

Wealth Weekly

Adding Chips to the Menu

WEALTH MANAGEMENT RESEARCH

wmr@forsythbarr.co.nz

+64 4 499 7464

Most equity markets, apart from China's, ambled lower last week as enthusiasm for the US mega-cap technology stocks waned more than it waxed. The week started well with a flurry of merger & acquisition announcements, including from Gilead Sciences and Nvidia. Snowflake had a spectacular market debut. The Federal Reserve spoiled the party with a more cautious view on the economy than markets were hoping for. The US-China row over technology continued; Oracle's partnership with TikTok gave it a boost before the US threw a spanner in the works on Friday, only for Trump to smooth things over during the weekend. Brexit acrimony continued while rising COVID-19 cases prompted renewed restrictions in the UK. FedEx, European apparel retailers Inditex, H&M and Next, and Tourism Holdings and Fonterra all reported creditable results.

Chips for adventurous portfolios

The use of semiconductors is set to increase as the world becomes increasingly digital through the adoption of 5G mobile communications technology and artificial intelligence. **Last week we published [Semiconductors: Technology's Not-So-Fat Conductor](#), explaining what semiconductors are and how the industry works, and outlining our preferred stocks in the sector.**

Semiconductor fabrication takes place at a microscopic level, demanding significant innovation and expenditure on capital equipment. Similar to the products, the industry itself is also highly complex. Companies operate under different business models – some opt for vertical integration while others choose to specialise, and supply chains stretch the entire globe. Those supply chains could get a shake up if tensions between the US and China over the latter's proclivity for intellectual property theft leads to increased trade barriers on chip technology. The sector is prone to volatile cycles as it is. **But if we look through near-term inventory build-ups and political risks, we see a positive long-term future for this industry.**

For investors who are prepared to ride the industry's ups and downs, our preferred exposures within the semiconductor supply chain are **Intel, NVIDIA, Qualcomm and Taiwan Semiconductor Manufacturing Co** (widely known as TSMC).

Themes of the week

Since the first developed market central banks adopted inflation targeting as their prime objective three decades ago, bond yields have been in a secular decline. Over that time the fixed income assets in balanced portfolios have consistently delivered income and diversification (bond yields typically fell and bond prices rose during periods when equity markets declined). **With bond yields now hovering at the lowest levels in millennia (no exaggeration), the capacity of bonds to provide income and an offset to equities is diminished. With this outlook, we have reduced our recommended exposure to fixed income assets to a neutral level, and increased the recommended exposure to Australasian equities.**

The Reserve Bank's potential plan to directly fund the banks could mean they no longer need to compete for retail funds to the extent that they did in the past, which seems likely to lead to lower term deposit rates. That could force bank savers to either tighten their belts further, accept that their savings will be diminished by inflation over time, or find riskier ways to generate returns.

Looking ahead

On Wednesday the **Reserve Bank of New Zealand** will release its Monetary Policy Review (formerly known as the OCR announcement but nowadays also including decisions on a wider array of policy tools). The central bank is expected to leave rates unchanged but continue to indicate it is working towards negative interest rates and direct funding of banks, and may try to talk down longer-term yields. Fed Chair Powell will testify before Congressional and Senate committees on Wednesday, Thursday and Friday (NZ time). **Tesla's** hotly anticipated Battery Day will follow its AGM on Wednesday morning. **Nike** and **Kathmandu** (Wednesday) and **Costco** (Friday) are among companies expected to report earnings this week.

Semiconductors

Making sense out of chips

What are semiconductors?

Semiconductor chips are the ubiquitous enablers of modern electronics. Sometimes referred to as integrated circuits or microprocessors, they are found in your car, computer, phone, and wearables — just to name a few applications.

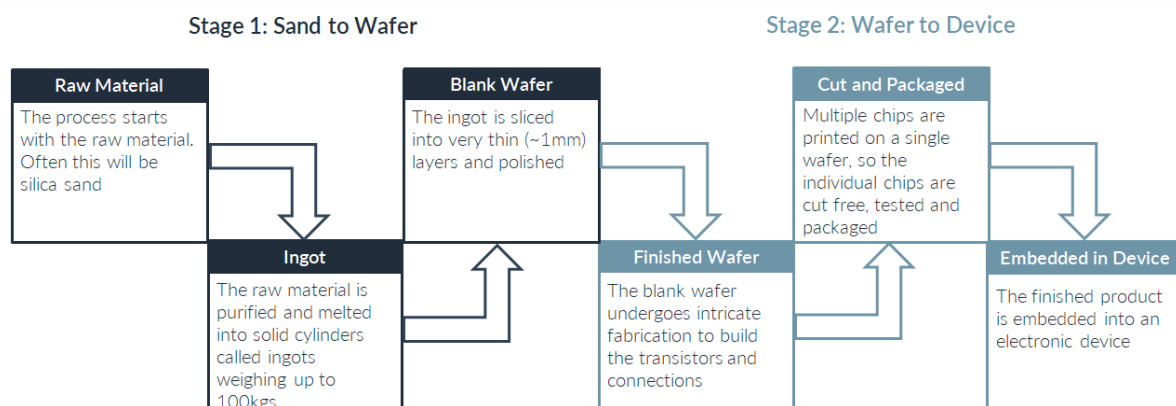
The term semiconductor refers to the moderate degree to which the material that chips are printed on (silicon) conducts or inhibits electrical currents. Making microscopic alterations to this material (known in the industry as doping) to create on/off switches (transistors) enables control over the flow of electricity. Connecting millions of these switches/transistors together creates an integrated circuit in which the transistors work in concert, continually switching states between the on and off setting to help computers or devices complete calculations quickly.

Computers need millions or even billions of transistors to complete tasks. The smaller the size of transistors, the more of them can be fit on a chip, and the stronger the chip's computing power becomes. Leading-edge technology can produce transistors around 5–7nm (1 nanometre = 0.000000001 metres). For context, the 7nm semiconductor chip manufactured by TSMC has approximately 100 million transistors per square mm, each one being 100,000 times smaller than the width of single human hair.

How are semiconductor chips produced?

The microscopic scale of construction makes the process of designing and fabricating chips intricate and complex (Figure 1).

Figure 1. Chip making process



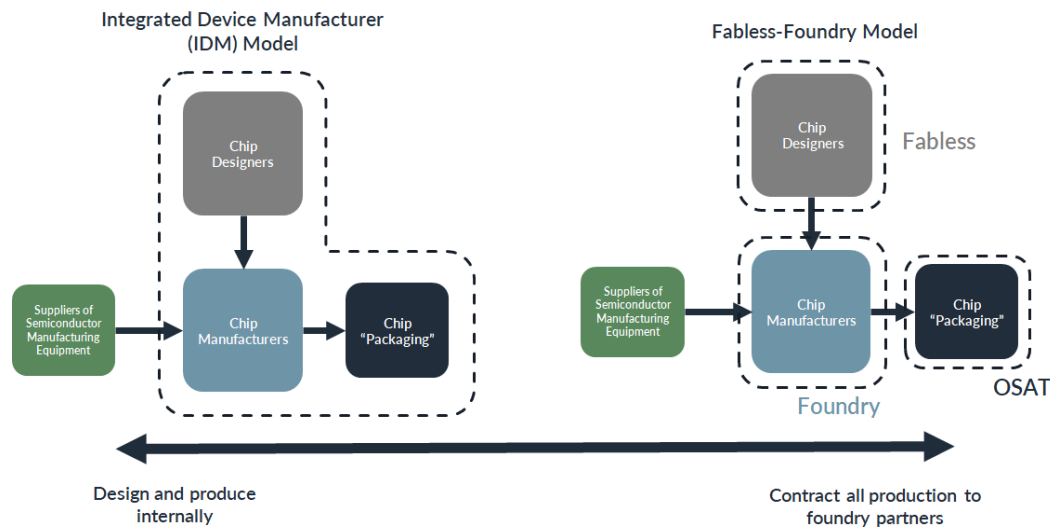
Source: SIA, Forsyth Barr analysis

Industry dynamics

Three key considerations when investing in the semiconductor industry are the shifting business model, industry cycles and drivers for growth.

Shifting business model: An easy mistake for investors to make is to directly compare companies that occupy different parts of the value chain — it's like comparing Uber to General Motors and Hertz. Historically, semiconductor companies designed, manufactured and packaged chips; this is known as the integrated device manufacturer (IDM) model. Intel has been an example of an IDM. There has been an increasing shift towards what is known as a "Fabless-Foundry" model. In the Fabless-Foundry model, companies that design chips (like Nvidia) outsource the fabrication to foundries (like Taiwan Semiconductor aka TSMC), and the testing and packaging to outsourced assembly and test (OSAT) companies. The premise is that specialisation yields better results and greater efficiency. Some companies adopt a hybrid model, choosing to outsource only a portion of fabrication — Intel is now going down that track. Semiconductor equipment makers like ASML supply chip-making machines to foundries/IDMs.

Figure 2. Chip-making business models



Source: Forsyth Barr analysis

The different requirements of these different parts of the supply chain lead to different challenges. Foundries like TSMC face large capital expenditure requirements (c.40% of revenue). In contrast, fabless chip designers like NVIDIA don't have to invest as much in equipment but have to spend heavily on R&D to innovate.

Industry cycles: The semiconductor industry is notoriously cyclical due to inventory cycles and end-user demand shocks. It's not uncommon to see share prices drop by -50% in a down cycle. When inventory consistently outgrows revenue, companies are forced to sell inventory at reduced prices and we observe weakness in share prices; the opposite is true when revenue growth exceeds inventory growth. End-user demand shocks occur when new technology or recessions change demand for types of chips.

Geopolitical friction between the United States (a significant supplier of chip-related technology and a big importer of products that contain them) and China (a major tech product assembler and striving player in high tech development) threaten to tangle up some supply chains and inventories.

Given the industry's cyclical nature, investors have to be prepared to take a long-term view and ride out the ups and downs (or else try to time the cycle).

Drivers of growth: The world is now in the early-stages of substantial technology-driven change, welcoming in the era of digital transformation and artificial intelligence. Breakthrough applications in the areas of virtual/augmented-reality, the Internet-of-Things, 5G connectivity, Industry 4.0, quantum computing, autonomous vehicles and smart cities are slowly becoming commercially viable. These breakthroughs are positive indicators for semiconductor chip demand.

Company profiles

Our preferred semiconductor companies are Intel, Nvidia, Qualcomm and Taiwan Semiconductor/TSMC.

Intel (INTC.O): INTC is the world's largest and highest valued semiconductor chip manufacturer based on revenue and the world's #1 microprocessor supplier for desktop PCs, notebook PCs, and servers with approximately 92% market share. Despite reported delays in their advanced manufacturing technology, we believe Intel (INTC.O) is well positioned to recover and improve the execution of their manufacturing operations.

NVIDIA (NVDA.O): NVDA is a market leader in the development of graphics processing units (GPUs). This core strength positions NVDA well to transition from its past focus on PC components to providing diverse gaming, data centre, and automotive software platforms.

Qualcomm (QCOM.O): QCOM's business strategy has been to invest in fundamental technologies that enable industries and then scale it worldwide. QCOM invested heavily in the 5G transition and now stands to be the leading global supplier of 5G modems and antennas, making it one of the biggest beneficiaries of the rollout of 5G.

Taiwan Semiconductor Manufacturing Co (TSM.N, 2330.TW): TSMC supports a thriving ecosystem of global customers and partners with the industry's leading process technologies, while having a portfolio of design solutions to enable innovation in the global semiconductor industry. TSMC has a global foundry market share of 56% and growing. TSMC is not only the biggest, but also the best.

Themes of the Week

Asset Allocation

Total return outlook of bonds reduces their importance in portfolios

The economic impact of COVID-19 has both transformed the investment landscape, and led to a material change in central bank policy.

Official cash rates have been the main policy tool for achieving target inflation levels. These rates are now either negative, at zero, or just above zero. Government bond yields have also fallen to historic lows, with a growing number of developed countries now issuing bonds with negative yields. Despite the collapse in interest rates, core inflation has undershot official targets for most of the past decade.

As official cash rates have become impotent and inflation has continued to undershoot targets, the main objective of monetary policy has shifted to encouraging full employment rather than price stability at all times. Along with that shift, the US Federal Reserve and the Reserve Bank of New Zealand have pivoted to a more amorphous objective of an average inflation level over a business cycle rather than in a specific time period. Governments have been increasingly called on to take responsibility for economic repair and recovery through fiscal policy (tax reductions and/or increased spending), while the central banks provide unlimited amounts of liquidity.

The combination of widening and ongoing public sector deficits with accommodative central bank liquidity policies has shifted the outlook for bonds in portfolios. In particular, if nominal bond yields are as low as they are likely to go (or close to it), then the income and diversification benefit from holding bonds in portfolios diminishes.

Changes to recommended asset allocations

We have reduced our recommended exposure to fixed income assets to a neutral level, and increased the recommended exposure to Australasian equities. This change in recommendation is based on the following macroeconomic outlook:

- **Official cash rates are expected to remain at or below current levels for the next few years.** While longer duration bond yields are forecast to remain stable over the next 1–2 years, the bond market is anticipating rising bond yields in outer years as the pivot of central bank policy towards full employment is expected to lead to higher average inflation.
- **The macro outlook for the next 12 months is consistent with low inflation and low interest rates.** The outlook for growth, while positive following the slump in 2020, will depend to a large degree on progress in developing treatments/vaccines that reduce the health (and therefore economic) impact of the current pandemic.
- While some sectors will continue to fare better than others, a weak employment outlook will ensure central banks remain extremely accommodative in the years ahead. **This reduced likelihood of tighter monetary policy or a major credit event removes a key trigger for equity bear markets for the foreseeable future.**
- Global risks remain. **Uncertainty around the outcome of the US election, and the deteriorating US-China relationship are uppermost in our minds.** We expect this to be reflected in further market volatility, which may create buying opportunities in equities.
- **With market risks dominated by global events, we prefer to take risk closer to our home markets.** New Zealand and Australian equities continue to offer attractive, tax effective, defensive yield and cyclical growth.

Bond yields — market outlook

The current yield curve is the best predictor for future bond yields. It incorporates all market participants' expectations on future inflation and monetary policy, and how central banks will respond to changes in inflationary conditions. Bond yields are determined by expectations for short-term rates at different times in the future over the life of the bond. Those expectations are embedded in the term structure, or slope, of the yield curve. Short rates are more volatile and tied into expectations for central bank policy moves, while long-dated bonds reflect the domestic term structure of rates. However, longer bond yields have also been distorted in recent years by the globalisation of bond markets and the impact of central bank buying (quantitative easing), which has pushed down yields of long bonds.

The current domestic bond curve is inverted for the first five years and steeply positive thereafter. **The market expects official cash rates to remain at or below current levels for the next few years. But inflationary expectations have increased in outer years, leading to a steeper curve and falling (negative) real yields.**

While the jury remains out as to whether central banks can generate higher inflation, the market is in no doubt that the combination of very easy monetary policies, a shift to average inflation targeting, and substantial and sustained fiscal stimulus, poses a risk to bond portfolios where yields have fallen to historic lows.

Total return example: The current NZ 10-year government bond yield is 0.57% with a coupon of 1.5%. Assume after five years the yield of this bond has increased to 1.0%. The total holding period return in the portfolio from this security would be -5.2%, or over -1% per annum.

New Zealand equities

Equity markets have rebounded rapidly after the technical bear market slump in March. While valuations have recovered, the weighted average cost of capital (WACC) has fallen in our estimates by ~1%. (The WACC is the combined cost to a company of funding its assets using both the cost of its debt and the return on equity that its shareholders expect to earn over the long term). This reduction in the cost of capital has lifted our current valuations of companies' future cashflows by around +25%, and our price targets (which are also partly based on other valuation methodologies) have increased by around +12% on average.

The implied equity risk premium for New Zealand is estimated to be ~6%. Assuming a risk free rate of between 0.50–1.0%, **the total expected return from New Zealand equities over the long term using the equity risk premium model is around 6.5–7.0%.** Of course there will be winners and losers, exacerbated by the ultra-low interest rate environment. But the New Zealand equity market is dominated by defensive yield and structural growth companies, which continues to make it an attractive destination for global capital.

Why not property?

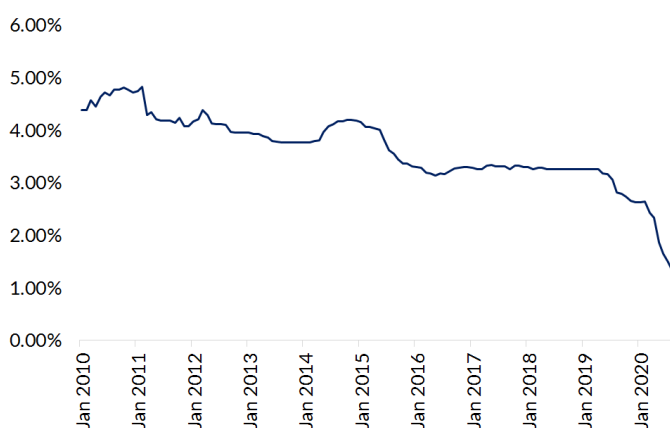
While some property vehicles offer a yield premium relative to other bond proxies, we feel this is already recognised in current pricing. The listed property market benefits from a lower WACC assumption. However, the property sector is bifurcated between vehicles that are likely to be negatively impacted by the changes wrought by COVID-19 (retail, office) and those that stand to benefit (ecommerce warehouses) or are more immune (industrial and healthcare). The more defensive vehicles have already bounced in value, but the softer earnings growth outlook for the sector justifies its current discount relative to the broader market.

Fixed Interest

Term deposits in name only

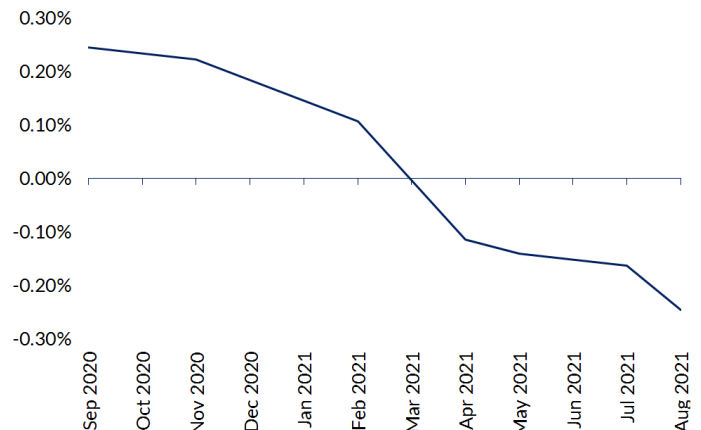
One of the victims of falling interest rates is likely to be the love affair with term deposits, a common destination for those not keen on the risks of the debt or equity markets. **With interest rates falling sharply in 2020 and the expectation of further falls in 2021 (Figures 3 & 4), what will become of term deposits?**

Figure 3. 6-month term deposit rates



Source: RBNZ, Forsyth Barr analysis

Figure 4. Official Cash Rate expectations



Source: Forsyth Barr analysis

It appears that part of the Reserve Bank's response to the COVID-19 pandemic may extend to lending funds directly to retail banks. If this eventuates then retail banks may not be required to source as much funding from the term deposit market. At present it is only strong competition that makes term deposit rates a viable investment option for many. **If the competition for retail funds falls away, the unfortunate consequence could be to force those funds to find an alternative home in assets that have a different risk profile than term deposits** (i.e. investors will have to take greater risk in the hope of achieving a similar or higher return).

There are many unintended consequences of lowering interest rates on common retail investment options like term deposits. One destination for term deposit money could be property, given New Zealand's love affair with houses. Asset bubbles and their creation are a hot topic during the unprecedented quantitative easing being undertaken by central banks around the globe.

Some central banks have decided that keeping interest rates higher so that savers receive interest and therefore spend a portion of their savings is actually a better outcome than the fear and confidence-destroying effect of ultra-low or negative interest rates.

Research Worth Reading

New Zealand

Equity Strategy – Recovery Heat Map; Government Support Flattening

Our COVID-19 recovery heatmap shows that last week there was another small improvement in a number of indicators, although the continuation of elevated Alert Levels means this will continue to dampen the recovery. The key indicator of improvement is the number of active COVID-19 cases, which was 44 as at Friday, 18 September, down from 75 for the past two weeks. The amount of government support also appears to be waning as the cumulative amount of wage subsidy paid was flat and the number of recipients of the COVID-19 Income Relief Payment (CIRP)/Jobseeker schemes reduced for the second consecutive week. With the removal of social distancing requirements on aircraft last week, domestic flights are almost back to Alert Level 1 levels, and should improve further heading towards the October school holidays. (Published by Forsyth Barr)

Kathmandu Holdings (KMD) – FY20 Preview – Wave Watching

KMD reports its FY20 result on Wednesday, 23 September 2020. KMD has likely benefited from favourable category trends and pent up consumer activity during its key sales period. With reasonable insight into FY20 trading, KMD has guided to FY20 Underlying EBITDA in excess of NZ\$70m (Forsyth Barr NZ\$71m). We expect the focus to be on outlook comments, and look for 1) its experience in Victoria amid a second COVID-19 wave, 2) margins and success of cost-out initiatives, and 3) an update on Rip Curl and its integration into the group. OUTPERFORM. (Published by Forsyth Barr)

Tourism Holdings (THL) – FY20; Vehicle Sales Driving Cashflow

THL reported a resilient FY20 result in the face of COVID-19 challenges although losses will feature in FY21 in the absence of borders reopening. The share price is back above net asset value (NAV). THL has mitigated NAV downside risk from COVID-19 to date; it has done well to (1) reduce its cost base and cash burn, (2) take advantage of improved liquidity in the vehicle sales market to reduce its fleet and pay down debt, (3) stimulate domestic rental demand, and (4) ensure balance sheet capacity to allow for reinvestment in its fleet when the rental market recovers. However, we expect NAV to fall in FY21 given losses accruing from domestic-only rental operations. We downgrade to UNDERPERFORM. (Published by Forsyth Barr)

Transport and Tourism Sectors – When Will Our Borders Reopen?

In the absence of a widespread and effective vaccination against COVID-19, NZ's re-entry into the global travel market will be reliant on (1) tolerating a containment strategy as opposed to elimination, and (2) superior technology based solutions for tracking, contact tracing and testing. The likelihood of NZ's borders reopening in the next six months is now very low, in our view. The risk to NZ's tourism industry is that the global flow of tourism may establish new routines as other destinations open up and we stay closed. (Published by Forsyth Barr)

Australia

Ampol (ALD.AX) and Viva Energy Group (VEA.AX) – Federal government support for refining

The Federal Government has announced support for domestic diesel storage and local refineries, with about A\$2.3b to be allocated over 10 years to the refining industry. In Ord Minnett's view, however, this will be insufficient to offset the current cash burn, given weak refiner margins, and more detail is required on minimum stockholdings and domestic diesel storage participation. ALD: ACCUMULATE; VEA: ACCUMULATE. (Published by Ord Minnett)

Macquarie Group (MQG.AX) – Guidance update

MQG has guided for its first-half FY21 result to be -35% below the first half of FY20 and -25% behind the second half. This implies a net profit of A\$950m. Changes to broad divisional commentary were minimal and largely unsurprising. MQG remains unable to give full-year guidance given the challenging market conditions, and Ord Minnett sees a wide range of possible outcomes depending on the level of volatile items and impairments in the second half. Over the long term, Ord Minnett remains attracted to structural growth drivers in the Macquarie Infrastructure and Real Assets (MIRA), green energy and Australian mortgages divisions. ACCUMULATE. (Published by Ord Minnett)

Rio Tinto (RIO.AX) – CEO and management changes

In response to the Juukan Gorge rock shelter destruction in May, the board of RIO has made significant changes to the executive committee. The CEO, iron ore chief and head of corporate relations will leave the company. Outgoing CEO Jean-Sébastien (J-S) Jacques was appointed in 2016 on a 10-year view, and so his departure comes significantly earlier than initially planned. There isn't an obvious internal CEO successor, which makes an external appointment appear likely. **ACCUMULATE.** (Published by Ord Minnett)

International**Abbott Laboratories (ABT.N) – COVID Testing Opportunity; Updating Our Interactive Tool For 2Q Results, BINAX NOW**

UBS continues to like shares of ABT and believes the COVID testing opportunity could be large short-term but more like flu long term. With a resilient business in an uncertain period, and some of the best growth drivers in MedTech looking forward, UBS sees ABT's premium valuation as more reflective of a safety premium. **BUY.** (Published by UBS)

Apple (AAPL.US) – Watches, iPads, Fitness Apps and Bundled Services; Expecting iPhone Launch Later

As widely anticipated, AAPL's launch event featured the next generation Apple Watch and iPad. iPhone 12 was not previewed as the launch this year is later than usual. Additionally, Apple launched Apple Fitness+ and a bundled Apple subscription offering for individuals and families. **BUY.** (Published by Citi)

FedEx (FDX.US) – Pulling Peak Forward, as the Stars Align

Coming off the earnings call, Citi believes FDX is pulling forward peak volumes in two ways. First, volume growth is trending at/above peak levels well ahead of the traditional holiday peak, suggesting even more positive fundamentals ahead. Second, given the much better than expected results, Citi believes previous peak earnings have been pulled forward by at least two years. Citi believes COVID has materially changed the landscape for the parcel carriers, which if permanent should greatly increase the value of their networks. **BUY.** (Published by Citi)

Nike (NKE.N) – Nike Survey: Wholesale Recovery Led by EMEA; Slower in China

With NKE's 1Q21 earnings this week (after the US market close on 22 September), Citi conducted its quarterly survey of athletic/sporting goods retailers across China and Europe – the first survey conducted since COVID-19 lockdowns in both regions. In China, survey responses indicated a slow recovery in the wholesale business, while in Europe, responses suggest a stronger recovery vs. Citi's current estimates. **BUY.** (Published by Citi)

NVIDIA Corp (NVDA.O) – Transformational ARM Deal Finally Announced; But Execution Is Key – Maintain \$625 PT, Buy

NVDA announced the acquisition of ARM for ~US\$40b (including earn-out provision) from Softbank. The deal is expected to close in ~18 months subject to regulatory approvals. Deal considerations include: \$21.5b in NVDA stock, \$12b in cash (\$2b paid at signing), \$1.5b NVDA stock for retention, and \$5b earn-out paid in cash or NVDA shares. Assuming revenue synergies, UBS thinks the deal could be ~2% accretive to Non-GAAP CY22/23 EPS. UBS likes the strategic rationale behind this deal. **BUY.** (Published by UBS)

Tencent Holdings (0700.HK) – CFIUS inquiry a sentiment negative but limited economic impact near term

According to Bloomberg, the Committee on Foreign Investments in the US (CFIUS) has sent letters to companies (including Riot and Epic) asking them about their security protocols for handling US user data. UBS expects this to add to the geopolitical overhang on Tencent. According to Tencent, its revenue exposure to the US is only ~2%, however, continuous regulatory attention will concern investors. UBS still believes sentiment on Tencent can improve after October post US elections and with the likely launch of mobile Dungeon Fighter and League of Legends (Wild Rift) games. The key threshold to watch is whether the US would (or even could) direct US companies to stop working with Tencent outside of the US. If that is the case, then UBS believes there is downside to estimates and the stock. **BUY.** (Published by UBS)

Calendar

Figure 5. Calendar

Date	New Zealand	Australia	International
21-Sep	Credit Card Spending		CN: PBoC Loan Prime Rate
22-Sep		RBA Assist Governor Debelle Speaks	UK: BoE Governor Bailey Speaks Ping An Insurance Investor Day
23-Sep	RBNZ Monetary Policy Review Kathmandu FY20	Manufacturing PMI Services PMI	US: Existing Home Sales (Aug) US: Fed Chair Powell Testifies UK: Composite PMI UK: Manufacturing PMI UK: Services PMI EU: German Manufacturing (Sep) JP: BoJ Monetary Policy Statements Merck & Co Investor Day Tesla AGM & Battery Day Nike 1Q21
24-Sep	Exports (Aug) Imports (Aug) Trade Balance (Aug)		US: Crude Oil Inventories EU: German ifo Business Climate Index (Sep) US: Fed Chair Powell Testifies
25-Sep			US: Fed Chair Powell Testifies US: Initial Jobless Claims US: New Home Sales (Aug) UK: BoE Gov Bailey Speaks Costco 4Q20
26-Sep		CFTC AUD Speculative Net Positions	US: Core Durable Goods Orders (Aug)

Source: Forsyth Barr analysis

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