representative from China Cinda Asset Management Co, an asset manager focused on bad debts and a representative from Guangdong Holdings Limited, a provincial-level state-owned company. As of writing,

EVERRE has not paid USD82.5mn of coupons on two bonds issued by Scenery Journey Ltd that came due in early November. There was a 30-day grace period on the payments which has since ended on 7th December 2021. EVERRE has also reportedly failed to pay USD255.2mn in coupons due 28th December 2021 on EVERRE 8.75% '25s and EVERRE 7.5% '23s. There is also a 30-day grace period on the payments. We expect that a managed debt restructuring process would be carried out as next course of action.

Many hands hopefully make light work: As of writing, no formal debt restructuring process has actually started although the company has appointed legal and financial advisers since September 2021. The relative inertia amongst investors and EVERRE from delayed acceleration and formal debt restructuring could be due to hopes for a last-minute government reprieve. However, at a recent event in HKSAR in early December, the governor of the People's Bank of China commented in a pre-recorded message that the rights and interests of creditors and shareholders will be fully respected in accordance with their legal seniority and EVERRE will be dealt with in a market-oriented way. Given the size of the problem, it looks increasingly like there needs to be a concerted effort including from the government to limit systemic risk.

OCBC Bank

Sustainable Finance Regulations for Financial Institutions to Weather the Storm

While the multitude of principles and agendas covering sustainability highlights its depth and breadth and established the 'what', the resulting network of regulations as mentioned in "***Disclosures in Sustainable Finance – Addressing Words that Speak Louder than Actions***," are focused on the 'how'. The quickening pace of regulatory developments to establish how sustainability agendas can be achieved is perhaps indicative of rising concerns surrounding climate change and increasing instances of severe weather events as well as the lack of progress and passing of time towards key future milestone sustainability dates. It may also represent better familiarity and knowledge of the issues and increasingly efficient thought leadership in finding a way forward.

We highlighted above that sustainability related regulations were growing in both quality and quantity and as understanding of sustainability issues and the cost to address them rises, so has the specificity of regulations grown towards the Financial Institutions sector. This is due to the compounding influence that Financial Institutions have on sustainability and environmental, social and governance ("ESG") issues given their role as a facilitator for the broader economy. The influence of environmental concerns stretches beyond their own footprint and operations to the activities that Financial Institutions chooses to fund. Social issues influence Financial Institutions given their functional and financial capacity to address problems with social inequality through the essential services they provide. Finally, governance is relevant for Financial Institutions given their systemic importance as a steward in the world of finance, highly regulated nature, and their sensitivity to sentiment and public confidence.

Developments in sustainable finance regulations such as SFDR are occurring alongside the Financial Institution sectors' own separate and significant regulatory development journey. This commenced following the 2008 financial crisis with a desire to improve financial sector resilience and ensure its ability to withstand a future crisis primarily through higher minimum capital requirements but also with minimum short term and long-term liquidity coverage obligations. This was achieved through Basel III regulations that seeks to improve banking regulation, supervision and risk management.

As we head into 2022 however, both regulatory tracts are seemingly merging to create a financial system that is overall more resilient to both systemic and environmental shocks. As discussed in "***Financial Institutions – a cruise to nowhere?***", the European Commission ("EC") published on 27 October 2021 legislative proposals for the postponed implementation of Basel IV into European law that includes more formal requirements for Financial Institutions to include an assessment of ESG risks and to adequately disclose these risks and their consistency with the EU's overall sustainability strategy. This is to ensure that the influence of ESG risks on Financial sector systemic stability is incorporated in capital adequacy assessments whilst also ensuring that Financial Institutions are contributing to sustainability efforts and complying with the European Green Deal to make Europe the first climate neutral continent by 2050. This is separate to the mandatory obligations to disclose ESG risks as per SFDR and could be a preliminary step to incorporating ESG risks into minimum capital requirements and prudential regulatory frameworks.

The first parameter in understanding Financial Institutions' resilience to ESG risks is by looking at climate-related stress and how climate change may impact their financial performance through their operations but also their lending and investment portfolios. Per an opinion piece in the Business Times, the concept of a stress test came from the recommendation of the Task Force on Climate-related Financial Disclosures ("TCFD") that climate-related stress impacts and its reporting should include forward-looking scenario planning of a warmer planet. Whilst Financial Institutions are improving their disclosure of ESG and climate related information for their own operations including their policies for doing business with carbon emitting industries and clients, their ability to report the comprehensive impact of climate change on their lending and investment portfolios is weaker given it relies on the disclosure of their customers, something they have much less control of.

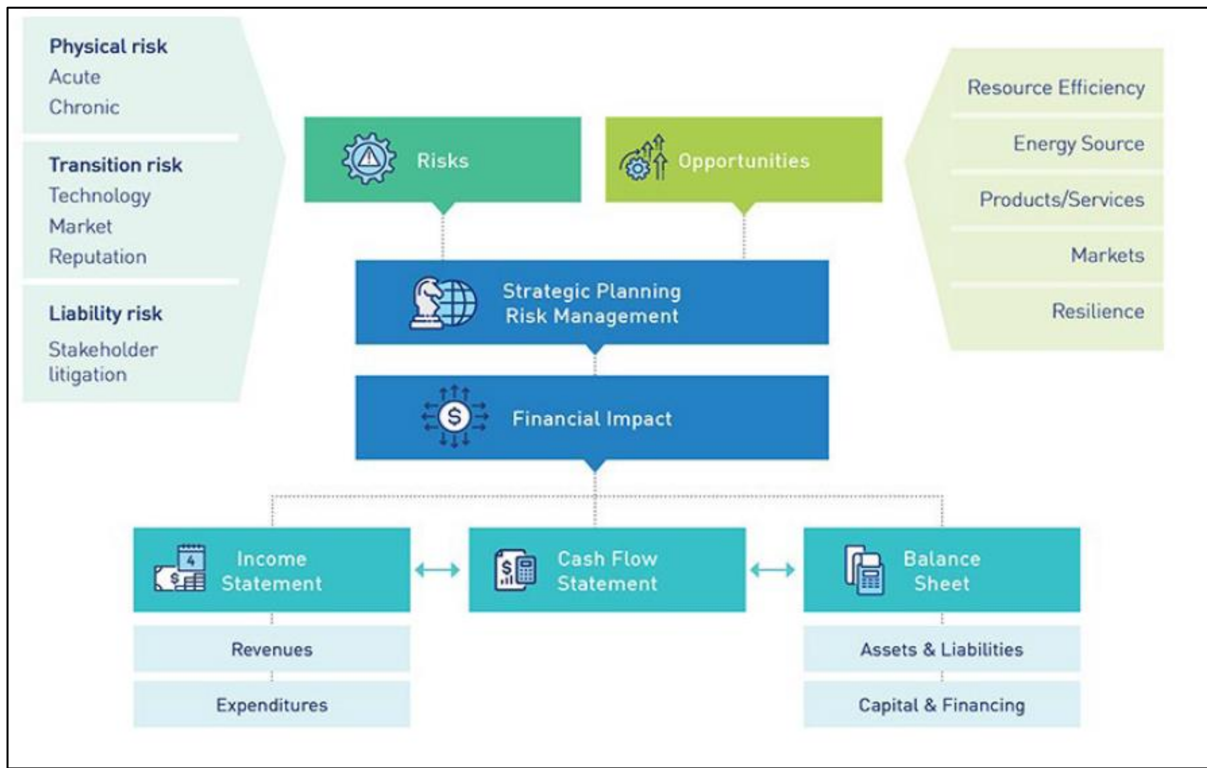
That said, Financial Institutions are under pressure. The European Banking Authority ("EBA") released results of a pilot climate risk assessment exercise in May 2021 and the European Central Bank ("ECB") released the results of an economy-wide climate stress test in September 2021 ahead of the launch of a climate stress test for European banks in 2022. This is amongst several other sustainability or ESG related regulatory developments in Europe through 2022 including further progress under SFDR, the replacement of the Non-Financial Reporting Directive ("NFRD") for larger corporates with the Corporate Sustainability Reporting Directive ("CSRD"). Key findings from the EBA and ECB exercises were as follows:

- More disclosure is needed on transition strategies and greenhouse gas emissions to improve climate risk assessments.
- Banks need to improve their data monitoring capabilities and infrastructure to deal with the additional disclosures.
- Climate risk assessment accuracy and results are sensitive to the composition of the bank's loan portfolio based on the size of the borrowers and their exposure to industries susceptible to transition risk and/or with high greenhouse gas emissions.
- Physical risk (economic costs and financial losses from increasingly severe and frequent climate change-related weather events and permanent climate changes, both direct and indirect) represents the dominant negative impact for corporates and financials. This impact increases if there is no policy action.
- While there are transition costs for all firms (business transformation, technological changes), these are lower than the expected costs of not transitioning (or projected costs from higher physical risk).
- Failure of corporates to transition presents a material risk for financial sector stability through projected losses for corporate credit portfolios which increase depending on the severity of climate risks using three scenarios that indicate the transmission channels for transition and physical risks (orderly, disorderly and hot house).
- Governments and Central Banks should implement as soon as possible adequate climate policies, regulatory frameworks and robust stress testing tools to ensure an orderly transition to net zero and maintain financial stability.

The ECB's next climate stress test exercise will commence in March 2022 to test climate risk stress test capabilities as well as exposure to transition and physical risks. The results will be published in July 2022 and will be used as an input into the Supervisory Review and Evaluation Process ("SREP") according to KPMG. SREP is an annual process conducted by the ECB together with local regulators who review a Financial Institution's business model, governance and risk profile to ensure that the Financial Institution has adequate capital and liquidity as well as appropriate risk mitigation strategies and processes. The outcome of the review are entity specific capital requirements (Pillar 2) and recommendations in addition to system-wide minimum capital requirements (Pillar 1) under Basel III.

Other global regulators are also looking at implementing their own climate stress tests. The Australian Prudential Regulation Authority ("APRA") published in September 2021 an information paper that provides an overview of the Climate Vulnerability Assessment and information on what international activities are being done on climate scenario analysis and stress testing. China earlier in 2021 announced that it would monitor financial risks related to climate change and work with other financial regulators to establish a framework for managing climate change-related financial risks in the future as part of its wider annual stress test exercise in 2021. This announcement was followed in June by People's Bank of China ("PBOC") Governor Yi Gang stating that the PBOC has conducted stress tests to assess climate risks, the results of which will be published in the future. In Singapore, the Monetary Authority of Singapore announced that banks will have to undertake stress tests by end 2022 under a range of climate change scenarios that impact physical and transition risks with mandatory regulatory disclosures on the management of risks related to climate change and other environmental issues. MAS' climate stress test will reference the climate change scenarios developed by the Network for Greening the Financial System ("NGFS") that is made up of 91 central banks and monetary supervisors. NGFS published the second version of their climate scenarios in June 2021 to simplify the climate stress test process by focusing on key factors with economic implications and assuming six possible levels of government action that range from holding temperatures from rising to 1.5 degrees Celsius (prompt government action) to temperatures rising at least 3 degrees Celsius (no improvement in current policies). MAS like other regulators are also consulting the practices and approaches of other global regulators.

Figure 25: Climate risks, opportunities and financial impact



Source: APRA Information Paper – Climate Vulnerability Assessment, 3 September 2022

There are numerous implications for Financial Institutions going forward from climate related stress tests. KPMG highlighted several establishment considerations even before considering the stress test results including:

(1) Set-up of internal people and processes to conduct these stress tests and who will be responsible for its results.
(2) Criticality of data integrity through quantity and quality of data as well as an adequate understanding of the interdependence of different data.
(3) Data analysis may be negatively impacted by the obvious lack of experience in conducting these relatively novel stress tests and difficulty in judging the results. Together with data integrity, results could be highly prone to error.
(4) Additional technology investments by Financial Institutions to ensure data is collated and presented in the ECB provided templates.

The real implications however could occur as a consequence of the stress test results:

- Higher capital requirements will be necessary if exposure to transition and/or physical risks are elevated.
- Financial Institutions may be forced to change the way they do business – particularly if the cost of doing business in certain jurisdictions or with certain clients or industries outweigh the profits.
- Business segments may be de-emphasized where adequate disclosure of ESG related data is challenging, in particular small to medium-sized enterprises.
- Mandatory disclosure of heightened ESG risks may drive capital and investors away from certain Financial Institutions when they may need it most, thereby creating higher credit dispersion and less competition. This may raise costs for consumers and possibly undermine financial sector stability.
- Disclosure obligations may amplify as regulators seek additional and more routine disclosures for Financial Institutions with poor climate risk stress test results.

Climate risk stress tests appear to be a useful and necessary component of the overall package of sustainable finance related regulations. The ultimate challenge however will come from interpreting the results and gaining confidence in their accuracy. The absolute accuracy of the results may not be as important as the process however, especially if it hastens Financial Institutions' actions in driving impactful sustainable finance activities. This may ultimately fulfil the aims of the sustainable finance related regulations jigsaw puzzle, even if it does so in an indirect way.

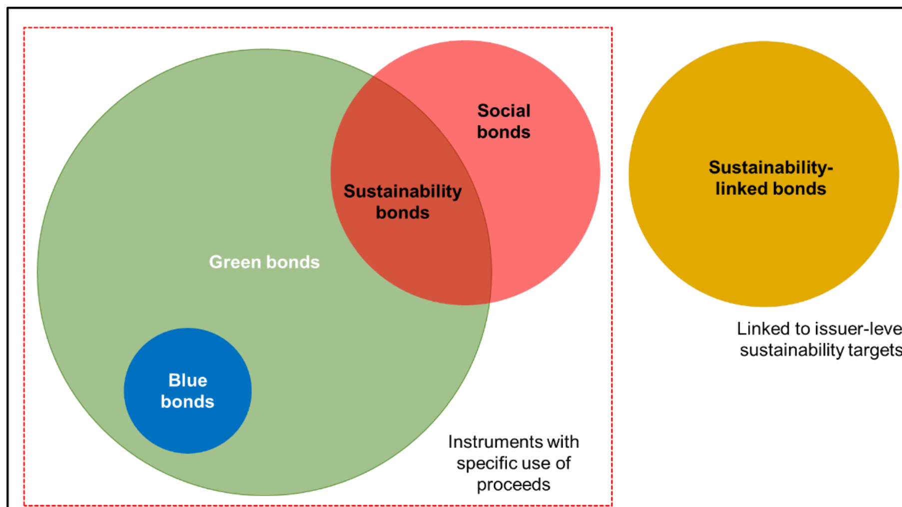
OCBC Bank

Getting to Know the Sustainable Bond Market and Sustainability Linked Bonds

With companies increasing their focus on Environmental, Social, and Governance issues, as well as aligning themselves with numerous UN Sustainable Development Goals ("SDG"), this evolution has translated to the capital markets. Issuers are seeking innovative debt instruments to ink down their sustainability promises and commit their raised capital to either a specific use-of-proceeds or to reach an ambitious sustainability performance target ("SPT") which is set at the issuer level. As of present, within the ESG fixed income space, there exist four primary forms of sustainable bonds – **Green bonds, Social bonds, Sustainability bonds, and Sustainability-linked bonds**. Collectively, we refer to this group as "GSSSL bonds".

As seen in **Figure 26**, this can be further split into two segments, instruments with a specific use of proceeds – Green bonds, social bonds, and sustainability bonds, and instruments that have no specific use of proceeds, but are tied to the issuer's sustainability targets – Sustainability-linked bonds. It is easy to confuse between sustainability bonds and sustainability-linked bonds due to the similarity in their naming convention. However, it is important to note that these bonds are different in their characteristics.

Figure 26: Classification of GSSSL bonds



Source: OCBC Credit Research

<u>What is a sustainability-linked bond?</u>

Recently, issuers have been increasingly leveraging on a relatively new bond instrument called a sustainability-linked bond ("SLB"), essentially a typical bond with an **adjustment that links their Sustainability Performance Targets ("SPTs") to the issue structure of the bond**. In this section, we will be deep-diving into sustainability-linked bonds and how it can help companies achieve its sustainability targets.

So, what incentivises companies to issue SLBs over green, social, and sustainability ("GSS") bonds? Simply put, not every company has a green or social projects in their pipeline. With GSS bonds requiring use of proceeds to be tied to a green or social project, this would make a large proportion of companies disincentivised to issue GSS debt if these investments are not aligned with the company's strategy. Yet, many companies want to improve their overall sustainability and seek a sustainable debt instrument to drive its sustainability transformation journey. In this instance, a SLB would be suitable for these companies.

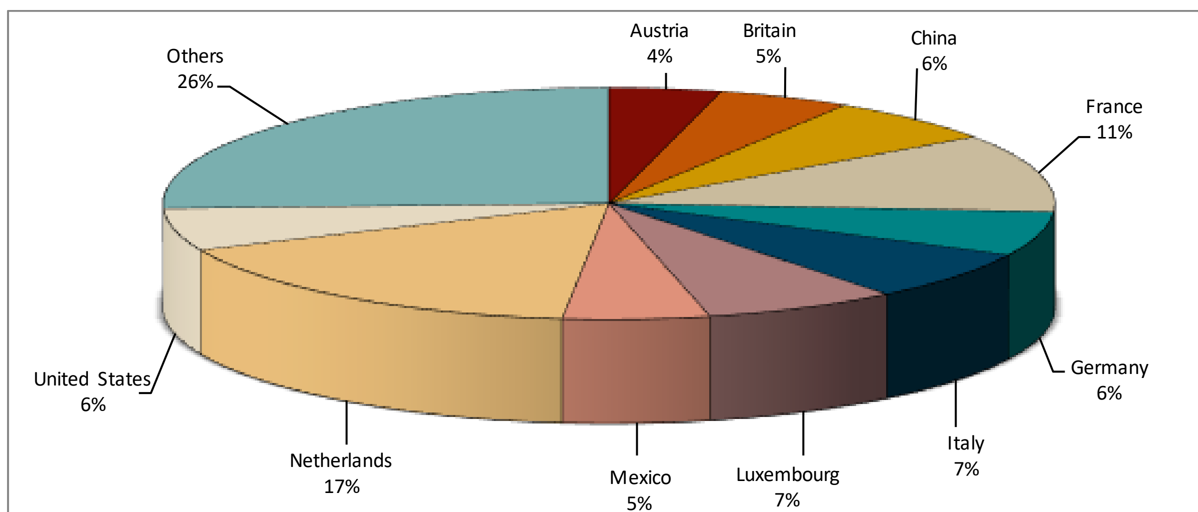
According to Bloomberg, sustainability-linked bonds can be viewed as behaviour-based debt, where the intent is to encourage issuers to modify their corporate behaviour. These bonds are structurally linked to the issuer's achievement of ESG or broader SDG targets, such as linking the coupon of a bond to a pre-determined key performance indicator ("KPI") or SPT. SPTs that are not met then generally results in an increase in the instrument's coupon rate, penalising issuers for not achieving their pre-set targets.

"The overarching intention underlying SLBs is the reinforcement of accountability from issuers with regards to their targets through introduction of a tangible stake beyond reputation ("skin in the game") in the achievement of their strategic sustainability objectives." – International Capital Market Association ("ICMA")

The history for SLBs is a short one, as these bonds did not exist until 2019 when Enel issued a USD1.5 billion 5-year bond with a 2.65% coupon. Since then, the SLB market has grown from strength to strength, as seen from total SLB issuances growing at a CAGR of 350% from 2019 to 2021, with USD103.3bn issued in 2021. Cumulatively, the total amount outstanding for SLBs is USD119.7bn across 170 issuers.

As seen in **Figure 27**, Europe-based issuers dominated the SLB market in 2021, with the largest issuers coming from the Netherlands (17%), France (11%), Luxembourg and Italy (tied at 3rd with 7% of total SLB issuances each), and Germany (6%). This is unsurprising given Europe's reputation for being a leader in the sustainability space. Notably, Enel Finance International NV, which is based in the Netherlands, was responsible for USD12.1bn or 11.7% of total SLB issuances in 2021. The two largest economic powers in the world, US and China, is each only responsible for 6% of total SLB issuances. Both the sustainable debt capital markets in these countries tend to lag the European market though is forecasted to grow exponentially in the coming years.

Figure 27: Breakdown of SLB issuers by geography, 2021

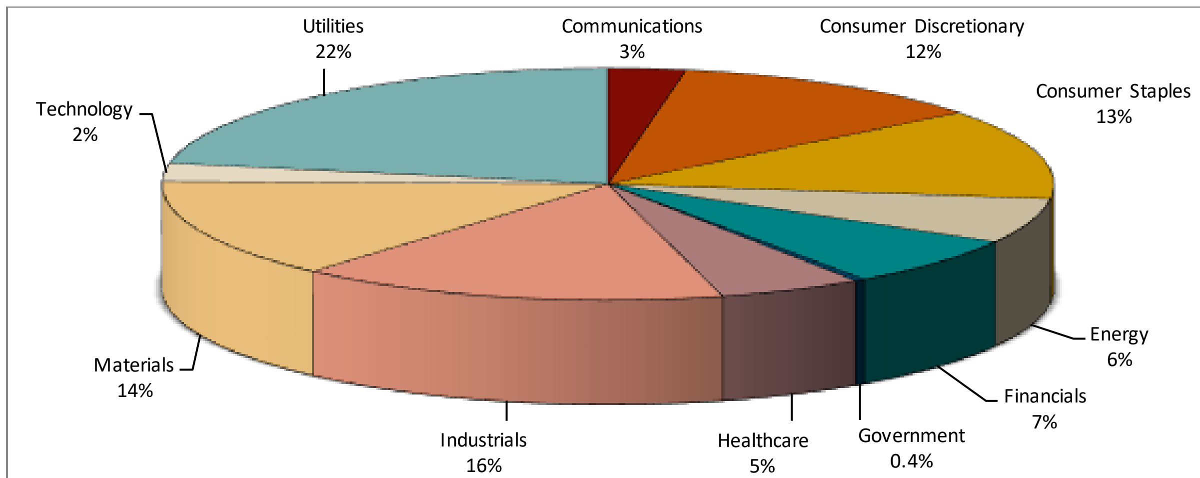


Source: Bloomberg

Remember, green bond issuers are required to use proceeds for green projects, while SLB issuers are not restricted in how their proceeds are used. For the majority of companies, this limits their ability to issue a green bond as they do not have a green project on hand. Conversely, the flexibility of an SLB allows these companies to use proceeds how they want to while still promising investors that they will become more sustainable in the long-term. Comparing **Figure 28** and **Figure 29**, we can see that the industry split is more spread out in the SLB market, with 5 industries (Utilities, Consumer Discretionary, Consumer Staples, Materials, and Industrial) each taking up more than 10% of the SLB market, as compared to the green bond market where the majority of issuances (84%) is concentrated in the Utilities, Financials, and Government sector.

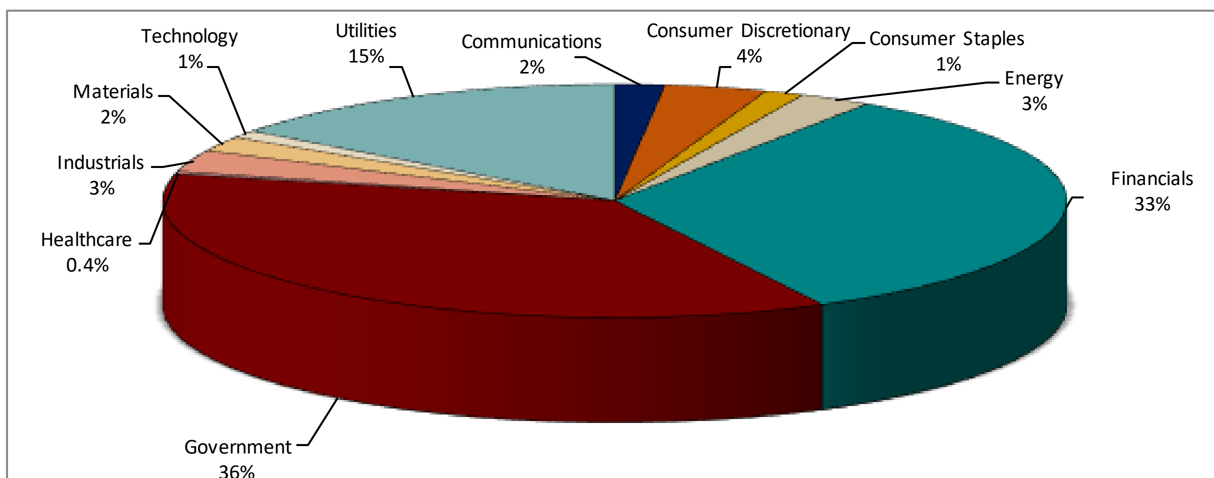
As seen in **Figure 28**, the Materials and Industrials sectors account for 14% and 16% of total SLB issuances. This is significant because an argument made for SLBs is how it allows highly pollutive and transiting industries to showcase their commitment to their sustainability journey. Out of the four main GSSSL instruments, we think SLBs are the most suitable sustainable bond structure for these industries to use. Thus, looking ahead, we can expect these industries to continue to take up a good chunk of the total SLB issuances.

Figure 28: Breakdown of SLB issuers by industry[1], 2021



Source: Bloomberg
[1]Refers to BICs Level 1 Classification

Figure 29: Breakdown of Green bond issuers by industry, 2021



Source: Bloomberg

Five Core Principles

Since the SLB market is relatively new and the sustainable finance market in general is still undergoing widespread regulation changes, the guidelines for SLBs are also in its infancy stages and could potentially change in the future. The current framework that companies voluntarily adhere to is the ICMA Sustainability-Linked Bond Principles ("SLBP"), which was published in 2020. The Sustainability-Linked Bond Principles are voluntary guidelines that illustrates the gold standard for companies to follow when issuing a sustainability-linked bond.
To adhere to the SLBP, issuers need to comply with the following five core principles. This is a **simplified and shortened version** of the principles and interested parties can look at the actual documentation for a detailed breakdown.

(1) **Selection of Key Performance Indicators**: The KPIs selected should be material to the company's business operations and strategy, quantifiable on a consistent methodological basis, externally verifiable, and able to be benchmarked.
(2) **Calibration of Sustainability Performance Targets**: Represent a material improvement in the selected KPIs.
(3) **Bond characteristics**: The financial and/or structural characteristics which can change depending on whether the issuer is able to attain its SPTs. For example, the most common structure is for the SLB to have a step-up clause in which the coupon rate increases when the trigger event takes place.

(4) **Reporting**: Companies should keep investors updated at least annually with the performance of the selected KPIs and information that is relevant to the ambitions of the SPTs.
(5) **Verification**: Issuers should seek independent and external verification of their performance level against each SPT or each KPI by a qualified external reviewer with relevant expertise at least once a year. While the pre-issuance external review such as a Second Party Opinion is recommended, post issuance verification is a necessary element of the SLBP.

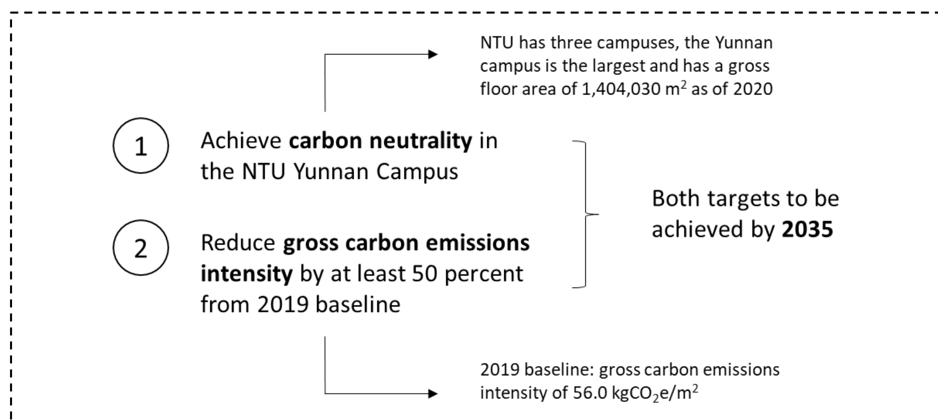
Case Study: Nanyang Technology University

Nanyang Technology University ("NTU") is one of the premier educational institutes in the world, with a vision to become a Smart Campus and to attain the rank of the greenest university campus globally. Per the QS World University Rankings, NTU has been rated as the world's best young university for seven consecutive years and is currently ranked 12th overall. As a testament of its sustainability, NTU has 62 Platinum Green Mark Awards: 60 for building projects, one for the rejuvenated Yunnan Garden and a District Award for the campus. Furthermore, NTU has eight zero energy and two super-low energy buildings.

On 11 October 2021, NTU announced its Sustainability Manifesto alongside its SGD1 billion Medium Term Note ("MTN") program. This paired with its Sustainability Framework, allowing the university to issue SLBs through the debt capital markets. Through its manifesto, the university stated that it plans to achieve carbon neutrality by 2035, together with a 50 percent reduction in its gross carbon emissions intensity by the same date. Amongst others, the manifesto declared that NTU will achieve 100 percent Green Mark Platinum certification for all eligible buildings on the main NTU campus (the Yunnan campus in the west of Singapore) and NTU's net energy utilisation, water usage, and waste generation will reduce by 50 percent by March 2026 (compared to the baseline levels of 2011).

In a drawdown of its SGD1 billion MTN program, NTU priced a SGD650 million 15-year senior unsecured bond at 2.185%. NTU's SLB is the second of two SLBs outstanding in the SGD market, the other being Sembcorp Industries Ltd SGD675mn 2.66%'32s Sustainability-linked Bond. According to the bond's pricing supplement, the use of proceeds will be allocated for the refinancing of existing borrowings, general corporate purposes, working capital and capital expenditure requirements (including supporting the Issuer's sustainability research and initiatives, delivery of educational programs and generational upgrade of infrastructure). The Sustainability Performance Target is similar to its commitment in its Sustainability Manifesto and can be generally split into two parts as seen in **Figure 30**.

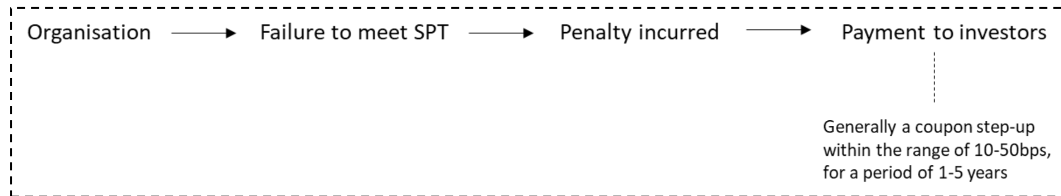
Figure 30: NTU SLB Sustainability Performance Target



Source: Nanyang Technology University

In relation to NTU's sustainability-linked bond, it has certain interesting characteristics that differentiate it from other SLBs in the market. As seen in **Figure 31**, for other SLBs, one of the reasons why it could be more attractive to an investor compared to a plain vanilla bond is due to the penalty incurred being allocated to them.

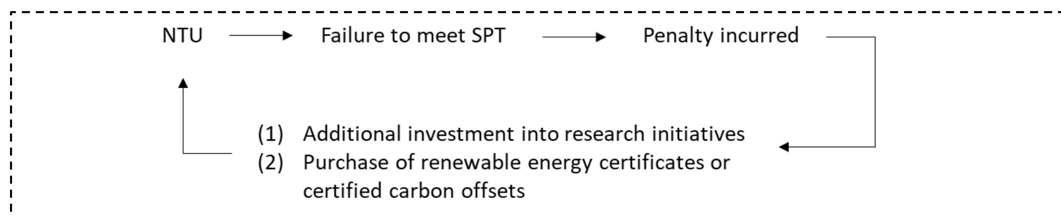
Figure 31: Conventional sustainability-linked bond structure



Source: Nanyang Technology University

While this is generally the case when an organization fails to meet its SPT, NTU's SLB has a unique structure that allocates the penalty "back" to the university. Specifically, as seen in **Figure 32**, an amount equivalent to 50bps of the outstanding principal amount (~SGD3.25mn[1]), will be allocated to investments into research initiatives in the fields of climate research or climate mitigation or adaption technology, or the purchase of renewable energy certificates or certified carbon offsets. According to Capital Monitor, this is the second SLB ever which features this unique structure, the first being All Nippon Airways ("ANA") JPY20 billion 5-year 0.48% sustainability-linked bond. [1] **Estimated penalty**: 0.005% x SGD650,000,000 = SGD3,250,000.

Figure 32: NTU sustainability-linked bond structure



Source: Nanyang Technology University

NTU's sustainability-linked bond shows us another pathway. In the global push for a carbon neutral economy by 2050, one critique of SLBs is that investors should not be benefiting from a company's inability to meet their sustainability targets. Thus, this innovative structure helps to negate a main criticism of SLBs (in that investor benefit from issuers not meeting targets), while staying true to the primary goal of helping a company commit to its sustainability journey.

Looking ahead

(1) **Sustainability-linked loans and sustainability-linked bonds:** To understand the true potential of the sustainability-linked bond market, we can look towards its sister instrument – Sustainability-linked loans ("SLL") – for an indication of where the SLB market is headed. Given a two-year head start in 2017, the SLL market is currently much bigger than the SLB market with total issuance volume of USD378.3 billion in 2021 according to data from Bloomberg. Similarly, the SLL market is also much larger than the green loans market, which peaked in 2019 with a total issuance volume of USD94.4bn and only issued USD65.3 billion in 2021. This is mainly attributed to the flexible nature of SLLs, which do not restrict the issuer to solely green or social projects. As mentioned above, this attracts a wider range of issuers, especially in hard-to-abate industries such as transportation and heavy industries. Similarly, with SLBs being much more flexible for issuers than green, social, or sustainability ("GSS") bonds, the potential for SLB issuances to outpace GSS bonds is definitely not a farfetched proposition.

(2) **More firms in the "transition" industries issuing SLBs**: As mentioned above, high carbon emitting firms who want to align themselves with a carbon neutral economy but do not have green projects in the pipeline can issue an SLB. From Figure 3, the Materials and Industrials sectors account for 14% and 16% of total SLB issuances. Both sectors are highly pollutive, as the processes involved in the end product generates much carbon emissions as well as other forms of pollution such as water and air pollution. For example, the manufacturing of paper and forest products requires widespread deforestation, the production process of steel requires the highly pollutive baking process of coke, while the manufacturing of equipment generally involves the intense usage of fossil fuels. For these companies, it is hard for them to issue green bonds as the majority of their projects might not qualify as a

green project. Thus, an SLB would be the most viable instrument for them to show their commitment to their sustainability journey.

(3) **Innovation of new sustainable debt structures**: As the GSSSL market is still relatively nascent, numerous companies have come up with innovative structures to suit both their corporate needs and to fit their sustainability journey. **Verbund**, an Austria-based electricity company, issued a EUR500 million 20-year green sustainability-linked bond with a 0.90 percent coupon. As a utility company with numerous renewable energy ("RE") projects in the pipeline, its use of proceeds as defined in its Green Financing Framework will be allocated to RE projects. Thus, both the use of proceeds structure and Verbund's sustainability performance target (increasing its RE capacity) essentially complemented each other. Another interesting concept was from the **Bank of China** ("BOC") who issued the world's first sustainability re-linked bond with a USD300 million 3-year issuance at 1 percent. The bond coupon comprises two parts – a base rate of 1 percent and a coupon adjustment rate, which is determined by reference to the performance of the relevant sustainability performance targets of the underlying Sustainability Linked Loans ("SLLs") portfolio, as designated by Bank of China. Each coupon adjustment is subject to a cap and a floor, which will not be cumulative. Compared to other SLBs which only have a coupon step-up clause, BOC's sustainability re-linked bond also has a step-down mechanism which activates if the underlying loan borrowers manage to exceed their sustainability target.

(4) **Regulation changes as the market is still nascent**: The European Central Bank (ECB) included sustainability-linked bonds (SLBs) as eligible collateral in their asset purchase programme. This meant the market started to recognise SLBs as a viable tool for supporting corporate transition through finance. In a proposed amendment to the EU green bond standard, issuers of sustainability-linked bonds need to develop a transition plan to show investors how they will adhere to a 1.5°C increase scenario and become carbon neutral by 2050, should they wish to adopt the EU label. Generally, as the market slowly matures and more participants are involved, the regulations will also gradually be modified to ensure that greenwashing in the sustainable bond market is minimised.

Challenges

While we have noted the potential strengths of an SLB, there are a few shortcomings that an SLB must overcome to gain broader acceptance amongst market participants.

One is the lack of comparability, both within the SLB issuer's own curve against its more conventional bonds as well as against the SLB's of different issuers. This is because SPTs are unique and specific to the issuer and its circumstances which makes it challenging in comparing SLBs from a relative valuation perspective. Lack of comparability though is more an issue of investment returns rather than sustainability credentials, and while it means that the incentive for SLB growth in the short term will be driven almost entirely by sustainability issues rather than returns, we do not see lack of comparability as a major shortcoming for potential growth. This is given the current significant and growing interest in sustainability. We do believe however that lack of comparability is part of a wider valuation concern as the SLB market grows and matures – other considerations are the valuation of SLB's as they approach their SPT measurement and reporting dates and what it means for an SLB's bond price if they fail to meet their SPTs.

In our view, greenwashing accusations are at the top of the headwinds the SLB market faces given it impacts sustainability credentials. Sustainability funds at large asset managers have a mandate to only invest in assets that adhere to certain criteria. For several fund managers, SLBs do not meet these criteria as most targets and goals are not ambitious enough, especially with claims that these SLBs might actually slow down the sustainability transition of companies. An analysis done by Reuters showed that of 48 SLBs issued by the 18 biggest borrowers in 2021, nearly half, or 23, included a target which lets them improve at a slower rate than they have done previously. Furthermore, Reuters points out how Tesco had pledged to cut its carbon emissions by 60% by 2025 from its 2015 baseline, but the target was already 83% completed before the SLB was even launched.

The solution to overcoming lack of comparability and greenwashing is twofold in our view. Firstly, investors need to perform an in-depth assessment of issuers to ensure that they are undertaking material changes to enhance their sustainability performances. As the GSSSL markets slowly matures, investors will definitely become more adept at conducting this specialised form of due diligence. Secondly, issuers need to set sustainability performance targets which are ambitious and

go beyond a "business as usual" trajectory. Ensuring these two requirements are met will go a long way for the sustainability-linked bond market, enabling it to one day rival or even surpass the ever-expanding green bond market. Understanding these two concepts may also improve the ability to compare SLBs based on both sustainability concepts and hence investment returns. This issue may grow in importance as time goes on and greenwashing concerns possibly lessen and more SLBs approach their SPT reporting dates.

OCBC Bank

Disclosures in Sustainable Finance – Addressing Words that Speak Louder than Actions

Europe in the driver's seat: As sustainable finance and ESG investing grows, so has the need for improvements in the quality and consistency in disclosure. As we cover later on in our Financial Institutions outlook (pg. li-lvi), regulatory impetus for sustainable finance disclosure (amongst others) is driven mostly out of Europe through various regulations and mechanisms as part of the European Commission's focus on sustainable finance. This commenced in 2015 with the global adoption of the UN 2030 agenda including the 17 Sustainable Development Goals ("SDGs") and the Paris Agreement that focused on mitigating the effects of Climate Change.
Since then, developments have become more targeted and specific through:

(1) The Financial Stability Board's Taskforce for Climate-Related Financial Disclosures ("TCFD") to improve the effectiveness of climate-related disclosures) in 2017;
(2) The European Union's ("EU") Action Plan on Sustainable Finance - adopted in March 2018, ten reforms across four legislative proposals sought to drive capital towards sustainable financing by managing financial risks associated with sustainability (environmental and social) issues and improving transparency;
(3) The European Green Deal of 2019 and European Green Deal Investment Plan of 2020 that seeks to make Europe the first climate neutral continent by 2050 and establish the investment plan to achieve it respectively; and
(4) Publication of the EU's Taxonomy Regulation in June 2020 that established the conditions for an economic activity to qualify as being environmentally sustainable. This becomes effective and is expected to be passed into EU law in 2022.

Building Momentum: As the quality of regulatory efforts has improved, so has the quantity of efforts in 2021. This recognizes not only an improvement in knowledge and increased familiarity but also some increased urgency to address weather related events and the impact of climate change. As our commodities and macro-economic analyst wrote in a series of three articles on COP26, 2021 will be remembered as a critical turning point for the climate. The COP26 held across late October and early November ultimately represents a step forward in addressing climate risks, albeit a case of two steps forward but one step back.
Key developments in 2021 include:

(1) Launch in April 2021 of the Net-Zero Banking Alliance by banks globally, representing over 40% of global banking assets that are committed to achieving net-zero emissions across their lending and investment portfolios by 2050;
(2) Adoption of the EU's Sustainable Finance Package to improve financing for sustainable activities in Europe; and
(3) Sustainable Finance Disclosure Regulation that discourages greenwashing and promotes responsible and sustainable investments, effective from March 2021.

Holding hands together: What is interesting to note is that the myriad of regulations and legislation do not stand alone but instead work together to achieve the global ideals first established by the Paris Agreement and SDGs. An important development in this puzzle is the Sustainable Finance Disclosure Regulation ("SFDR") that was first introduced in 2019 and came into effect on 10 March 2021. SFDR was initiated by the High-Level Expert Group on sustainable finance ("HLEG") that was established in 2016 and is made up of 20 senior experts from civil society, the finance sector, academia and observers from European and international institutions. Its broad mandate was to deploy sustainability concepts throughout the European financial system by advising the European Commission on how to improve the flow of public and private capital to sustainable investments and maintain financial system stability against environmental risks.

Making disclosure a requirement and regular: The SFDR establishes mandatory disclosure obligations for asset managers and other financial market players and is designed by the European Commission to work with Taxonomy Regulation and other regulations as part of the abovementioned EU Action Plan on Sustainable Finance. This obligation is expected to improve the quality and transparency of information for sustainable funds investment by disclosing how ESG/sustainability factors and risks are integrated in the investment process for ESG related products at both the entity and product levels. Another obligation for asset managers and financial market participants is the need to disclose their analysis of 50 key sustainability factors and how their investments address potential adverse impacts from these factors.

Using these two parameters, SFDR will assist in the classification of funds into three broad categories – including funds that have no sustainability focus, funds that are supportive of key sustainability agendas (environment, social and governance

considerations) and funds that are focused on sustainable investments. Disclosure of the parameters will make asset managers also accountable for the labels they provide to their funds. Implementation will be done in phases depending on the type of information to be disclosed – level 1 disclosures (entity level disclosures for asset managers and other financial market players on policies that identify and address sustainability impacts and risks in its investment decision making process) came to effect on 10 March 2021, while level 2 ones (additional entity but also product level disclosures that include a Principal Adverse Impact ("PAI") statement) will come into effect on 8 July 2022. PAIs seek to quantify the potential negative sustainability impact from the investment being offered across the 50 key sustainability factors mentioned above. Level 3 disclosures which integrate SFDR with EU Taxonomy Regulation is expected to come into effect on 1 January 2023.

A small step in regulations, one giant leap for Sustainability? While SFDR applies to financial market participants based in the EU or those outside the EU that market to EU clients, SFDR likely provides a template for the implementation of other sustainable disclosure measures globally. We expect the impetus for this to grow, particularly as the urgency surrounding key sustainable issues such as climate risk rise. Although these changes create additional administration, processes and costs for fund managers through additional disclosures, it also provides more and clearer information for investors. The ongoing refinement in, and requirement for, sustainability disclosure is a credit positive in our view as greater discipline, consistency and transparency in disclosures will drive higher confidence in sustainable investing and hence capital flows. As touched on in "***Getting to Know the Sustainable Bond Market and Sustainability-Linked Bonds***", knowledge is power and the additional disclosures together with improving Taxonomy regulation should reduce greenwashing concerns and will assist in performing in-depth analysis of issuers, products and the financial market participants that are selling them.

OCBC Bank

Climate Finance – Opportunities in the Unlabelled Universe of Bonds

Climate finance and ESG-themed bonds have been dominating the market with issuers taking advantage of the so-called "greenium". "Greenium" is where green bonds are issued at a higher price while offering investors a lower yield. In other words, issuers benefit from a lower cost of funding. This is more prevalent in the USD market while in Asia, such bonds have recently picked up pace. Despite being nascent, we have seen a rapid growth in green, social and sustainability and sustainability-linked ("GSSSL") labelled issuances denominated in SGD. Collectively, we call them the GSSSL market for simplicity at OCBC Credit Research rather than listing out all the different labels. If you have been following our podcasts and writeups, you would have heard and read about sustainability-linked bonds ("SLBs") issued by Sembcorp Industries Limited and Nanyang Technological University. SLBs are a type of debt instrument which incentivise issuers or borrowers to achieve pre-determined sustainability performance targets (SPTs), and often these are "unlabelled".

Climate-aligned issuers are issuers that derive at least 75% of their revenues from climate-aligned business activities. As a growing climate-aligned bond market is necessary to redirect capital and investment flows towards activities that promotes sustainable development, we take a closer look at unlabelled bonds in the climate-aligned bond universe – how unlabelled issuances are defined, accounted for, who are the issuers and what opportunities entail under this unlabelled umbrella.

Definitions of Climate Aligned Issuance

Definitions are based on a Climate Bonds Taxonomy issued by the Climate Bonds Initiative ("CBI"). CBI is an international organization promoting investment in projects and assets necessary to facilitate transition to a low carbon and climate resilient economy. CBI also runs the Climate Bonds Standard and Certification Scheme providing certification to eligible issues. There are various benefits to obtain a certification. For issuers, a label allows them to demonstrate to the market that the bond issued meets climate integrity or is aligned with Paris Agreement of 1.5 degrees Celsius warming target. This attracts a more diverse base of investors. Investors armed with disclosures from the issuers can make more informed investment decisions in line with their mandates and proactively hedge their portfolio against climate risk. To be defined as a climate-aligned bond under CBI's taxonomy, assets and projects are to feature at least one of these eight broad categories, namely, energy, transport, water, buildings, land use & marine resources, industry, waste and information, communication & telecoms (ICT).

For labelled green bonds, issuers are usually green pure plays where all or most of their revenues are derived from green activities or other sustainable activities. Additional certification is obtained to differentiate their bond issuance to provide extra visibility for investors when doing due diligence before making an investment decision. Certifications can be obtained from CBI or other organisations like International Capital Market Association. At the same time, the unlabelled category contains fully-aligned climate issuers where they derive >95% of revenues from climate-aligned assets and green business lines and strongly-aligned climate issuers where 75%-95% of their revenues derived from climate-aligned assets and green business lines. These climate-aligned issuers may and or may not have labelled bonds. However, for the purpose for this writeup, we are only focusing on the unlabelled climate-aligned bonds universe.

Table 3: Categories of Climate-aligned Issuers

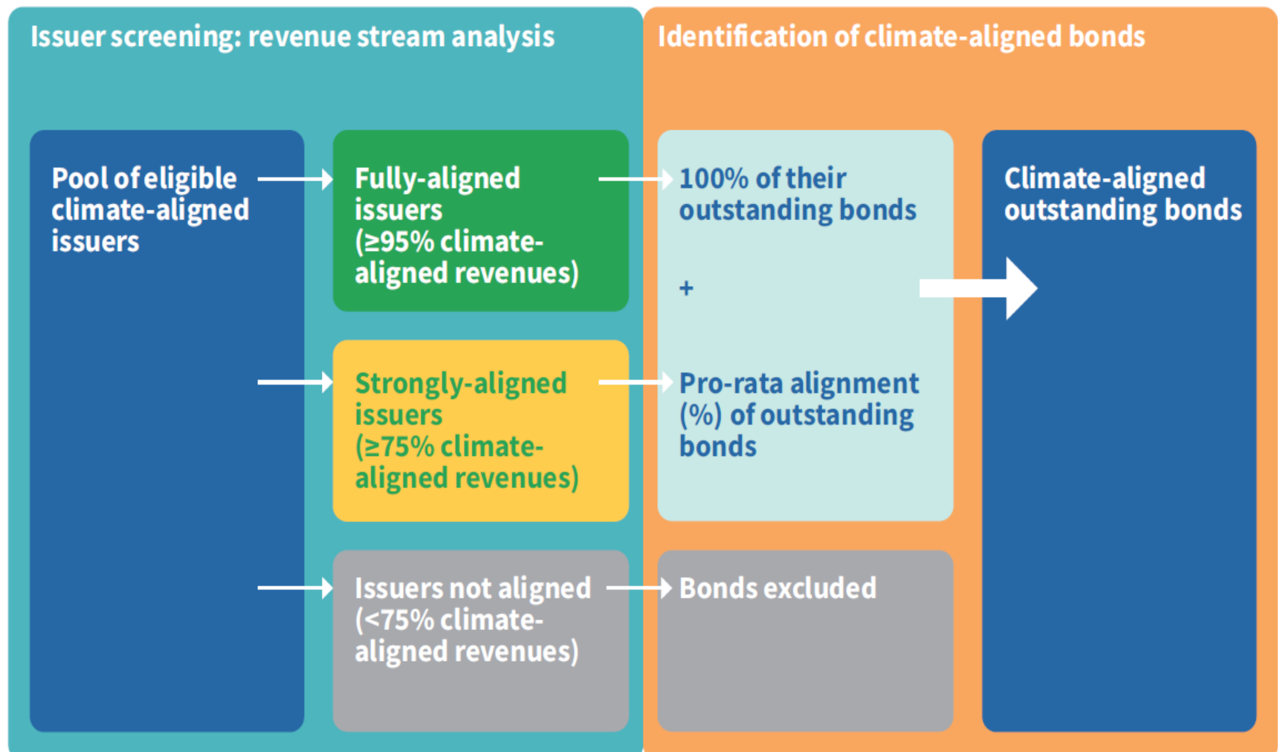
Label	Climate-aligned Issuers	Definitions
Labelled	Green Bond	Green pure plays where all or most of their revenues are derived from green activities
Unlabelled	Fully-aligned Climate Issuer	>95% of revenues from climate-aligned assets and green business lines
	Strongly-aligned Climate Issuer	75%-95% of their revenues derived from climate-aligned assets and green business lines

Source: Climate Bond Initiative, OCBC Credit Research

In an annual report, CBI identified a universe of USD913.2bn of unlabelled but climate-aligned bonds, this amount is about 50% of the total labelled volume of USD1.7 trillion in 2020. For investors searching for investments to meet their ESG mandates, these unlabelled bonds may be seen as hidden treasures.

Figure 33 below adapted from the CBI report better illustrates how the outstanding climate-aligned bonds are identified.

Figure 33: CBI Climate-aligned Bonds Methodology

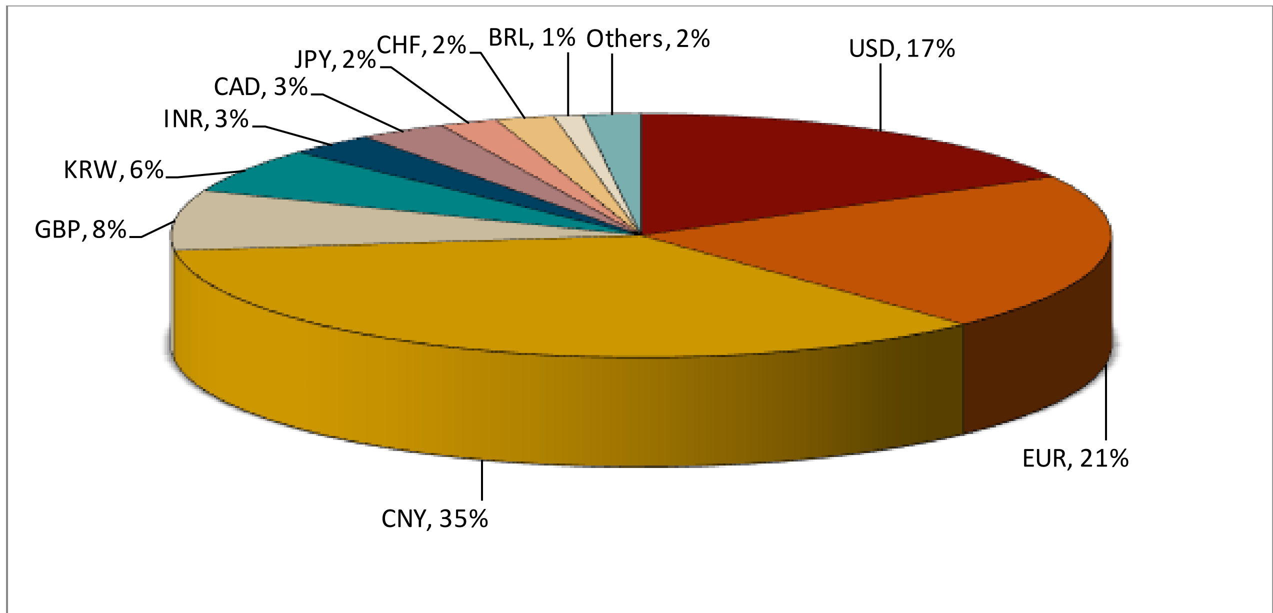


Source: Climate Bond Initiative

<u>Global Landscape of Unlabelled Climate-Aligned Bonds</u>

The USD913.2bn outstanding climate-aligned bonds is derived from 420 climate-aligned issuers identified, based on the methodology above. Of these, 311 are fully-aligned issuers while the rest falls under the strongly-aligned category. These issuers span across 45 countries, issuing in 33 different currencies. Developed and emerging countries take up almost equal share, 50% and 49% respectively with 1% issued by one supranational institution EUROFIMA with USD8.8bn of bonds outstanding. Popular currencies with issuers are USD, EUR, GBP and CNY. 52% of the outstanding bonds are issued in hard currency, CNY is nonetheless the top currency with 35%. CNY bonds also account for the largest share in soft currency. A hard currency usually originates in a robust economy under stable political governance whereas soft currency is one that fluctuates due to country's uncertain political or economic landscape. Hard currencies are considered more valuable as compared to soft currencies. Chart below shows a breakdown for all the currencies where data is obtained from CBI's 2020 report.

Figure 34: Unlabelled Climate-Aligned bonds breakdown by currencies

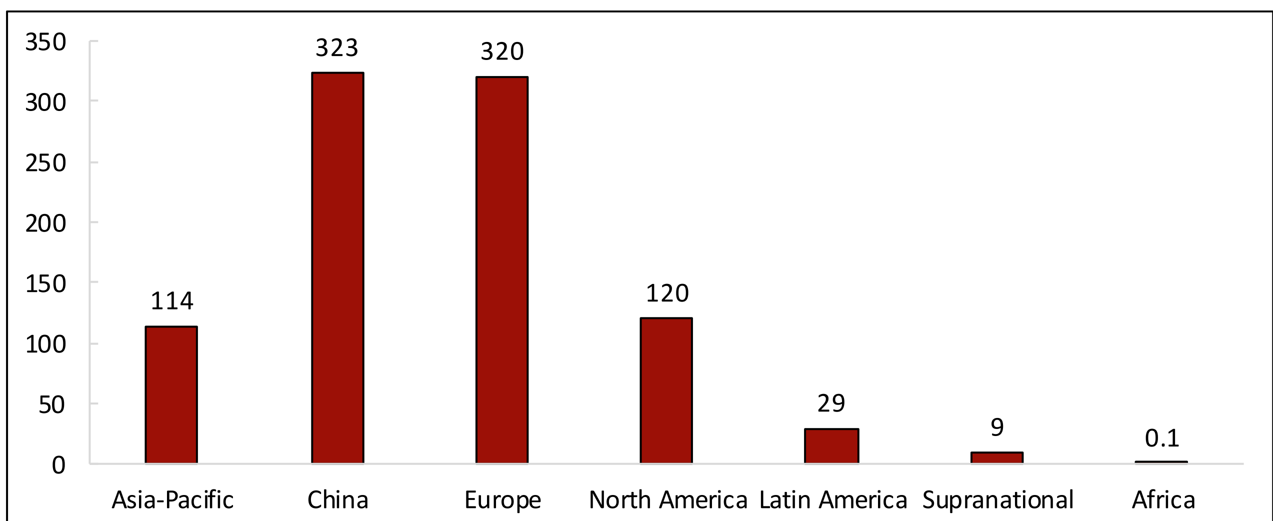


Source: Climate Bond Initiative (Data from 2020)

The Asia-Pacific region ("APAC") is the largest contributor globally for climate-aligned bonds. Being the region with sizeable issuance, it accounts for 36% or USD325bn of global market share. Issuances from APAC is concentrated in China and represents 74% of APAC's total. One of the largest issuances is by China Railway Corp (USD230bn) who is a strongly-aligned issuer as its non-green revenues generated from real estate and highway infrastructure are slightly more than 5%. Stripping China out from Emerging Market ("EM"), EM accounts for 14% of global outstanding climate-aligned bonds. It is relatively low as compared to Developed Market ("DM") and China. Main issuers in EM are Korea Electric Power Corporation, Indian Railway Finance Corporation and Electrobras SA.

The European region came in second with France leading the way in the DM space. Top issuers are Société Nationale des Chemins de fer Français (SNCF) at USD53.7bn and Electricite de France (EDF) at USD52.1bn. North America ranked third with USD119.7bn contributed by 65 issuers.

Figure 35: Unlabelled Climate-Aligned Universe by Region (USDbn)



Source: Climate Bond Initiative (Data from 2020)

Sectors that dominate un-labelled hidden climate-aligned capital are transport and energy. For transport theme climate-aligned bonds, railway transport in particular accounts for 90% of total climate-aligned outstanding bonds. In APAC, these issuers are usually government linked entities like China Railway Corp, Indian Railway Finance and Korea Rail Network

Authority. Top transport issuers in Europe are SNCF, Deutsche Bahn and OeBB-Infrastuktur. This mode of transport is important as electrification of high-speed rail will be able to replace short-haul flights and scale up low carbon transportation. Other sub-sectors in transport are made up of electric and hybrid vehicles, public transport, shipping and bicycle and electric vehicle ("EV") charging stations. In DM, Tesla has the biggest market share in EV while the uptake of EVs in EM faces roadblocks with insufficient charging points and unreliable power sources. Policies and private capital will be required to support growth in this area even though most capital may be channelled to industry and sectors that have been adversely impacted by COVID-19 pandemic.

For the energy sector, capital raised is more predominant in Europe and North America especially in the renewable energy mix sub-sector. The total outstanding bond volume in the energy DM sums up to USD108.8bn. Issuers seen in this sector are Hydro-Quebec, Vattenfall and Orsted. In EM, South Korea and Colombia led the energy climate theme with USD62bn in outstanding climate-debt. Top issuers are Korean Electric Power Corp, Korea Hydro Nuclear Power Co and Empresas Publicas de Medellin E.S.P (EPM). Similar to DM, the renewable energy mix is amongst the top energy climate sub-sectors with USD40.2bn outstanding bonds for EM. Looking at China as a standalone, it has USD48.5bn outstanding climate-aligned bonds in the energy sector, where 56% of this bond volume is issued by China National Nuclear Corp, China Three Gorges Corp and China Yangtze Power collectively.

The Singapore Context

According to CBI, bonds and issuers that are climate-aligned in Singapore generally are from the real estate sector. Issuers like CapitaLand Ltd and Frasers Property Ltd fall under the top 20 best performing property companies globally. As of writing, there are twelve outstanding bonds where seven are issued in SGD by three subsidiaries of Frasers Property Ltd. Per Bloomberg's sustainability debt indicator, of the twelve issues, only one issued by Frasers Property AHL is labelled sustainability. It is a senior unsecured bond of SGD300mn. Meanwhile, all outstanding bonds under CapitaLand Limited that are issued by CapitaLand Ltd or CapitaLand Treasury Ltd are not labelled with Bloomberg's green indicator. As there are considerable needs for real estate companies to meet green building standards and improve on their green footprints, it will be beneficial when these issuances are refinanced with the green label upon maturity.

Table 4: Outstanding Bonds under CapitaLand and Frasers

Issuer	Coupon (%)	Maturity/ Call Date*	Currency	Amount Outstanding (mn)
CapitaLand Treasury Ltd	3.65	17/10/2024*	SGD	500
	3.15	29/08/2029	SGD	800
	4.076	20/09/2022	USD	400
	3.08	19/10/2027	SGD	500
	2.9	21/09/2032	SGD	800
	3.8	28/08/2024	SGD	500
CapitaLand Ltd	2.8	08/06/2025	SGD	10.25
	1.95	17/10/2023	SGD	22.25
Frasers Property Treasury Pte Ltd	4.98	11/04/2024*	SGD	600
	3.95	05/10/2022*	SGD	350
	4.15	23/02/2027	SGD	500
	4.38	17/01/2023*	SGD	300
	4.25	28/08/2024	SGD	280
	3.65	22/05/2022	SGD	500
Frasers Property AHL Ltd	3.00	09/10/2028	SGD	300
Frasers Property Holdings Thailand Co Ltd	3.02	17/08/2022	THB	2300
	2.94	21/12/2024	THB	2500
	3.88	17/08/2028	THB	1200
	3.54	07/03/2028	THB	2000
	2.55	07/03/2023	THB	1000

Source: Bloomberg
[1]FPLSP SGD300mn 3%'28s sustainability bond issued in September 2021

Labelled Opportunities

Based on our calculations using CBI data from 2020, approximately USD373bn of outstanding unlabelled climate-aligned bonds are due for maturity in 2024. Usually, these unlabelled issuances are difficult to identify thus with upcoming maturity, it presents an opportunity for these issuers to refinance and label their debt from vanilla to green. Although some climate-aligned issuers have already entered the labelled green bond market, there remains further room for issuers to label their debt.

So, should investors be interested in the unlabelled universe of bonds?

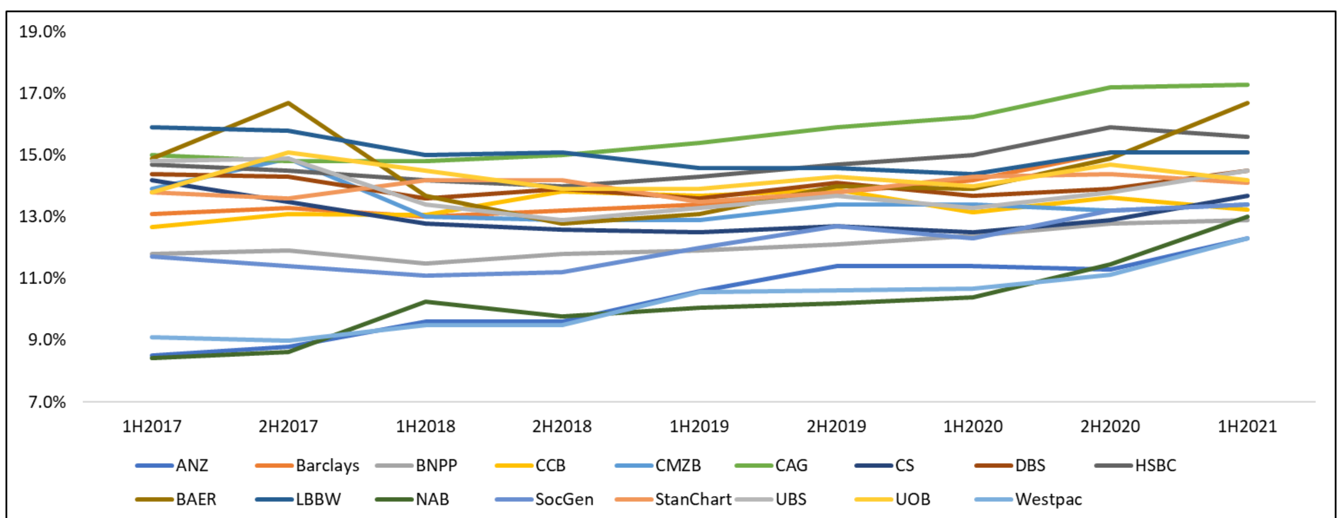
Indeed, tapping into the labelled green market provides better transparency in this nascent and fast-evolving market where both issuers and investors stand to benefit.

For investors, almost all climate-aligned issuers are rated investment grade by both international and local rating agencies. Only a small percentage of approximately 5% are unrated or falls into the high yield space. This presents good quality asset choices for investors to add on to their portfolios in accordance with ESG mandates and insulate it from adverse climate transition and physical risks. For the issuer, apart from a potentially lower cost of debt through the greenium, being certified with the green label strengthens internal corporate integration with sustainability, provides new engagement, increases visibility and market opportunities and enhances its reputation. In addition, with the possible changes in policies to expand the GSSSL market, policymakers and central banks may even start accepting smaller haircuts when accepting these assets as collateral. For example, the central bank of China, PBoC has already included green bonds in their collateral framework, accepting lower rated (AA, AA+) green bonds and green loans as collateral for its Medium-Term Lending Facility.

Financial Institutions – A Cruise to Nowhere?

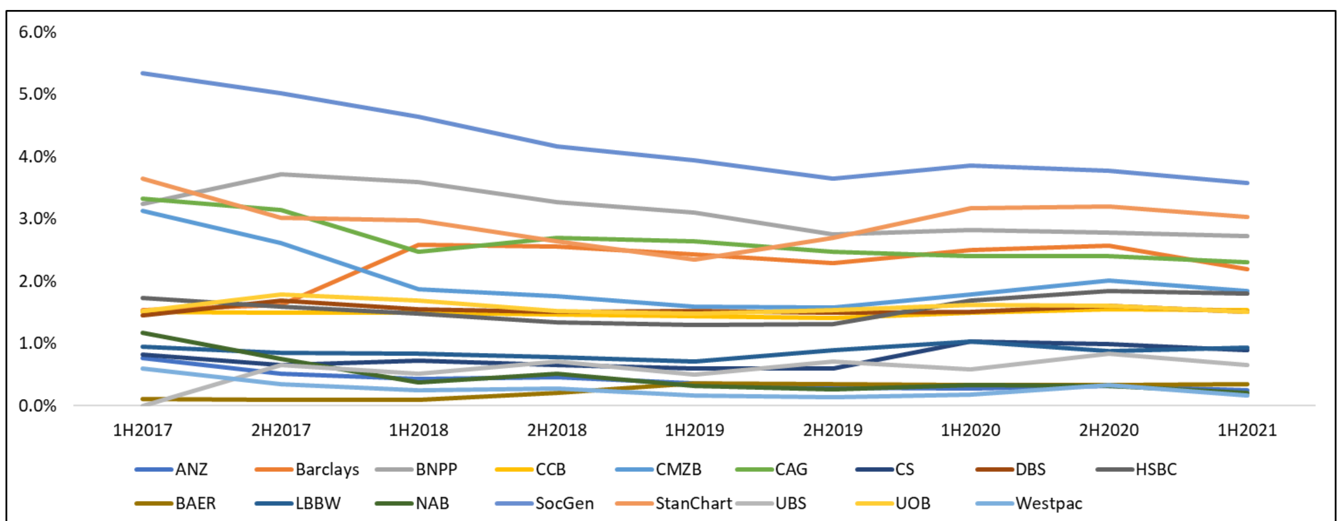
Since resuming coverage of Financial Institutions in July 2016, the fundamental performance of Financial Institutions has been largely stable with shades of positive and negative influences on the operating environment throughout time. As we opined in our Singapore Outlook 2019, we viewed the Financial Institutions in our coverage as like slow sailing large cruise ships - not deviating drastically from course and remaining stable in a storm. The perfect illustration of this is by looking at a few key credit ratios for Financial Institutions through a period of somewhat extreme dislocation affecting the global economy and financial markets. As can be seen, it is as if the pandemic did not happen as solid underlying fundamentals and resilience from past actions by Financial Institutions and regulators, timely and explicit government support, and the essentiality and systemic importance of Financial Institutions preserved the credit profiles of Financial Institutions we cover. Combined with rising vaccination rates and the opening up of economies, earnings generation quickly recovered as business volumes rose and significant credit provisions raised in 2020 were written back.

Figure 36: CET1 Capital Ratios



Source: Bloomberg, OCBC Credit Research

Figure 37: Non-Performing Loans to Total Loans



Source: Bloomberg, OCBC Credit Research

This is not to say though that the impact of the COVID-19 pandemic will not linger or have longer lasting impacts for Financial Institutions in a COVID-19 endemic world. Some of the key risks highlighted in our Singapore Mid-Year 2021 Outlook remain relevant in our view - select industries will continue to be negatively impacted through changing consumer

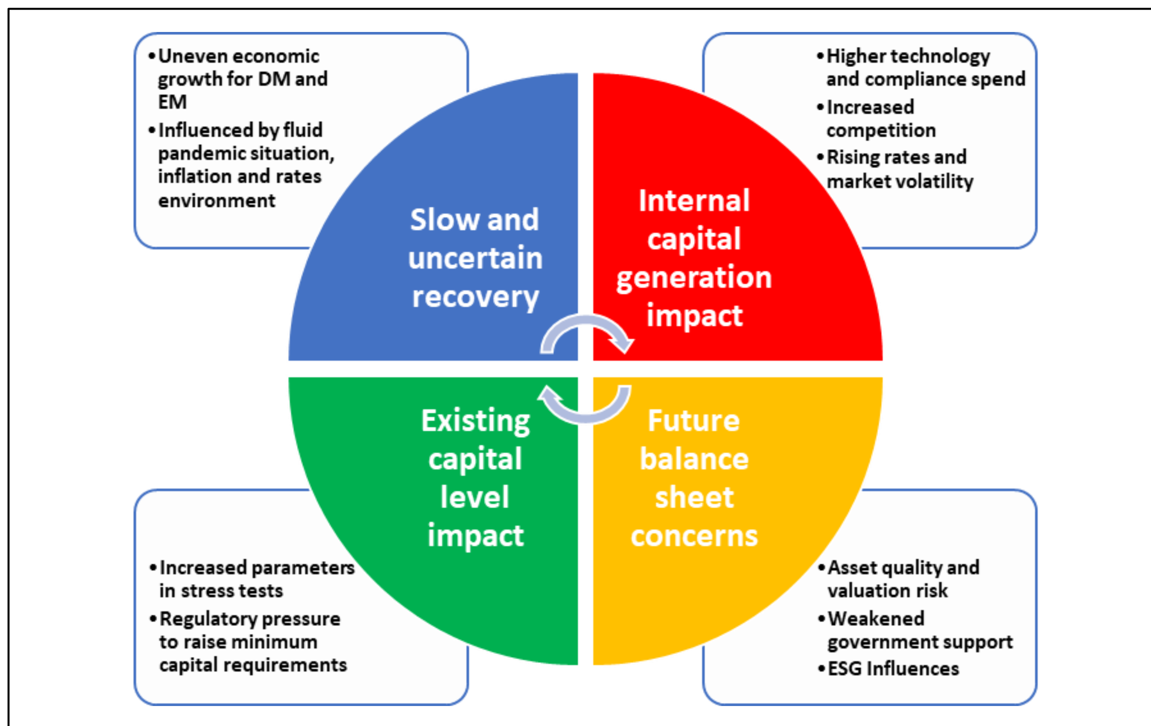
preferences, demand dislocation and supply chain disruption while the pathway to economies re-opening will remain bumpy as new variants emerge. At the same time, government fiscal firepower is constrained from the support provided to mitigate the earlier impacts of the pandemic while overall systemic risks and vulnerability to negative events continue to be elevated from high systemic leverage and stretched valuations. These risks will need to be closely monitored in 2022 with the rising influence of inflation that further constrains governments' ability to support any potential economic slowdown from subsequent waves of COVID-19.

In addition, the rates outlook is still uncertain. Our rates strategist sees bouts of heightened volatility in yields from time to time on headlines surrounding the virus situation and border opening/restrictions, and adjustments in market expectations versus Central Bank stances. That said, the rates trajectory is looking up with the 10Y UST yield to reach 1.85% by end of 2Q2022. In mid-2021, we saw risks facing Financial Institutions as evolving rather than reducing. At end-2021, we see these same risks continuing to evolve and becoming somewhat elevated.

That said, uncertainty is not necessarily a bad thing for Financial Institutions, especially when it relates to economic and market uncertainty and volatility. In general, higher inflation is accompanied by market volatility – this creates opportunities for the trading businesses of Financial Institutions. Higher rates as well create opportunities for Financial Institutions to improve their net interest margins, as long as funding costs are managed amongst other things. Our rates strategist expects the UST yield curve to steepen in the early part of 2022 which may also assist Financial Institutions which borrow short and lend long.

In all, global and industry developments are likely to keep the pressure on regulators to ensure that Financial Institutions maintain adequate capital and liquidity buffers to ensure ongoing financial system resilience. Key risk and compliance lapses in 2021, particularly at Credit Suisse Group AG, will also impact regulatory developments in the context of ongoing environmental, societal and governance influences.

Figure 38: Key risks for Financial Institutions in 2022



Source: OCBC Credit Research

Influences on Financial Institutions in 2022 are globally consistent although Financial Institutions are mostly domestic in nature. With that said, there are a few regional nuances to influences on Financial Institutions in our view:

Australia – Strong getting stronger

The pandemic appears to have helped clarify Australia's new bank capital framework. In late November, the Australian Prudential Regulation Authority ("APRA") announced the formalization of Australia's "unquestionably strong" benchmarks for capital and to align overall Australian standards with Basel III requirements. The framework provides both an absolute measure of capital strength as well as mechanisms to ensure that capital buffers can be flexible and appropriate for the operating environment. Per APRA's information paper, the minimum capital ratio for Australia's major banks will be 10.25%, made up of:

- 4.50% minimum prudential capital ratio
- 3.75% Capital Conservation Buffer ("CCB")
- 1.00% additional CCB for domestic systemically important banks
- 1.00% Countercyclical Capital Buffer – this is the baseline with a buffer range of 0.0%-3.50% that can be varied by APRA depending on stress within the banking system.

Of note is that Australia's major banks currently operate above the proposed minimum requirements, so no additional capital raisings are proposed or needed. APRA expects that banks will continue to operate above these levels. Based on revisions to the methodology for calculating capital ratios, Australia's major banks should see a ~50bps improvement to actual capital positions as at 30 September 2021. Some of these revisions relate to higher risk capital weights for residential mortgages and better distinction between low risk and high risk (e.g. interest-only lending to property investors) lending as well as reduced capital risk weights for lending to small and medium enterprises ("SMEs"). The definition of SMEs has also been revised up increasing the number of SMEs eligible for lower risk weights.

The other change is the introduction of a capital floor of 72.5% between the standardized and internal ratings-based risk weighted models such that internal assessments of risk weights cannot be lower than 72.5% of the assessment using standardized approach.

The new standards will come into effect from 1 January 2023. Our overall view of the strength of Australia's financial system is unchanged from this announcement. Australian banks continue to operate at noticeably higher capital ratios than required due to the previously announced 10.5% "unquestionably strong" benchmark in place since 2017. APRA risk weights are also more conservative than Basel III requirements recognizing the imbalances with bank balance sheets and the high concentration towards residential mortgages and the regulators' proactive approach to monitoring bank capital strength.

China – lending a helping hand

The credit landscape in China has made headlines in 2021 for all the wrong reasons as stress within China's high yield property sector drove a material widening in Asiadollar high yield credit spreads. High profile liquidity concerns for China Evergrande Group ("EVERRE") and Kaisa Group Holdings Limited ("Kaisa") and multiple negative rating actions fed a cascade of defaults in the China high yield property space through 4Q2021 that culminated in both EVERRE and Kaisa being placed on "Restrictive Default" by an external rating agency (See "***Case study: China Evergrande Group - Towards a Debt Restructuring***").

The genesis of the struggles within China's high yield property sector was regulatory but has now been amplified by slowing property sales, whether induced by or compounded by the pandemic. That said, the regulatory influence is not unique to the property sector and the government's regulatory wand to rebalance growth and promote common prosperity could impact Chinese bank balance sheets through increasing the potential for loan losses from sectors exposed to regulatory risk. So far, the technology, food delivery and children's tuition have been some of the sectors impacted by the government's desire to reduce inequality.

Chinese Financial Institutions are also more exposed to government actions by their government ownership and systemic importance. This means at times they are a policy tool for the government. For instance, to address possible contagion risk within the property sector in 4Q2021, the government urged Financial Institutions to relax mortgages for some homebuyers and continue providing liquidity to property developers to ensure a "healthy property market" according to the People's

Bank of China ("PBOC"). Central bank officials also reportedly told Financial Institutions to work with governments "to jointly maintain the steady and healthy development of the real estate market and safeguard the legitimate rights and interests of housing consumers".

That said, downside risk from government actions on China's large Financial Institutions will likely be limited. For one, their substantial market positions and balance sheets and relatively low exposure to high yield property developers should cushion their earnings as China's economic growth moderates in 2022. Secondly, as domestic and also global systemically important banks we expect regulators will remain pro-active in ensuring that China's largest bank's remain anchors for financial sector stability and implement supportive policies also. As an example, the PBOC announced in early December that it will reduce most banks' reserve requirement ratio by 0.5 percentage points, thereby releasing around USD188bn of liquidity. Per PBOC, some of the additional funds will be used by Financial Institutions to repay maturing loans from the PBOC's medium-term lending facility, while others will contribute to long-term capital. At the same time, the capital cost for Financial Institutions will also reduce and lower the overall financing cost for the economy.

Singapore – Competition, Costs and Compliance

Overall, Singapore bank fundamentals remain sound owing to solid growth in business volumes, relatively low non-performing loans and strong capital positions. As per the Monetary Authority of Singapore's ("MAS") December 2021 Financial Stability Review, the Singapore banking sector "entered the COVID-19 crisis from a position of strength" and that resilience was built upon as the operating environment recovered.

Capital strength though could be somewhat tested in 2022. Competition will rise as digital banks begin operating in 2022 – so far MAS has awarded four digital full banking licenses to a Grab-Singtel consortium, consumer tech company Sea Limited, Alibaba affiliate Ant Financial and another consortium comprising state owned property developer Greenland Financial Holdings, Tencent linked fintech company Linklogis Hong Kong and Beijing Co-operative Equity Investment Fund Management. These groups have the potential to add disruption to Singapore's banking sector where, according to an article in the Straits Times, more than 70% of Singapore consumers are open to migrating to digital first banks. Singapore financial institutions as well will be looking to compete in this space – DBS Banking Group Ltd ("DBS") was recently named the World's Best Digital Bank by Euromoney. It is not just potential business opportunities that will drive investment and competition – in the same Straits Times report which referenced work by McKinsey & Company, the cost to income ratio for DBS digital segment was materially lower than its traditional segments.

Expansion into digital services and digital assets comes with a cost, however. All Financial Institutions are expanding their investments in technology and digital capabilities which will also put pressure on capital through higher financial costs. But there is also additional operational costs or risks – in late November, technical difficulties impacted DBS's online banking services which drew comment from the MAS who said it will consider supervisory actions following an investigation by DBS. For the last outage that occurred in 2010 and covered 6 hours, DBS was asked to set aside SGD230mn in regulatory capital.

Of note though in the four digital full banking licensees is not just the potential for competition from services but also the potential for competition from their composition. None are traditional financial sector players – this may give them an advantage in building the consumer experience for digital services. This may also drive capital pressure for existing Singapore Financial Institutions through acquisitions for inorganic growth in digital capabilities. We have already seen the acquisitive behaviour of DBS of late with the 1H2021 acquisition of a 13% stake in Shenzhen Rural Commercial Bank Corporation Ltd ("SRCB") (following the amalgamation of Lakshmi Vilas Bank with DBS Bank India Ltd in late 2020) and the recent bids for some of Citigroup's APAC retail operations that have been put up for sale. DBS is reportedly interested in Citigroup's Taiwan operations that were previously reported to be worth anywhere from USD2bn-USD4bn and also expressed interest in its Indonesian operations that could be worth up to USD1bn. United Overseas Bank Ltd however is reportedly the preferred bidder for the Indonesian retail operations which could complement its existing business in the country.

Such expansions are somewhat consistent with what MAS highlighted in its Financial Stability review where the rise in credit growth for Singapore Financial Institutions was largely driven by a recovery in non-bank lending to non-residents and an increase in loans to Emerging Asia. Per MAS, Singapore is an intermediary for credit from the rest of the world to Emerging Asia. Whilst credit growth in of itself will pressure capital positions, rising exposure to Emerging Markets ("EM")

could have a multiplier effect on capital positions given the K-shaped recovery amongst countries as a result of the pandemic and the relatively weaker position of EM compared to Developed Markets in terms of vaccination rates and vulnerability to inflation pressures. This is notwithstanding the temptation to expand in EM given their relatively higher growth rate, but the possibility of slowdowns is similarly high.

Expansion of services and locations will no doubt impact operating risk and the need to maintain compliance oversight. This could be another source of pressure on capital in 2022. This could partially negate the anticipated benefits to earnings from rising business volumes as economies recover, higher interest rates and potential market volatility that will help Financial Institutions' trading operations.

Europe – The Regulatory Frontier

The Financial Sector in Europe is structurally crowded and competitive. Together with low interest rates, pre-COVID earnings generation was constrained, impacting return on equity and potential for improvement in capital ratio buffers. These dynamics were in play in the shadow of the proposed implementation of the final Basel III recommendations that were also known as "Basel IV". Agreed in 2017 for implementation in January 2022 (with a phasing in of an output floor on risk weighted assets calculated using internal bank models to 1 January 2027), the recommendations covered changes or reforms to the measurement of credit risk and operational risk weighted assets (amongst other changes) that would have resulted in a reduction of Financial Institutions' return on equity due to a material increase in capital requirements with a forecast capital shortfall of around EUR120bn according to a McKinsey and Co. report from 2017.

Implementation of Basel IV recommendations however were put on hold as the operating landscape altered dramatically due to COVID-19. With the critical need to preserve capital in the European (and global) financial system to maintain liquidity for borrowers, the final implementation date for Basel IV was postponed in March 2020 from 1 January 2022 to 1 January 2023. Since then, there has been a recovery in the operating environment, improvement in Financial Institution earnings along with capital positions and a recognition of the importance of strong capital buffers to mitigate an extremely stressed operating environment and maintain financial system stability. This prompted the Basel Committee for Banking Supervision ("BCBS") to publish on 6 July 2021 its findings that strong capital buffers that were a consequence of the global financial crisis and prior Basel reforms were highly effective in helping Financial Institutions mitigate the systemic shock of the pandemic.

While Regulator intent to pursue Basel IV implementation as soon as possible is therefore justifiably high, the path forward is not so straight forward. The operating environment for Financial Institutions remains somewhat fragile despite its obvious recovery in 2021 while bank margins may continue to be under pressure. Banks will also need capital buffers as they implement their ESG mandates to support client transitions to a low-carbon world. To this end, the European Commission ("EC") published the legislative proposals for the implementation of Basel IV into European law on 27 October 2021 that were effectively less onerous for Financial Institutions in terms of the implementation timeline and the proposed increase in minimum capital requirements. Implementation is proposed from 1 January 2025 (with a phasing in of the output floor to 1 January 2030) whilst the proposed increase in minimum capital requirements will be 6.4%-8.4% in 2030, as opposed to the 18% that was previously expected.
Other aspects of the EC's legislative proposals include:

(1) Changes to banking supervision in Europe to improve consistency and predictability of regulator actions, particularly for large banking groups that operate across borders and jurisdictions; and
(2) Inclusion of more formal requirements for Financial Institutions to include an assessment of environmental, social and governance ("ESG") risks and to adequately disclose these risks and their consistency with the EU's overall sustainability strategy. Such risks must also be included in capital adequacy assessments and stress testing to understand the Financial Institution's resiliency to things such as climate risk (see "***Sustainable Finance Regulations for Financial Institutions to Weather the Storm***").

Overall, these changes are positive in our view. This is not only because of the focus on building resiliency in Financial Institution balance sheets through higher capital requirements and disclosure of ESG risks, but also because it shows that Financial Institution regulators continue to be pragmatic in balancing the short-term needs of Financial Institutions (i.e. balance sheet capacity) with the desire for long term systemic stability.

Adequately placed for new beginnings

We expect bank credit profiles will remain stable throughout 2022 despite volatile operating conditions. Fundamentals through market positions and diversified business offerings will not only act as a shock absorber against this volatility, but parts of Financial Institutions business segments will benefit from this volatility as well. Developments in the ESG space will accelerate however Financial Institutions have become better at addressing them and will continue to work in partnership with regulators and government to achieve broader ESG and sustainability objectives. The discipline that will come from higher stakeholder (ie investors, employees, clients and the general public) expectations on Financial Institutions' responsibilities in the ESG and sustainability space will also result in a more constructive development path forward in our view. These expectations are increasingly settling on the shoulders of Financial Institution CEOs. As an example, Société Générale Chief Executive Officer Frederic Oudea will take control of the risk and compliance functions as part of a recent senior management restructure.

With regards to bank capital instruments, we continue to be overweight and provide opportunities. From a demand perspective, these structurally higher yielding instruments should remain attractive to investors in a rising or volatile interest rate environment. At the same time, we expect supply of bank capital instruments to remain supported by (1) ongoing refinancing needs to maintain minimum capital buffers; (2) regulator interest to raise minimum requirements given the benefits of holding excess capital at the heights of the pandemic; and (3) likely higher capital requirements that will result from the implementation of climate stress tests as part of government Climate Risk actions. Combined with strong Financial Institution fundamentals and regulator pragmatism, we see write-down risk as low.

S-REITs - Maintaining their Resiliency

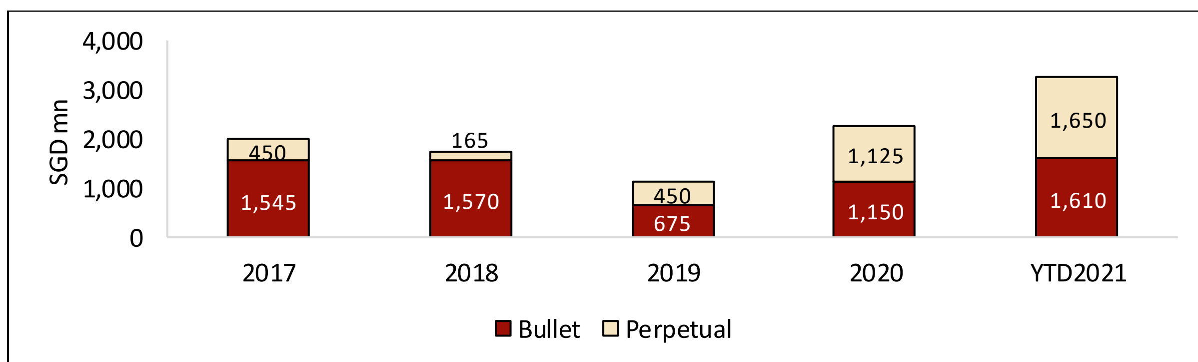
As COVID-19 comes to almost two years, Singapore REITs broadly as a segment of the equity and debt markets have proven their resiliency. Covering the sharp trough in March 2020, the iEdge S-REIT Index, regarded as the REIT benchmark for Singapore REIT equities reported a negative total return (takes into account both price and dividend yields) of 2.2% in 2020. However, REIT equities rebounded year-to-date ("YTD") with total returns from 1 January 2021 to 30 December 2021 at a positive 6.2%. In our view, REITs continue to be a pillar of the portfolios of equity investors focused on the Singapore market, with equity providing a buffer for bond and perpetual holders.

In the SGD bond markets, REITs are historically viewed as a high-grade segment where benchmark issuers are externally rated by international rating agencies. REITs retained strong access to debt capital markets financing through COVID-19, with SGD2.3bn priced in 2020 and SGD3.3bn priced YTD.

Mainstreaming of REIT perpetuals: At the beginning of 2021, we pointed out that REIT perpetuals became in style in 2020. Since then, the momentum has continued. Out of the SGD3.3bn of REIT papers priced YTD, 51% were in the form of perpetuals. By amount outstanding, REIT perpetuals made up 7% of all the new issuances YTD. REIT perpetual structures have converged to become the most "standardized" part of the SGD corporate perpetual market (unsecured, subordinated, no step-ups, non-call for five years with a dividend stopper). This makes comparison across different REIT perpetual issues much simpler versus other corporate perpetuals. By market practice, Singapore REITs follow the aggregate leverage cap that has been set out by the Monetary Authority of Singapore ("MAS") with diligence, even though no fines are imposed on REITs who exceed this cap. Calculation of the aggregate leverage cap follows a prescribed formula and is currently set at 50%. For a REIT with a simple ownership structure where it only owns properties and own 100% of all of these properties, the aggregate leverage ratio is effectively total debt over total assets. This means that debt is capped at 50% of total assets.

In Singapore, REIT perpetuals are universally treated as equity for the purposes of accounting though we note that the tax authorities have regularly allowed REIT perpetual distributions to be considered as interest expense (ie: debt) for tax deductibility. The MAS has set out guidelines on the characteristics for perpetuals to be considered as equity rather than debt for the purposes of calculating the aggregate leverage cap, thus encouraging convergence.

Figure 39: REIT issuance YTD (1 January 2021 to 19 November 2021)



Source: OCBC Credit Research, tabulated from Bloomberg data retrieved on 20 November 2021

Note: (1) Not including Keppel REIT's convertible bond priced in 2019 and RCS Trust which is an unlisted trust

Rising rate expectations hurling REIT perpetuals: We note that since the second half of September 2021, REIT perpetuals traded heavy in the secondary market, driven by higher interest rates and an expectation that rates will continue to rise.

Like all perpetuals, REIT perpetuals have no legal maturity date which means that an issuer is not in default if it does not exercise the call option and redeem the instrument. Since REIT perpetuals are perpetuity in the legal sense, this in theory means investors can suffer large losses when interest rates rise.

Compounding the problem, REIT perpetuals have no step-up margins. Step-up margins push up the cost of perpetual distributions when it takes effect (from the perspective of issuers) and economically incentivizes the issuer to exercise the

call rather than pay up. The higher the step-up margins, the more a perpetual becomes "debt-like" as issuers are motivated to redeem the instrument at a foreseeable date, even though there is no legal maturity date.

Although the sector provides yields where probability of call differs: With bulk of the REIT issuers having manageable credit profiles (if not explicitly investment grade) and paying more than 100bps higher than their bullet counterparts, we think it is too simplistic to dismiss REIT perpetuals simply because of the potential of rising interest rates. In our view, whether a REIT perpetual remains investable in this environment is best analysed on a case -by-case basis.

REIT perpetuals are perpetuity legally, however, there are factors in place that influences the probability that they will be called at a set date.

As a starting point, we assume that REIT issuers would exercise the call at first call if it is cheaper for them to raise a replacement perpetual versus letting the perpetual distribution rate reset higher. This economically makes sense, as issuers have no incentive to pay higher cost of funding. We also assume that perpetual investors prefer to get their money back in five years' time (ie: more "debt-like").

The reset distribution rate is made out of two parts (1) Initial margin and (2) Underlying interest rate.

Despite all REIT perpetuals having no step-ups, initial margins between REIT perpetual issues differ. This is affected by credit spreads at time of issuance and the underlying interest rates at time of issuance. We find that initial margins are wider for REITs whose credit profile were perceived to be weaker at time of issuance and also when interest rates were low.

This means that if credit spreads narrow for these REITs in the future, the chances of the REIT being able to issue a replacement perpetual at a cheaper cost improves.

Overall spreads are a summation of credit spreads, senior-sub spreads and other technical influences (including supply and demand for perpetuals at point of issuance). In a rising rate environment, higher underlying interest rates would push up the total reset distribution date to a level where in totality it may still be cheaper for the REIT to replace the perpetual in the primary markets. This is especially the case if the initial margins were wide enough and that the replacement perpetual can be raised at a lower overall spread.

REITs exist as property income vehicles and pay regular dividends to its equity holders. The existence of a dividend stopper means if perpetual distributions are stopped, REITs would be unable to serve their key purpose to their equity holders. As such, barring a high liquidity stress scenario, we see low likelihood for REITs to skip perpetual distributions.

Perpetuals issued by a number of Neutral (4) issuers under our coverage are paying a yield to call of ~3.5%-4.0% as we write and we continue to be neutral-to-overweight on certain REIT perpetual issuances.

REIT perpetuals a way to unleash debt headroom? Since the change in quarterly reporting to semi-annual reporting in 2020, the majority of the REITs no longer provide the same standardized information each quarter that facilitates comparison across REITs. For example, Singapore REITs have different financial year end periods which means the extent of information provided in 3Q2021 differs from one another. However, we are still able to glean some insights from what has been provided.

Based on our analysis of 23 REITs (21 of which are part of our official coverage) we estimate that the median reported aggregate leverage was 37.6% as at 30 September 2021, by magnitude of change, merely 0.8% higher than reported aggregate leverage at the beginning of 2021. SGD1.1bn of REIT perpetuals were priced in this nine-month period and these perpetuals are not included into the reported aggregate leverage number.

Simplistically taking only the assets that are on balance sheets, we find total assets of these 23 REITs amounting to ~SGD153bn with perpetuals at ~SGD4.0bn. REITs fund their assets mainly through (1) Equity (2) Debt (3) Perpetuals and (4) Internal cash (including from divestments). Assuming assets equal total capital, we find that on a median basis, perpetuals only make up 3% of capital bases.

However, we observe that among certain REITs, perpetuals were used in 2021 as a funding source for acquisitions and we expect that overtime, perpetuals may comprise up to 20% of the capital base of REITs who are seeing the benefit of using perpetuals.

To find out how the use of perpetuals impact capital structure, we ran a scenario analysis using the median reported aggregate leverage as at 30 September 2021 of ~38%. We simplistically assume that assets are only funded by debt, equity and perpetuals and there are no joint ventures and associates. In reality, the reported aggregate leverage calculation as prescribed by the MAS includes proportionate debt and assets at joint ventures and associate. We also assume that perpetuals are only used for acquisitions which increases the asset base rather than paying down debt.

Our analysis shows that even a small usage of perpetuals allows significant debt headroom to be unleashed. At the same time, the use of perpetuals reduces the need of REITs to raise new common equity which can potentially dilute existing equity investors. When S-REITs raise new equity from unitholders (for example to reduce aggregate leverage to below 50%), each existing unit owns a smaller portion of the income stream and asset base.

Figure 40: Illustration of Using Perpetuals in Capital Structure

Perpetuals as a % of capital	0%	5%	10%	15%	20%
Debt	380	380	380	380	380
Perpetuals	0	53	111	176	250
Equity	620	620	620	620	620
Total Asset	1,000	1,053	1,111	1,176	1,250
Reported aggregate leverage	38%	36%	34%	32%	30%
Aggregate Leverage (if perpetuals are included as debt)	38%	41%	44%	47%	50%

Source: OCBC Credit Research

REIT perpetuals are hybrids: We view REIT perpetuals as hybrid instruments and see sufficient leeway for these instruments to become a more permanent part of a REIT's capital structure. Increasingly, this is a view shared by REIT issuers and investors. In 2020, we saw Ascott Residence Trust becoming the first REIT in Singapore who opted not to call its perpetual. The pandemic had posed significant operating challenges to hospitality asset owners though, ART's credit profile still suggested that it could have raised new capital and redeem the perpetual if it wanted to. We think the decision was also driven by economics. With interest rates near all-time lows in July 2020, the perpetual would reset to only 3.07% versus the original distribution rate of 4.68% and was much likelier to be cheaper than what ART could raise from the market at that point in time. Whilst there was a knee-jerk negative reaction on that tranche, overtime the non-call had little implication to the rest of ART's curve in the secondary market. Lippo Mall Indonesia Retail Trust opted to skip a perpetual distribution though resumed payment in 1Q2021 and managed to raise a new USD200mn bond.

Regulators have set out guidelines for REIT perpetuals such that these are not misconstrued as debt. However, additional safeguards will be imposed from 1 January 2022, such that the quantum of perpetuals used by REITs would be indirectly capped.

As mentioned earlier, the MAS currently sets a 50% aggregate leverage cap as the primary way to keep credit risk in check for the REIT sector. Historically, the aggregate leverage cap was only 45%. However, to allow Singapore REITs to grow bigger and compete in the marketplace for physical properties, there has been an acceptance to allow REITs to take on more debt, though on a measured basis.

Interest Coverage Ratio and Adjusted Coverage Ratio Begins: From 1 January 2022 onwards, REITs would also need to meet a minimum interest coverage ratio ("ICR") of 2.5x before they are allowed to lever up to 50% as another credit check measure. Additionally, there is also an Adjusted ICR ratio which takes 100% of the perpetual distribution in the denominator. For REITs without perpetual distributions, these two numbers will be the same although REITs with perpetuals would have an Adjusted ICR ratio that is lower than the ICR. The minimum Adjusted ICR is also set at 2.5x. REITs would need to disclose these standardized measures going forward, some have already begun to do so for both measures.

We note that the calculation of both ICR and Adjusted ICR are likely to be comprehensive and provides a meaningful measure on a REIT's ability to meet its interest obligation and perpetual distributions. We gather from REIT Managers that income from joint venture, associates and dividend income from property funds which some REITs have invested in would add to the numerator, though fair value from changes in derivatives and investment properties are excluded. Such fair values are typically paper gains and only monetized when properties are sold. Expenses associated with borrowings would be taken into account as interest expense.

Interestingly, there is an inconsistency in how the aggregate leverage ratio and the ICR (and Adjusted ICR) are calculated. REIT perpetuals structured per the MAS guidelines are not considered as debt in calculating the aggregate leverage but the perpetual distribution would be considered as interest expense. This is despite perpetual distributions largely being deferable and non-cumulative – something akin to dividends on the REIT's equity and consistent with how perpetuals are treated in the calculation for aggregate leverage.

That being said, the Adjusted ICR would indirectly limit how much perpetuals outstanding a REIT can have, even if perpetuals are not explicitly restricted.

Hypothetically, a REIT with a starting Adjusted ICR of 3.0x would have a 0.5x headroom (or 20%) to pay additional interest expense and/or perpetual distribution, assuming constant cost of funding.

Smaller REITs get included in Global REIT index: On 1 September 2021, index provider FTSE Russell shared that eleven smaller S-REITs will be included into the FTSE EPRA Nareit Global Developed Index later that month. On 2 September 2021, trading volumes of all eleven swelled, with prices rising 3.3% on a median basis that same day.

We scrubbed the data and find that eight of them still traded at a higher average volume in the two months after the initial hive of activity, compared to the eight months before index inclusion. This indicates a good likelihood that index inclusion helps with liquidity.

In terms of actual money flow, equity institutional investors bought SGD176.4mn of S-REIT units on a net basis in September per SGX data, the same month these REITs were included into the index. This was also despite such investors selling more S-REITs than they bought for seven out of the ten months to October 2021.

Of these eleven REITs, eight are existing SGD bond and/or perpetual issuers, namely AIMS APAC REIT, ARA LOGOS Logistics Trust, Cromwell European REIT, ESR-REIT, Lendlease Global Commercial REIT, OUE Commercial REIT, SPH REIT and Starhill Global REIT.

REIT scale still matters but equity investors more vigilant: Index inclusion only happens when REITs have a sufficiently large free float and this is affected by asset base. Typically, REITs that benefit sustainably from the inclusion are those who are likelier to stay in the indices. At the beginning of 2020, we discussed at length the chase for scale among REITs and this is something that we expect to continue seeing in the market, although equity investors now appear more vigilant on proposed new mergers and acquisitions.

In early 2021, an attempt to combine ESR-REIT and Sabana Industrial Real Estate Investment Trust was blocked by minority activist investors due to a valuation gap between what the investors demanded versus what the acquiror was intending to pay. In October 2021, ESR-REIT and ARA Logos Logistics Trust ("ALOG") announced a proposed combination and it remains to be seen if this transaction will go through. ESR-REIT's Sponsor, ESR Cayman Limited, is in the midst of acquiring ARA Asset Management Ltd ("ARA"), where ARA is the majority shareholder of ALOG's Sponsor, LOGOS Property Group Limited. Should a combination be successful, the combined REIT will be renamed as ESR-LOGOS REIT ("ELOG") with total assets of SGD5.4bn in industrials assets across Singapore and Australia based on 30 June 2021 financials. On 31 December 2021, Mapletree Commercial Trust ("MCT") and Mapletree North Asia Commercial Trust ("MNACT") announced a proposed combination that will create a mega REIT with total assets of SGD17.5bn based on 30 September 2021 financials if successful. Both REITs are Sponsored by Mapletree Investments Pte Ltd.

Significant expansion overseas: Out of the 23 REITs we track, Singapore assets still make up ~70% on a median basis in terms of portfolio value. However, REITs continue to become more geographically diversified. We expect home bias (ie: Singapore) among investors to continue, where REITs with a higher proportion of Singapore assets seeing higher demand for their bonds and perpetuals. However, for investors looking for an expanded investment opportunity and higher yields, it is no longer sufficient to only track the Singapore property market as new capital raised by REITs would likely be directed towards overseas investments. Using SGX's data on all REITs and property trusts listed in Singapore, we calculate that SGD8.2bn of the SGD9.3bn (or 88%) of announced acquisitions from January to October 2021 were for acquisitions outside of Singapore. SGD6.6bn (or 80%) of these overseas acquisitions were announced by REITs who are existing SGD bond and perpetual issuers.

Figure 41: Geographical Breakdown by Portfolio

By portfolio value (%)	Singapore	HKSAR	China	Malaysia	Vietnam	Indonesia	South Korea	Japan	India	Rest of Asia	Australia	UK	Rest of Europe	US
CapitaLand Integrated Commercial Trust	96												4	
Keppel REIT	80						4				17			
Mapletree Commercial Trust	100													
Suntec REIT	71										16	13		
Frasers Centrepoint Trust	100													
Lippo Malls Indonesia Retail Trust						100								
Mapletree North Asia Commercial Trust		54	22				3	21						
Starhill Global REIT	68		1	15				2			14			
CapitaLand China Trust			100											
SPH REIT	80										20			
LendLease Global Commercial REIT	70												30	
Ascendas REIT	62										13	12		13
Mapletree Industrial Trust	51													49
Mapletree Logistics Trust	24	25	17	5	2		8	11	1		8			
ARA LOGOS Logistics Trust	55										45			
AIMS APAC Industrial REIT	78										22			
Frasers Logistics and Commercial Trust	18										46	10	27	
ESR REIT^	100													
Cromwell European REIT^													100	
Ascott Residence Trust	18		5	1	3	1	3	20		2	14	7	14	13
Frasers Hospitality Trust	32			5				9			32	14	4	
First REIT	4					96	0							
OUE Commercial Trust	90		10											

Source: SGX Research using company latest info for geographical breakdown by portfolio value, other data from Bloomberg, SGX, as of 30 November 2021
^ OCBC Credit Research does not have official coverage of these names

REITs using development limits: Separately, we observe REITs beginning to acquire investment properties that are still under development from third parties, with Frasers Logistics & Commercial Trust following Keppel Real Estate Investment Trust's ("KREIT") investment into a Grade A development project in Australia. KREIT will be buying the development from Lendlease Group ("LLC") where LLC will be acquiring the project from local developers. LLC, also a SGD-bond issuer will be taking on development and leasing risk of the project. While REITs had been invested in assets that are in developments/redevelopments in the past, this had tended to be either standalone (eg: built-to-suit) or in partnership with their Sponsors. We note that cap rates of investment properties have in general compressed across the board, which may be the motivating factor to acquire properties under development

REITs raising funds through GSSSL bonds: Ascendas Real Estate Investment Trust was the first REIT in Singapore who issued a green bond in August 2020, followed by a green perpetual (the first one in the SGD market) in September 2020. In July 2021, REITs again broke new ground with Frasers Logistics and Commercial Trust issuing the market's first sustainability bond where proceeds can be used for both green as well as social purposes. Green buildings have become mainstream in Singapore and Europe with the REITs we cover continuing efforts to make the properties they own more sustainable. As such, we continue to expect REITs to be a key issuing segment in the nascent but growing SGD green, social, sustainability and sustainability-linked ("GSSSL") market.

OCBC Bank

Figure 42: REIT statistics (as of 30 September 2021 unless otherwise stated)

	Aggregate Leverage (%)	EBITDA/ Interest (Latest available period)	EBITDA/ Interest (previous period)	Debt Duration (years)	Debt cost (%)	Proportion of debt fixed/hedged (%)
Commercial						
CapitaLand Integrated Commercial Trust	40.9	4.1	3.4	4.1	2.3	84
Keppel REIT	37.6	2.2	1.3	3.3	2.0	71
Mapletree Commercial Trust	33.7	4.6	3.8	3.8	2.4	73
Suntec REIT	44.3	1.4	1.3	3.1	2.3	57
Frasers Centrepoint Trust	33.3	4.8	2.0	2.5	2.2	56
Lippo Malls Indonesia Retail Trust	42.3	1.9	2.1	3.1	6.5	80
Mapletree North Asia China Commercial Trust	41.4	4.5	3.4	3.0	1.8	79
Starhill Global REIT	36.3	2.9	2.4	3.7	3.2	96
CapitaLand China Trust	36.4	4.9	2.8	3.5	2.6	76
SPH REIT	30.3	7.1	4.2	2.9	1.8	76
Lendlease Global Commercial REIT	32.0	4.3	4.3	2.3	0.9	100
Average:	**37.1**	**3.9**	**2.8**	**3.2**	**2.6**	**77**
Industrial						
Ascendas REIT	37.4	4.8	4.1	3.5	2.4	78
Mapletree Industrial Trust	39.6	6.1	6.3	2.9	2.4	58
Mapletree Logistics Trust	38.2	4.9	4.9	3.6	2.2	76
ARA LOGOS Logistics Trust	37.8	3.6	3.7	3.0	2.8	74
AIMS APAC Industrial REIT	24.7	3.9	3.7	2.1	2.8	98
Frasers Logistics and Commercial Trust	33.7	7.3	5.4	3.4	1.6	73
ESR REIT^	41.3	2.8	2.4	2.6	3.4	88
Cromwell European REIT^	37.8	5.2	6.5	3.5	1.7	100
Average:	**36.3**	**4.8**	**4.5**	**3.1**	**2.4**	**80.6**
Hospitality						
Ascott Residence Trust	35.3	2.6	2.5	2.9	1.6	79
Frasers Hospitality Trust	42.2	2.3	0.9	2.6	2.0	77.2
Average:	**38.8**	**2.5**	**1.7**	**2.7**	**1.8**	**78.1**
Others						
First REIT	34.7**	3.9	3.3	1.2**	4.2**	50
OUE Commercial Trust	38.4	2.5	2.3	2.7	3.2	81.3
Average:	**36.6**	**3.2**	**2.8**	**2.0**	**3.7**	**65.7**

Source: OCBC Credit Research, Company financials and investor presentations
* as at 30 September 2021 or financials for the half year period ended 30 June 2021, as applicable
** OCBC Credit Research estimates
^ OCBC Credit Research does not have official coverage of these name

OCBC Bank

Singapore Commercial REITs – Where to From Here?

Uneven office recovery though physical offices remain in demand

Singapore office workers coped with working outside of the office: Through the pandemic, investors, owners and office tenants alike in key gateway cities have been grappling with what would become of offices as workers shift their mode of working. From being in the office five days a week for around forty hours (if not more), much work has been successfully done remotely over the past two years. According to data from the Singapore Ministry of Manpower, 49% of all employed residents worked remotely in 2020. Among key office tenant segments, the proportion was 77.6% for Information and Communications, 76.3% for Financial and Insurance Services and 74.7% for Professional Services. Despite this changes, there was no widespread trend of tenants breaking leases early in Singapore and occupancies reported by S-REITs remained commendably above 90% in most cases. This was despite the actual number of people in offices being significantly lower.

Surveys show workers want flexible options to stay but at the same time also want collaboration: According to an extensive survey conducted by research firm Edelman Data x Intelligence, 73% of employees want flexible remote work options to stay. However, concurrently, 67% of employees want more in-person work or collaboration post-pandemic. The survey covered 31,092 full-time employed and self-employed workers across 31 markets in January 2021 and was captured in Microsoft's 2021 Work Trend Index report. Even though companies decide on tenancy decisions as the ultimate paymasters of office spaces, the end-users of such spaces are workers and, in our view, influences the tenancy decision.

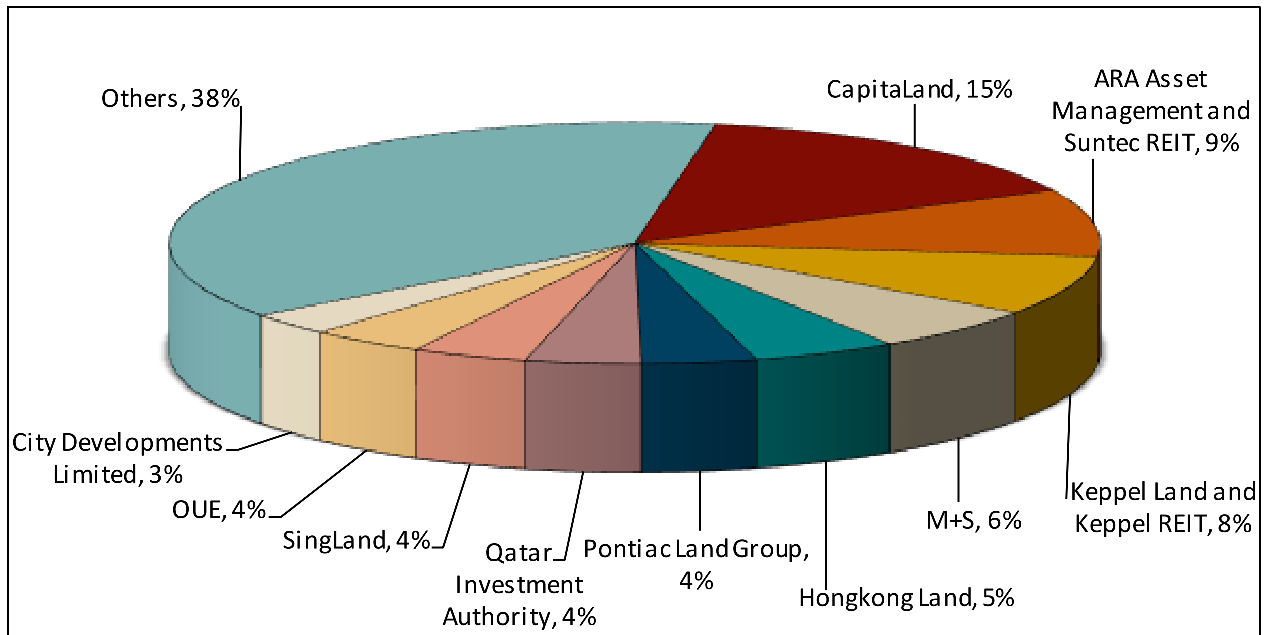
……these demands are not mutually exclusive: We think workers' demand for flexibility is not mutually exclusive from also wanting face-to-face collaboration. Assuming the survey results still hold as of writing, it also means a simplistic approach by companies to stop renting office space and keep everyone working from home to save on costs may also be short-sighted. A physical space for face-to-face collaboration is still required, although whether these take place at offices would depend on how frequent interactions are required. Hypothetically, for a team that only needs to meet infrequently, such collaboration could also occur at a short-term rented space (eg: event spaces) rather than a permanent office address.

We expect office space to be still needed in Singapore: Uncertainty still remains on how offices will change, and this is likely to still hold back some leasing decisions. As such we are paying attention to REITs with a high lease expiry in the next 12 months. We think S-REITs holding the highest quality offices (clean, green, focused on occupier's wellbeing) will be in a more defensible position. Our base case for the Singapore market assumes a gradual move towards a hybrid workforce, where companies would still require physical space to house workers during the times they are working in the office.

Singapore workers not that different in terms of ask: In April 2021, a YouGov survey conducted for CNA covering more than 1,000 respondents in Singapore found that 60% of respondents wanted a mix of both working in the office and remotely. A more recent survey released in December 2021 by Robert Walters, a human resource consultancy, put the number of people preferring to work in the office for at least two days at 54%. Rather than a significant decrease in physical footprint, we think a more likely scenario is for occupancy to hold up. However, we think tenants would have the upper hand in negotiating better lease terms (eg: higher rent-free periods, shorter term leases, termination clauses). While companies could opt to move to a hot desking model which reduces physical footprint and benefit from significant savings in rents, studies have found that such arrangements have a negative impact on worker wellbeing and loss in productivity.

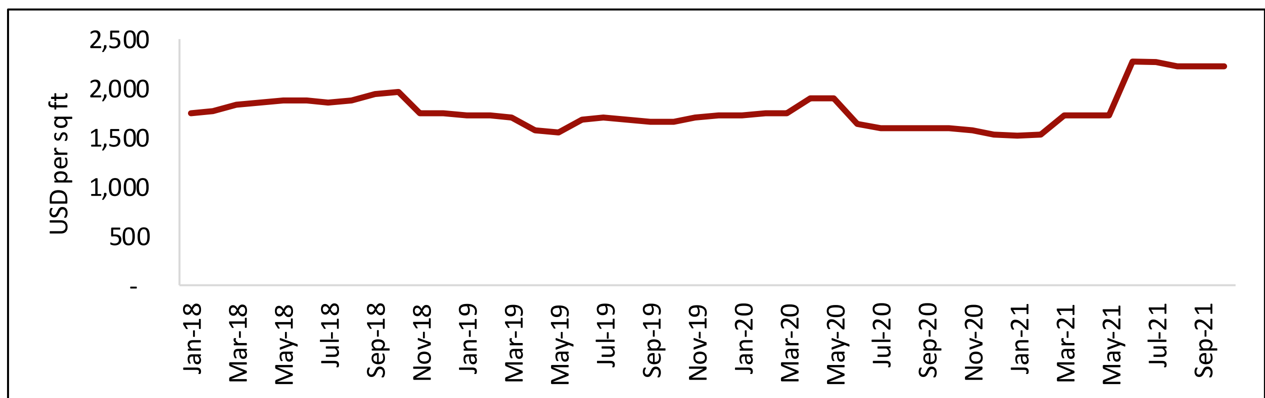
Various factors at play: What "hybrid" actually entails would be different to each company and geographical market. We think this decision is highly dependent on cultural factors, remote working conditions, as well as the type of tasks that is carried out in an economy. This includes how empowered employees are vis-à-vis employers, human resource management and policy factors. For example, the Singapore government has been vocal on encouraging flexible work arrangements ("FWA") to help meet policy goals on demographics. On the flipside, we expect little change to the demand for offices from the change in working format in China.

Figure 43: Major Grade A Office Space Owners in the Singapore Central Business District



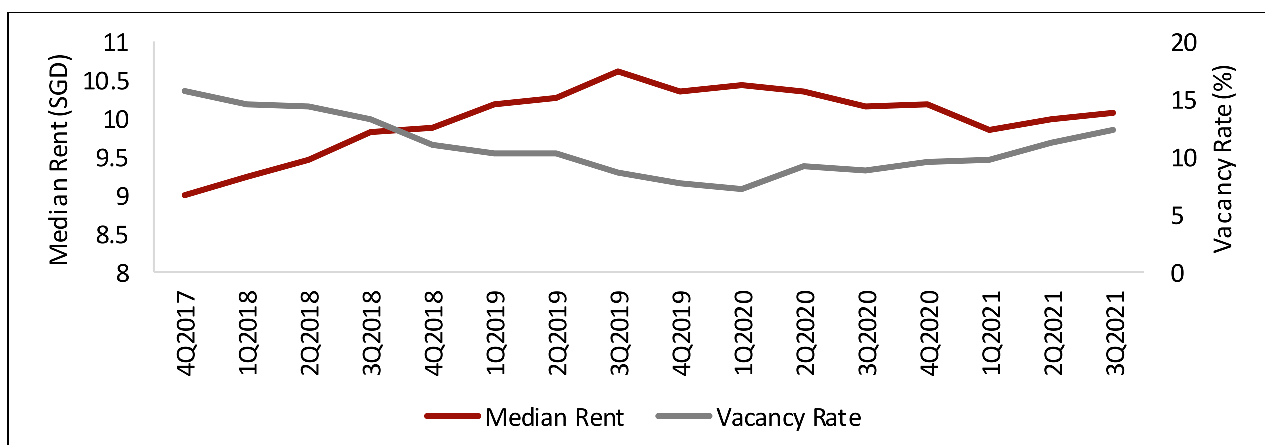
Source: Cushman & Wakefield Research as published by Business Times
Note: As at 30 June 2021

Figure 44: Singapore Office Price



Source: RCA

Figure 45: Singapore Office Rent and Vacancy



Source: URA

Note: (1) Median rental based on lease commencement; SGD per sq ft per month, (2) Buildings located in core business areas in Downtown Core and Orchard Planning Area which are relatively modern or recently refurbished, command relatively high rentals and have large floor plate size and gross floor area

S-REITs increasingly expanding in overseas office markets: We set out below brief commentaries of the key office markets where S-REITs operate in. These markets are key gateway cities and in the radar of global property investors. Despite varying market conditions, investment demand for physical office properties in these markets were strong in 2021 and expected to continue into 1H2022.

Figure 46: Brief Commentary of Key Office Markets

Geography	Brief Commentary	Key Office Hubs	Sources
Singapore	• Vacancies stayed low through the pandemic but have risen in 2021. • Office rents bottomed out in 1Q2021 and are on the uptrend. • Active investment market for Singapore offices despite pandemic. • Little new space to be added in 2022 although 2023 expected to be significant. • Singapore remains attractive to tenants as an Asia-Pacific hub.	• Raffles Place • Marina Bay • Tanjong Pagar / Anson Road • Orchard Road • Shenton Way	• OCBC Credit Research • Urban Redevelopment Authority ("URA") • Real Capital Analytics ("RCA") • Knight Frank • Cushman & Wakefield
Sydney, Australia	• Vacancies increased through the pandemic and expected to rise further by end-2021, mainly due to increase in supply. • Office rental index for prime office sharply declined in 2020, more rental incentives provided with effective rents still lower y/y in 3Q2021. • Strong leasing demand expected. • Office prices per square foot increased through the pandemic. • Strong investor demand remains.	• Sydney Central Business District • Parramatta • North Sydney • Macquarie Park	• Knight Frank • Colliers • Cushman & Wakefield • Dexus • RCA
Melbourne, Australia	• Vacancies increased through the pandemic and expected to rise further by end-2021. • Office rental index for prime office sharply declined in 2020 and was still declining in 9M2021. • Vacancy increased mainly due to lower leasing demand. Unlike other Australia capital cities, negative demand was concentrated in Grade A office space. • Office prices per square foot increased through the pandemic and has resumed its rise after falling in 2Q2021. • Strong investor demand remains.	• Melbourne Central Business District • Southbank • St Kilda • Docklands	• Knight Frank, Colliers • Dexus • RCA • Property Council of Australia
London, UK	• Vacancies gradually increased in 2020, though accelerated in 2021.	• West End • City and Southbank	• Colliers • Knight Frank

	• Office prices per square foot increased significantly since mid-2021. • Office rent stable mainly from lack of new supply of prime office space. • Investor demand rebounded in 2021. • Low leasing volumes in 2020 but gradually improved in 2021. • London offices historically have long leases, though the pandemic may accelerate the shift towards more flexible leases.	• Docklands and Stratford	• JLL • RCA
Tokyo, Japan	• Vacancies have increased significantly (though Tokyo vacancy rates started from a low base). • Rents falling as landlords prioritise occupancy. • May face an oversupply situation in 2023-2025. • Office prices per square foot dipped in 1H2020 though has risen significantly since end-2020. • Investor demand rebounded in 2021. • COVID-19 has upended the way work is done; companies are adjusting leasing strategies to hybrid working. • High quality offices in centralised locations to hold up better.	• Chiyoda • Shibuya • Chuo • Shinjuku • Minato • Shinagawa	• Savills • JLL • Japan Property Central • RCA
Seoul, South Korea	• Vacancies expected to fall further from high leasing demand. • Office prices per square foot stable in 1H2020 and increased significantly since 2H2020. • Limited new supply in short term. • Very strong investor demand in 2021 from domestic institutional investors on expectation of further price increase. Investor demand expected to remain strong. • Effective rent expectations rising.	• Central Business District • Gangnam Business District • Yeouido Business District	• Colliers • Knight Frank • RCA
Beijing, China	• Historically a high vacancy market from oversupply, although vacancy rate varies across key office hubs in the city. • Vacancies increased in 2020 though fell in 3Q2021, partly due to destocking. • Office prices per square foot continued its decline. • New office supply to taper in 2022.	• Central Business District • Lufthansa • Financial Street • East 2nd Ring Road • Zhongguancun • Olympics Games Village • Wangjing Jiuxianqiao	• Savills • Colliers • JLL • Knight Frank • RCA

	• Active investment market in 2021 including from domestic buyers. • Soft rents in 2020 though have begun to stabilise and expected be positive in 2022. • After initial pandemic wave, minimal day-to-day disruptions. No widespread fundamental shift in working formats.	• Lize	
Shanghai, China	• Historically a high vacancy market. • Vacancies increased in 1Q2020 though stabilised and has started to fall. • Office prices per square foot started to decline in 2021. • Active investment market in 2021 including from domestic buyers. • New office supply expected in 2022 although to taper significantly after. • Soft rents in 2020 though have begun to stabilise and gradually increased in 3Q2021. • Leasing activity recovered, led by domestic companies. • After initial pandemic wave, minimal day-to-day disruptions. No widespread fundamental shift in working formats.	• South Jing'an • Pudong • Xuhui • Huangpu • Changning • Putuo • Hongkou • North Jing'an • Minhang • Yangpu	• Colliers • Knight Frank • RCA • IPE Real Assets

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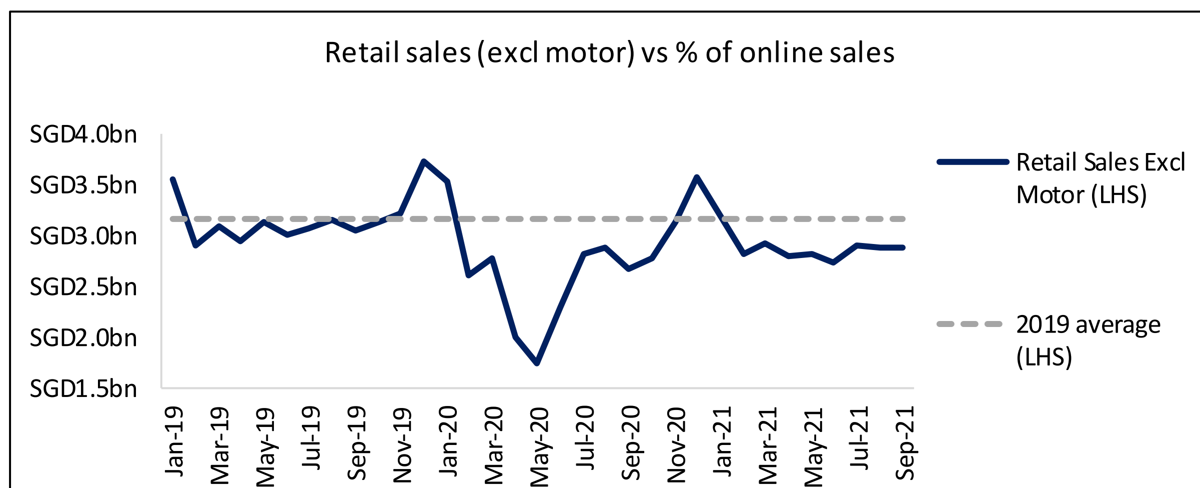
Singapore Retail REITs – Into the Retailverse

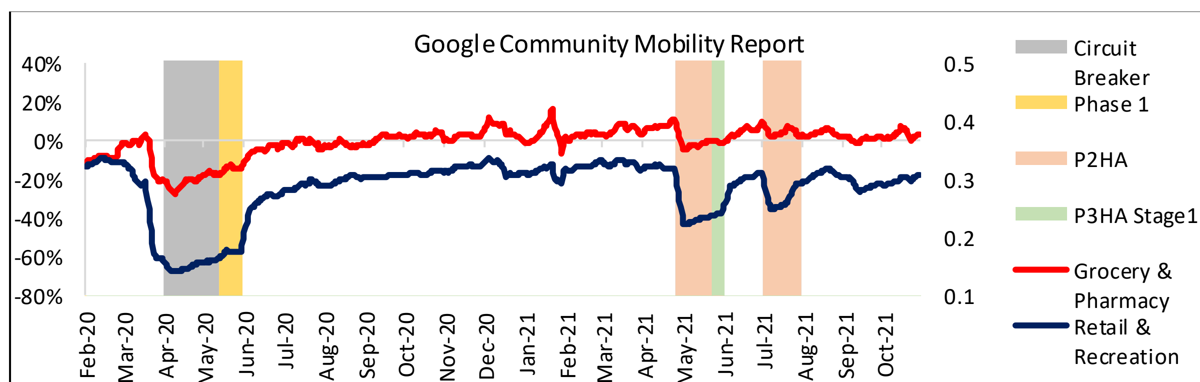
Singapore retail sales have yet to recover to pre-pandemic levels despite nearly two years since the onset of the pandemic. In general, shopper traffic has declined by ~40% from pre-pandemic levels amongst the retail REITs under our coverage, exacerbated by movement restrictions. While a fuller recovery was in sight as restrictions have been progressively lifted since the end of Phase 2 Heightened Alert ("P2HA") in Aug 2021, the rise of Omicron and potentially other variants could dim the outlook.

Figure 47: Retail sales still below pre-pandemic levels even though online sales surged



Source: Singstat, OCBC

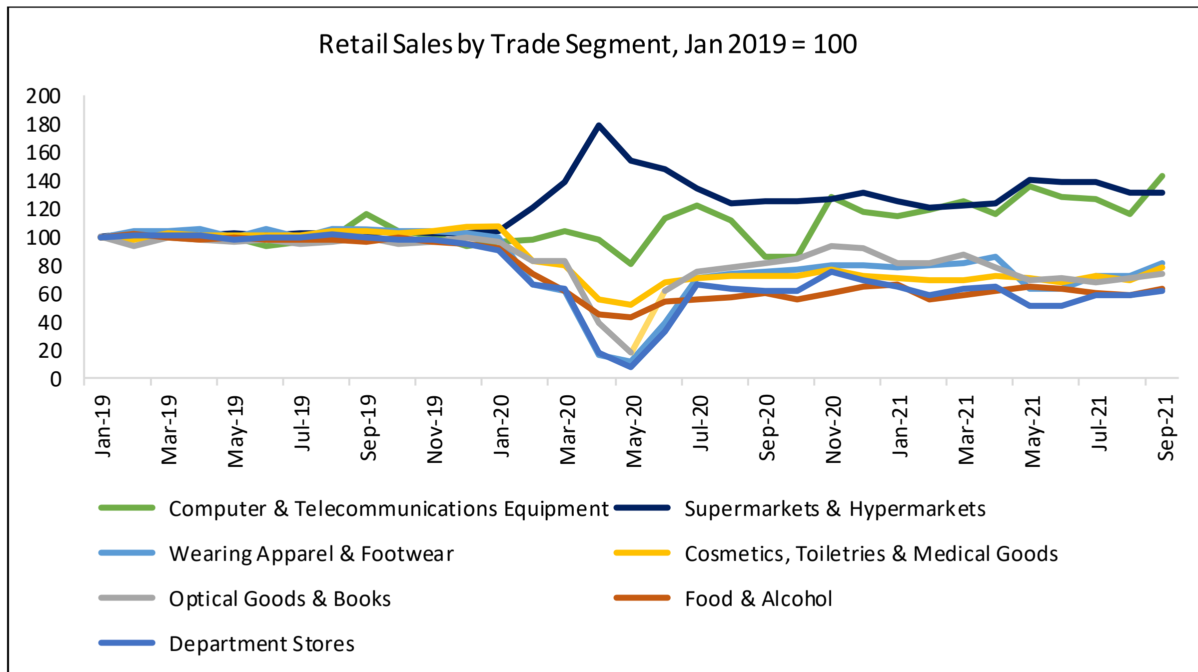
Figure 48: Retail & Recreation traffic impacted by movement restrictions and yet to fully recover



Source: Google, OCBC

Outcomes diverge depending on sector. Certain segments thrived under the pandemic, such as Supermarkets & Hypermarkets, as well as retailers in the Computer & Telecommunications Equipment segments. However, the general retail sector has been hard hit, especially in the sectors such as Food & Alcohol, Optical Goods & Books, Cosmetics, and Apparel & Footwear.

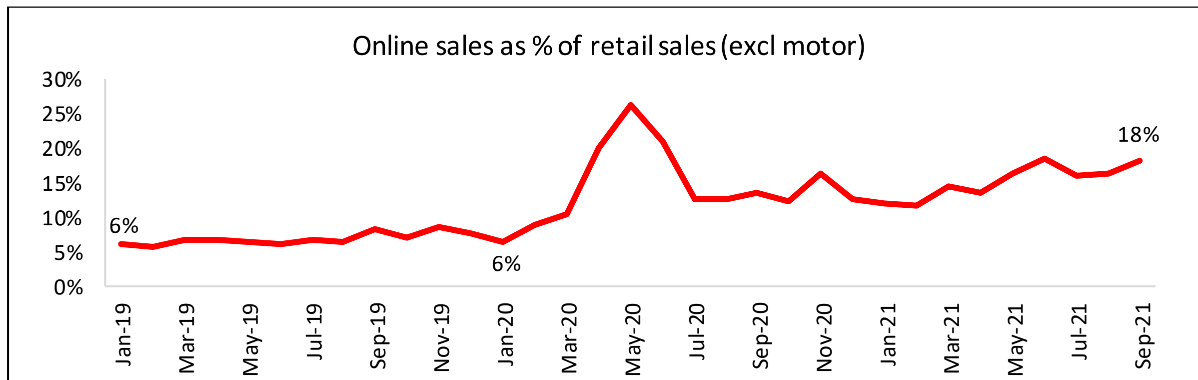
Figure 49: Department Stores, F&B, Optical Goods, Cosmetics, Apparel & Footwear are the hardest hit



Source: Singstat, OCBC

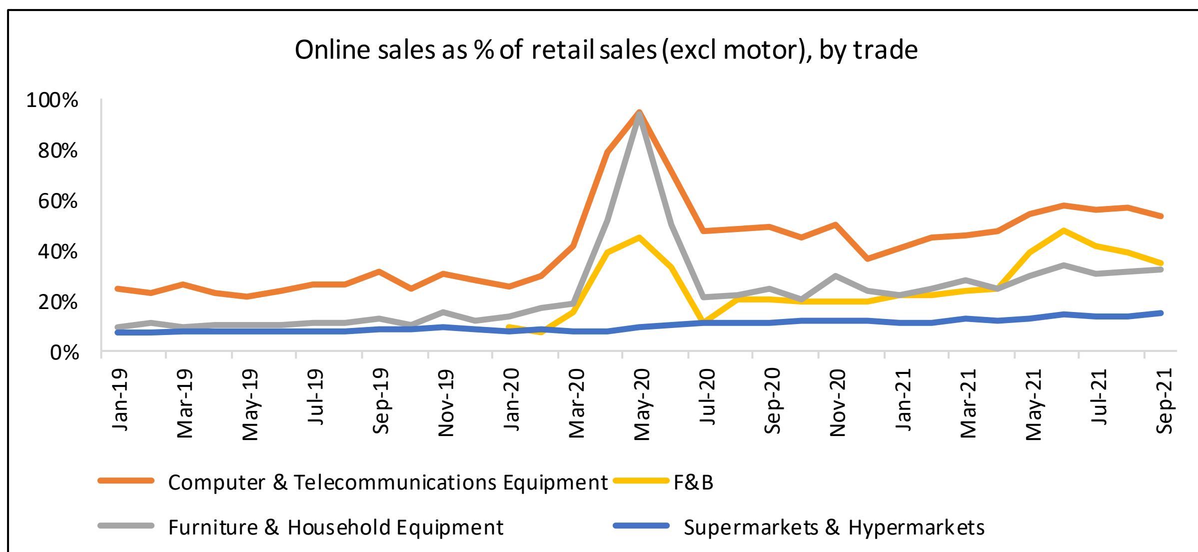
Fewer transactions done via physical stores: Retailers who focus solely on sales through physical stores face a double whammy in general. In addition to the shrinking retail market, online sales have been capturing an increasing share of the retail market. While online sales represented just ~6% of the total retail sales pre-pandemic, as of Sep 21 the representation has tripled to ~18%, helped by movement restrictions shifting consumer behaviour from offline to online purchase. We believe the shift in consumer behaviour towards online will likely stick even if movement restrictions end.

Figure 50: Shift towards online sales accelerated by the pandemic



Source: Singstat, OCBC

Figure 51: Most trades see an increasing shift in sales to online



Source: Singstat, OCBC

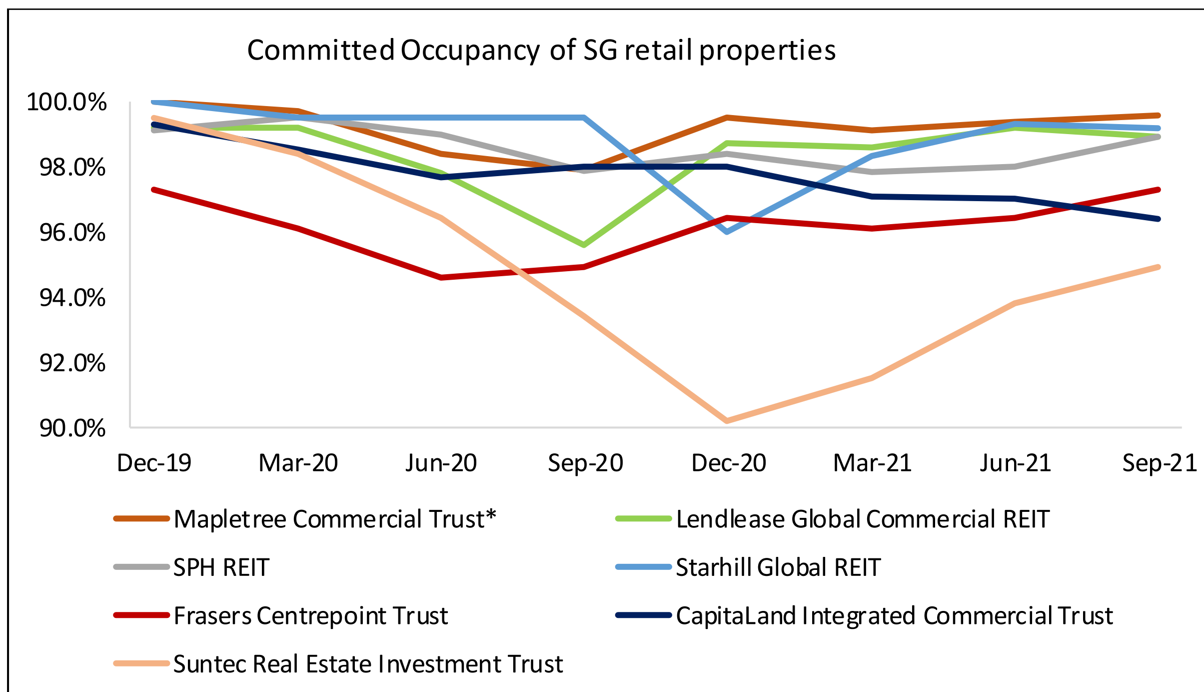
Significant impact to malls…: With a smaller amount and proportion of sales done via physical stores, mall occupancy costs (rent paid divided by sales) have likely risen significantly, and perhaps to levels that are difficult to sustain. To cushion the impact to tenants, the government has mandated landlords to provide 2 weeks of rental waivers to qualifying tenants (as part of co-sharing of rental support with the government). Although this has impacted the net rental income of malls, mall-owners benefit indirectly as tenants are kept afloat by keeping rentals more sustainable – we think rentals may have fallen more if not for the subsidies provided (together with the government). Separately, the code of conduct, which was introduced recently, to make lease terms fairer for tenants, has not had a significant impact since it applies only to new leases from 1st June 2021.

…with some impacted more than the others: Downtown malls have been impacted more than suburban malls as the former has been reliant on tourists (visitor arrivals to Singapore plunged) while the latter caters to locals. According to Savills, monthly rents in Orchard Area fell 4.8% q/q to SGD21.70 psf in 2Q2021, accelerating the gap from prime rents in Suburban Area which fell 1.9% q/q to SGD23.60 psf in the meantime. Although REITs hold higher quality assets, there is no shelter amidst the storm. CapitaLand Ltd's suburban portfolio recorded -3.8% rental reversion, while its downtown portfolio was impacted more with -14.3% rental reversion as of 9M2021.

REITs try to keep occupancy high at the expense of rental rates: Amongst the REITs we cover, the simple average Singapore retail occupancy rate fell to 96.7% as of 3Q2020 from 4Q2019's 99.2% as a number of retailers exited following the Circuit Breaker last year. We think that the fall in occupancy resulted in REITs changing tack to cut rentals in a bid to boost

occupancy, as evidenced by the subsequent reported double digit or near double digit decline in rental reversion. The impact to Singapore retail REITs is not surprising given that their tenant mix are generally geared towards food & beverage as well as apparels & footwear, which are amongst the hardest hit trade sectors. As of Sep 2021, majority of the REITs are still reporting negative rental reversion, though occupancy rate has partially recovered to a simple average of 97.9%. Separately, we understand that a small but increasing proportion of new or renewed leases are structured with variable rents (with lower fixed rents). While this should imply that REITs will face lower rental income stability and a lower upfront rent (given that retail sales have yet to fully recover to pre-pandemic levels), this should bolster occupancy by attracting a wider variety of tenants.

Figure 52: REITs suffered a dip in occupancy last year but have focused to bring occupancy back up



Source: Company, OCBC
* Occupancy rate of VivoCity

Keeping relevant in changing times: Although shoppers are making fewer transactions at the physical shop, shopping malls remain relevant with some makeover through embracing omnichannel retailing and adopting online-to-offline ("O2O") strategy. Several REITs have developed their own apps to target and retarget shoppers (e.g. vouchers, earn points, redeem rewards). Mall owners are facilitating purchases without the need to step into the mall (e.g. order online with delivery or self-pickup) and instead of competing against online channels, several retail landlords undertook campaign collaborations with e-commerce platforms (e.g. Lazada, Shopee). According to CapitaLand Ltd, O2O shoppers spend 44% more than pure offline shoppers. O2O shoppers are also younger than pure offline shoppers, thereby future proofing its retail business by capturing younger customers. For most REITs under our coverage, tenant mix has been refreshed to cater to the shifting consumer preference for new F&B concepts, activities and experience.

Still looking to grow, albeit with caution: Despite the industry headwinds, retail properties valuations have stayed mostly intact with few landlords looking to sell – a double edged sword for REITs as the valuation of their assets remain stable though acquisitions of retail assets in Singapore will be difficult. As such, REITs are looking to venture beyond Singapore for diversification and potentially higher yielding assets. Although most REITs see continued recovery in retail, helped by recent relaxation of movement restriction measures, uncertainties remain as the situation with the pandemic is fluid.

Singapore Industrial REITs – The Changing Nature of "Industrial"

Data centres becoming more mainstream for real estate investors: Until recent years, data centres which straddle the infrastructure as well as real estate investment asset classes was viewed as a niche part of the commercial real estate market. However, institutional funds such as traditional commercial real estate investors, sovereign wealth funds, and pension funds have moved into this segment, often partnering with data centre operators with specialist skillsets. Based on data by PGIM, a global asset manager active in the real estate, total transaction activity (including those made by corporates) for data centres averaged ~USD25bn per annum between 2017 and 2019. As a comparison, global commercial real estate investment transactions in 2019 and 2020 was USD1.1 trillion and USD833bn respectively per data by CBRE, a property consultancy and brokerage. This includes all commercial real estate including office, retail, industrial, hospitality and multifamily.

Large Singapore Industrial REITs are in data centres: In the case of Singapore REITs, two out of Singapore's "Big Three" industrial REITs, namely Mapletree Industrial Trust ("MINT") and Ascendas Real Estate Industrial Trust ("AREIT") has expanded into data centres. In October 2017, MINT announced the formation of a new joint venture with its Sponsor to buy 14 data centres in the US. This initial investment into data centres was followed by other data centre acquisitions, in the process changing the asset profile of MINT. As at 30 September 2021, 52.9% of MINT's SGD8.5bn of assets under management ("AUM") was in data centres. These data centres are mainly located in the US. In March 2021, AREIT completed a portfolio acquisition of data centres in Europe. Data centres was 9% of AREIT's asset portfolio as at 30 September 2021. Keppel DC REIT ("KDC REIT"), predominantly a data centre REIT listed in Singapore as of writing, increased its multi-currency debt issuance program to SGD2bn from SGD500mn in January 2021, although has yet to debut in the SGD bond market. Digital Core Realty Trust, a pure-play data centre REIT sponsored by Digital Realty Trust, listed on 6 December 2021. Digital Realty Trust is among the top three data centre colocation providers globally.

Figure 53: Announced Transaction Value in Data Centres among S-REITs

SGDbn	2019	2020	YTD
Mapletree Industrial Trust	1.0	0.6	1.8
Ascendas Real Estate Investment Trust	-	-	1.0
Keppel DC REIT	0.6	-	0.2
Total	**1.6**	**0.6**	**2.9**

Source: OCBC Credit Research calculation based on company announcements and SGX Research data; YTD as at 6 December 2021
Note: (1) Not including data centre transactions announced by business trusts, (2) Data based on announced dates rather than completion date

Every additional dollar raised by industrial REITs may go towards data centres: MINT's new investments have clearly tilted towards data centres. Since calendar year 2019, all of MINT's acquisitions were in data centres. We understand that all of the other Mapletree-Sponsored listed REITs will continue to focus on their current investment mandate, with MINT being demarcated to focus on data centres. MINT is targeting for data centres to make up two thirds of its AUM over the medium term. Overall, AREIT's new acquisitions and investment has been more diversified by property type where the REIT has also acquired logistics, offices and business parks over this three-year period, in addition to data centres. Geographically though, AREIT is clearly tilting towards overseas acquisitions.

Sector's growth is a structural trend globally although opportunities vary significantly: Rapid digitalisation including brought forward demand from the pandemic means that structurally the trend for the creation and storing data is intact on a global basis. However, data centres face supply-demand issues that is dependent on particular geographical markets. This means that whilst commercial property investors have a highly optimistic view on underlying demand for data centres, occupancy and lease rates differ by specific properties and locations. According to a report by Cushman & Wakefield, a property consultancy and brokerage that surveyed 48 different markets, vacancies in key data centre markets are low at less than 10% but secondary markets are generally at 18-20%. DC-North Virginia in the US is the largest data centre market globally with ~1.2 GW of data centres and another 300 MW in active development per data from Cushman & Wakefield. At 1.2 GW, this is 60% higher than Tokyo. Per Cushman & Wakefield, even though vacancy rates may be very low (for example, sub-3% in DC-North Virginia), operators may construct additional phases as soon as the current operational capacity is taken up, thus affecting vacancy rates.

Figure 54: Top Ten Data Centre Markets by Power Consumption

Existing Market Power (by MW)	Active Development (by MW)
DC-North Virginia, US	DC-North Virginia, US
Tokyo, Japan	Singapore
London, UK	London, UK
Shanghai, China	Sydney, Australia
Bay Area, US	Bay Area, US
Dallas, US	Frankfurt, Germany
Singapore	Dublin, Ireland
Frankfurt, Germany	Chicago, US
Chicago, US	Atlanta, US
Beijing, China	Nashville, US

Source: Cushman & Wakefield report published on 22 January 2021

Real estate investors may sub-out the day-to-day management: Traditional commercial property tends to last for decades and longer if major reconstruction and refurbishments are carried out. In contrast, data centres like other segments within the information technology sector tend to develop at a faster pace versus what commercial real estate investors are used to. Critical infrastructure (power supply, internet speed and reliability, network availability, heating, ventilation, and air conditioning ("HVAC") systems) are important to data centre tenants and require specialist skillsets. We observe no notable data centre management appointments at both the REIT Managers of AREIT and MINT. In our view, for now the REITs function more as real estate investors that mainly provide capital, where in practice they contract out the property and facility management to others, such as entities linked to the third-party vendors who sold them the data centres at the first instance. A parallel are REITs that own hotels, where day-to-day management of a property may be carried out by a specialist hotel manager (eg: Accor, IHG, Hilton).

Technology advancement moves at a rapid space: The technology for storing data itself is also constantly evolving. Despite the concept of cloud computing being introduced to the market 15 years ago, global quarterly revenue for the cloud infrastructure services market was estimated by market intelligence firm the Synergy Research Group at USD45.4bn in 3Q2021 (up 37% y/y) and USD164bn on a trailing 12-month basis. The rise of cloud infrastructure services has led to discussions over what will happen to standalone enterprise data centres, with some companies looking to exit. In November 2021, DatacenterDynamics ("DCD"), a trade publication, reported that Richemont, the luxury products company, will be moving its information technology infrastructure to the Amazon Web Services ("AWS"), in a cloud-first strategy. Earlier in September 2021, Lendlease Group announced that it will exit eight on-premises data centres by 2022, using Alphabet's Google Cloud as its only cloud services provider. Newer themes such as smaller data centres located closer to users and mobile data centres may yet shake up the data centre market.

High tenant concentration risk among cloud players: In our view, data centres face a higher concentration of tenants versus traditional commercial property given that a small number of companies are among the largest tenants in data centres. We note that large tenants have the capabilities to develop and manage their own data centres, which means potentially cancelling their leases when their own properties are built. This happens with traditional commercial properties as well, although tenants in traditional commercial properties tend to come from diverse industry sectors and see property ownership as non-core to operations. On the flipside, the counterparty credit risk of such large tenants are frequently high grade. Per the Synergy Research Group, 63% of the cloud infrastructure services market share (by 3Q2021 global revenue) was attributable to only three companies Amazon, Microsoft and Alphabet. The next ten companies collectively take up another 22% of the market share. As another indicator that market power will become even more entrenched, Amazon, Microsoft, Alphabet and Facebook have been investing directly in subsea cables to strengthen network infrastructure, giving users a better experience for cloud applications. These include Bifrost, Echo and Apricot, announced in 2021.

Colocation providers more fragmented but consolidation happening: Data centre operators who operate colocation data centres are also major tenants for data centre owners. The users in colocation space includes cloud companies as well as financial services, insurance, healthcare, social media, gaming, government, education and other industries. The market for colocation operators is more fragmented, with the top 15 companies accounting for around half of the market according to Structure Research, a research firm focusing on the cloud and data centre market in January 2021. According to Structure

Research, Equinix, the largest operator has 11.1% of market share. Equinix's revenue in 2020 was USD6bn, implying that the total market size by revenue is ~USD54.0bn. We note though that consolidation is happening among larger players in this market. In November 2021, American Tower Corp announced the USD10.1bn acquisition of CoreSite Realty Trust while KKR and Global Infrastructure Partners will be buying CyrusOne for USD15bn.

Green is expected among tenants: With data centres being electricity guzzlers, sustainability is also a key concern among regulators and tenants. We expect green data centres to be a mainstream requirement in the medium term. This is compounded by the high tenant concentration among data centres. Major users of data centres who already have a stated sustainability goal for data centres include Amazon, Alphabet, Microsoft, Apple and Facebook. According to a written answer to a parliamentary question, the Ministry of Trade and Industry ("MTI") shared that data centres consumed ~7% of Singapore's total electricity consumption in 2020. This was ~5.3% in 2019. Due to sustainability concerns, a temporary moratorium on the construction of new data centres was imposed in Singapore since 2019. Industry players were informed but the decision was not highly publicized. However, we observe that data centres under development could still go ahead. For example, a SGD1.4bn Facebook-owned data centre in Singapore is set to commence operations in 2022. The data centre was announced in September 2018 and expected to be fully powered by solar.

Figure 55: Key Types of Data Centres

Type	Brief Description
Enterprise data centres	• Built, owned, and operated by companies as the user. • Optimized for that company. • Often housed on the corporate campus.
Managed services data centres	• Data centres managed by third parties on behalf of a company. • End user leases equipment and infrastructure.
Colocation data centres	• End user rents space within a data centre owned by others • Colocation data centre hosts the infrastructure while users provide and manage the components, including servers, storage, and firewalls.
Cloud data centres	• Data and applications are hosted by a cloud services provider.

Source: Summarised from Cisco information

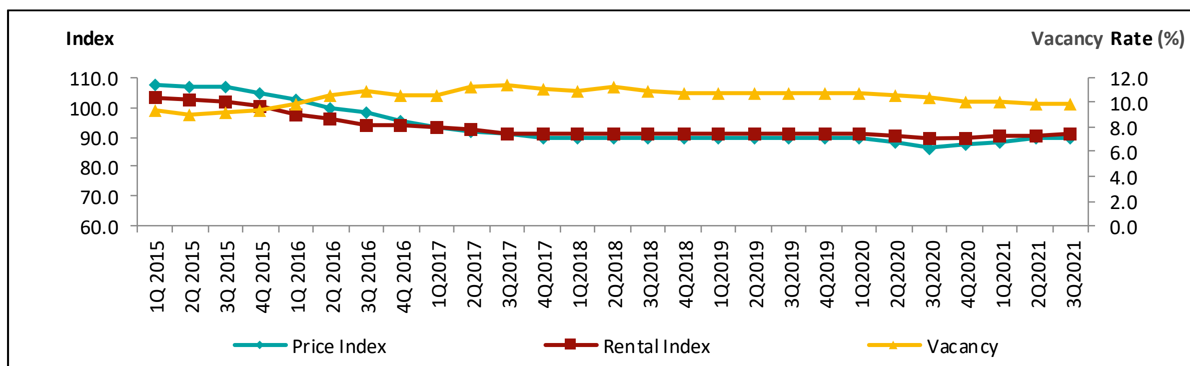
Figure 56: Key Tenants

Type	Brief Description
Hyperscale cloud providers	• Large users of data centre capacity. • Cloud service providers are providing an alternative to companies for their data and computational needs. • These companies are also owners and managers of data centres. • Key companies: Amazon, Microsoft, Alphabet, Oracle, IBM, Alibaba, Tencent
Colocation / IT Solutions Providers	• Provides companies with private colocation options to manage sensitive data. • Also offer managed services. • These companies are also owners and managers of data centres. • Key companies: Equinix, Digital Realty Trust, NTT, China Unicom, China Telecom
Social media companies	• High level of content created and shared from the rise of social media • These companies are also owners and managers of data centres. • Key companies: Facebook, LinkedIn (owned by Microsoft), YouTube (owned by Alphabet)

Source: Summarised from DataHawk information, Structure Research, OCBC Credit Research

Away from data centres, Singapore industrial property was resilient in 9M2021: The Singapore industrial property segment was resilient in Singapore in 2021 for similar reasons to 2020 where operations taking place in the properties were less disrupted versus commercial property (offices and retail) and hospitality. Per JTC's 3Q2021 market report, sector-wide rents increased 0.7% q/q in 3Q2021, and this was up by 1.9% y/y. All key sub-segments saw rental increases q/q, particularly warehouses which increased by 1.7% q/q (2.6% y/y), which is high for industrial property. Sector-wide vacancy was stable q/q at 9.9% (3Q2020: 10.4% and 3Q2019: 10.7%). On a y/y basis, the price index rebounded in 9M2021, with 3Q2021 recording a 3.9% y/y increase. While transactions in the investment sales market measured by numbers of caveats lodged was low in 9M2020, this had rose to 320 transactions by 3Q2020 and was even higher than 3Q2019 (pre-COVID). The market continued to be active in 9M2021, with 411 caveats lodged in 3Q2021, increasing 28% y/y.

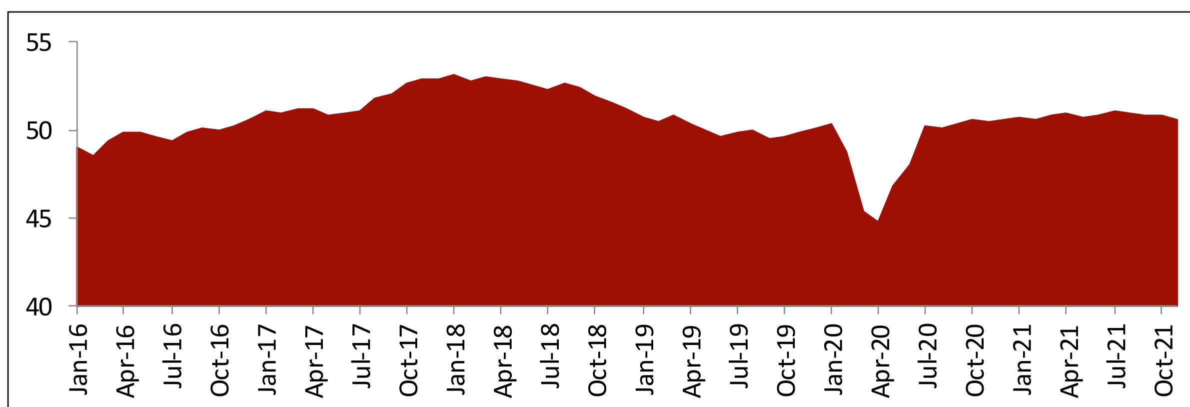
Figure 57: Industrial Price, Rental and Vacancy



Source: JTC, OCBC Credit Research

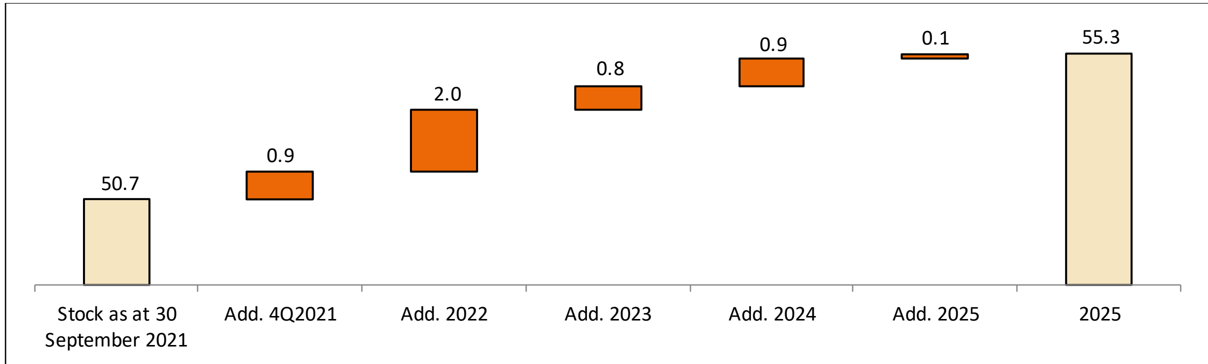
Actual supply likely to be lower than potential supply: Currently, JTC is projecting significant upcoming supply in 4Q2021 of 0.9mn sqm and 2.0mn sqm in 2022 versus 1.1mn sqm on average per year in 2017 to 2019. However, in our view actual completion is highly dependent on whether the labour supply crunch persists amidst a challenging outlook for the construction sector which is also facing higher costs in material and shipping. At the end of 4Q2020, 2.7mn sqm of new space was projected to come online in 2021. However, only ~0.7mn sqm was actually added in 9M2021. We continue to expect some spill-over and in our view, new supply is unlikely to be an issue in the next 12 months for existing industrial property owners.

Figure 58: Singapore PMI – Manufacturing Index



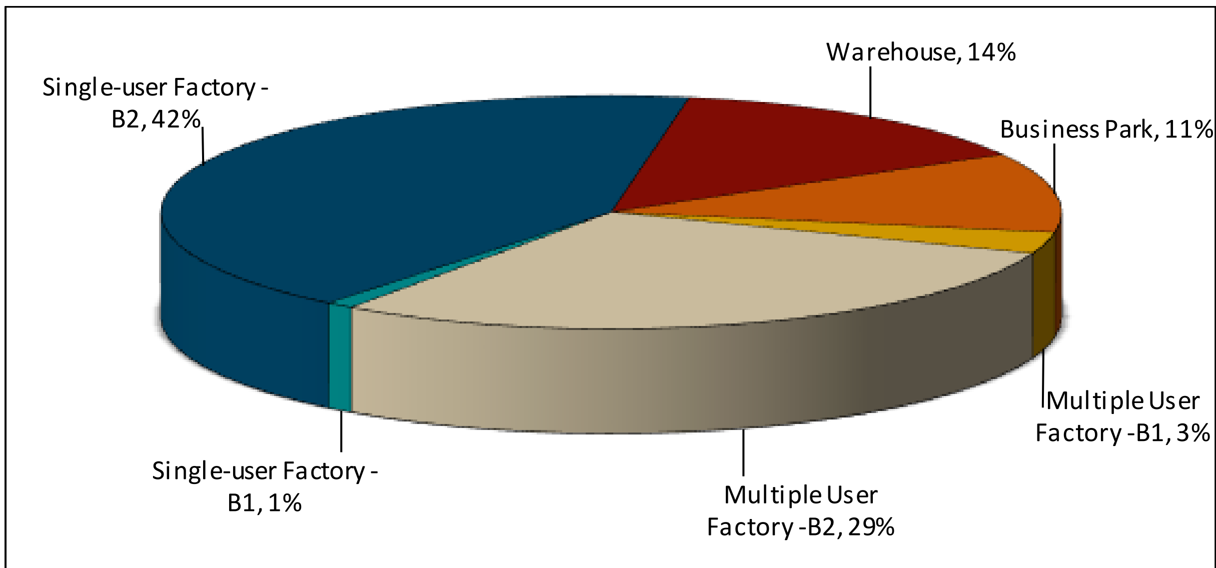
Source: Bloomberg

Figure 59: Industrial Stock and Supply Pipeline



Source: JTC, OCBC Credit Research

Figure 60: Additional supply by sub-segment from 4Q2021 to 2025



Source: JTC, OCBC Credit Research

OCBC Bank

Singapore Hospitality REITs – Evolving Situation Until Pandemic Under Control

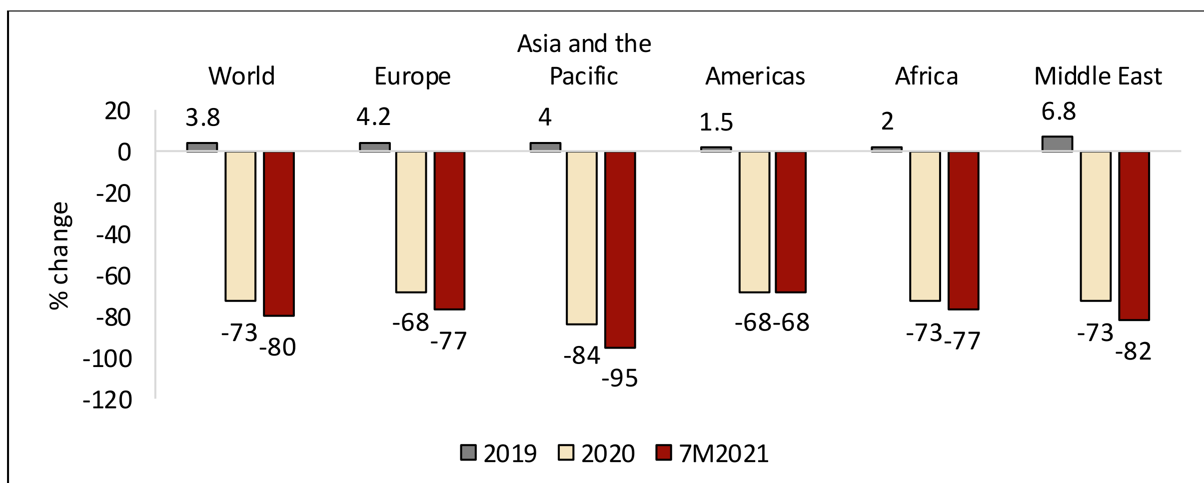
Outlook was brightening before Omicron: The pandemic had posed an unprecedented challenge to the travel and hospitality industry. However, the outlook was brightening in the past few months. In a November 2021 report jointly published by the World Tourism and Travel Council ("WTTC"), a trade group and Trip.com, an online travel agency, domestic spending drove travel spending in 2021. However, the WTTC in October 2021 projected international travel spending to supersede domestic travel spending in 2022 as more geographies ease travel restrictions and vaccination rates increase. The WTTC was projecting a 9.3% y/y increase in international travel spending in 2021 and a significant increase by 93.8% y/y in 2022. In 2020, international travel spending had declined 69.4% y/y. As the Asia-Pacific region was a laggard in 2021, the growth rate projected for 2022 was at 148% y/y.

We expect people want to travel for leisure, but business travel is less clear: Based on our observations of Singapore Airlines Limited's forward booking numbers after vaccinated travel lanes ("VTL") were announced, recovery in actual US and China's domestic travel volumes and other surveys on sentiment, our base case is that travel demand remains strong, particularly for leisure. However, actual spend has been curbed by travel restrictions imposed and on-going concerns over the pandemic.

For business travel, the picture is less clear as we have adapted to virtual meetings. Before the pandemic, it was par for course for external meetings and conferences to be conducted face-to-face. However, the pandemic has shown us that workers have adapted well to virtual meetings, even those involving external parties. For example, investor and due diligence meetings are now routinely carried out virtually. The Global Business Travel Association ("GBTA"), a trade group, projects that business travel has grown by 14% in 2021 from 2020 and may increase 38% y/y in 2022, with global business travel spend recovering to more than USD1 trillion.

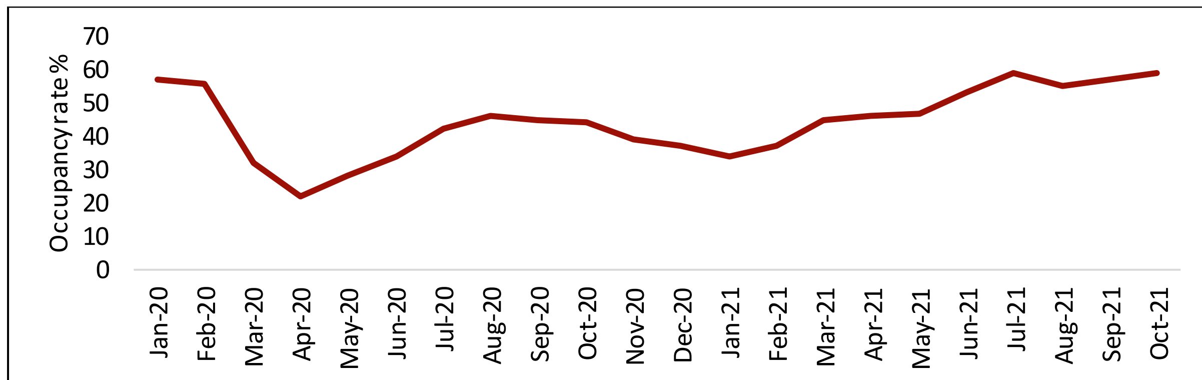
Non-essential business travel may fall: We think there will be some structural shift in business travel demand where business travel will be concentrated on functions that are harder to replicate in a virtual environment. For example, high level sales and development, client management, strategy setting among company senior management and complex learning and development activities. Despite the more upbeat outlook from the Hospitality REITs we cover, we are hard pressed to think that companies would want to spend on non-essential business travel for meetings that can be done efficiently online. In September 2021, Bloomberg reported on a survey that it carried out among 45 major global companies on business travel. 38 of these companies plan to spend less on-air travel post-pandemic.

Figure 61: Change in International Tourist Arrivals



Source: UNWTO
Note: 7M2021 refers to provisional data (% change over 2019)

Figure 62: Global Hotel Occupancy Rate

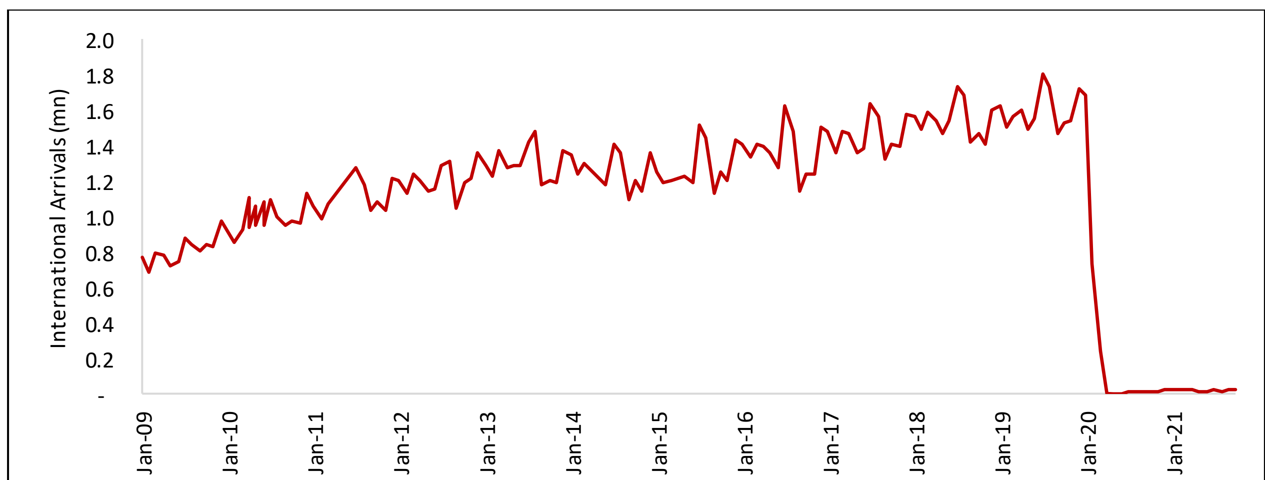


Source: STR

Singapore taking a lead in reopening but inbound travellers unlikely to come back in a big way yet: Singapore was the first country in the Asia-Pacific region to introduce VTLs in September 2021, a landmark move that reaffirmed Singapore's position as an international hub and re-establishing much needed ties with the rest of the world. The VTLs brought about optimism for the travel and hospitality industry in Singapore. From only two VTLs with Brunei and Germany, as at 26 November 2021, 25 other VTLs have been announced. However, on 29 November 2021, three of these VTLs (including the international travel hubs of Qatar and the UAE) had been deferred due to rising concerns over the Omicron variant. Potentially other variants could also derail the reopening.
In our experience, the VTLs are a significant improvement over the previous quarantine system for travellers although actual activity is still hampered by rapid changes in travel regulations, restrictive terms and conditions on VTLs and where China's international borders have not yet reopened. New ticket sales on the VTL have been suspended from 23 December 2021 to 20 January 2022 while from 21 January 2022 onwards, VTL quotas will also be reduced. This means that while the VTL remains, actual capacity of inbound travellers into Singapore will be lower than originally planned.

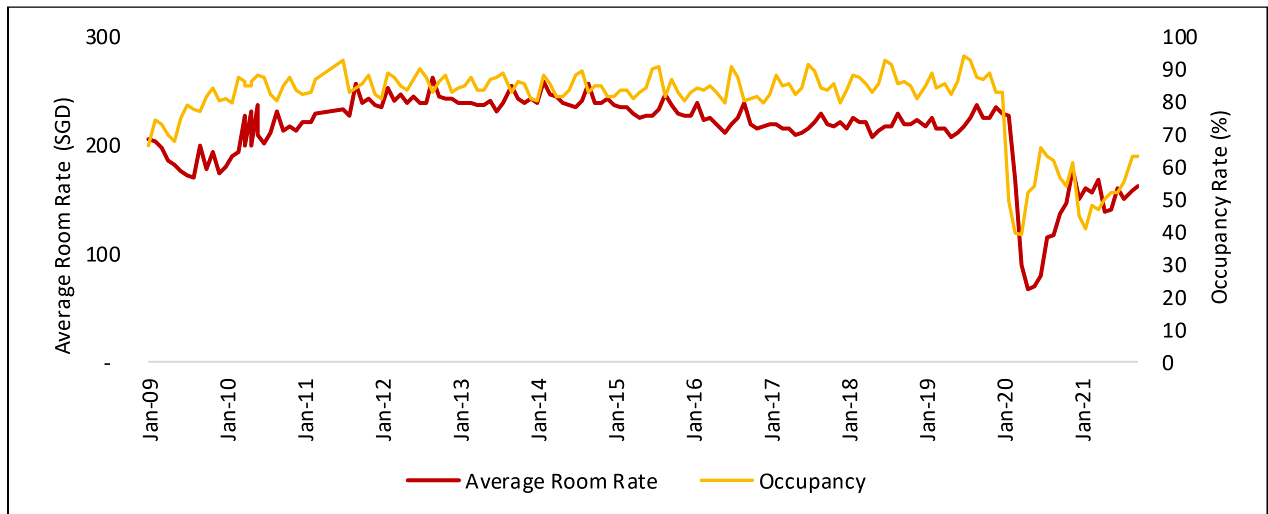
The travel and hospitality industry in Singapore is highly reliant on intra-Asia-Pacific travel. China, the biggest source market for Singapore by number of travellers before the pandemic is unlikely to open its borders with other countries in the short term as it remains firm in its zero-COVID strategy that prioritizes public health over other considerations. At Changi Airport, November 2021 passenger volumes was 395,000 versus 111,000 during the same time last year. The Straits Times, quoting the managing director of air hub development at Changi Airport Group, reported that the number of passengers passing through the airport was 6-7% of pre-COVID-19 levels for November 2021.

Figure 63: International Visitor Arrivals to Singapore



Source: Singapore Tourism Board

Figure 64: Singapore Historical Average Room Rate and Occupancy



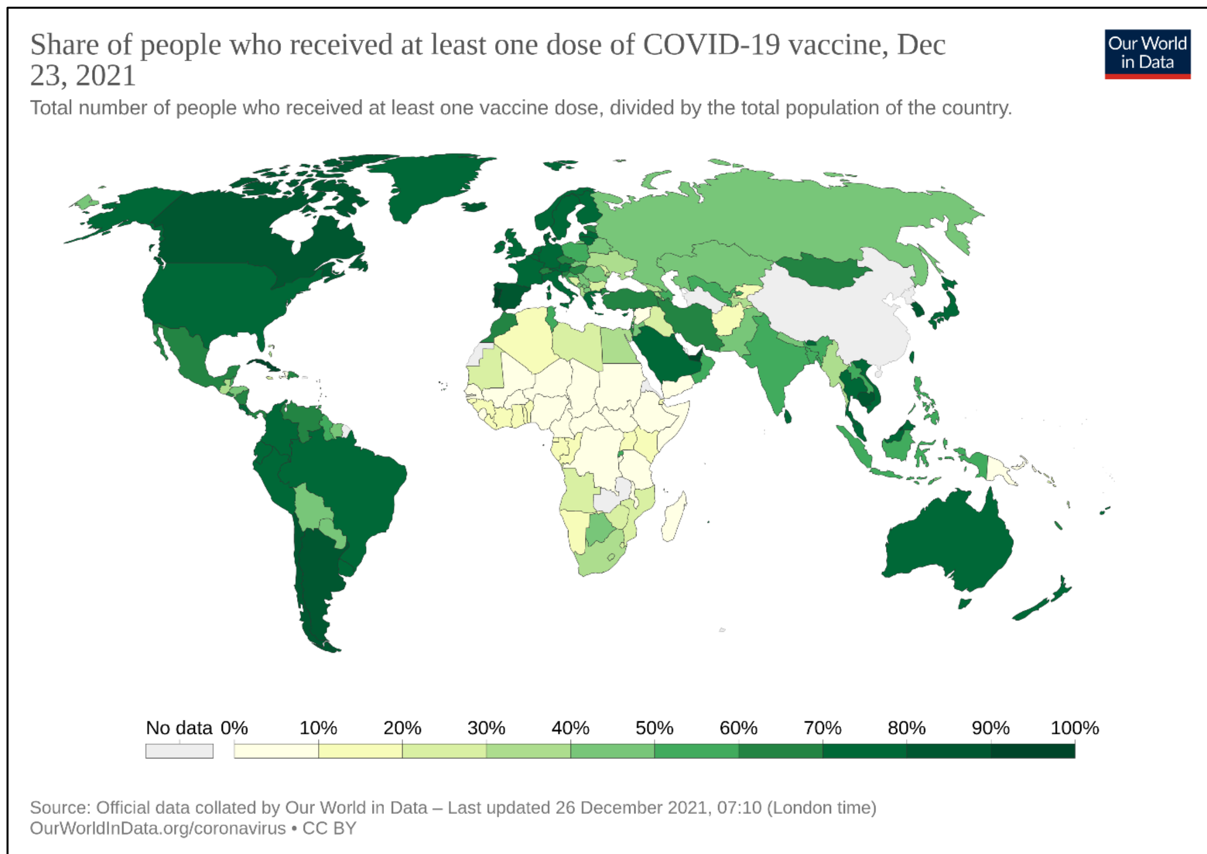
Source: Singapore Tourism Board

Travel recovery likely to be in fits and starts: In our view, until the pandemic is fully under control globally, we are more likely to see the travel and hospitality industry recover in fits and starts from immediate reactions by governments to restrict travel. Would-be travellers may also change their plans due to heightened safety concerns.

It is worth recalling that the science says that the virus will keep evolving when it gets transmitted. While there is much that we still do not know about Omicron, studies have shown that transmissions can be reduced with vaccination. However, vaccination coverage is still highly uneven globally, from lack of access as well as resistance against vaccination for a myriad of reasons.

Hospitality properties need to be flexible: Even before Omicron, industry specialists have opined that we should expect shorter lead times on travel bookings with flexibility being demanded. According to a study done by Skift (a trade publication for the travel and hospitality industry) and Oracle in 2020, 76% of travellers said that they would be more likely to book a hotel with flexible cancellation and refund policies. According to Trip.com data, hotel booking windows was only 10 days in 1H2021 versus 32 days before the pandemic in 1H2019.

Figure 65: Vaccines Administered Globally



Higher awareness of sustainability to impact business travel: Away from the pandemic, there is now a higher awareness that air travel is a key contributor to carbon emissions, and we think this may pose a medium-term headwind to business travel, particularly if these are non-essential. The UK arm of PwC, a global network of professional services firms, acknowledges that business travel to visit client sites is necessary as part of their work. However, it also specifically targets to reduce emissions from business travel per employee as part of its sustainability commitments. Skift reports that HSBC, Zurich Insurance, Bain & Company and S&P Global are also targeting to cut emissions from business travel. While the direct impact is on air travel demand, it can negatively impact properties that cater to business travellers.

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Singapore Residential Property – Speed Humps, not Speed Bumps

We published our Singapore residential sector update in the OCBC 1H2022 Global Outlook (pg 75) on 6 Dec 2021, 10 days prior to the 16 Dec 2021 property cooling measure. With 3Q2021 property prices rising by 7.8% y/y (which is in-line with our full-year forecast of 7-10% price growth that was revised upwards from the previous forecast of 5-8% as mentioned in the 2021 Credit Outlook) and factors that drove the growth in 2021 remaining (e.g., increasing wealth of Singaporeans, aspirations to upgrade, looming supply crunch), we forecasted prices to grow by 5-7% in 2022.

Move to cool the property market…: The government's latest property cooling measures are targeted to ensure housing affordability and dampen investment demand through:

- Raising the Additional Buyer's Stamp Duty ("ABSD") for Singapore Citizens ("SCs") and Singapore Permanent Residents ("SPRs") who are buying their 2nd and subsequent properties. ABSD is also raised for foreigners and entities (including developers).
- Tightening the total debt servicing ratio ("TDSR") from 60% to 55%.
- Imposing loan-to-value ("LTV") limit of 85% for HDB units.

Table 5: ABSD raised significantly except for first residential property of SCs and SPRs

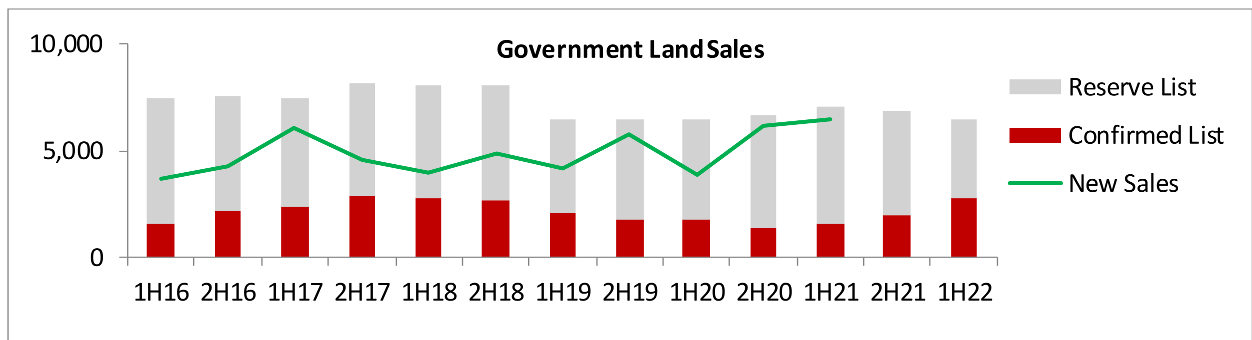
Additional Buyer's Stamp Duty Rates from 6 July 2018 to 15 December 2021		Rates from 6 July 2018 to 15 December 2021	Rates on or after 16 December 2021
Singapore Citizens	First residential property	0%	0% (No change)
	Second residential property	12%	17% (Revised)
	Third and subsequent residential property	15%	25% (Revised)
Permanent Residents	First residential property	5%	5% (No change)
	Second residential property	15%	25% (Revised)
	Third and subsequent residential property	15%	30% (Revised)
Foreigners	Any residential property	20%	30% (Revised)
Entities	Any residential property	25% [2] (Plus additional 5% for Housing Developers [3] (non-remittable [4])	35% [5] (Revised) (Plus additional 5% for Housing Developers [6] (non-remittable) [7])

Source: MAS

…were not surprising and the impact on the market may be limited: We anticipated the government to act given the potential for divergence between price growth and GDP growth, which we cited in our 1H2022 Global Outlook publication. In addition, we think that the current measures will not sufficiently dampen demand in the housing market. While the new property cooling measures may stave off demand from foreigners which were beginning to return, the impact on first-time homebuyers and HDB upgraders are limited (a mere 5% increase in TDSR and 5% decrease in LTV for HDB), and this group has been cited by several developers as a significant source of demand in the housing market. As the factors driving the market in 2021 should continue into 2022, and the impact of the latest property cooling measures may be limited with respect to housing demand, we retain our forecast of 5-7% price growth in 2022.

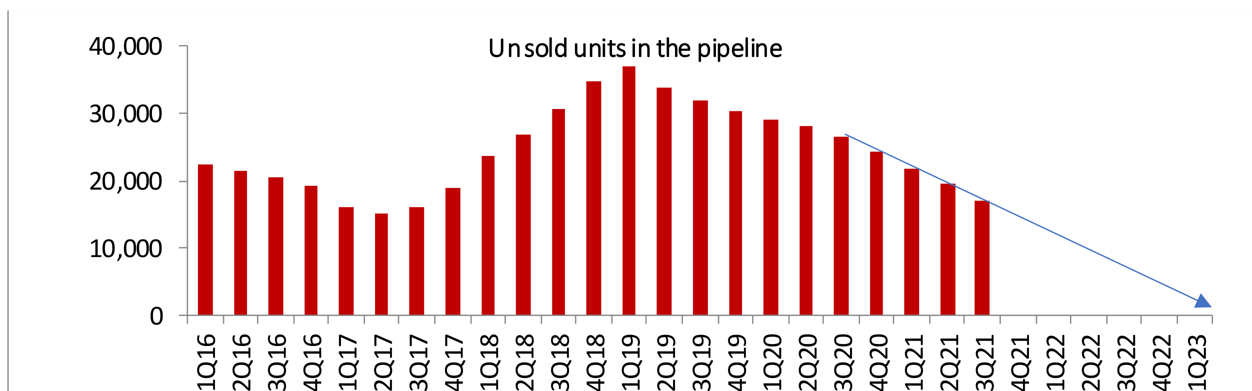
Not enough has been done to alleviate near to medium term supply: Although the government has increased the confirmed list of land sales by almost 40% h/h to 2,785 units as of 1H2022, we retain the view that this is too little and likely too late (Mid-Year 2021 Credit Outlook, pg lxi) to impact the near-term property market dynamics. New sales as of 1H2021 was close to 6,500 units, which dwarves the supply from Government Land Sales. In addition, the move by the government to hike ABSD for developers to 35% (albeit 30% is remittable) will likely nip in the bud the recent mini revival of the collective sales market, which is the other significant source of land supply. Already, Shun Tak, a leading Hong Kong conglomerate with core businesses in property, transportation, and hospitality, has walked away from its proposed SGD556mn en-bloc for High Point, forfeiting its SGD1mn tender deposit.

Table 6: Increase in confirmed supply is a drop in the ocean relative to new sales



Source: URA, MND, OCBC

Table 7: Still heading towards a supply crunch unless supply increases faster



Source: URA, OCBC

Tapping out of the Singapore property market: Despite rising property prices, Singapore is becoming a less attractive market for property development. In the words of Oxley Holdings Ltd, "profit margins of property development projects in Singapore are expected to decline... intends to focus... in developed countries... that generate higher profit margins". We observe similar trends across other developers such as CapitaLand Ltd and Frasers Property Ltd, which have a much smaller landbank in Singapore as the focus has been shifted to other geographies and other asset classes. Simply put, the rise in construction cost and labour cost (as a result of the pandemic) and land cost have accelerated beyond the rise in property prices. The reminder of property cooling measures (with perhaps more to come) and dampened profitability may prompt the remaining developers to reconsider their business profiles.

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Positive ("Pos") – The issuer's credit profile is either strong on an absolute basis or expected to improve to a strong position over the next six months.

Neutral ("N") – The issuer's credit profile is fair on an absolute basis or expected to improve / deteriorate to a fair level over the next six months.

Negative ("Neg") – The issuer's credit profile is either weaker or highly geared on an absolute basis or expected to deteriorate to a weak or highly geared position over the next six months.

To better differentiate relative credit quality of the issuers under our coverage, we have further sub-divided our Issuer Profile Ratings into a 7-point Issuer Profile Score scale.

IPR	Positive		Neutral			Negative	
IPS	1	2	3	4	5	6	7

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Overweight ("OW") – The bond represents **better relative value** compared to other bonds from the same issuer, or bonds of other issuers with similar tenor and comparable risk profile.

Neutral ("N") – The represents **fair relative value** compared to other bonds from the same issuer, or bonds of other issuers with similar tenor and comparable risk profile.

Underweight ("UW") – The represents **weaker relative value** compared to other bonds from the same issuer, or bonds of other issuers with similar tenor and comparable risk profile.

Please note that Bond Recommendations are dependent on a bond's price, underlying risk-free rates and an implied credit spread that reflects the strength of the issuer's credit profile. Bond Recommendations may not be relied upon if one or more of these factors change.

Other

Suspension – We may suspend our issuer rating and bond level recommendation on specific issuers from time to time when OCBC is engaged in other business activities with the issuer. Examples of such activities include acting as a joint lead manager or book runner in a new issue or as an agent in a consent solicitation exercise. We will resume our coverage once these activities are completed. We may also suspend our issuer rating and bond level recommendation in the ordinary course of business if (1) we believe the current issuer profile is incorrect and we have incomplete information to complete a review; or (2) where evolving circumstances and increasingly divergent outcomes for different investors results in less conviction on providing a bond level recommendation.

Withdrawal ("WD") – We may withdraw our issuer rating and bond level recommendation on specific issuers from time to time when corporate actions are announced but the outcome of these actions are highly uncertain. We will resume our coverage once there is sufficient clarity in our view on the impact of the proposed action.

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OCBC Credit Research team would like to acknowledge and give due credit to the contributions of ***Alvin Song Zhiliang*** *and* ***Liu Hongying****.*

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