



TRINITY SMF

STUDENT MANAGED FUND

The Long View

Key Macro Insights

In all chaos there
is a cosmos,
in all disorder a
secret order.

Carl Jung



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Foreword

“The irrationality of a thing is no argument against its existence, rather a condition of it.”

I began my market summary for the first half of the year with this quote from *Human, All Too Human*, Friedrich Nietzsche’s breakaway work. In the book Nietzsche distances himself from the thinking of Wagner and Schopenhauer, ideologies he had taken after in his early career, and instead attempts to reconcile metaphysics with the empirics’ view that our world is grounded in science.

Today we all find ourselves in the shoes of young Nietzsche, trying to wrap our heads around how something as random as a virus has had the most profound impact on almost every aspect of our lives. Financial markets served as a worthy microcosm of our uncertainty (and fear) with record levels of volatility and a wave of mass selloffs followed by an incredible bull market at the first sight of fiscal support. The initial chaos was short-lived, however, and was fast replaced by an acknowledgement of the severity of our situation.

Many financial records were broken this year and provided incredible opportunities for investors to make money- most notable was the collapse of Non-Farm Payrolls at the end of April. 20.5 million Americans had lost their jobs in a single month in the name of public health and people around the world were quick to defend lockdowns as necessary despite their economic impact. There is irrefutable truth in the notion that it was a policy choice to save lives, but that’s an easy thing to say if you still have a job. I am sure it was of little comfort to the 20.5 million and their families who had to find a new way to put food on the table and pay rent. There was nothing normal about this year and it would be iniquitous for me to use this space to merely write some financial highlights as if they were sports results. April’s NFP report was just one of hundreds of similar reports we saw this year and although it is our job to look at the market objectively it is important in times like these to be aware that these are people’s lives, their jobs, their worst nightmares being realised. For the rest of any of our lives this year will be a deep scar on any graph.

However, in all of this chaos there are opportunities. The macroeconomic landscape is changing rapidly for investors. It may all look different but the game is the same: find value. We set out to do just that by providing both a fresh outlook on classic economic themes as well as coverage of policies and projects that have the potential to change how we invest and in some cases how we live. *The Long View* is simply the anthology of our findings across key regions; I hope you, as a reader, are able to gain insights you might otherwise miss in a more traditional economic outlook.

I am immensely proud of the outcome and owe great thanks to the analysts for their hard work and to James for working by my side throughout the process.

The current irrationality of our economies is not abstract, it is the result of a series of deliberate choices. As many found out the hard way this year: statistics do not happen to us, we create them. 2020 presented humanity with a unique set of challenges to overcome and whilst the path out of our current economic crevasse remains uncertain I do know that if there is one asset to never bet against it is mankind’s resolve. The end is in sight.

Ryan Clarkson
Chief Macroeconomist

What We Do

The Macro team works to support the investment arm of the Fund with the goal of ensuring improved idea generation and risk exposure in order to better leverage smart beta. This included wide-ranging training sessions for new sector managers and senior analysts on monetary and fiscal policy, using alternative asset classes and derivatives to inform investment decisions and the value of using Stat Arb over traditional volatility.

As a team, Macro works to produce traditional research reports as well as non-traditional insights to help identify opportunities and risks that can then be used to help evaluate and generate ideas at an investment committee level.

As has been emphasized in our training sessions, case studies and in *The Long View*, a focus for us this year has been on using more Alternative Data to inform any views we take. This focus has been invaluable in ensuring we continue to approach economies as vectors and not scalars, which we believe is critical to realising the true value behind macroeconomic events and using them in top-down, high conviction investing.

Producing the Fund's first comprehensive collection of key macro insights has been both challenging and rewarding and we look forward to building on top of this in the months ahead.

Thanks must go to all our analysts for their hard work.

James Kinsella
Deputy Chief Macroeconomist

Global Issues

The Path to Herd Immunity

Rory Henderson

A look at the logistics behind a global vaccination campaign

Reports of the first human case of the respiratory disease COVID-19 caused by the novel coronavirus initially emerged from Wuhan, China in December 2019. Reported as pneumonia-like symptoms with no apparent cause, by the 10th of January the first death had been reported, with a further 41 cases. The scientific community shared the genetic sequence of the virus publicly on the 11th of January. By the 23rd of January cases had quickly risen to 571 and strict lockdown measures were first enforced in Wuhan. The virus had quickly become too large to contain and the World Health Organisation (WHO) declared the COVID-19 epidemic a public health emergency of international concern on the 30th of January. Governments were criticised as being too slow to respond, and on the 11th of March with 118,000 cases in 114 countries, and 4,291 deaths the WHO declared COVID-19 a global pandemic.

A wave of lockdowns, slashed interest rates and financial market sell-offs followed the WHO's declaration, with the equities falling by around 30% across the board in the month of March. From then on, the path to herd immunity has been heavily disputed, in the scientific world, discussed over zoom calls with friends and argued about by politicians in socially distant government buildings.

The simple fact is, in order to achieve herd immunity, the percentage of the population with antibodies needed to prevent infection from the virus must exceed a threshold. Once this threshold has been crossed, a virus will no longer be able to percolate through a population. This threshold varies depending on the type of virus but it's generally it sits between 70%-90% range. Two main paths to herd immunity exist, mass vaccination and controlled infection. Attempting to reach herd immunity via the latter is scientifically problematic and unethical. As recent reports are now suggesting reinfection is possible in cases where patients have recovered from the disease, controlled infection is not a viable option. Leaving mass vaccination as the only possible path to herd immunity, a back of the hand calculation suggests between 5.5 and 7 billion people will need to be vaccinated to cross the percolation threshold and stop the virus propagating across the world.

With 74 vaccine hopefuls currently undergoing clinical trials, governments are hedging their bets and scrambling to acquire adequate doses to meet demands. Of those 74, 13 are now in stage 3 clinical trials which involve large scale efficacy testing on humans. In the last two weeks, several promising vaccine contenders have emerged. With Pfizer/BioNTech, Moderna, AstraZeneca and Sputnik V vaccines all reporting greater than 90% effectiveness. Mass production has already begun while the companies await emergency use authorisation. Definite timelines on this authorisation are not yet available, as the trial data has only just emerged, but numerous reports are suggesting mid-December for rollouts. Pfizer has stated they will have the capacity to make 50 million doses by the end of 2020 with the capabilities to scale up to 1.3 billion by 2021. Moderna aims to have 10 million doses, and AstraZeneca claims to have enough for 100 million doses by the end of 2020.

Acquisition and distribution of the vaccine will be in the hands of local authorities. The Department of Defense and the Centers for Disease Control and Prevention (CDC) in the United States, are aiming to begin roll out in mid-December with an initial 6 million doses ready to go and a further 500 million ordered. In the European Union, each of the 27 member states has individual control of the distribution of the vaccine to its population and early 2021 seems likely for delivery. Doses are being acquired thru the European Commission's joint procurement scheme who have placed orders for 300 million doses from Pfizer and 400 million from AstraZeneca, as well as a further 1.4 billion doses from 4 alternate vaccine candidates pending approval. UK health authorities have also stated December as the starting period for its vaccine roll out and have ordered 100 million doses of AstraZeneca's vaccine as well as a further 40 million doses of Pfizer's vaccine, with 10 million to be delivered in December and the remaining in 2020. Russia aims to produce 500 million doses of its Sputnik V vaccine a year and will vaccinate its population first before exporting doses to other countries. In China, a reported 100 million people have already received a vaccine developed by Sinopharm before the completion of clinical trials as the Chinese government authorised emergency use of the vaccine in July.

To vaccinate the developing world, where 92 low-income countries encompass over half of the world's population. The WHO, in collaboration with the GAVI vaccine group, have initiated the COVAX program, which has raised \$2 billion in funding to acquire and distribute vaccines to those countries who cannot afford them, with the goal of vaccinating 20% of the population in the developing world. The COVAX program has focused on acquiring AstraZeneca's vaccine as it offers significantly fewer barriers to distribution as it only requires standard refrigeration temperatures. Unlike Pfizer/BioNTech and Moderna's vaccines which will require deep-freeze delivery chains to be implemented.

To maintain their effectiveness Pfizer/BioNTech and Moderna's vaccines need to be stored at -70°C and -20°C respectively and will only survive at standard refrigeration temperatures between 2°C and 8°C for five days. This makes implementing these vaccines in the developing world highly impractical and near on impossible. For developed nations with better infrastructure it presents a serious barrier, cold storage facilities will need to be constructed and sophisticated supply chain management plans implemented, as any break in the temperature controlled supply chain would lead to vaccine spoilage. These significant barriers to vaccination will result in massive increases in the cost of vaccinating a country's population and reduce the speed of rollout. With most governments planning to cover the cost of inoculating their populations, these factors will be deliberated on extensively.

With Pfizer and Moderna both publicly stating their vaccine development projects are strictly for-profit ventures, they are setting the price high, to maximise profits with the output they can achieve. Vaccine suppliers and governments have negotiated varying prices, many of which remain unpublicised. However, prices range from a few dollars for the AstraZeneca and Sputnik V shot to up to \$50 for the two-dose Pfizer and Moderna regimens. The European Union is paying significantly less per dose than the US at \$5.50 per dose for the Pfizer vaccine.

Once authorisation comes and roll outs begin the general structure of rollouts will be similar across leading nations. The first demographic of people to be vaccinated is speculated to be frontline health care workers. Following that, care home residents and other vulnerable members of the population will receive vaccinations. Subsequently, essential workers likely including teachers, members of the police force and essential manufacturing staff coming next. Finally, the general public will have access to vaccinations. The pace of rollouts and when we can expect to see full nationwide vaccination depends entirely on the number of vaccine hopefuls which prove effective and receive authorisation.

Two possible scenarios have been modelled for varying roll out situations in the US. In the best-case scenario, the virus could be quelled by late June 2021. However, all six vaccines the US has ordered would need to be approved and supply chains would need to work efficiently, ensuring there are no delivery delays. The worst-case scenario predicts April 2023 as the date where herd immunity is achieved in the US. This scenario assumes only four vaccines receive authorization and significant delays see production fall to 80% of current

predictions. While herd immunity achieved by July 2021 sounds extremely appealing, it seems unrealistic. The worst-case scenario discussed above seems more in line with reality as implementing the super-cold refrigeration supply-chain will be expensive and complex. The developed world will likely see mass vaccinations and herd immunity by the end of 2021. However, in order to achieve herd immunity uptake of the vaccine needs to be high. Any significant resistance to vaccinations caused by adverse reactions, public uncertainty and hesitancy may seriously hinder the pursuit of herd immunity. The developing world will receive vaccines paid for by the \$2 billion raised by the COVAX program; this aims to cover 20% and further \$18 billion will be needed to fully vaccinate the developing world.

This is a constantly evolving topic, with new information surfacing daily. AstraZeneca has already announced an extension of phase three trials due to inconsistencies in their data. Issues like this can be expected to surface regularly as we progress towards herd immunity, due to the unprecedented pace of progress, from initially sequencing the first COVID 19 virus genome in January to numerous potential vaccines approaching release in December.

Wolves

Ryan Clarkson

Tesla and NIO are Changing More Than the Cars We Drive

Gray Wolves were the apex predator of Yellowstone National Park for long before the park was created in 1872. However, between 1872 and 1926 a lack of hunting laws and a view among locals that the wolves were undesirable predators led to their extirpation from Yellowstone. They would not return for 70 years.

In 1927, shortly after Yellowstone was declared wolf-free, the Model T Ford ceased production having sold over fifteen million units. The affordable production car had been an instant hit and by the time wolves returned to Yellowstone in 1995 there would be over 205 million registered vehicles in the United States with internal combustion engines. However, at the turn of the century, concerns about emissions and climate change sparked a revolution with small companies designing their own Electric Vehicles in the hope of making transport environmentally sustainable. Tesla and NIO are two such firms; both with opposing consumer models and visions for the organisation of transport networks and energy grids in sustainable cities. How each proposes we should model our cities gives a rare insight into how people will live and the economy will be different in a sustainable future.

Tesla offers a more traditional model whereby individuals own their own car and are able to charge them in their homes at night or at fast charging points (the petrol stations of the future) when travelling far from home. Through their development of a ‘million mile battery’ Tesla is aiming to increase customer value in addition to creating post-EV applications for the batteries in clean energy storage when the car itself becomes too outdated and is scrapped. Tesla views this post-EV application as crucial to the sustainability of the EV concept in the longer term as it reuses parts instead of recycling them.

Their approach to EV ownership fits into a much larger plan to create a customized, decentralized energy grid. This grid is made up of end use devices that either produce, consume or produce and consume energy and connects all these agents through a “scalable hierarchical energy distribution grid utilizing homogenous control logic,” according to the patent. The system utilizes a control module to apportion energy in a specific and optimized manner to an end use device in a household (such as a Tesla needing to be charged), where similar devices are grouped into fractals of a subset according to their energy demand. The benefit of such a system is that it is not limited to a single energy input and instead thrives as the diversity of sources increases. Thus the patent lays the groundwork for a 21st century energy grid where households and businesses can interconnect their energy supplies and demands and increase energy efficiency as a result. To some this may sound identical to pre-existing systems that allow households that generate excess energy from solar

systems to sell that load back to the grid, but it isn't. That would be like all the children in the neighbourhood putting their Legos in a big pile to share; Tesla wants to enable one child to give another the exact piece they need without having to dig through the pile.

What this means for the discerning economist is that countries that follow a Tesla-like model will need single family homes where owners have garage space to charge their cars and suburbs that produce renewable energy for the grid- not more skyscrapers and people living in apartments. Urban planning will evolve to accommodate these needs and people will likely generate their own energy with solar panels on their roofs instead of opting for the conversion of centralized production to a sustainable source (i.e. replacing a coal-fired plant with a wind/hydroelectric/nuclear one).

NIO on the other hand has designed their business model around the exact opposite idea: that people will continue living in cities despite them becoming more and more densely populated. Resultant to this, they predict that people will naturally end up living in smaller and smaller dwellings and more people will be forced into apartments as developers start building vertically when they run out of space. In the future, NIO expects suburbs to house a significantly smaller portion of the population than Tesla does and thus rely on people having to park cars on tight streets and not in garages with space for every owner to have access to their own charging point. To solve the charging dilemma NIO decided to just replace the empty batteries for charged ones the same way one replaces the dead batteries in a tv remote with a fresh set of double-As. What this model allows for is a continuation of the current structure of electrical grids: energy generation will remain in the hands of a utility provider and will take place outside of the city. In a similar fashion, NIO can provide a battery changing service and allow citizens to have their car's batteries swapped out at their own version of a future petrol station.

NIO's model serves as a source of encouragement for Chinese cities that are heavily investing in new infrastructure. The world's fastest builders now know that they can continue erecting standardized apartment towers and creating population densities that could never be served by traditional public

transport systems alone because the NIO model enables individual vehicle ownership without the major EV ownership constraint (charging capability). It is arguably also China's best hope of peaking carbon emissions in 2030, a promise President Xi Jinping reaffirmed to the UN General Assembly this year.

Both firms offer profoundly different solutions to EV use and future energy consumption yet neither's approach is 'wrong'. Tesla has built a traditional EV and a novel approach to home energy distribution (with application on a national scale that would change the way energy is delivered to end users). NIO has developed a novel EV that's works within the existing Chinese infrastructure (and also within the larger political framework of a big government PRC). What it does mean is that the US and China will begin to look less and less similar as time progresses and these models take shape in their respective countries.

What these two firms have done is completely change consumer sentiment towards the EV in the world's two largest economies and some of the biggest cities on the planet. Demonstrating the value proposition in lower running costs and increased performance has forced the rest of the world's auto manufacturers to start developing their own EVs as well. Ford, makers of America's most popular vehicle (the F-series truck) have already paid EV pickup truck start-up Rivian USD 500m. for access to their first skateboard (battery system and drivetrain) to integrate into their own trucks and Tesla has become the world's most valuable auto manufacturer. The change in consumer sentiment towards EVs has completely changed the way we finance the auto industry. The energy utilities are next. Change is unavoidable, just as it was when wolves were finally reintroduced into Yellowstone.

70 years without a predator meant the elk and deer population of Yellowstone grew significantly-reducing vegetation to all-time lows. When wolves were reintroduced in 1995 the most remarkable changes began to occur. The first eight lucky wolves killed some of the deer and forced a change in their behaviour as a result. The deer had to avoid valleys as this was where they were most vulnerable. The plants here began to regenerate: more flowers meant more mice, more mice meant

more foxes and vultures. The trees grew back too and with them came eagles and bears who would feed on the carrion left by the wolves; more greenery meant the bears now also had more of their beloved berries to snack on. The fresh wood helped dwindling numbers of reptiles, beavers and otters to flourish once more. Changes like this are incredibly rare and are called Trophic Cascades. They occur when something at the top of the food chain changes and its effects trickle all the way down the ecosystem.

Of all the changes that began to occur the most profound was undoubtedly how the wolves changed the rivers. New plants and trees reinforced the riverbanks. With less soil erosion the rivers meandered less and the channel narrowed. The water flowed faster and more pools formed. The wolves' trophic cascade extended far beyond the Yellowstone ecosystem.

By presenting the world with readily-available and feasible solutions to climate change's biggest contributors, firms such as Tesla and NIO have empowered citizens to lobby, march and elect presidents on the basis of climate policy. Al Gore painted a worrying picture with *An Inconvenient Truth*; it showed how serious the threat to our future and our way of life was. Little did he know

that two years prior to the film's release Elon Musk had bought into Tesla's Series A with the intention of selling an electric car to everyone in the world.

Innovation and improvisation are two characteristics that most significantly differentiate humans from other species. We either find a path to success or we make our own. These two traits are now breathing new life into a society grappling with a very real and serious threat thanks to companies like Tesla and NIO. It's not just a new car, it's a whole new perspective on how we view our responsibility towards protecting our environment with the tools we have at hand. Governments are no longer ignoring their environmental obligations and as they look for ways to adapt they will face a choice: the Tesla model or the NIO model? The answer will infer key information for the long term investor about everything from the geographic distribution of wealth to which construction firm is a good investment and everything in between.

It appears as though we, as a species, are beginning to make more conscious and deliberate economic choices; taking the first step towards creating our own trophic cascade.

Wolves change rivers.

The Growing Role of the Private Sector in Space

Adam Ward

The final frontier will soon be home to new payloads and reached by new firms

When looking at the rise of the private sector in commercial spaceflight, the United States stands out as the country with the most advanced aerospace industry. While the private sector has long dominated the defence and aviation need of the US, crewed spaceflight was thought to have been out of reach for private companies. Driven by an undesirable dependence on Russian launch vehicles, the unexpected rapid success of NASA's Commercial Crew Program allowed SpaceX to launch the first American Astronauts from American soil in 9 years. The meteoric rise of

SpaceX has dislodged the near monopoly once held by the United Launch Alliance, a joint venture between Lockheed Martin and Boeing, two established aerospace companies from the American market.

Prior to American deregulation, Russian space agency ROSCOSMOS dominated the crewed launch sector, utilising low-cost boosters based on leftover Cold War missile technology. Before 2019, Russia also had the luxury of charging NASA \$80 million for each use of the Soyuz to ferry astronauts to the ISS. SpaceX however has now named the price for a seat on its spacecraft as just \$60 million, through breakthrough innovations in both manufacturing its own parts and enabling the reuse of all components of the Falcon 9 launch vehicles. The past success of America's high-tech sector paved the way for commercial success in space. American prowess in aerospace paired with a large technological talent pool provided the

perfect conditions for a flourishing space industry- which has left other countries struggling to catch up.

In Europe, the private launch industry is dominated by Arianespace- a pan-European company headquartered in France. Arianespace is subsidised by European governments and its Ariane series launch vehicle, known for its reliability, held a dominant market share for western commercial launches in the 2000s. The disruptive force of the entry of SpaceX into the market has forced the company to request additional subsidies and focus on cost-cutting. Further delays of Europe's next-generation Ariane 6 launcher, developed by Arianespace with the ESA, has caused further financial difficulty and there is speculation that the increase in the efficiency of Ariane 6 may not be enough to compete with the low-cost of America's emerging competitors. An underestimation of how competitive the space launch market would be in the 2020s has left Arianespace struggling for relevancy.

Emerging players, such as India and China, have yet to develop their space industries in a commercial capacity. The Chinese National Space Administration (CSNA) has been expanding its operations at a rapid pace, having landed their first reusable space vehicle in September of 2020, with plans for a permanent Chinese space station by 2022. China's state space agency has remained shrouded in secrecy, as it is viewed by the Communist Party as a key pillar of China's national security at present. Furthermore, many nations such as Israel and the UAE have also expanded the operations of their national space agencies in recent years. 20 countries are expected to launch their first ever satellites between 2020 and 2030. perhaps laying the groundwork for a commercial presence. In 2019 the satellite industry generated \$27.9bn for both manufacturing and launch. In total, 490 satellites were deployed in 103 launches. The United States accounted for 57% of demand, with telecommunication being the primary purpose for satellite deployment, at 35%.

Bank of America estimates that the global space industry as a whole, including commercial crew vehicles, will grow in value from roughly \$400bn in 2019 to \$1.4tn by 2030. The satellite industry itself is expected to reach a market value of over

\$300bn a year. Growth will be primarily driven by new entrants to the market including Jeff Bezos' Blue Origin, and established adversaries, such as the United Launch Alliance, expanding beyond traditional government services to the commercial market. Huge demand for launch services is driven by the booming market for "mega-constellations" of smaller satellites for delivering internet access to remote areas from low-earth orbit (LEO). The new use of low-earth orbit satellites providing internet access has gradually replaced demand for broadcast satellites at geostationary orbit. Euroconsult estimates that on average in the coming decade, 990 satellites of all sizes will be launched each year. This is a fourfold increase on the previous decade, with most expected to be small satellites less than 500 kg in mass.

Heavier payloads for geostationary orbit (GEO) are estimated to decrease in demand to only 4% of satellite launches by 2028 but will still constitute 39% in value due to the greater cost in propellant and complexity of their missions. SpaceX's Falcon 9 Heavy and the upcoming Ariane 6 are best positioned as the most efficient vehicles with the capacity to launch payloads to GEO. 55 commercial LEO constellations will launch a combined total of over 6,600 satellites, with 67% of satellites launched by 2028 forming part of a constellation. Telecommunications is expected to remain the largest application in terms of quantity and mass, with a host of nations including Russia, China, and the European Union seeking to deploy their own more advanced versions of a global positioning system. Large investments in Earth observation satellites will make them the top application in terms of value. The increased investment in Earth observation satellites is driven by demand for mapping data, state surveillance, and the need to monitor climate change and increasingly unpredictable weather patterns.

In terms of manufacturing, small satellites under 500kg will account for 87% of satellites but only 13% of the total value. Manufacturers are seeking to accommodate the needs of constellations by adapting their capabilities to mass production and standardisation, over bespoke payloads. 5 'fully reconfigurable' payloads are currently marketed by suppliers, which allows streamlined production and lowers costs.

Some ambitious companies are investigating the possibility of exploiting resources such as rare metals from near-Earth asteroids, however any information in this area at present is purely speculative as the prohibitive cost and difficulty of returning samples from asteroids, let alone extensive mining operations, makes it very unlikely that this goal will be commercially viable in the next decade.

The space industry is expected to undergo rapid growth over the next decade with commercial satellite launches and operations booming as costs plummet. In addition to the satellite boom,

commercial crew vehicles are ready to assume NASA's role in transporting astronauts to the ISS, with SpaceX already having the capacity to do so and Boeing expected to begin by 2022. These crew contracts on behalf of government space agencies are expected to be worth of \$500bn to the industry in the coming decade.

The United States is best poised to have the most dynamic and competitive space industry, surpassing Europe's once dominant share of the satellite launch market. However many more countries in the process of expanding their space programs have the potential to become major players by 2030.

Outlook of Defence & Arms Sales

Sam Pearson

An analysis of the impact the Biden Administration may have on U.S defence; Boris' boost in U.K military spending; how conflict in the Middle East is affecting the global arms trade.

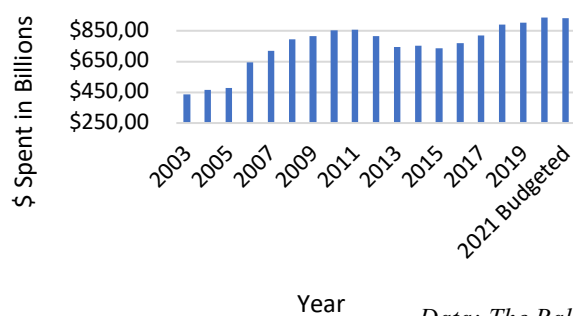
Defence Spending

Trump championed record national defence spending during his term in office; however, president-elect, Joe Biden, was critical of his lack of fiscal discipline in this department. Congress repealed sequestration for the defence budget in 2019 for two years, but large increases in spending on the DoD are unsustainable and will likely be halted under Biden, as will the vast sale of U.S arms to Middle-East. Iran is now free to import advanced weapons once again and is making advancements in its nuclear program at a worrying rate. Meanwhile, Boris Johnson has outlined plans to modernize U.K armed forces through £16.5 billion in additional stimulus.

The Pentagon's five-year defence plan indicates it will request to – and is expected to - remain flat after 2021. Temporary repeal of sequestration allowed for year-on-year expansions of the DoD's budget, with \$935.8 billion allocated in 2020. While Biden does not envisage major defence cuts, he may face overwhelming pressure to do so by the left if the Democrats win Georgia's undecided Senate seats, giving them the power to make

significant policy changes. However, without this Senate majority, it will prove very difficult to make massive changes to this budget.

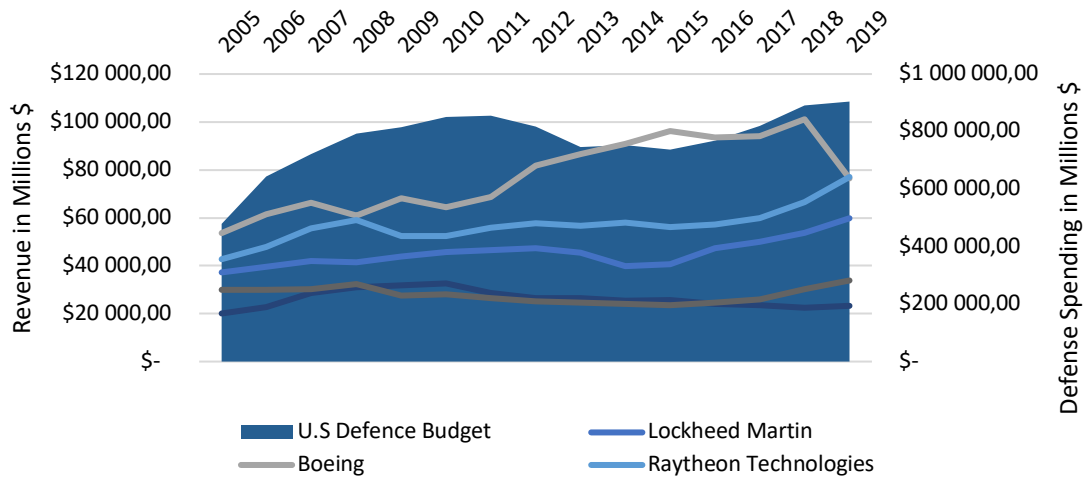
U.S. Defence Spending



Data: The Balance

U.S military spending is greater than the next ten largest government expenditures combined. In 2018, it was three times more than China's budget (\$250B) and ten times bigger than Russia's (\$61.4B). Therefore, U.S. spending is crucial to defence, aerospace, arms and advanced technologies contractors globally. 85% of Lockheed Martin's revenues, the world's largest weapons manufacturer, came from U.S government contracts. Since 2001, \$2 trillion has been spent for America's 'War on Terror' in Afghanistan and Iraq and now for defeating ISIS, which has seen large allocations towards the Overseas Contingency Operations component of the budget. However, spending on personnel and maintenance is expected to rise drastically by 2024 due to retirement and medical costs, and investment in weaponry and space projects may see cuts that will not be welcomed by aerospace and defence contractors.

Relationship Between US Defence Spending and Annual Revenues of Top 5 Defence Contractors

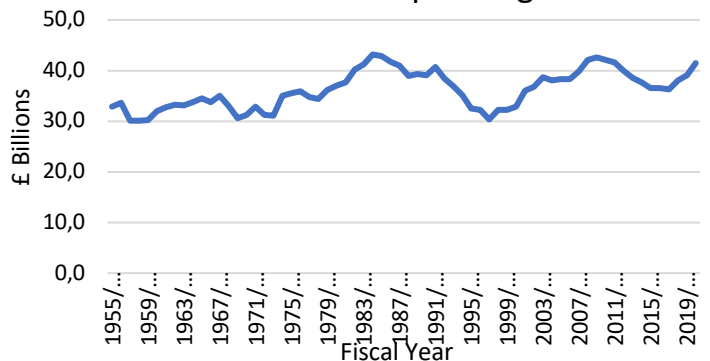


Data: Macrotrends

Defence companies will be more encouraged by the United Kingdom’s promise of its most significant defence investment since the Cold War ended. Boris Johnson has announced a £16.5 billion spending boost aimed at pioneering new technology for armed forces. Britain’s Ministry of Defence received an annual budget of £41.5 billion this financial year, which is due to rise 0.5 per cent above inflation every year of parliament, and now will include this bonus of £16.5 billion over four years as a top-up. Some of this will be put towards the creation of a new National Cyber Force agency dedicated to military uses of A.I. The funding settlement is also set to include plans for an armed forces Space Command and provide £1.5 billion for research and development. A portion of this will be set aside for the RAF’s next generation fighter-jet programme, Tempest, that is being developed by BAE Systems. However, Downing Street has been criticized for their lack of direction on military strategy in light of the spending increase. Despite talking about transforming into technological warfare, they will be investing vast amounts of money in old heavy metal - the type of equipment the MoD was looking at purchasing ten years ago. Boris’ pledge to support economic recovery from the pandemic with an increase in domestic shipbuilding seems to be at odds with the aspirations of a more digital military. In the short term, the MoD is expected to hold back its expenditure until a clearer direction is given by the integrated defence and security review, which is likely to be ready for release in January. Even

though the U.K is the second-highest spender in NATO, it still pales relatively insignificant compared to the monstrous budget of the United States. As a result, many defence contractors are unlikely to see considerable changes in orders as a result of their spending boost.

UK Defence Spending



Data: House of Commons

Sale of Arms Internationally

The Trump administration constantly sought to expand arms sales around the world, and this proved effective as sales dramatically rose during his term in office with exports growing over 23% from the periods 2010-14 to 2015-19. Although his foreign policy, and prioritization of arms sales, may have benefitted U.S defence contractors, it has also exacerbated conflicts such as the war in Yemen. Saudi Arabia was the top customer of these weapons, who were widely documented for bombing civilians. Despite a bipartisan bill that sought to end America’s support for the Saudi-led coalition fighting in Yemen, Trump refused to cut

ties with Riyadh and vetoed the bill. Military orders worth over \$110 billion are directly linked to mass civilian casualties as a result of Trump bypassing Congress after their efforts to block the deal. The U.S is the top exporter of arms in the world, and in the last five years, half of these have gone to the Middle East.

Under Biden's administration, it is very likely he will end U.S military support for the Saudi-led war in Yemen, while also terminating weapon sales to Riyadh. This would shut out a significant customer of U.S defence contractors and consequently end major revenue sources. Trump had made it easier to export firearms, while also speeding up the review process for major arms sales, directing U.S. diplomats to advocate for American weapons purchases and easing the criteria for selling armed drones. This work may well be undone by his successor, leaving significant implications for arms manufacturers domestically.

However, Iran will play a massive role in Biden's approach to foreign policy with Saudi Arabia. The U.S' lucrative weapons deal with the Arabs has been crucial to Saudi's backing of Yemen's internationally recognized government in the civil war against the Iran-backed rebel forces. Tensions between the U.S and Iran remain high after the U.N's decade-long embargo on Iran expired in October. The ban served to prevent Iran from purchasing foreign weapons amid fear over their advancing nuclear program. Despite the U.S strongly opposing the ban's scheduled lifting, they failed to convince the rest of the Security Council to grant an extension. The U.S is now expected to set up a mechanism that will block any Iranian attempt to purchase advanced weapons systems. The Trump administration warns that America will penalize any sales of weapons to Iran or, equally, the purchase of exports from Iran. However, it is very likely Russia and China will jump at the opportunity to supply their weapons to Tehran, with both superpowers showing interest to

establish a larger presence in the Gulf according to the former head of the Israel Defence Force's military intelligence division.

Iran has been long outmatched by the U.S backed Gulf nations Saudi Arabia and U.A.E., and now that they can purchase arms without restrictions, it is predicted they will quickly begin spending on Russian fighter jets, trainer aircraft, tanks, and anti-aircraft and coastal missile defence systems. Although this is worrying for the U.S (and its allies), it is most conscious of Iran's suspected efforts to develop nuclear weapons. Iran signed a nuclear deal in 2015 with the U.S, Germany, France, Britain, China and Russia known as the Joint Comprehensive Plan of Action (JCPOA) limiting their stockpile of enriched uranium. The deal promised Iran would curb their nuclear program in return for economic incentives by the other countries in the accord. Since Trump unilaterally withdrew America from the deal, Iran has steadily increased its stockpile of uranium in violation of the U.N deal in an effort to pressure the remaining nations to improve their economic incentives to offset Washington's hard-hitting sanctions. The future scale of U.S sanctions will only truly become clear once Biden is inaugurated though. Still, the recent news that Tehran has enacted a law which will immediately accelerate its enrichment of uranium to levels near weapons-grade fuel will present a threat to the President-Elect straight away. Iran has also threatened to expel international nuclear inspectors that have been monitoring them over recent years if U.S sanctions are not lifted by February in retaliation over their top nuclear scientist's assassination. Biden is said to be willing to offer Iran "a credible path to diplomacy" on the basis that they return to strict compliance with the U.N deal. However, if Iran continues to retaliate, Biden may have to rethink his intentions to cut ties with Saudi Arabia so soon – they will be a crucial strategic ally if tensions escalate even further.

Africa

Managing Expectations for the AfCFTA

Oliver Deely

The world's newest and largest non-WTO free trade area is open for business

The African Continental Free Trade Area (AfCFTA) is a groundbreaking trade deal which aims to bring together 55 African states with a combined population of over 1.3 billion people (60% of which are under the age of 25) and who have a combined GDP of over USD \$3.4 trillion; this represents the biggest trade deal since the formation of the WTO. As of December 2020, the agreement has been signed by 54 out of the 55 African Union Member States. At a high-level, AfCFTA is focused on stimulating growth, employment and diversifying economies across the continent through the creation of a single African market for goods and services. It also brings the potential for Africa to obtain significant social and economic benefits on the back of future improvements in renewed funding, transport infrastructure and improved liquidity. The agreement aims to eliminate 90% of tariffs on goods and significantly reduce non-tariff barriers (NTBs) on merchandise and services, such as differences in licensing regimes and regulatory standards. The African continent houses some of the fastest growing markets in the world, however, trade within the continent is amongst the lowest globally. African countries often trade more outside the continent than with their neighbours; more than 85% of exports are exported outside the continent. The agreement is expected to address Africa's industrial deficit and reduce the continent's over reliance on primary goods exports, it is further expected to help liberalise services and stimulate intraregional trade flows.

The World Bank have stated that on a social level the AfCFTA presents an opportunity for African countries to bring 30 million people out of extreme poverty and to raise the incomes of a further 68 million who live on less than \$5.5 per day. The IMF have projected that the AfCFTA will produce a 2-4% increase in economic welfare for the continent as a whole depending on how quickly its reforms are implemented.

Whilst the AfCFTA will create significant opportunities within the region, domestic policies will need to play a key role in easing some of the current barriers to trade that are not related to tariffs such as security issues, lack of investment in infrastructure, corruption and harassment at borders. The success of AfCFTA will also depend on the extent, and how quickly it incorporates a sufficiently financed, robust and continent-wide integrated programme to alleviate the significant transitions and dislocations among firms and workers that trade liberalisation policies influence globally, while also having a key impact on the entry of new businesses and the workforce.

Trading was originally planned to commence July 1 2020, however in order to avoid distracting African leaders as they responded to the COVID-19 pandemic this has been delayed until 1 January 2021. Nevertheless, whilst the COVID-19 pandemic is still a very prevalent issue across the continent, there is a push to move forward with the implementation of AfCFTA with the idea that the promotion of further collaboration and intra-African trade could help weather economic downturns and accelerate economic recoveries related to the pandemic.

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As previously touched upon, over 85% of African exports are sold outside the continent and currently SMEs, which are relatively small and locally based, account for 50% of GDP on the African continent. This highlights a significant issue which must be tackled in order for the AfCFTA to become effective: there is a considerable lack of cost-effective infrastructure to get goods and services to market inside Africa at competitive rates. The problem is continent-wide and exists not just across countries but within countries as well. There are some instances where, because of variation in railway gauges across some African countries, it is necessary to offload shipments at a border and put them either on different rail cars or on trucks to get them to their final destination. An example of this is that the cost of shipping a product from Johannesburg to Kigali is several times the cost of shipping the same good from Johannesburg to Beijing.

The AfCFTA has the potential to increase output significantly across the continent, predominantly from a significant increase in manufacturing. It is expected that the manufacturing sector could double in size creating 13-16 million new jobs and this would help shift the composition of Africa's exports to the rest of the world away from excessive dependence on raw commodities and towards more specialist sectors.

Alongside the AfCFTA there is also a proposed African Single Currency. An 'African Monetary Union' would be an economic and monetary union for countries of the African Union and would call for the creation of a unified currency, similar to the Euro. The African Monetary Union would be administered by the African Central Bank which is one of the original five specialised agencies of the African Union. The Abuja Treaty signed in 1991, aimed for the creation of an African Central Bank by 2028 but so far little progress has been made and only three member states of the African Union have committed to using a common currency. In 2015, the Commissioner for Economic Affairs at the African Union, Anthony Marupinghas, stated that Kenya, Uganda, Tanzania, Rwanda and Burundi were committed to joining a common currency within the next 10 years.

One more promising route towards a single currency looks like it could sprout from the Economic Community of West African States (ECOWAS), who in 2017, agreed to abandon their monetary sovereignty and introduce a common currency: the Eco. The Eco would be introduced by the West African Monetary Zone in the framework of the ECOWAS and so far 15 countries have signed up.

Whilst 150 million people in 14 African countries (most of which are former French colonies) also use a common currency in the form of the CFA Franc, the Eco differs significantly in a number of ways. Firstly, the CFA Franc is currently pegged to the Euro, which reduces the autonomy of national central banks to conduct monetary policy. The Eco would be controlled by a single central bank in Africa, with capacity to make monetary-policy decisions under an inflation-targeting regime. Secondly, the CFA Franc is not exactly a single monetary union, instead there are two different currencies which fall under the same name: the Central African CFA Franc and the West African CFA Franc. In comparison, the Eco will be the sole currency of fifteen countries: bringing together 380 million citizens. The third and final major difference is that the new monetary union will include Africa's largest economy, Nigeria.

There are some significant advantages of having a common currency union. Importantly, Eurozone countries have found that a shared currency, led by a self-governing central bank generally keeps inflation under control. Between 1982 and 2002 when Spain joined the Euro, inflation averaged 8.5%; between 1999 and 2019 inflation has averaged approximately 2%.

The Eco currency could be very complimentary to the AfCFTA and its goals, especially if the Monetary Zone expands beyond the 15 countries currently committed. This is because trade under a common currency becomes more efficient as exchange rate related costs disappear, boosting intra-regional commercial transactions amongst members. Trade between Eurozone countries increased by 5-20% after the introduction of the Euro. A single monetary union would also prevent members from devaluing their currencies to become more competitive externally and would force them to introduce productivity-boosting reforms in order to achieve the same objectives.

Whilst there are many advantages to having a common currency, the Euro has also shown there can be some major drawbacks. One problem that could be particularly detrimental to the African project is that fragile institutions might be tempted to take advantage of lower financing costs resulting from sharing currency with higher-credibility countries, incentivising them to increase their public debt and fiscal deficits. This is what happened when Greece joined the Euro, causing a severe debt crisis which threatened the integrity of the Eurozone. There are also concerns that Nigeria would dominate developments in foreign exchange markets with its heavy reliance on oil potentially adding undue currency risk.

Countries willing to join the Eco must meet ‘convergence criteria’ which is aimed at maintaining macroeconomic stability. The criteria is not dissimilar to that set out in the Maastricht Treaty and ECOWAS currently demands that members maintain a fiscal deficit no higher than 3% of GDP, have an inflation rate below 5% of GDP and public debt below 70% of GDP. No ECOWAS country has fulfilled this criteria in recent years and whilst African leaders had originally hoped that the plans for the Eco currency would be in place by the end of 2020, COVID-19 could have now delayed this by up to 5 years. There is no clear sign of member states hitting their targets after the economic hit from the pandemic. The IMF has projected that the Sub-Saharan African economy will contract by 3.2% in 2020 which is the worst decline on record for the region.

Overall, the AfCFTA has the significant potential to increase employment, intra-African trade and foreign exports as well as shifting exports towards more skilled sectors. For such gains to be realised, the longstanding continent-wide infrastructure gaps touched upon will need to be addressed both across and within African countries. Requisite financing will need to be incorporated within AfCFTA from day one as closing this gap in infrastructure is arguably the largest public good. It is crucial that African leaders collaborate without delay, seeking continental public-private partnerships. It is also critical that domestic governments cooperate in order to implement structural reforms aimed at reinforcing their political and economic institutions as well as seeking to end the security issues and corruption that regularly occurs at African borders. This will not only attract foreign investment but will create a business-friendly environment that allows entrepreneurs to maximise their potential. In 2021 it is key that African leaders start making these significant strides in order to release the potential of the free trade area and maximise this \$2.5 trillion opportunity.

LNG Projects in Mozambique

Christian Schierke & Ryan Clarkson

A potential accelerator of Africa's economic development

Despite industrial electrification and COVID-19 related market disruptions, liquefied natural gas (LNG) remains a promising growth area within the energy sector due to the global LNG price decreases in relation to oil and coal. Furthermore, improved LNG accessibility and a growing LNG demand from Asia is driving the sector forwards. This growth in demand is ensuring that energy giants can continue the monetisation of major gas accumulations in Africa. One of the continent's greatest gas reserves was found in 2010 in the Rovuma basin, Cabo Delgado at the coast of

northern Mozambique. The discovery attracted a series of multinational oil corporations who have initiated enormous investment in local LNG projects.

Mozambique is located between South Africa and Tanzania in the South East of Africa and has consistently been among the economies with the lowest GDP per capita worldwide. Its poverty rests upon several factors including natural disasters, high population growth, disease, civil wars, low (agricultural) productivity, bad governance and an uneven distribution of wealth. However, the aforementioned projects, with a cumulated capital expenditure of \$128 billion, could change Mozambique's situation distinctly and trigger a massive progression in economic development across the whole continent.

But how can a project eight times more valuable than the country's overall economy (Mozambique's GDP is estimated to be around \$14.3 billion) be enforced in a region composed of poverty and political chaos? The ambivalence of the project is indeed extreme: just 60 kilometres from the onshore production site, insurgents linked to the Islamic State have occupied villages and even executed civilians. In November 2020, the United Nations reported a minimum of 355,000 refugees had fled from the region since 2017 with the exact number of deaths remaining unclear; in the same month the extremists carried out a mass decapitation causing more than fifty casualties.

These developments are a major risk for Mozambique's LNG projects as they are essential for the country to increase income and find a way out of poverty and a crippling national debt. So far, the violent unrest has not had severe consequences for the projects, as current LNG projects have only seen some COVID-19 related delays to date.

The projects aim to retrieve and market gas from the natural gas fields within the basin. First, the natural gas is collected, depending on its location either onshore or offshore, and is then pipelined to respective onshore facilities where it is cooled down, liquified and stored. The LNG is then transported again and loaded into LNG vessels, which export the liquefied gas internationally. There are two areas of the Rovuma basin, where LNG projects are currently in preparation: Area 1 and Area 4.

Mozambique LNG is an onshore project located in Area 1 and is worth \$25 billion. It is operated by Total, the second largest LNG player in the world. Total's goal is to service both the Pacific and Atlantic markets and to not only supply growing markets like India or China but also challenge the American oil trade. The Final Investment Decision (FID) for Mozambique LNG of \$20 billion was made in 2019 and production is scheduled to start in 2024.

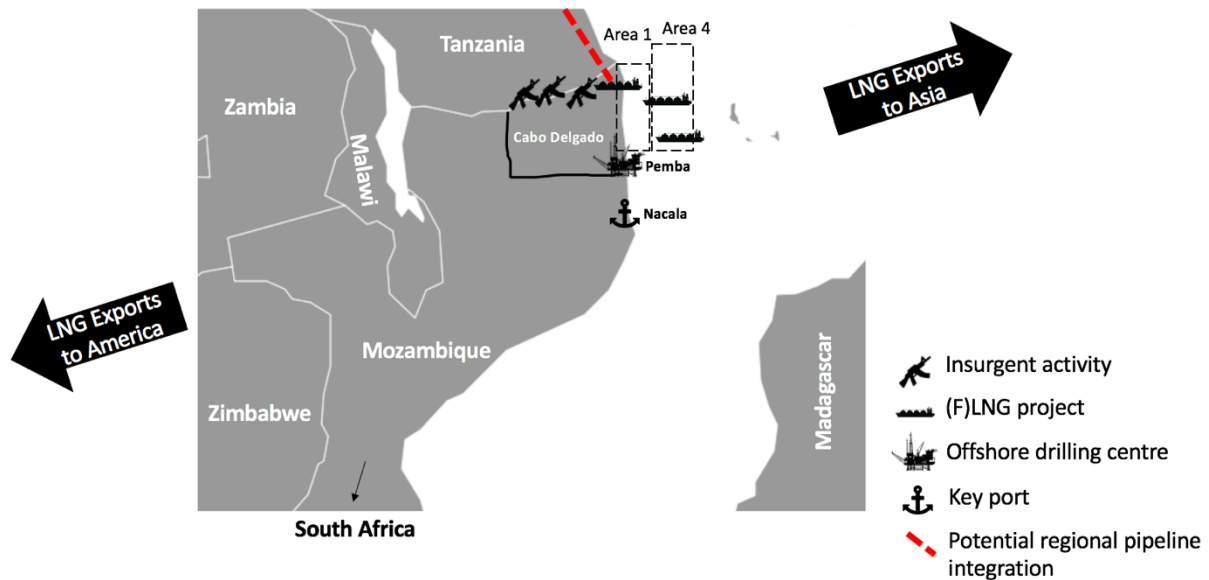
Within Area 4, there are two major projects, Rovuma LNG and Coral South FLNG (Floating Liquefied Natural Gas). Coral South FLNG, a floating plant which had its FID in 2017, is operated by the Italian oil and gas company ENI who will sell 100% of their FLNG to their

contractor, BP. ENI, together with ExxonMobil, will operate the Rovuma LNG project which is expected to be the largest LNG project in Mozambique. In this project, ENI acts as an offshore/upstream operator whereas ExxonMobil operates midstream processes including liquefaction. Due to COVID-19 and the subsequent drop in oil prices, the project's FID - initially planned for 2020 - has been postponed. To limit the economic impact of that, Exxon and Eni are already in talks with Area 1 operator Total to create synergies and are planning to prolong the project's FID further to early 2022 or 2023 to wait for oil price recovery. Nevertheless, it is unclear, whether Rovuma LNG will reach its initially estimated capex of \$30 billion or if the project will be downsized.

Given these three projects total roughly \$60 billion there is still \$68 billion dollar gap to the abovementioned capex of \$128 billion. So what else contributes to this remarkable capex? Further extensions of the projects are planned to commence after 2024: with regards to Area 1 this could be mean an additional LNG project called Prosperidade LNG which brings \$20 billion to the table or a complementing train for the Golfinho gas fields costing around \$7 billion. The Rovuma LNG in Area 4 does also show room for extensions, as once in operation, it is likely that additional megatrans will be used to increase overall output. This could nearly double the first estimated capex of Rovuma LNG. Furthermore, other sectors of industry are likely to follow the LNG projects to make use of the established infrastructure. Projects in regard to petrochemicals, power, fertiliser or liquid projects could expand the scale of the megaproject further. Thus, a total capital expenditure of \$128 billion is everything but unrealistic, particularly when the transition from coal and combustion engines to its electric counterparts continues to take time. LNG remains an ideal transition energy, especially when plants become more and more efficient.

Assuming all goes well and all this capital is actually invested and the terror threat is contained, Mozambique, even the whole continent, could eventually prosper.

Africa



The Area 1 and 4 mega trains are expected to produce 0.75 tcfg each year and this will account for 95% of the project's revenues. Of the remaining 5%, 2% will come from Domgas and 3% from condensate. Mozambique's gas find is dry with a methane concentration of 96% at offshore sites, however, at Area 4 the remaining wet gas (condy) will be extracted. Condy is primarily made of heavier hydrocarbons and naphthenes; the condy at Area 4 is low sulphur but high benzene and would need to be further developed before being sold (likely for use in petrochemical production).

The upside for Mozambique's economy is underpinned by the development of new non-LNG projects. Around 60% of the projected boost to the country's GDP will arise from developments outside of LNG with Agriculture and Trade & Accommodation projected to account for nearly half of this growth. Overall, new LNG projects will create upwards of 320,000 jobs and, although this seems minor compared to the 1.1 million people in formal employment and the 11 million in informal work, these new jobs will generate economic value in excess of Mozambique's current GDP and will benefit their Balance of Payments by \$7.8-9.8 billion each year. The support to a widening current account deficit will be welcomed and the medium-term GDP growth that will come with the project has formed part of Fitch's decision to maintain the country's foreign-currency rating at CCC despite the long-term impacts of the Coronavirus.

These projects will bring significant growth to household income which will further reinforce the

economy-wide growth outside of LNG and the benefits of this come with very little downside to Mozambique's own financial position (which is precarious) as projects are financed by FDI. The benefit of undertaking capital formation without the accumulation of significant debt cannot be understated and will manifest itself in the form of a current account surplus in the long term as exports grow and all sites begin to produce gas. Over its lifetime the project will also generate in excess of \$130 billion in tax revenue for the government of Mozambique, peaking around 2040. The economic benefit of this project will in all likelihood extend far beyond the life of this first round of drilling and even after a second phase of projects it is likely that the government of Mozambique will undertake a further Domgas project. LNG will be the tool that takes Mozambique from a frontier economy to an emerging market.

Given the scale of the total investment that will go into Mozambique's economy it will probably serve as an acid-test for future investment in frontier markets in Africa. Should Total and co. successfully navigate the inherent political instability and bureaucracy of an underdeveloped nation as well as the terror threat and manage to move their profits offshore without prohibitive foreign exchange controls, Mozambique would act as a roadmap for other foreign investors looking into Africa. If the projects are caught in miles of red tape or fail altogether one could not reasonably expect to see FDI of such a scale deployed in a similar environment anytime soon and other resource-rich African countries in a similar position to Mozambique would probably have to

settle for smaller scale and risk-averse foreign investment.

The East African Railway Master Plan

Ferdinand Croy

An analysis of the impact of the East African Railway Master Plan on the East African Community.

After the near collapse of its railway system in 2004, the East African Community (EAC) held a summit which gave birth to the East African Railway Master Plan. The initial plan aimed to rejuvenate the ageing railway systems of EAC members but was later extended to neighbouring economies as well. The aim is to resolve gauge network issues and to improve efficiency and speed of transporting cargo in the region.

The East African Community

The EAC is an intergovernmental organisation consisting of six member states in the African Great Lakes region: Burundi, Kenya, Rwanda, South Sudan, Tanzania and Uganda. The EAC's capital is Arusha, Tanzania and Paul Kagame, the president of Rwanda, is the organisation's current chairman. The organisation was first founded in 1967 but collapsed in 1977. In 2000 Kenya, Tanzania and Rwanda revived the community and were joined by Rwanda and Burundi in 2007. Its latest addition is South Sudan which joined the organisation in 2016.

In 2010 the EAC established a common market for goods, labour and capital and in 2013 the community even declared to launch a monetary union within the next 10 years. To fulfil these goals the EAC made the decision to form the East African Monetary Institute and the East African Central Bank. The formation of a committee to draft a regional institution is a strong indication that the establishment of the East African Federation, a proposed federation of EAC member states into a sovereign state, is in full swing.

In 2019, the EAC had a population of 177 million, which would make it the 8th most populated

country if considered a single entity. The region contains five cities with populations larger than one million; Dar es Salaam being the largest city and Kampala being the largest urban area, however, only 22% of the population lives in urban areas. English is the official language of the EAC, with Kiswahili, or Swahili, being the lingua franca of the community.

The member states' protocols on the common market and the customs union put a large emphasis on the harmonisation and cooperation of sectoral policies with regards to agriculture, education, science, technology, infrastructure and private sector development. Despite the large population and large efforts to integrate all six economies with one another the market and trade between the member states remains relatively small. Since the vast majority of the community lives in extreme poverty, the EAC's GDP amounted to only USD 193.7 billion in 2019. Additionally, ongoing political hostilities between members and the outbreak of the COVID-19 pandemic has resulted in locked-up borders and brought the integration of the community's ambitious protocols to a halt. Despite this, the region is the fastest growing economic region in Africa and puts a large effort into growing its service sector, with Kenya's Capital, Nairobi, becoming home to the EAC's largest companies.

East African Railway Master Plan

The East African Railway Master Plan is a proposal to widen and deepen the economic, political, cultural and social integration to improve the quality of life of the people in East Africa. After the near collapse of the railway system in the region Tanzania, Kenya and Uganda realised that enhanced social and economic development can only be achieved with adequate physical infrastructure and proposed the outlines of the East African Railway Master Plan. Later Burundi, Rwanda and South Sudan were included in the proposal. The plan includes the standardisation of new railway lines as well as a standard-gauge network between the member states. In a later step the plan will be expanded to Ethiopia and the Democratic Republic of Congo. In addition to the

construction of new railways, the project will also encompass the rejuvenation of existing rail networks in the region (most of which date back to the colonial era and consists of narrow-gauge railways which are barely serviceable and not useful in a modern economy).

New railways between and within the core countries of the Master Plan are divided into the Northern Corridor Integration Projects (NCIP) and the Central Corridor. The members of the NCIP, Kenya and Uganda, have agreed on building all railways to the standards of the Chinese National Railway Class 1. Central Corridor countries: Burundi, Rwanda and Tanzania, have agreed on the Chinese Class 2 standard. 2017 saw the opening of the Mombasa-Nairobi Standard Gauge Railway, which remains the first and only railway of the plan in operation. The Community has started the construction of the new railway line between the northern corridor from Mombasa, Kenya to Malaba, Uganda. The line will ultimately include Juba, Kigali and Bujumbura. In the Central Corridor, the Tanzania Standard Gauge Railway is currently under construction and the Isaka-Kigali Standard Gauge Railway is in its commencement phase. A section between Uganda and South-Sudan and another section between Burundi, Rwanda and Uganda are in their procurement phase. Further sections to non-core countries of the plan, Ethiopia and the Democratic Republic of Congo, have been proposed but construction has not yet started. A vital aspect of the plan is to provide Burundi, Rwanda and South Sudan with access to the Indian

Ocean as they are economically weakest member states. Rail links with the ports of Dar es Salaam and Mombasa should significantly reduce transport costs, develop other sectors and increase local GDPs and facilitate the exploration of raw materials. In the case of passenger transportation, the new railway system is a cheaper and safer means of transport compared to road transport and should contribute to the development of tourism in the region. The realisation of the railways will create jobs during construction and operation periods. The labour-intensity of the railway sub-sector will contribute to the increase of household income and lower the contribution of the agricultural sector to local economies. New connections to cities will accelerate urbanisation in the region especially in Burundi and Rwanda which are among the least urbanised countries in Africa. China's involvement in both the logistics and financing of the project pose an additional risk of debt trap diplomacy to the EAC's member states which may not be able to cope with the additional financial pressure created by the COVID-19 pandemic. The project forms part of the African distribution network- a key arm in China's Belt and Road initiative and as such China stands to gain a significant sphere of influence in East Africa should they choose to leverage any outstanding debt in return for political favours down the line. The lasting impact of the ongoing political hostilities between member states, the COVID-19 pandemic and Chinese politics on the EAC's make-or-break plan remains to be seen.

The Americas

How Many Despots Does It Take To Save A South American Economy? A Brazilian.

James Kinsella

Bolsonaro's economy will soon have Brazilians pulling their hair out

Brazil's economy is staring into the Abyss. When it was announced that the nation's GDP growth failed to meet market expectations in early November, many people called for the head of the man whose rampant overspending was responsible. Similarly to another populist leader from the Americas, Jair Bolsonaro just added it to a long list of scandals throughout his tenure and powered on though. But unlike Mr. Trump, Bolsonaro will have to deal with the consequences in January and beyond.

The primary fiscal deficit stands at 12% of GDP, and public debt has reached 95% of output. A significant amount of aid has been provided by the government this year, but that is soon to dry up as stated by the man himself. However it would be harsh to put all the blame on a man who will only be in the job for two years in January. So with this in mind let's look at the economic climate pre-Bolsonaro, what he's inherited, and how his aggressive fiscal policy has affected it.

In January of 2017, Brazil had had their worst recession since records began, with the economy contracting 8% from December 2014. For a country that was considered by many to have the biggest growth potential outside of Asia, rich in resources such as soy and oil, this recession was inexplicable to most. A massive multi-billion investment in both the 2014 World Cup and 2016 Rio Olympics backfired spectacularly, a commodity price dip along with considerably less trade deals with China, and possibly the biggest bribery scandal in global political history came together to destroy a promising economy. The internal political scandals and general incompetence from the government is too complex and long to cover in an article, but here is some context: Odebrecht, a Brazilian company, paid \$2.6 Billion in anti-corruption fines to various authorities, the largest of its kind in history. An impeachment and resignation (narrowly avoiding impeachment) of two administrations occurred in this 24 month window such was the public pressure. Local macroeconomic policy referred to as the "New Economic Matrix", where the government, having previously stimulated the economy through increasing the minimum wage, spreading wealth and increasing local consumption, gave in to the industrial lobby and introduced measures such as tax exemptions and subsidies to drive industrial competition. This generally failed with productivity in the region dropping by 0.9% and 3.7% in 2013 and 14 respectively, proving very costly indeed. So you would think it would be a fairly straightforward job to begin the path to recovery...

Several unpopular measures were introduced by Michel Temer, the most important of which were labour law reforms, a cap on fiscal spending for 20 years was set, and a loosening of outsourcing laws. The labour reforms led to the April 2017 general strike where a reported 40 million people lined the streets all over Brazil. The national GDP grew 1.1% in 2017, slower than forecasted. Two major problems not rectified in this new period was unemployment and economic inequality. As of 2018, 19.9 percent of the population lived on less than \$5.50 per day; including 9.3 million people on less than US\$1.90 per day – the global reference for extreme poverty. Unemployment hit 12.6% in January 2017. A further 1.8% in GDP growth in 2018 left Temer bowing

out at an extremely low approval rate in December of that year. GDP growth during 2017-19 was disappointingly low, marking the slowest recovery on record for Brazil and placing them among the bottom 10% weakest recoveries around the world in the last 50 years according to the IMF.

If the USA was fairly sick of the establishment in 2016, 2018 Brazil were ravenous for an alternative candidate. In stepped former Army captain and far right candidate for Alliance Jair Bolsonaro. His election platform was populism to the core with pledges to fight crime and corruption paired with controversial statements on homosexuality, refugees, women and race. Also, his harkening back to days under dictatorship seemed to win more votes than it lost. With 55% of the vote Bolsonaro won and was sworn in in January 2019. Perhaps most interestingly he had ducked questions on and not provided any policy for the economy, which perhaps was never the best sign for further economic recovery.

Paulo Guedes, a University of Chicago educated economist was appointed as “super-minister” of the economy and promised sweeping changes in the coming years. On top of his list was pension reform. Brazil’s pension system was one of the most generous on the globe, with millions retiring in their 50’s and receiving extraordinary benefits post-retirement. It accounted for 44% of Brazil's fiscal output and 8% of GDP in 2018, and left unchecked it was predicted to grow to 17% of GDP in the next 5 years. A bill was passed in September 2019, raising the retirement age 9 years, cutting benefits and social welfare payments in the process. It was considered a necessary move by the general public, surprising as that may be.

To follow up with this was an attempt at further economic reform, principally around the benefits of incoming civil servants, an increase in discretionary, privatisation of state assets and further tax reforms. Only two of these were subsequently debated and passed, that of privatisation and discretionary spending. Many have suggested the fact that most of these motions aren’t being conceived in the presidential palace has been their downfall. Bolsonaro is charismatic and has the ability to push bills through, but opinions are divided on whether he fully understands/supports measures introduced by Guedes. One local commentator said to the Financial Times “he’s like Trump, except stupider”. This man has no level of further education outside a military academy, never progressed past the position of captain in the army, and had been a fairly outspoken but irrelevant politician since first being elected into local office in 1988. If he cannot fully comprehend his own fiscal policies, then how can he expect others to support it?

The measures passed in congress in November 2019 had left 93% of the fiscal budget already earmarked for mandatory spending, and put 46 government owned companies up for auction. 0 out of those 46 have been acquired, in spite of bullish talk from Bolsonaro over the potential fortunes being reaped. This led to 1.1% GDP growth in 2019, something that disappointed investors and onlookers alike. Bolsonaro had been talking of V-shaped rebounds and yet delivered considerably smaller than expected growth.

In March 2020 Paulo Guedes said “we have 15 weeks to change Brazil”, and what he couldn’t have known was that that would involve a critical response to the Coronavirus. By October more than 140,000 Brazilians had died and 4.8 million had been infected, making Brazil one of the hardest hit countries in the world. This isn’t the full picture as testing is inefficient and the full impact felt in the favelas of major cities have yet to be measured. To protect the most vulnerable people, the Government put forward a large but time bound fiscal package. The cost of this package is estimated at 713.4 billion Real (US\$135.4 billion), or 10.4% of GDP, and additional emergency grants/subsidies to businesses bringing it up to 18%. With the state of national calamity set to expire on December 31st, the generous emergency assistance and aid to businesses and local governments will lapse, and Bolsonaro has stated that “people should not expect handouts”. As it stands the government is overspending by about 20% and this has to be reeled in to avoid economic catastrophe.

Almost 12 million jobs were lost between February and July. The unemployment rate rose by about 2 percentage points to 13.8%, but this small increase is overshadowed by the 11 million workers (over 10% of the workforce) that left the labour force completely, either benefiting from early retirement while it still lasted or emigrating.

Most dangerous of all in this situation is the mixed and sceptical messages coming from the president about Covid. Donald Trump appears as a voice of reason when compared to Jair Bolsonaro. Over summer Trump discussed the benefits of Hydroxychloroquine and said he was injecting himself with it, whereas Bolsonaro has forced the Brazilian health ministry to issue guidelines, recommending the drug for all coronavirus patients. The US president has dismissed statements with his scientific advisers, and threatened to sack Anthony Fauci, but Bolsonaro has sacked one health minister and provoked his replacement to resign. Mr Trump has expressed solidarity and empathy for anti-lockdown protesters, whereas Mr Bolsonaro has addressed their rallies. This is dangerous in the context of public health and although Bolsonaro's resistance to lockdowns and halting business has helped the economy to an extent, it appears to be hurting Brazil on the global stage and the economy further down the line.

As it stands, the Brazilian economy is projected to shrink by 5.8% in 2020, followed by a partial recovery to 2.8% in 2021. With the Emergency Aid cut and fiscal spending cap limiting the extension of the package, private consumption is expected to recover only modestly in the second half of 2020 and expand slowly through 2021 due to the lingering effects of the health crisis and the withdrawal of fiscal support. The current account is projected to post a small surplus of 0.3% of GDP in 2020 amid a sharp contraction in imports and to balance in 2021 as external demand picks up.

Jair Bolsonaro is a strong character and maintains his popularity amongst the general population in spite of his horrifically inept response to COVID-19. The surprisingly generous aid package does have a strong factor in this goodwill. It is too early to say that this goodwill will last into an austere 3rd year in office. His fiscal policies are very much dictated to him by Paulo Guedes, who appeared to have halted the slide before the pandemic required the financial easing provided.

US Fiscal Policy

Max Manning

A look at the Biden economy

The current US political situation is unstable at best. President Trump appears to be trying to look the other way with respect to the election outcome. President Elect, Mr. Joe Biden, all things going to plan and with him sitting in the White House next year - should have a stabilizing impact on the US and even global financial markets. Although he does have plans to raise the US corporate tax rate to 28% from where it currently sits (thanks to Pres. Trump) at 21%. However, given that before Pres. Trump, the rate was 35%, Biden is not going overboard with this. In fact, this could be the first sign of the US realising that its exuberant borrowing and spiralling government debt are not sustainable. Increasing their corporate tax revenue stream will reduce their deficit spending, at least that is the idea. It is unlikely that 2021 will see the arrival of tougher budgeting outcomes due to Covid-19 looking like it will continue to be a major

public health crisis and market factor. It is much more likely that 2022 will see the Federal Reserve start to crack the whip by reducing the rate of balance sheet expansion and open market activity, forcing the federal government to be the primary impetus to any economic stimulus that may be necessary should the current Federal Funds Rate of 0-25 bps prove insufficient.

Inflation

What is interesting to note is that even though real interest rates are on the floor, and have been for years, real inflation (CPI) has not been particularly affected – we have seen inflation in various asset classes instead, such as: equities, real estate, derivatives. If this is the case, Biden's planned increase in US corporate taxes (21%-28%) could have a significant effect on US equity valuations, however, this will require the Democrats to win the remaining two senate seats in Georgia next year or for bipartisan collaboration in order for motions to pass the senate and the house. Although runaway inflation would have a powerful negative effect on the market, it is highly unlikely as US interest rates are not expected to rise within the foreseeable future. However, if they were to rise most

companies that are using some form of debt instrument, such as the issuance of bonds as a tax shield, could run into difficulty as the cost of raising debt increases.

Power in the WH

Despite Biden's electoral win, he now faces an even more difficult battle. The US senate is in Republican control and as previously mentioned, unless the Democrats can win the two senate seats remaining in Georgia or come to some bipartisan arrangement, their ability to bring about change in key areas will be impaired.

So, what will Biden be able to do even without both Houses of Congress?

- Change many of the recent Trump policies, including re-entering the Paris agreement and WHO (with special emphasis on the former as Biden is particularly vocal on environmental issues facing the US).
- Deploy unused money from pandemic support package (although the central bank is now actually asking that this money be repaid instead).
- Reserve government contracts for those that concede to his policies (\$15 min wage, etc.) These contracts are discussed further on.
- Write off outstanding federal student loan debt. Unlikely, but popular amongst young voters and farther-left members of the Democratic party (will only apply to public debt, but given the rate at which the US is engaging in deficit spending at the moment it would not be too much of a stretch for them to cover some of the roughly \$1.6Tn owed).
- Biden and his administration have been clear on their ambitions to place a ban on no-poaching agreements and to tackle non-compete agreements too. This is in response to the current industry practices in the US which are theoretically holding back and depriving the US of advancements due to the lack of fair competition.

As it has been suggested by the New York Times, a far more likely stance for the Biden administration is one similar to that of Obama's: a

democrat trying to put the pieces back together after a republican for a "long slog back to health."

Fiscal Policy & Relief

The aim of most government fiscal policies is to target the total level of spending, the total composition of spending, or both in an economy. The two most widely used means of affecting fiscal policy are changes in government spending policies or in government tax policies. The US is expanding money supply at a vast scale and using it to pay down their own debts. March saw the largest fiscal relief package in US history. The US unemployment benefit was boosted because of this but is set to end by December 31st. Janet Yellen, previously chair of the Federal Reserve, will sit in charge of the Treasury under Joe Biden. Democrats are looking to add \$2Tn of relief funds to the current debt; this idea has not been welcomed by Republicans who hold the Senate majority and will more than likely block this. Ms Yellen has also already briefed both the incoming POTUS and VPOTUS on her plans. She has said that she intends to support keeping interest rates on the floor for "a long time." The main concern with this is that unemployment continues to rise. If unemployment is rising despite monetary policy action from the Federal Reserve, which is supposed to stimulate the economy and increase employment, then all the Fed is doing is expanding their balance sheet and weakening the Dollar, meaning another plan is needed to help the economy. The stimulus should be going towards keeping businesses alive, but this is also contradictory to the rising unemployment figures we are seeing. The stimulus itself is up for debate as strictly speaking for capitalism to work, businesses should be allowed to fail, if they are not allowed to fail then it is bordering on unfair and anti-competitive – this is also not necessarily fair given the current crisis has been caused by a pandemic that nobody could have predicted. Yellen will likely try to approve another round of fiscal stimulus in Q1 but this will require support from both sides of the aisle in the Senate.

Tax & Healthcare

Biden is proposing to raise income taxes for those earning \$400,000 or more. The move of the top rate of income tax from 37% back up to 39.6% will be a further action of undoing Trump's tax policies. Biden has also vowed to

continue reforms of the healthcare system in the US where Obama had excelled and where Trump has scaled back. Again, without the Senate's backing, progress will be limited.

Biden's Response to COVID-19

There are two main plans behind the Biden response:

- A public health response which includes wide availability of free testing, elimination of cost barriers for preventing (PPE), and treating C-19, the development of a vaccine as well as the provision of personnel, supplies and facilities as is needed.
- An economic health response which will include emergency paid leave for all those affected by C-19 as well as particular focus on helping small businesses to endure the storm with monetary supports and loans. A macro-economic plan is also in place and is said to be progressive and ambitious with the measures planned.

Climate & Sustainability Action

Biden will make a \$2 trillion accelerated investment, with a plan to deploy those resources over his first term. Spending will be spread over:

- Infrastructure (roads, bridges, electricity grids, water systems)
- The auto industry (+1m new jobs)
- Transit (cities with over 100,000 people will receive high-quality zero-emissions public transport infrastructure)
- The power sector (carbon free by 2035).
- Buildings (4m retrofits)
- Housing (+1.5m new sustainable homes)
- Energy innovation
- Agriculture and conservation (+250,000 jobs)
- Environmental justice

Biden also hopes that these investments will lead to new job creation and will therefore also go towards strengthening the economy and reducing unemployment. The infrastructure and energy sectors will be the focus of job creation for Biden's term in office and should be monitored closely to evaluate his performance (and thus chances of either Biden or Harris winning re-election) and the overall health of the US economy.

US Housing Market

Sean Connolly

Squashing talk of a bubble

Since the US Housing market has emerged from a period of downtime caused by the Coronavirus pandemic it has seen a surge in home buying and also in prices. This increase in demand for housing is partly because of the increased desire for more living space in a period when time spent in the household is higher than ever due to lockdowns enforcing working from home, children being kept away from sporting activities and various other impacts caused by the coronavirus pandemic. The growth in the supply of US Housing has been unable to match the increase in demand seen in 2020. Supply did not remain stagnant in 2020 (it in fact maintained a steady growth rate) it is rather a rapid increase in demand in 2020 that has caused the inflation in US housing prices.

There are two schools of thought concerning the US housing market: one of recovery and one of collapse. It is the factors that have been causing this widening of the gap between supply and demand leading to inflation in US housing prices that effectively quash any talk of a collapse in the US housing market.

Firstly, mortgage rates in the US are very low and have been in a steady decline since 2018; this enhances the buying power of consumers and thus fuels the growth in demand and inflation of housing prices in the US. Looking forward, mortgage rates are predicted to rise in the US in 2021 indicating that their effect in increasing the demand for housing will diminish.

Secondly, the amount of 'first time buyers' has risen in recent years. Much of this is due to the increase in the desire for private space for work and social reasons as mentioned above but also for health reasons in this current pandemic climate. This has contributed to the increase in the demand for housing. As opposed to repeat buyers who

contribute equally to supply and demand, first time buyers only increase the level of demand. Furthermore, the pandemic has pushed many renters into home buying, contributing to the increase in first time buyers. Overall, the National Association of Realtors survey report detailed how the share of first-time buyers has risen from 31% in 2018 to 34% in 2020.

Although the growth rate of new listings has remained positive in 2020, it is still evident that the flow of new listings in 2020 has been lower than in previous years which is as a result of the dramatic drop seen in spring due to the pandemic. This has added to the gap between supply and demand in the US housing market, thus contributing to the inflation of prices. However this supply is expected to grow quickly in 2021 as construction efforts will most likely be accelerated as the economy rebounds with the distribution of vaccines.

We have seen that there has also been significant innovation in the housing market in 2020 which has meant that the imbalance between supply and demand has been widened. These innovations include drone footage, virtual staging, 3-D home tours and many other features which effectively allow consumers to view and buy homes with simply the use of their phone. These innovations make home buying quicker and easier. Effectively it means that new listings are sold a lot more quickly than would have been seen 5 years ago which contributes to the widening gap seen between supply and demand.

Prices have not risen rapidly, as was seen prior to the subprime mortgage crisis. Prices have risen due to a small contraction in supply and large increase in demand detailed by the factors above. A lot of these factors are as a direct result of the pandemic and most likely will not have the same effect in 2021, however the effect that innovations in home buying have had on accelerating the home sale process are set to only continue to grow which may continue to contribute to the imbalance seen between the supply and demand of US housing.

JP Morgan recently outlined rapid price growth, high price levels and high price levels despite expanding supply as the three main proxies to detect a potential collapse of the housing market. Their line of thinking is that when all 3 are present then the risk of a collapse is extremely high. Their study into testing if these factors were evident in 2020 in US states found that there was no state where all 3 were simultaneously evident.

Overall, the evidence points to the fact that the US housing market is set to continue to recover in 2021 as a vaccine will allow the construction of new houses to be accelerated which will help bridge the supply and demand gap, this will potentially slow the inflation seen in housing prices in 2021. This is because in general the factors causing the gap between supply and demand have been as a direct result of the coronavirus pandemic and thus the effect these factors have on increasing the inflation of housing prices will be diluted as time moves on.

US Corporate Credit

Maresa Ronan

A bounce-back for one of the hardest hit markets

Credit markets in the United States are all extremely interwoven, which accelerates the risk transmission and facilitates risk absorption. The flow of credit in the US in recent times has been closely linked to the impacts of the Coronavirus pandemic which struck the markets in March and has caused significant stress on the US credit market as a whole since then. The Coronavirus will continue to impact financial markets unfavorably into 2021 and potentially even further should vaccine distribution be delayed. At the end of the 2019 financial year there was \$54 trillion of credit

outstanding in the US financial system. US banks hold a significant proportion of this credit risk (totaling approximately \$13.2 trillion).

In the initial phases of the 2020 financial year, credit markets witnessed a large credit selloff in response to the economic shocks experienced by the Coronavirus pandemic. There was a sharp and unprecedented increase in the overall demand for cash. This in turn had an adverse effect on macroeconomic activity, reduced the valuations of financial assets across all classes, including corporate bonds, and decreased the risk appetite of market participants. In areas where credit is traded certain sectors showed greater opportunities for investors than others. Sectors such as energy, European automobiles, and Chinese property all performed well despite the economic turmoil

caused by COVID-19. Borrowing costs were reduced and there was an increase in financial flexibility for issuers in 2020 due to the lowering of interest rates as well as asset purchase programs by the Fed which targeted higher standard corporate debt. However, this made it difficult for investors to find yield after prices were pushed all the way up. At the end of the second quarter of 2020, the Barclays Global Aggregate Index Yield closed at 0.95%, near the all-time low the index saw in 2008. Since March, credit has broadly returned to normal. Some sectors have returned to their pre-Coronavirus levels quicker than others, while others (such as consumer discretionary debt) were slow in their rebound as real consumption remained low. The Fed played an extremely important role in enabling firms to either refinance or access bridge financing, something that has modified forward looking default rate expectations for the better. There is further room to tighten credit spreads as at the end of the 2020 financial year it remained close to the 60th percentile of historical observations (which date back as far as 1998). The US High Yield Default Rate was 8.3% in October 2020, a significant increase from October 2019's of 3.8%. It is projected to go as high as 10.3% in the first quarter of 2021.

The outlook for 2021 looks likely to see a return to normality for financial markets. This is, however, likely to be driven by the distribution of Coronavirus vaccines. On top of this, the U.S presidential result has increased optimism of an economic stimulus package which provide widespread relief to the economy in 2021. Despite this, there are still uncertainties surrounding the 2021 financial year. New corporate bond issuance in 2020 stands at a record of \$1.9 trillion due to the large amount of debt generated in the bond market in 2020 in the wake of the Fed opening both a primary dealer credit facility and a commercial paper funding facility. For investors in 2021 it will prove important to differentiate companies that overreached in 2020 from those that remained disciplined. In 2021, if the policy measures which were brought in by the Fed are withdrawn too quickly (the repo program is only meant to last for one year) it is likely that firms that overborrowed in 2020 will find themselves short of cash in the near term.

If the rollout of vaccines is delayed at some point and key trade partners (or the US itself) enter into another lockdown, certain industries will suffer more so than others with liquidity and solvency issues. For example, there is a likelihood that we could see another collapse in the value of corporate credit for highly geared fracking firms, similar to what we witnessed in March-April when the oil prices collapsed, as a return to hard lockdowns would create severe and unexpected demand destruction.

The issuing of corporate credit in 2020 improved as the year progressed. The amount of credit upgrades have outnumbered the credit downgrades in the final quarter of 2020. The first and second quarter of 2020 saw a significant rise in net high-yield downgrades as a result of COVID-19. In 2019, the average net high-yield downgrades per quarter was 51. While in the first quarter of 2020 alone, U.S net high-yield downgrades was up to 194 and in the second quarter it went to a record high of 368. In the third quarter of 2020, this fell to 29. This trend is promising for the final quarter of the 2020 financial year. The net U.S Investment-Grade downgrades in 2019 averaged close to one net downgrade per quarter. In the first and second quarter of 2020 the U.S net IG downgrades stood at 21 and 26 respectively. This then dropped in the third quarter to 7. If this trend continues there is potential for further improvements in the final quarter of 2020 and into the first quarter of 2021. The Fed provided immense support to investment grade firms which helped to recover net downgrades as the economy opened up and liquidity showed signs of recovery in many troubled businesses. The 2021 financial year for credit markets will be far more settled than what was experienced in 2020. Investors of corporate bonds in 2020 suffered briefly a result of the pandemic, but did benefit from both monetary and fiscal policies and recovered well as a result. Going into 2021 corporate bonds look stable (although expensive) once more for investors having recovered well from early 2020. The primary buying opportunity for 2021 is high yield bonds that have lost value due to a credit downgrade and have since seen their cash position strengthen. High quality credit will continue trading expensively until the risk of further hard lockdowns is attenuated and earnings recover to justify equity valuations.

Asia

China: All soup, no dumpling.

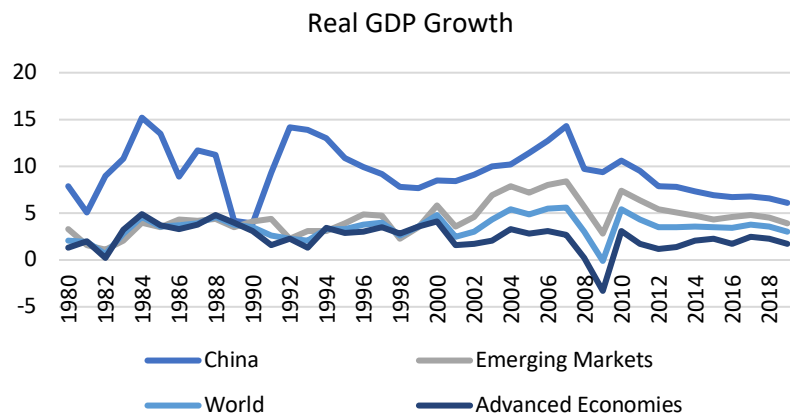
Ryan Clarkson

“All warfare is based on deception.” - Sun Tzu

The Creation of a Problem

For decades China has wanted to rival the United States for global supremacy. Not since the Cold War has any nuclear power moved so decisively to expand both their economy and sphere of influence. As part of China's rapid growth and transition away from an agrarian economy towards an urbanized society the Chinese Communist Party made a promise to its people in the post-2008 bull market to double GDP between 2010 and 2020. A tall order for most nations, but the CCP's commitment to this goal was pure and they began to use aggressive debt policies to get the world's fastest builders to work. Fast-forward to 2017 and the IMF issued a warning to Chinese investors that “debt has reached dangerously high levels”; Beijing brushed aside the warning and continued leveraging the economy to the hilt, hell-bent on reaching their 2020 target.

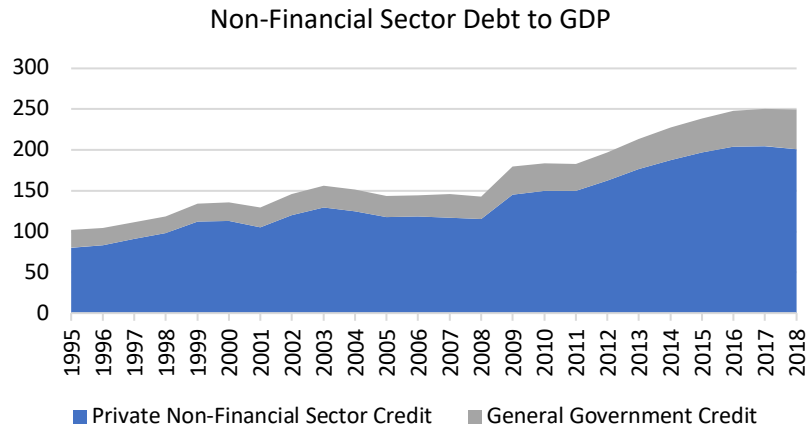
China has seen Real GDP growth in the double digits for the majority of the last 20 years, even producing a strong economic performance through the Global Financial Crisis thanks to massive monetary and fiscal stimulus.



Data: IMF

Unfortunately, China set their GDP doubling goal soon after the GFC and continued to add to their debt in what should have been a period of consolidation. The result of this is an unprecedented accumulation of debt. Debt to GDP in the non-financial sector increased by around 110% of GDP between 2008 and 2018; with around 90 of the 110% increase held by the private sector, at least on paper, which saw its Debt to GDP expand from 117-206% in the period. The remaining increase came from government debt (28-47%). The majority of the private sector debt is held by corporations, however, household debt did triple over the period. It is important to note that official Debt to GDP figures from China are understated as China has a propensity to overstate its GDP and simultaneously bury trillions of dollars of debt in ‘hidden liabilities’.

Asia



Data: BIS

In an IMF study of 43 credit booms (defined as a 30% increase in Debt to GDP in five years) only five ended without major slowdowns in economic growth or a full-blown financial crisis and of the sample studied no nation began with an absolute Debt to GDP ratio above 100% (which China has done). A similar study was conducted by the BIS and was based upon how each nation's Debt to GDP and Debt-Service Ratios deviated from their basis. Their model captured 90% of banking crises within a three year prediction window and when the model was used on China in 2018 they found that China had exceeded the Debt to GDP threshold by 4x and the Debt-Service threshold by 10x. China's Debt-Service ratio is now at 20.1% and it will continue to grow because China currently has the largest interest expense growth rate in Emerging Markets at 27.8% (all whilst PBOC has been cutting rates over the decade).

(All figures as % GDP)	China	Japan	EM	UK	Brazil	Euro Area	Advanced Economies	G20	US	India
Private Non-Financial Debt Growth	88	-3	50.5	-18	20	13	-10	2	-19	5
Total Non-Financial Debt Growth	108	64	59	47	44	42	21	20.5	19.3	-2
Total Non-Financial Debt	250	365	199	267	148	255	261	235	243	124

Data: BIS

China's debt level, in terms of absolute debt to GDP, is not significantly dissimilar to that of advanced economies, but this is not the primary concern- the rate of debt growth (and the quality of the debt) is. The problem is one of cashflow. If China is to generate sufficient windfall to meet their obligations as they become due the return on their investments in Gross Capital Formation must be sustainable and unfortunately they are not.

Inefficient Use of Credit

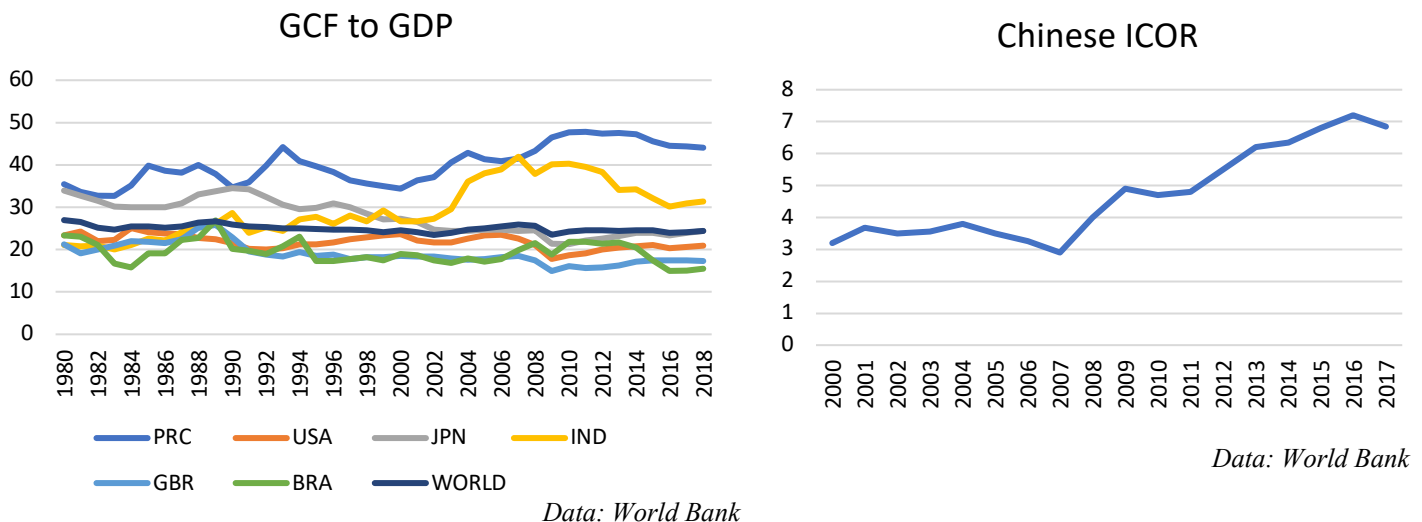
China continues to lean on GCF as a driving force of growth as it is the easiest way to increase GDP. The sustainable way for an emerging market to transition into a developed economy is for government to transition GDP from being infrastructure-led to consumer-led. This allows the country to focus economic activity on improving quality of life and simultaneously ensure a stable deleveraging that avoids both a cashflow crisis and a hard landing. This, unfortunately, has not taken place in China as a result of the structural imbalances in the governance system. Local governments are measured by the CCP on two factors: their ability to

maintain law and order and their ability to grow their municipalities' GDP. These performance metrics run into trouble because the national budget is skewed against the local governments; local governments are responsible for 80% of public spending in China but are only entitled to 50% of the revenues they generate. This imbalance forces local officials to game the system to grow GDP and fill the deficit. Strong GDP growth also helps local officials to secure promotions when their term is up and because Chinese local governments have comparatively short terms of office, local leaders are emboldened to do whatever it takes because they will be gone long before any debts default and thus they are essentially free from accountability.

Local governments grow GDP in two main ways:

1. They redefine city limits so they can continue to build high-yield urban infrastructure like apartment blocks and bridges when they run out space.
2. Local governments secure private debt to fund government projects using a loophole called a Local Government Financial Vehicle.

The result of this strategy is fairly obvious: China's GCF projects are completely detached from actual demand and their sustained reliance on GCF for economic growth has led to any such project producing a declining Incremental Capital Output Ratio (which peaked in 2016).



China's ICOR has more than doubled in the decade between 2007-2017: meaning the effective ROI for any GCF investment has halved, creating a series of run off issues:

- Excess output that is largely wasted. Local governments keep firms alive for tax revenue even when they don't turn a profit because they employ people and the local government can tax any revenues, not just profit. An example is China's steel industry that produced half of global steel demand in 2015, making the metal cheaper than vegetables in China and wasting potential profits by not controlling supply better.
- A high reliance on land for local governments to rezone and build on. China now has 113 cities with a population above 1 million people- many of these cities are now running out of free land to rezone and are encountering farms and protected public land.
- Excess capacity in infrastructure and housing. These projects were justified by the incredible rate of urbanization in China (over half a billion people have moved to cities since 1980), but that is now nothing more than an excuse. In 2013 the Chinese Centre for Urban Development announced plans for new cities that would bring the total housing stock in China to 3.4 billion. More than double the current population. This reliance on real estate and the associated supply bubble has created China's infamous 'ghost cities' which now hold 50 million empty homes (22% of all urban homes).

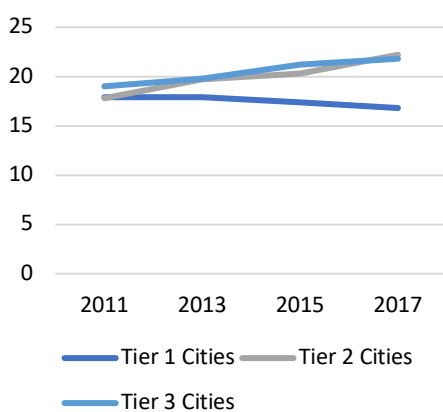
The Danger of Real Estate Reliance

The economic façade that the CCP has constructed is kept in place by rising real estate prices, which in turn supports economic growth. Real estate stores approximately 50% of local household wealth (this goes up to 70% in urban areas), accounts for 50% of bank collateral and is the subject of 30% of bank loans. The demand to own real estate as an investment has supported land prices and this encourages local governments to keep rezoning and selling more land to developers (creating a self-reinforcing cycle of real estate worth only a fraction of its book value).

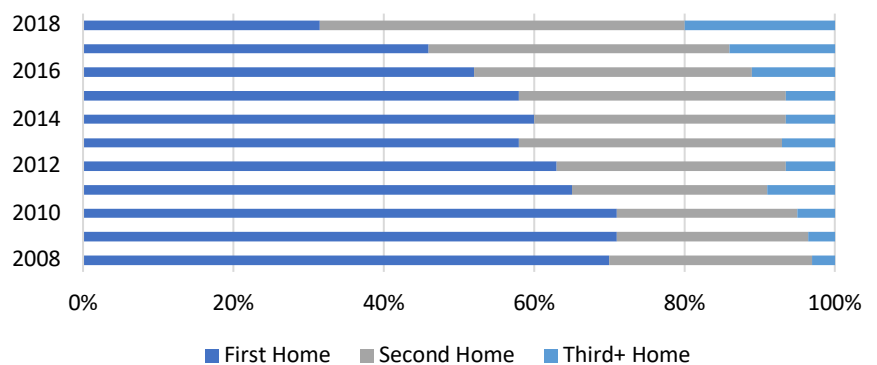
This cycle has manifested itself in different ways across the nation with major cities encountering affordability issues (four of the six most expensive cities in the world by Price to Income ratio are in China: Beijing, Shenzhen, Guangzhou and Shanghai) and smaller cities are becoming home to massive excess capacity and prices are trading at heavy discounts (up to 30% for some projects done by Country Garden Holdings, one of the country’s largest developers). PBOC does not have an ideal monetary policy solution to this issue of overdevelopment as a rate cut will raise prices and hurt those in major cities further and a hike in rates will decimate the remaining demand in non-major cities. Either of these decisions risks protest by those hurt most, just as the discounts offered by Country Garden Holdings were protested as unfair by those who paid full price, and so far the government seems unwilling to sacrifice law and order for economic performance.

The problem in cities is severe with 20% of apartment stocks lying empty and unfortunately the problem is not limited to a few ‘ghost cities’ but has infiltrated major economic hubs. The Centre for Chinese Household Finance has admitted that Tier 2 cities now have a higher proportion of their apartments empty than Tier 3 cities (22.2% vs 21.8%) and 16.8% of housing in Tier 1 cities is also made up of empty flats (this number is falling but is still alarmingly high). Individuals are falling victim to the con of rising real estate prices *en masse* and have begun buying up property as a store of wealth and as collateral to secure loans against. The majority of housing sales in China are now for second homes, with two-thirds as many people buying their third home as their first. It is important to note that this is all taking place in a country where per capita GDP is below 10 000 US Dollars so the majority of the aforementioned 50-70% of household wealth stored in real estate is actually sitting in outstanding mortgages (and is secured against an asset with very little real world value).

Empty Flats to Total Housing



Breakdown of Home Purchases



Data: Bloomberg

Data: Chinese Household Finance Survey

The result is that a growing number of these homes aren’t leased out to tenants (there is hardly a renter in sight with 73% home ownership) but are simply kept empty with the intention of being sold for a capital gain. In 2017 home vacancies in China were 10% more than in the US, 7% more than Taiwan’s and 20% more than Hong Kong’s. Therefore a breakdown in demand (caused by something like financial consolidation after a global pandemic- or even just individuals realising they are over leveraged) would massively slow down price growth and would likely cause a total market collapse as there is insufficient genuine demand-side support to intervene. Yes, the government could intervene and temporarily buy up enough stock to stabilize prices (note

that they would have no way to offload this much property and would invariably have to distribute it back to genuine buyers) but once the dust settles citizens would be far too wary to buy investment properties again and genuine buyers would realize that if they held off for long enough the government would buy a home for them. This creates a systemic risk in the Chinese economy because of the huge amount of individual wealth stored in property.

Demographics are also working against China; despite being young it is one of the fastest aging nations on the planet and the UN estimates that China is at the peak of its Working Age Population and at the lowest point of its dependency ratio for the next 100 years. This makes it obvious that maintaining their current level of economic output is unsustainable. A smaller workforce will bring with it lower productivity and increased pressure on the financial system as workers retire and go from being net depositors of capital to net withdrawers of it. Japan had a similar WAP profile 25 years ago and suffered a two-thirds fall in GDP growth and this was 25 years after Japan's GCF peaked, meaning it had already suffered the fall in growth due their economy maturing. As it stands currently, China would peak its WAP and GCF at the same time, thereby compounding the economic impact. A good model for Chinese GDP growth going forward is then closer to 3% than the 6% being forecast by China.

The Role of Shadow Banking

Shadow Banking is the supply of non-bank credit that is not subject to the same regulations as ordinary bank lending. The estimated size of the shadow banking industry in China is 70% of GDP but this varies wildly as the Chinese government cyclically clamps down and then loosens up regulations in the sector to control the rate of credit expansion. As the Shadow Banking industry is so large in China it complicates the debt situation even further as overall Debt to GDP is significantly higher than any estimates will admit and much of the credit market is totally unregulated. Shadow Banks have no reserve requirements and investors in shadow products are left completely exposed as a result.

One again, however, the issue is not limited to the immediate problem at hand (dodgy lending products) because somewhere in the region of 40-50% of shadow products consist of Wealth Management Products- this product is used by ordinary Chinese citizens as an investment vehicle and will leave them totally exposed should a default or liquidity crisis occur.

This creates Contagion Risk because if a company is unable to post sufficient collateral to secure a loan from a traditional lender the firm can raise a portion of the money required using a shadow product and then secure the remaining amount via the traditional lender (which will be happy to loan a smaller amount that the firm is able to back with collateral). This is exactly what happened in the US National Mortgage Crisis in the 1930's: borrowers used thrift lending and the newly available Private Real Estate Security to secure loans with only a 10% down payment when the banks thought the borrowers were putting 50% down. The scary part is that even in the 1930's the banks communicated with the thrift institutions and no one caught on until it was too late. Shadow Banks in China do not communicate with traditional lenders meaning there is no real way to quantify the full extent of Shadow Banking (but one can assume it does nothing good to the Debt-Service coverage of any company using shadow products). A crisis in the Shadow Banking sector will invariably spill over into mainstream financial institutions and to the general public that is exposed through Wealth Management Products.

In 2017, President Xi Jinping announced a tightening of credit regulations in an attempt to promote quality over quantity in credit markets and as one can expect with tighter credit laws, SMEs lost out and economic growth was stunted. The policy shrunk profits for smaller businesses and placed them in a tighter cashflow position which was less than ideal as many of these firms have high Debt-Service ratios. Regulating Shadow Banks creates a quagmire for the CCP: they can continue to tighten the noose on shadow products and cut economic growth off at the knee, or they can let the status quo continue and 'run the wheel' on the economy at an increased risk to the financial system in the hope that they are able to transition away from their reliance

on real estate before their debts catch up to them (although this is incredibly unlikely as over 80% of corporate debt in China will mature by the end of 2023).

Debt Trap Diplomacy

The CCP's ability to derive a fiscal solution to the debt problem has been significantly weakened in the past few years. The most recent issue to emerge is the current state of the Belt and Road Initiative, the BRI is China's plan for 21st century economic expansion and currently involves projects in 77 nations. China was meant to fund over a trillion dollars' worth of projects despite most of these countries being underdeveloped and fiscally unstable. China offers to finance and help build infrastructure projects that will be mutually beneficial that the host nation could never otherwise afford. It has, however, become painfully clear that host nations are largely unable to repay the borrowings and in turn China offers debt relief in exchange for ownership and control of whatever they have built. An example of this is the water port constructed near Hambantota, Sri Lanka in 2010. Sri Lanka's new port failed to attract sufficient business (which was meant to be Chinese ships) and the government defaulted on the outstanding USD 5.5 billion. China struck a deal with Sri Lanka and took 70% ownership of the port for 99 years for USD 1.12 billion in exchange for a refinancing on the remaining loan.

China is brazenly enacting debt trap diplomacy in developing nations who all too greedily accept a perceived short cut to growth. However, in the wake of the Coronavirus pandemic a significant portion of the countries involved in the BRI have asked for debt relief from China and this has created a massive undertaking for China that the CCP has no choice but to accept or risk failure of the entire BRI. To illustrate the severity of the situation: Pakistan, just one of the 77 BRI nations, has asked for relief on half of the outstanding USD 60 billion it owes to China through the CPEC (the China Pakistan Economic Corridor) organisation. China subsequently suspended debt repayments from all BRI nations, a move that has no doubt created strong political ties within China's sphere of influence but comes at the cost of dwindling foreign exchange reserves. Unfortunately for the CCP though, it is impossible to blame the BRI's shortcomings on the Coronavirus. This current wave of trouble is washing up at the feet of the China Development Bank and Exim (the Export-Import Bank of China, one of their two remaining 'policy banks') who lost USD 150 billion in Venezuela in 2017 and have had to cut back on international lending as the BRI has begun to unwind itself. In the decade following the GFC the two banks lent USD 462 billion (the World Bank lent USD 467 billion over the same period), with the Chinese banks peaking their lending in 2016 at USD 75 billion. In 2019 the two banks only lent USD 4 billion.

As much as the failings of the BRI are problematic on their own as they add an extra layer of complexity to the fiscal position of China, they also provide an indication of what is really happening inside the Chinese economy. The BRI is an attempt to replicate the Chinese model of economic growth in other developing nations. Projects are entirely focused on the same type of GCF initiatives that China has built themselves on for the last decade and, when these projects come under scrutiny of a poorer or more transparent nation that is unwilling or unable to brush losses under the carpet, the truth is clear for all to see: it is an unsustainable model that was built with complete disregard for market equilibrium. Nearly every BRI nation has projects that have failed to bring in revenues close to forecasts, stimulate the economy or produce sufficient cashflows to make the debt burden sustainable. The only reason China is still able to hide the real issues in their economy is because so much of their infrastructure development is focused on real estate and the Chinese people are still willing to purchase more houses because they expect prices to continue to rise *ad infinitum* (the same thing happened in the National Mortgage Crisis with hybrid financing and again in the Subprime Crisis with adjustable rates).

China has adopted a policy of 'dual circulation' to keep the wheels on the bus inside the country. Under the policy the Chinese Development Bank and the policy banks (Exim and the Agricultural Development Bank of China) prioritize internal financing over international financing in order to try and support real consumption in their local economy; with the intention of then being able to resume widespread international financing with the revenues. This approach is supposedly driven by a growing appetite for credit that the current

financial system is unable to satisfy, however, as an ever-larger portion of new debt is used to service existing dues and the remainder goes towards GCF (that will only exacerbate debt to GDP and worsen credit worthiness of borrowers) the likelihood the policy succeeds in saving China is very low.

The Nails in the Coffin

As both fiscal and corporate China are experiencing climbing Debt-Service levels, financing has shifted from the long term to shorter terms. Long term financing in Rmb loans peaked in 2017 and short term loans bottomed out in 2018 and have been on the climb ever since; indicating that investment in high yield projects is decreasing and financing for cashflow/interest repayment purposes is on the rise. China has tried to remedy the situation with stimulus spending targeted at SOEs but as these tend to have poorer revenue prospects than private firms it is unlikely these efforts will generate the long term returns needed to support a stable deleveraging of the economy.

Land and real estate prices are slowing considerably and now sit below 5% p.a. when home prices were growing at over 18% in Q1 2017. Moreover, prices are no longer responding to interest rate cuts- a tool that has been highly effective and the staple mechanism of action for PBOC (who in reality are the same as the CCP) in the past. A tumble in land prices will have a direct impact on the local governments that are heavily reliant on land sales for revenues (in 2015 just 19% of local government revenue came from land sales- in 2018 it accounted for 27% of revenues); a slowdown in prices could be the catalyst to a fall in fiscal spending that unwinds much of the growth of the past decade and takes out any outstanding debt with it.

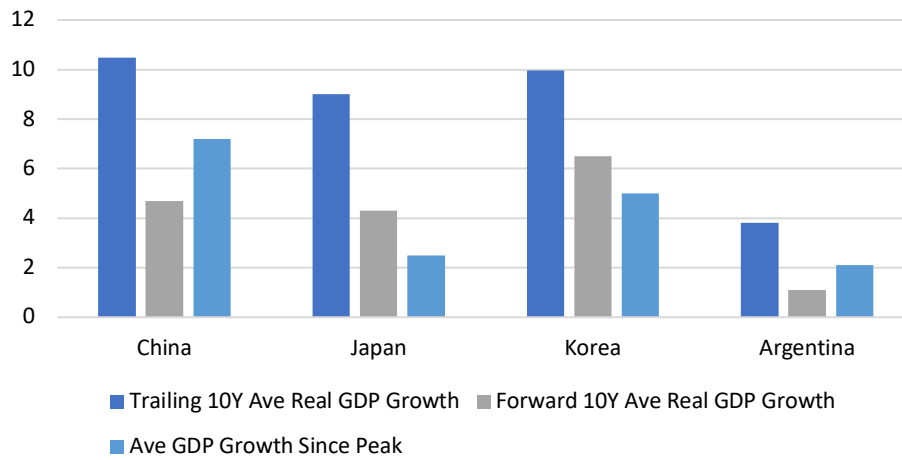
All this comes amidst cracks appearing in the wider economic position of China. Growth in aggregate demand is the lowest it has been in two decades (this was true even in 2019, well before the arrival of the Coronavirus) and imports from key trade partners are falling. Although imports have always been volatile for China it is important to note that the current decline is not driven solely by frayed relations with the US and the same relationship holds if they are excluded from the equation and one only looks at the EU, Australia, Japan and South Korea. The slowdown in domestic consumer-led growth and their recent fall in exports has pushed their current account to the precipice of deficit (they managed to produce a large surplus in Q2 and Q3 2020 but this is unlikely to be anything short of temporary given the wider economic position of Chinese consumers). This raises significant risk of China running twin deficits due to the large fiscal deficit they have run for decades due to investment in GCF. China has usually funded the budgetary deficit by increasing money supply and supporting their currency with large FX reserves, however, with imports outstripping exports these reserves are dwindling fast and last year we even saw China let their currency peg to the USD slip. If a twin deficit does re-emerge it will place significant pressure on FX reserves and raise the risk of a currency crisis.

Exim might be a useful tool for the CCP to help companies export their products (should they be forced to abandon dual circulation) and they operate through two main tools: concessional loans and preferential export buyer's credits. However, the Exim system is designed around the BRI and so far the policy banks have failed to efficiently tap into developed markets: predominantly as a result of products offered by the bank being centred around GCF- something developed markets have very little need for or interest in outsourcing to another country. Therefore, China's best prospect of avoiding a debt crisis by bringing in sufficient export revenue falls on its ability to push the BRI onto emerging markets. Should demand for such products dry up (as a result of tighter financial positions from the Coronavirus) then Exim will have very little ability to push Chinese exports to the world as they are poorly equipped to refocus operations on non-GCF items such as consumer goods and soften the blow of a debt crisis. China's most valuable trade partners in this situation (which are developed markets) are beginning to lose interest in Chinese products. China has no real way to stop this and as a result their ability to avoid running a current account deficit is significantly weakened.

If China does try to shift their economy to being consumer-led and transition into a developed market the government will likely have to initiate tax cuts in order to support economic growth as best as possible and this will place further pressure on the budget deficit, increasing the need for foreign debt. Undertaking such a transition comes at a significant economic cost and shifting to a consumer economy sees average growth

reduced to half of what it was before. The reformation argument for China escaping their current predicament is far from bullish on the economy.

Real GDP Growth of Selected Countries Before and After Peak in Capital Formation (%GDP)



Data: World Bank

Capital Formation (%GDP) at Peak

China	47.7	2011
Japan	41.1	1970
South Korea	41.4	1991
Argentina	30.9	1977

Data: World Bank

Attempting such a late transition away from reliance on capital formation is incredibly risky and will place immense stress on China’s already damaged financial system. The likelihood of China being able to deleverage with causing significant currency devaluation is minimal at this point. The aforementioned factors have pushed the infrastructure sector to the brink of failure and stands as a testament to the CCP’s pursuit of doubling GDP when they should have begun the process of slowing growth down and transitioning the economy after the GFC. When the defaults arrive and both the CCP and corporates begin to find themselves short of cash they will turn to the Shadow Banks. The CCP will have no choice but to deregulate and whilst this will likely produce much needed relief it will be short lived as firms find themselves unable to outrun their dues, risking contagion to mainstream lenders as a result.

Delinquencies doubled between 2015 and 2019 and then doubled again in Q1 2020 as a result of the Coronavirus. The pressure the pandemic has put on Chinese credit may be being buried by stories of mass consumerism and a strong recovery but it cannot be ignored by value investors. One cannot help but be reminded of the often quoted and somewhat ominous line Michael Lewis asked in *Liar’s Poker*: “The questions a Liar's Poker player asks himself are, up to a point, the same questions a bond trader asks himself. Is this a smart risk? Do I feel lucky?”

China set out to be the leading economic superpower but has let its mask slip; the country’s decade-long deception of their underlying economic health is reaching a head and their once-revered miracle economy will likely be revealed for what it actually is: all soup, no dumpling.

Enter Yoshihide Suga

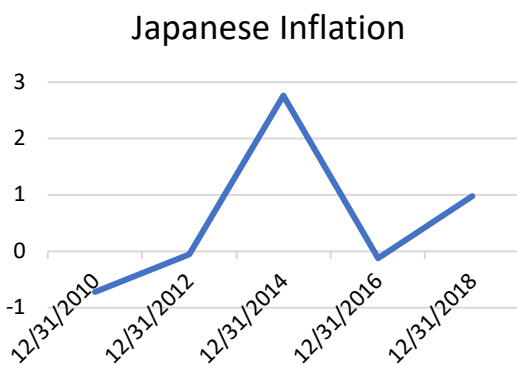
Robert Tolan

The implications of Suganomics.

Shinzo Abe, the most influential Prime Minister of Japan in modern times, resigned in September. Having implemented Abenomics, expansive fiscal policy, quantitative easing and extensive reforms of the economy, he made a daring attempt at resurrecting the world's most stagnant economy. His successor and former lieutenant, Yoshihide Suga, was elected to the presidency of the reigning Liberal Democrat Party with 71% of the vote. The task ahead of him, healing a zombie stricken with Covid, requires tenacity and ingenuity. Perhaps Suga's greatest threat is time. Abe served ten years at the helm, long tenures in Japanese politics are almost always followed by short ones. To live up to expectations, Suga will have to echo the Spice Girls and tell the economy, 'If you wanna get with me, better make it fast'. Failure to do so could end with Japan becoming Scary Spice.

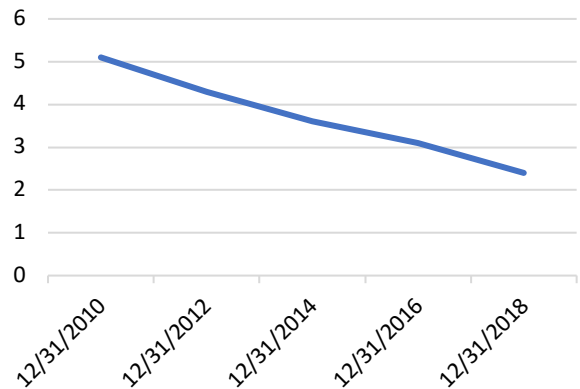
Continuity

Suga's primary objective will be to ensure deflation is avoided at all costs. The greatest success of Abe's administration was undoubtedly reversing the most pervasive trait of stagflation. To this end, Suga will be continuing low interest rates and ensure the Yen remains weak. To bolster this, extensive deregulation will be continued. Abe took the critical step of deregulating utilities. Suga is planning to further deregulate the financial sector.



Data: Macro Trends

Japanese Unemployment



Data: Macro Trends

Firms are escaping Hong Kong before Beijing further strengthens its grip. Proposals such as major tax incentives and creating special economic zones to lure these businesses to Tokyo are in their incipient stages. Notably, policymakers have ignored the social issues that have played a role in sluggish growth and indeed innovation, a collapsing birth rate and the rise of the Hikkomori, the reclusive population. It therefore appears Suganomics will be Abenomics take two.

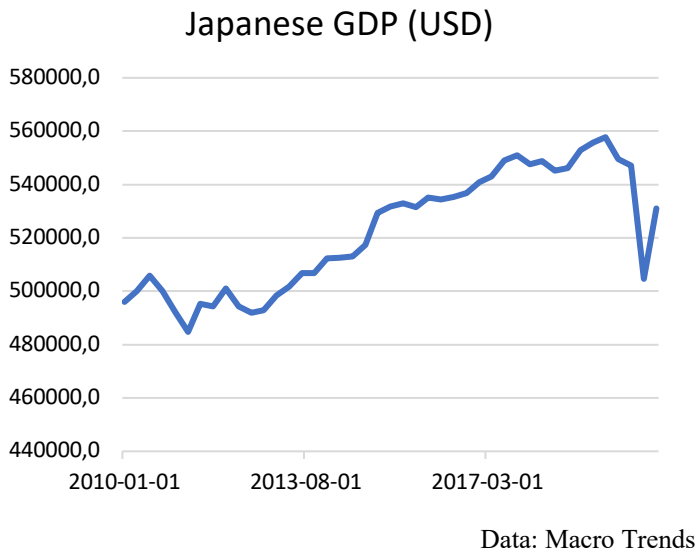
Bank of Japan

Indeed the main source of continuity may be the Governor of the Bank of Japan. Haruhiko Kuroda remains at the monetary levers of power and will continue to push for reflation – so much so we may see even lower rates. In tandem, taxes will be reduced. This will give the reflationary effort two prongs to bring inflation above 2%. The BoJ has committed to overshooting the 2% target in order to ensure deflation never occurs again.

Sustainability

Low rates have been particularly destructive for small regional banks. Miniscule loan yields are bringing many close to the brink and to prevent disruption, the BoJ is offering increased rates and funding if mergers and/or efficiencies are achieved. The banking system is much more fragmented than those of Japan's western counterparts. To rectify this and to ensure the strength of the banking system at a time when it is overexposed to real estate lending, Suga is pushing for consolidation. A formal plan is expected in the coming months. Nonetheless, the BoJ's current policies could make

these efforts futile if rates are not ratcheted up safely.



Pressure Cooker

The BoJ was the first central bank in the world to experiment with negative rates. Resulting in \$760bn in bonds being added to its balance sheet every year. How such an oversized balance sheet will react if and when rates rise again is anybody's guess. A glimpse was given by the Taper Tantrum in response to the Federal Reserve hinting at a rate rise in 2013. Yields on Japanese government and

corporate bonds will balloon. In an economy still traumatised by the Asia Crisis, the extent and intensity of the pushback, anger at the demise of being paid to borrow, would cause another Asia Crisis. In this sense, Suga and Japan are caught in a Catch 22. Even if this round of Abenomics is successful and Japan comes to the bridge leading to normality, it appears this bridge will collapse as soon as it is set foot on. Though low and negative rates have revealed a great deal about the nature of economics, they have set a trap that dwarfs even Covid.

Regardless of what Suga or the BoJ do, they cannot win as success could lead to disaster. Recognising this, Suga's government will remain conservative in western ideas but from the Japanese perspective, it will be quite liberal. The first test of this thesis will be the forthcoming budget expected in Q1/Q2 2021. Aside from increased pandemic relief, funds are likely to be set aside to encourage consolidation in banking and to make utilities more competitive. In tandem, the BoJ looks set to keep rates constant but to put more emphasis on using open market operations to ease pressure on major creditors. Depending on the intensity of the post-vaccine rebound, the BoJ will continue to sell Yen over the coming year to ensure Japanese exports can maintain a foothold in the global economy.

The Financial Implications of Hong Kong Losing Their Independence to China

Catherine Thiltgen

One country, two systems no more.

In May of 2020, the Chinese government enacted the Security Act of Hong Kong, which signalled an end to the independence movement, as well as the semi-autonomous nature of the region. This led to heightened tension to an already tumultuous relationship between the pro-freedom fighters in Hong Kong and the authoritarian Chinese government, who hold a desire to maintain power and the status quo in the region. The Security Act was a strong message from the Chinese government who had previously been restrained in

their response to the unrest from the pro-freedom fighters. China stated that they are willing to increase their use of military force, as well as impose martial law in order to maintain order—stifling any hope of Hong Kong sustaining their autonomy. The Security Act worsened international tensions between China and many key countries, however it is not clear whether the act will have a positive or negative effect on the Hong Kong economy.

China's rejection of the Hong Kong independence movement created many undesirable monetary effects for the country, specifically in relations with the United States, a relationship already tainted over fears of China's transparency with Covid-19. Donald Trump worked to end Hong Kong's trade preferences, in an effort to undermine the power of China. For many years, Hong Kong was not subject to the tariffs imposed by the US on imports; which

was changed in July of 2020 on the basis of Hong Kong no longer being completely autonomous from Beijing. However, Hong Kong's importance to China for imports and exports is much smaller than it once was so this caused negligible effects on the mainland. Additionally, there was a bill passed by the United States' Senate and House to delist all of the Chinese companies from the New York and Nasdaq stock exchanges that do not comply with US audit and oversight procedures, it just needs to be signed into law by President Trump. This is on top of the executive order Trump signed in November, 2020, prohibiting Americans from investing in key Chinese companies that support Beijing's military. These relations have unsettled global investors and many American multinational corporations are worried about how this will affect their businesses, with many major US corporations shifting their positions away from Hong Kong.

Nevertheless, there is evidence that China having more power over the region will actually end up benefiting Hong Kong's economy. There will be more money coming in from the mainland, which is the second largest economy in the world. Along with this, there will be more listings from Chinese companies in the Hong Kong stock market and there will be increased financial links between the two entities. The effects of this have already been realised, for example, in the first six months of 2020 Hong Kong held the third largest initial public offering market, caused by U.S-listed Chinese companies undertaking a secondary listing in Hong Kong. Because of this success, the Hong Kong dollar did not lose value when the Security Act of Hong Kong was implemented.

However, when the Security Act was announced, the Hong Kong stock market decreased by 5.6 percentage points, the most it has in five years. This is because the act could produce negative effects on the economy if the stifled political independence of

Hong Kong causes major corporations to relocate from the area, causing substantial amounts of money to leave the territory. Money is already starting to flood away from Hong Kong and into other economies such as Singapore, whose foreign currency deposits doubled from July 2019 to March 2020. Conversely, Hong Kong saw a decrease in overseas foreign direct investment of 48% in 2019. The companies leaving would decrease the importance of Hong Kong as a financial hub. Additionally, along with the United States, there are major countries that have expressed concerns with the Security Act, namely Canada, Australia, and the European Union, which could cause more tariffs, resulting in the exiting of investors from the region.

Hong Kong is very important financially to China; it is one of the largest open economies in the world and attracts more global capital than other cities under Chinese control, with companies first establishing themselves in Hong Kong before moving into the mainland. However, China has significantly decreased their reliance on Hong Kong in the last 20 years, and the government's main goal is now to maintain the status quo. However, there are still negative implications to the region as other countries are expressing concerns, specifically the United States. The United States has instituted major retaliatory practices, which will undoubtedly have negative effects on the Chinese economy and the businesses who operate in the region as an increasing number of major corporations are reducing their positions. The Security Act has not yet been in effect for long enough to know the true implications on the Hong Kong economy, though there are projected positives and negatives. The Act will probably not have as large of an impact on the economy as it will socially, causing the Hong Kong people to lose the independence they desire to maintain under the 'one country, two systems' arrangement.

What will the Indian Economy look like in 2021?

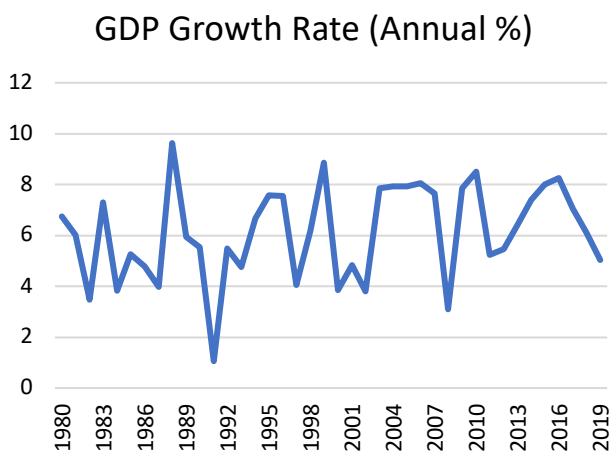
Sean Connolly

An emerging market with a Coronavirus problem

The Indian economy is widely known as one of the fastest growing developing markets globally. Much of this growth in the last decade has been driven by rapid population growth which will see India's population surpass that of China by 2024. The current Indian government follows protectionist economic policies with high levels of state

intervention and regulation. The Indian economy is largely driven by private consumption with India labelled as the 6th largest consumer market and is supported by huge government expenditure (INR 59tn. in 2019) and their exports, which account for 18.7% of GDP and are the 12th highest globally. The monetary policy of the Indian Central Bank follows a standard inflation mandate of ensuring price stability through the management of the money supply to allow for sustainable economic growth. Their fiscal policy is one of frequent budget deficits contributing to rising sovereign debt, this frequent use of debt financing to fund extensive public expenditure has had a positive effect on the Indian economy as indicated by continuous positive GDP growth year on year since 1980.

The IMF have donned the Indian economy as the fastest growing trillion dollar economy worldwide. The Indian economy is ranked as the world's third largest with respect to their Purchasing Power Parity (PPP) of GDP of \$11.33 trillion and fifth largest by their Nominal GDP of \$2.94 trillion. Overall, the Indian economy has grown from the 13th largest economy in 1980 to the fifth largest presently. The World Bank puts their GDP growth over this period at an average growth rate of 6-7%.



Data: World Bank

If the coronavirus pandemic had not struck this growth would have been forecasted to continue at a high and somewhat steady rate, however when we project forward into 2021 the effect that the pandemic has had and will continue to have is apparent and impossible to ignore.

To accurately portray the effect that the pandemic has had on the Indian economy it is possible to

investigate the impact it has had on the driving sectors of the Indian economy.

The Indian economy is largely export based as mentioned above. The Agricultural sector and services sector form the core of these exports and have all been heavily affected by the pandemic. Agricultural proceeds make up 14% of India's total GDP. In addition to this, 44% of India's workforce is employed within this sector. The implementation of nationwide lockdowns in India has meant that proceeds from crops that were due to be harvested in summer have been lost. These lockdowns have created a labour scarcity across the agricultural sector which has dramatically reduced this sector's efficiency, productivity, and profitability. Disruption to supply chains has also dramatically reduced agricultural exports from India. Similar disruptions to manufacturing supply chains has meant that exports from this sector have dramatically declined this year as well.

The services sector is predominantly made up of IT companies. Proceeds from this sector make up 60% of total GDP. The sector has been able to cope with the pandemic quite well with a shift to at home working which has been seen worldwide. However other services such as tourism and travel have been massively impacted by the pandemic and has meant that these services have been brought to a stand still.

The overall impact of the pandemic has seen GDP from April to June of 2020 shrink by 23.9%. This reduction in GDP is the largest contraction ever seen for the Indian economy. The estimated cost of entering a lockdown is in the region of USD 26bn and the overall cost of relief packages from the government amounts to INR 348bn. Over the course of 2020 unemployment has soared to heights of 24% but since has reduced to around 6% as of September. These figures cement the fact that India has entered its first economic recession since 1947.

The projected performance of the Indian economy in 2021 has been outlined by the IMF among other sources. They predict that GDP per capita will fall by a further 11% by the end of 2020 and it won't be until the beginning of 2023 that GDP Growth returns to similar levels seen before the pandemic. The Reserve Bank of India predicts that it will take until 2033 for the economy to return to its pre-Covid size. This 2033 recovery is assuming a 'v-shaped recovery' where in the first 2 quarters of 2021 at least we will see moderately low levels of

growth but if a vaccine is distributed effectively this economic growth could begin to recover and grow rapidly allowing the Indian economy to fully recover by 2033. The speed of this rebound has been debated worldwide. Factors stemming from a large fiscal deficit this year such as contracting budgets, lack of investment and high unemployment will persist as a result of the pandemic and have been documented by the IMF as reasons why this recovery may be at a slower pace with the Indian economy only recovering to pre-Covid size by 2050 in their estimates. Indian exports are expected to rebound sharply in 2021 as demand for their products and services have not been diminished. However, the recovery of sectors

such as tourism and travel will most likely lag behind.

The Indian economy will continue to harbour the ill effects of the coronavirus pandemic for certainly the first 2 to 3 quarters of 2021, however after this the Indian economy will be in a recovery phase in a bid to return to their previous trend of strong economic growth and lead the way in any global economic surge that may be seen. Whether this upswing is seen in the long-run or in the near future is largely down to how quickly and effectively a vaccine can be distributed to allow the Indian economy to return to operating at full capacity and also how the Indian Government manages their impending large fiscal deficit entering into 2021.

Europe

Brexit to Leave Lasting Scars on the European Union

Rebecca Warde

A divorce that will challenge Europe's loyalty to the unilateral economic union approach

Brexit is no doubt the hot conversation topic of the year. While political experts are leaning towards a No Deal Brexit, it is important to also consider the long-term political side effects Brexit may have on the European Union. It is important to consider the impact on the relations between countries in the European Union & on the EU as a whole with other countries worldwide in order to project an outlook of the macro economic environment in the coming years. The key risks discussed include the negative economic impact on both Irish & UK economies & the political shift in the European Union post Brexit.

The impact on trade is no doubt the most important factor for the British government. Facing a post-Covid economy, the British government are fighting to ensure the best projected outflows for their country. Although previously confident of a Trump win, Britain's hand in negotiations has been reduced significantly by a second-generation Irish Biden win. The Conservative's handling of the pandemic and a departure of two key "Get Brexit Done" champions have guided people to think Britain will concede in order to optimise their trading power. At the centre of the trade negotiation involves the introduction of tariffs. This matter is currently being discussed with the European Union with an outcome expected by week ending 29th November. Looking at worst case scenario, the introduction of tariffs will dramatically impact the price of imports & exports leaving the United Kingdom. The UK Global Tariff would be alike the Canadian model, whereby they are free to trade independently but customs must be applied. The head of Bank of England has described this move as a disaster for England & would leave the economy in a worse situation than Covid. Albeit the most detrimental impact of Brexit, talks are concluding this week which allow Britain & the world to predict the economic impact in full.

Secondly, although the European Union as a whole will be impacted, Ireland will no doubt feel the impact of Brexit the most. Even a Deal with Britain would cause a significant impact on GDP. Although continuously diversifying throughout the past few years the UK is the biggest purchaser of Irish food products. Even if the customer changes, there is still the issue of two thirds of Irish products flowing through the UK before being sent to other countries. Geography demands a continued strong Irish-UK relationship and an agreement must be reached to ensure Ireland is not losing out on a more inexpensive land bridge export option.

Summary of Results	EEA Scenario	Customs Scenario	FTA Scenario	WTO Scenario
GDP Impact	-2.80%	-4.30%	-4.30%	-7.00%
Exports	-3.30%	-4.40%	-4.50%	-7.70%
Imports	-3.50%	-4.70%	-4.80%	-8.20%

Even with an optimal outcome for Ireland, GDP will be impacted by 2.8%. The hit to GDP, unemployment and increased dependency on the state are not the only figures that will be affected. The exposure to exchange

Europe

rate risk has already negatively impacted the Irish economy, with imports being dearer & exports becoming cheaper as the GBP-EUR rate narrows.

In every sense Ireland is set to be negatively impacted by Brexit. Although the many potential future advantages of being the low corporation tax hub & an English-speaking neighbour of Britain, the immediate macroeconomic impacts will shock the Irish economy initially. Copenhagen Economics predicts “Irish exports to the UK will be 9-24% less than a Non-Brexit scenario by 2030” even with an optimal EEA agreement in place.

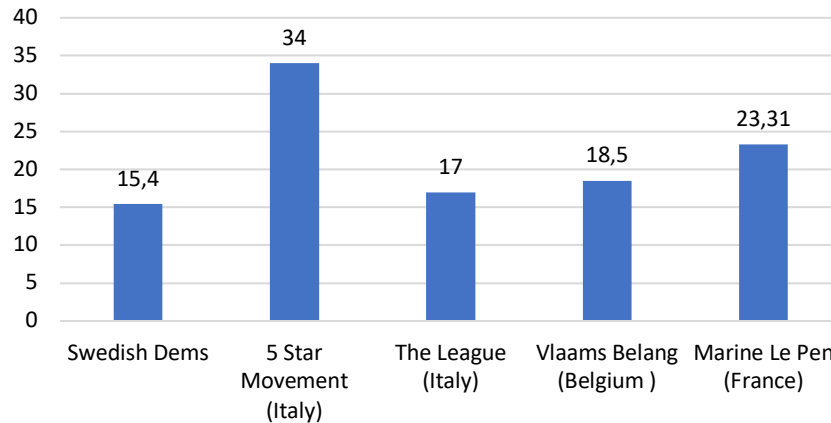
London has always been the centre of the financial world in the European Union, yet the financial services sector is currently not one of the main topics being discussed in Brussels. London, with its English-speaking workers, strong capital market share and more flexible regulation than its east counterparts, still views itself as the obvious choice for business. Although viewing itself as the inevitable choice, London was dealt another devastating blow on the 26th November with the city’s financial services sector being told to move or face disruption. The city was desperate to hold on to its “financial passport” in order to facilitate business as normal. If business cannot continue as normal there will be an inevitable relocation move by thousands of firms. Although an apparent strong feat, remote working is a direct consequence of Covid and allows more flexibility in terms of HQ location. This is an important factor to consider for the British government who seem to be relying on their reputation & regulation in order to retain Wall Street banks & investment funds. Even if firms decide to stay in London for these reasons alone, there will be an inevitable move of certain functions to another EU location. With this leads to a decrease in employment & discretionary expenditure in the UK negatively impacting the UK’s GDP.

Since the Leave vote was announced, companies and investors have looked towards other European financial strongholds in case of a No Deal Brexit & subsequently the epicentre of finance could be moved in the east direction post Brexit. Frankfurt, Paris & Luxembourg are among the key relocation destinations being considered. Although the immigration policy is not drawn up in full, the visa situation could also be another deterrent for top talent who see London as a potential home. As the policies develop in full one will be able to predict if London will remain the key player in the financial world.

As the biggest financial player, Germany will remain the EU’s stronghold location. However, due to EU’s negotiation rules for new policies etc, Germany will lose their usual strongest backer, the United Kingdom. There are two blocs when implementing new policy, the Liberal middle vs the Protectionist southern bloc. This exit will move the European Union away from a heavy liberal focus and it will be harder to form a blocking majority against certain policies favoured by other counties. This is an important factor to note in terms of projecting the new macroeconomic policies that may be championed in the current years. Germany usually favours more liberal facing policy and we can assume the proposed policies will follow this route. The opposition to these policies may come under threat in that other countries may be intimidated by Germany’s size and form a majority in opposition. Whether the protectionist policies become the forefront for European policy will be determined by Germany’s new relationship with others in the Union.

Another future potential outcome of Brexit could be an increasing number of countries wanting to leave the European Union and follow Britain in establishing their own market. As the economy is currently clouded by the coronavirus impact, we will have to wait & see how Britain performs in years to come. Although many economists predict they may in fact re-join the European Union it has no doubt stirred up growing negative opinions towards the European Union across the board, albeit in the low numbers. Various member states have seen a rise in far-right political parties putting renegotiation with the EU as their main policy: including the Swedish Dems, 5 Star Movement & the Front National outlined below.

Far Right Political % Vote Share 2019



Data: BBC

Having an anti-EU sentiment gaining growing numbers is no doubt a threat to the European Union. In order to conclude if this is a viable threat for the following years, it will be important to follow the share of election votes in 2020 in an uncertain Covid economy.

To conclude, Brexit will no doubt shake up the European Union and leave lasting scars on an economic and political front, whether it will contribute to an exodus from the European Union structure that we are familiar with will be answered in time. The Coronavirus impact no doubt shadows the initial Brexit efforts and may contribute to a starker post-Brexit United Kingdom than initially imagined.

The German Economy in 2021

Aisling Heaslip

Europe's powerhouse will reap the benefits of efficient fiscal support during its recovery

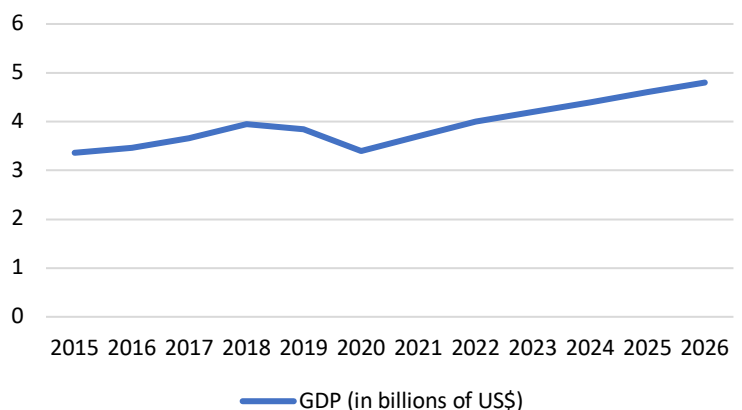
The economic impact of Coronavirus was unsurprisingly bleak for Germany in 2020. GDP fell by 10.1% in Q2, in comparison with a reduction of 2.0% in the first quarter of the year. This was the sharpest decline since 1970, when calculations for quarterly GDP began, this fall of over 8% of GDP highlights how not even Europe's largest economy is immune to the turmoil brought about by Covid-19.

The German economy is expected to contract by 5.8% this year, above the 5.6% suffered during the global financial crisis over a decade ago. For next year, the country's Government Council of Economic Advisers lowered their GDP growth forecast to 3.7%, down from a previous estimate of 4.9%. This is due to the anticipated contraction in

economic output during Q4 and 2021Q1 as a result of the second wave shutting down much of the economy once again and lockdown measures being reintroduced.

Looking ahead until 2025, Real GDP is predicted to increase at an annualised 2%. Overall, the recovery for the global economy is promising, however, trade policy disputes between the US,

German GDP



Data: World Bank & Trading Economics

China and the EU and the fallout from Brexit are likely to hinder growth.

Due to the substantial drop in economic output in Germany attributed to the pandemic, the unemployment rate has risen by 1.1% year on year and in November 2020 unemployment stood at 6.1%. Between 2018 and the start of the pandemic the unemployment rate was consistently around 5% as the country relished the end of the post-financial crisis boom.

During the second quarter of the year, the unemployment rate rose significantly. The government's economic stimulus package resulted in the economic situation improving considerably during the summer months up until Q4 as the second wave started to hit. One of the most beneficial programmes introduced was the 'Kurzarbeitergeld' - short-time work allowance, which is a form of government aid that allows employers to reduce employees' hours to maintain their jobs. This policy should stabilise the labour market as it has been extended and thus the unemployment rate is likely to remain roughly the same in 2021.

The consumer confidence index is estimated to fall by 2.1% this year partially due to Covid-19 but also because of the UK's withdrawal from the EU earlier in 2020. This index fell dramatically during the height of the pandemic in April and May due to a collapse in manufacturing activities from the strict lockdown measures implemented. To compensate for the decline in manufacturing activity the government extended its short-time work aid programme due to the climbing unemployment rate and households experiencing a drop in disposable income as this had caused consumer spending to fall significantly and led to households delaying investment plans. Nonetheless, the VAT reduction that was introduced as part of the government's financial aid and economic stimulus packages partially restored consumer confidence during the summer.

However, as Germany experiences a second wave the consumer confidence index weakened, falling to -11.6% and is likely to remain negative for 2021. The temporary VAT reduction that came into effect in June is due to expire at the end of this year but

may be extended into early 2021, to mitigate the economic fallout from the second wave and the impact this uncertainty has brought on disposable income. The CCI is predicted to increase at an annualised 0.3% until 2025.

In the third and fourth quarters of 2020, the business confidence index deteriorated significantly because of the coronavirus crisis and Brexit. Germany is the world's third largest exporter and the enforcement of severe lockdowns had a strong negative impact on international trade. As China is one of Germany's most important trading partners the restrictions imposed on trade were disastrous. The disorder caused by the pandemic greatly impeded international supply chains as manufacturing activities were shut down. Furthermore, restrictions on the tourism and hospitality industries has also hampered business confidence. During the second half of the year, business confidence strengthened as foreign demand was stabilised and the government injected liquidity into the manufacturing sector.

However, the effect of the second wave means that the business confidence index will decrease by 4.4% for 2020 but is forecast to grow by 6.7% next year as the vaccine begins to be distributed. Demand volatility in the services sector, the ongoing threat of Covid-19 alongside the trade conflicts between the US and China will undoubtedly inhibit confidence. The BCI is forecast to grow at an annualised rate of 1.7% up to 2025 as spending and global trade return to normal.

To alleviate the consequences of the Covid-19 crisis, the German government has provided an economic stimulus package worth €130bn. The package comprises of measures to support companies, the public sector and households. In March, the government announced the short-time work allowance, to provide aid to firms which had closed and whose revenue streams had ceased. The objective of this scheme was to provide security to workers and prevent a sharp rise in the unemployment rate during the pandemic, this has been largely successful as the unemployment rate has only risen by just over 1%. Under this programme, the Federal Employment Agency pays between 60% to 80% of the pay loss depending on the duration of the short-time work. This scheme

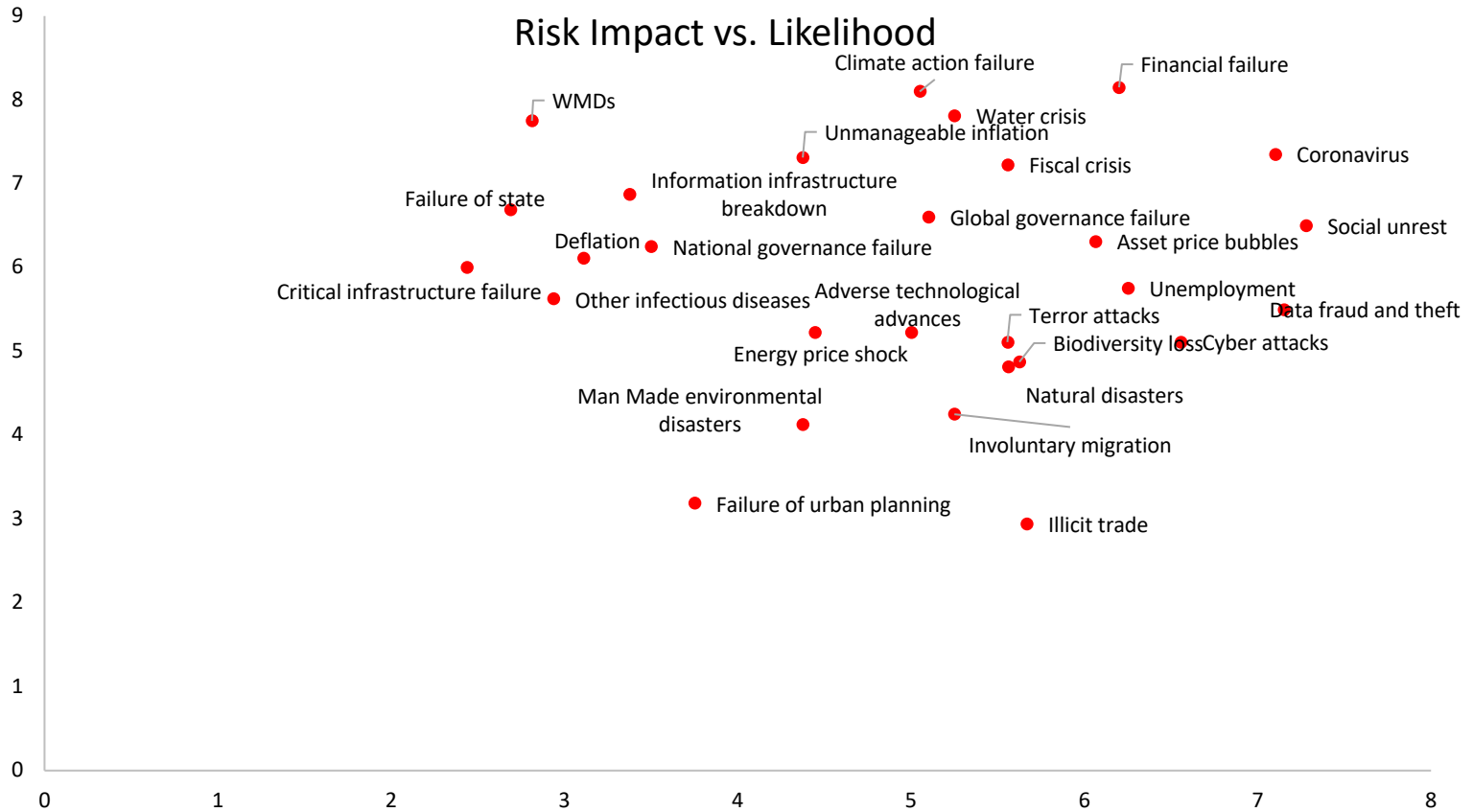
Europe

was due to end in 2020 but has been extended until 2022.

To encourage consumer consumption, the VAT rate was lowered. The regular tax rate of 19% was reduced to 16% and the lower rate of 7% was cut to 5%. Companies who require immediate financial

assistance can avail of the 'Überbrückungshilfen' (bridging aid), for which the government has set aside €25bn worth of perpetual grants. Both of these support packages were introduced in June and will be in place until the 31st of December 2020 unless there is an extension or a more long-term adjustment to provide aid.

Risks Report



Social Unrest

2020 has been a year where the very process of activism and protest has been reconsidered, with social media often at the forefront of it, for better and for worse. The western media has been focused on the United States, where the Black Lives Matter movement sparked global protest following the death of George Floyd at the hands of police. With the backdrop of COVID-19, protests often devolved into riots, with mandatory curfews being imposed in over 200 cities across the USA. Billions of dollars' worth of damage was done with president Trump condemning the protests and labelling Antifa a terrorist organisation. A strong contrast occurred during anti-mask protests, where protestors visibly armed were not engaged by police, and Trump expressed sympathies with the protestors. The unrest continued from early May right into the middle of election season, with a certain Mr. Trump being the centre of attention once again. But the worst may be yet to come with the biggest Trump rally expected before Biden is sworn in in mid-January.

However there were worldwide protests over various issues, and although some may have caused damage, a lot also caused major change in their various regions for better and worse. In Hong Kong the protests that were brutally quelled in 2019 continued with a media blackout being placed upon the region. The unwarranted arrest of local media tycoon Jimmy Lai is testament to this. In Guatemala, protests occurred in late November against the education and health spending. Many gathered peacefully in the centre of Guatemala city, but a group of 7,000 stormed the parliament building and set fire to it.

Risks Report

In Europe Bulgaria had some of the biggest protests under the rule of Boyko Borisov, who has somewhat suspiciously been the 2nd longest serving prime minister of Bulgaria. Protests were sparked following national newspapers publishing several instances of blatant corruption and disregard of lockdown restrictions from several government ministers and the PM himself. The President, Radov, who is a member of the opposition asked for his resignation and upon refusal massive protests ensued. Over 100 consecutive days of protests with the biggest numbering in the hundreds of thousands in Sofia.

2020 has been a year of Global distress and it has very much affected the amount of people engaging in issues: social or economic. And with 2021 facing a lot of the financial repercussions of the aid packages provided by administrations worldwide, a lot of whom wouldn't have budgeted for the extended period of time that the pandemic has lasted, it is likely that these tensions will continue.

Climate Action Failure

The most potentially catastrophic of the risk groupings according to our analysts was that of climate action failure. According to the World Economic Forum it is the biggest risk facing humanity over the next 10 years. 3 out of their top 5 risks were Climate based. We hear that various countries have committed to being carbon neutral and not using fossil fuels by 2040/2050, but most climate experts date us as having irreversibly damaged the earth in the next 4 years, and that we have a decade left to change our ways completely.

Probably the most well-known teenager and climate activist presently is Greta Thunberg. She has been dismissed by many of a certain generation as an alarmist and idealist, but there are no denying the facts. The last 5 years are on track to be the hottest ever on record, and the temperature rise of the climate and the melting of the polar ice caps are above that of scientists' predictions. The term planetary emergency is becoming part of our lexicon, with the near term consequences of climate change evolving it into a threat to the very existence of our planet. We are currently seeing the biggest effects on biodiversity, either through deforestation and extracting fossil fuels, or the climate change directly affecting the acidity and warmth of oceans. Animals are becoming extinct in the wild, such as the amazing axolotl which has a key part in future cancer research. Ecosystems' health have been severely been damaged, with the Natural Wonder of the Great Barrier Reef being an example of this, the economic impact on the area being massive due to the tourism it brings.

On a more human level crop yields have been dropping in many regions, and no amount of irrigation can arrest the slide. Food demand can only increase with our growing population and increasing clean water scarcity can only lead to famine and death. Fisheries are also a contentious issue as seen with Brexit: fish stocks are being heavily altered by both overfishing and climate change. Sovereignty over certain areas of ocean are set to become a major geopolitical issue as already seen in the South China Sea. Forced migration due to natural disasters and famine hasn't been a recent development in human history as the Irish know, but the sharp increase in it has been notable across the last 20 years. Cyclone Idai in 2019 displaced 150,000 people and the frequency of such disasters is increasing.

There is a monetary value to all these impacts. Worldwide economic stress and damage from natural disasters in 2018 totalled \$165 billion and 50% of that total was uninsured. This doesn't consider the minutia that contribute to other issues discussed, just purely natural disasters. US federal agencies suggests that, in the United States alone, climate-related economic damage could reach 10% of GDP by the end of the century. Looking globally, over 200 of the world's largest firms estimated that climate change would cost them a combined total of nearly \$1 trillion in the case of non-action. But there is hope, various international agreements are put in place with more being put into play as the world begins to realise the full extent of our impact on the climate. Ms. Thunberg has set up some of the biggest protests ever, with the youth being the centre of the movement... As she said: "the moment we decide to fulfil something, we can do anything."

Asset Price Bubbles

One of the core beliefs in a free stock market that is endlessly debated is that the market is fair, and that it corrects itself. Whether you believe that statement or not, bubbles often occur in asset markets and what almost always follows is deflation and recession. Famous examples of this are the stock markets of the great depression, the dotcom bubble of the early 2000's and the subprime crisis. Many expected a crash in 2020 and we saw a massive dip in February/March, but instead of a collapse we encountered a rally that saw the market recover to pre-covid levels around August. Since then it has steadily climbed in spite of less earnings for the vast majority companies and high levels of unemployment worldwide. Globally, equities markets are around 8% above their pre-Covid peaks (this would be higher if not for the hit the UK market took in the build-up to Brexit). Global stocks are 45% more expensive than their 15-year average in terms of price to sales. The US market is on a forward P/E ratio of 23 times, just as it was in 1999, and most tellingly of all the Shiller Cyclically adjusted P/E has just exceeded its October 1929 peak. Although alone these are not indicative of an overpricing, they should be taken into account when measuring relative risk. Efficient vaccine rollouts in developed markets are underway and through central bank supports corporates find themselves in a better position than in previous financial crises, making a strong recovery entirely possible.

Global Markets

Monetary Policy in Key Markets

Michael Collins & Robert Tolan

Exhausted central bank playbooks in the US, Europe and Japan now hope for inflation

Prior to the COVID-19 pandemic the world economy was at an all-time high, witnessed by consistent GDP growth from most major economies since the Global Financial Crisis. Although it is very easy to say now, we were likely nearing the end of the economic cycle and many economists felt that there would be some sort of major market failure within the coming years regardless. However, nobody could imagine the scale of the economic disaster that did come.

It has now been over one year since the very first Coronavirus case was detected in Wuhan, China. Since then 61m people from around the world have been infected with the virus which has resulted in the deaths of 1.4m people at the time of writing. However, The Covid-19 pandemic has had far-reaching consequences beyond the spread of the virus itself and efforts to contain it. World leaders placed their citizens under strict lockdowns; essentially halting economic activity. This resulted in mass unemployment, business closures and caused huge government deficits for the fiscal year.

European Market

The current crisis in the Eurozone is very likely to introduce some structural changes in the euro area economy and economic policies will play a vital role in facilitating these changes. In particular, they will have an important role in protecting the firms and employees of shrinking industries from hysteresis. The most recent rounds of data have shown activity in the services and manufacturing sectors is slowing and confidence is waning. A number of analysts have already cut their forecasts for European gross domestic product growth as a result. Thus far, the European Central Bank (ECB) analysis shows that the rapid implementation of short-term working schemes across European countries has mitigated the potential permanent employment losses resulting from the lockdowns implemented by member state governments. State guaranteed loans have also been key to facilitating firms' access to liquidity to cover working capital shortfalls. Implementing such measures are crucial to protecting the Eurozone area from long term scarring.

However, ECB President Christine Lagarde has warned that we could still face recurring cycles of coronavirus spread and tightening restrictions until widespread immunity is achieved, and because of that, Europe's recovery will not be linear, but rather unsteady, stop-start and contingent on the pace of the vaccine roll-out. Alongside further promised fiscal stimulus to be provided in the draft budgetary plans of the ECB, on the monetary policy front Ms Lagarde has also hinted at more stimulus in December as the Pandemic Emergency Purchase Programme (PEPP) and the Targeted Longer-Term Refinancing Operations (TLTRO's) have proven their effectiveness and can be dynamically adjusted to react to how the COVID-19 Pandemic evolves and reacts in the future. During its last meeting regarding monetary policy in October, the ECB left the main refinancing rate at 0% and the PEPP with a total envelope of €1.35 trillion.

Headline inflation in the Eurozone is likely to remain negative until early 2021, because of overall weak demand. However, contrary to earlier forecasts which expected consumer prices to pick up over the medium term, late 2021, it is now expected that consumer prices are to strengthen as early as the end of the first half of 2021 once the impact of Coronavirus fades through the initial distribution of vaccines.

US Market

The Federal Reserve System is arguably the most powerful financial institution in the world. The Fed, unlike the ECB, is a dual mandate central bank meaning it is targeted at managing inflation and unemployment compared to the ECB's single mandate of managing inflation alone. Throughout the course of the COVID-19 pandemic The Fed has adopted an expansionary monetary policy similar to the ECB's strategy and no changes were recorded in its latest quarterly update in October. The Fed made no changes to its bond purchases while keeping the Federal Funds Rate at the rock range of 0-25bps. Although the Fed's chairman Jay Powell warned that the rise in Coronavirus cases around the world was "particularly concerning", such fears have deescalated since the announcement of multiple potential COVID-19 vaccines.

Since the Quarterly update, the Fed's Open Market Committee said it would hold the Federal Funds Rate at its current level and reiterated its pledge to keep this rate until the US's pandemic stricken economy reaches full employment along with higher inflation. However, some analysts predict that employment may not recover until 2024, with the issue of the labour force participation rate a prevalent, if not growing issue that will have to be addressed through cooperation between the Fed and the Biden administration.

Although the presidential election and its results have been discussed in depth by Fed officials it was not the "central focus" of its most recent meeting. In fact, Fed officials mentioned the importance for Congress and the White House to supply the US economy with greater fiscal support now that previous rounds of stimulus have largely been exhausted. Following a recent slide in long-dated Treasury yields the urgency for the Fed to alter the composition of its bond purchasing programme in favour of longer-dated debt. Currently, the Fed buys USD 80bn of Treasury securities of all maturities each month in an attempt to hold down borrowing costs and support the US economy. The Fed also repeated that it plans to increase its future debt holdings at least at the current pace to sustain smooth market functioning and foster accommodative economic conditions.

Japanese Market

The Bank of Japan, also known as the 'Nichigin', has had to manage huge deflation in the Japanese market since the Global Financial Crisis and has been managing a volatile market since the early 1990's. Much like the ECB and the Fed, the Bank of Japan has employed expansionary monetary policy, however, such policies have been in place since 2013 as the bank has struggled to deal with deflation.

The Bank of Japan left its key short-term interest rate unchanged at -0.1% and maintained the target for the 10 year Japanese government bond yield at around 0% following its last quarterly meeting. The BOJ also revised its GDP forecast for the current fiscal year ending in March 2021 to a contraction of 5.5% from an estimate of a 4.7% decline made back in July, as the COVID-19 pandemic continues to weigh heavily on the service sector output in the Japanese economy. However, BOJ revised up its GDP forecast for the 2021 fiscal year ending in March 2022 to a 3.6% growth, against the 3.3% expansion forecast earlier. This is projected to be revised and again increased in the next quarterly report, following positive news from COVID-19 vaccine candidates. Regarding inflation, BOJ expects the core consumer prices to fall 0.6% in the current fiscal year, which was slightly more than the 0.5% drop seen in its last update in July. Japan's problems are structural so it is important to note that a recovery from Covid-19 for them will look very different to a recovery in Europe and the US.

Interest Rates are unlikely to change not just because of the Coronavirus pandemic but because of the additional reality that we find ourselves late in the economic cycle. As central banks are mandated to control inflation, setting targets of around 2%, there is high conviction that interest rates will remain at rock bottom in all three of these markets.

The CME (through measuring derivatives market sentiment) gives a 100% probability that US rates will remain the same until the Fed Open Market Committee meeting in September 2021. Although it can be argued that asset prices, such as housing, have increased in certain markets, it is clear to see that real asset value has not increased. Household amenities and products regularly found on the Consumer Price Index (CPI) of states within these markets have seen relatively stagnant pricing over the past 8 months. Inflation is expected to rise in the US and European markets in 2021, correlating to a rise in forecasted GDP growth, however, as Japan sees another rebound of Coronavirus cases, there are expected regional and potentially national lockdowns which could further chip away at their already damaged economy. If current rates are kept in place, US inflation is expected to rise to 2.3% in 2021 from 1.2% in 2020, with core inflation (which excludes the cost of food and energy) to run at 2% in 2021 compared to 1.7% at the end of 2020.

With news of viable Coronavirus vaccines, there is more confidence in consumer spending and projected employment. Although it's predicted that employment won't reach its pre-COVID levels until at least mid 2022, vaccines will allow tertiary sectors which were decimated by pandemic hysteresis to resume serving their consumer base, thereby providing employment. Once the economies of these three markets recover, it can be expected that interest rates will rise slightly however, as this is a distant hope it is safe to assume that we will remain in a low interest rate environment for the considerable future.

Balancing Risk and Reward in Emerging Markets

Conor Ryan

Idiosyncratic risks create non-traditional opportunities

The term 'Emerging Markets' was originally coined by Antoine van Agtmael in 1981. It's used to describe developing countries which possess some of the characteristics of more developed nations, while falling short in one or a number of categories, namely GDP per capita, growth rates and volatility levels. Since their popularization as an investment area, a dominant theme of EM markets has been the balance between their exceptional potential for growth, while at the same time having a level of risk significantly larger than their developed alternatives.

Whilst EM investments are likely to experience higher yields than those of developed markets, this added benefit doesn't come without cost as EM's

experience unique and persistent risks largely unfamiliar to most developed nations. Obviously risks can vary from country to country in both their prevalence and severity, so in analyzing EMs we've selected three primary areas of risk that we believe to be the most common and important across the sector.

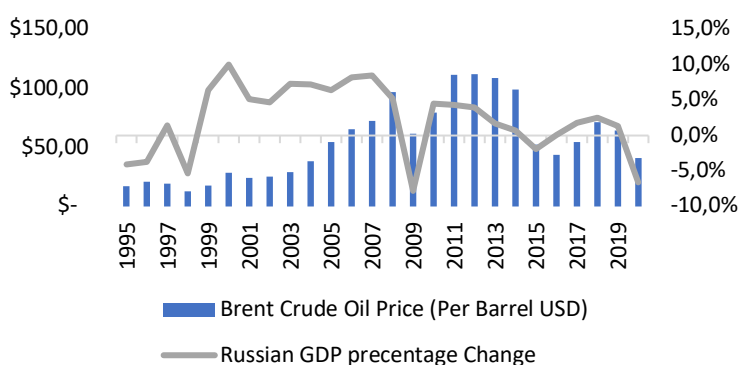
The first of these common risk areas is the Political volatility and uncertainty associated with the majority of Emerging Markets. Historically political upheaval and policy change has been one of the hardest risk areas to predict and account for, while also being one of the most diverse in its scope and degree of effect. A recent example of this effect in action was the fallout from the 2019 Argentinian election upset. The incumbent Mauricio Macri, a business friendly right wing candidate. Lost to the left wing Alberto Fernandez, in what was seen by many as a rejection of the budget-conscious austerity policies of Macri. Within the first day of this result the Argentine stock market had fallen 30% and the Peso had lost 15% of its value relative to the US Dollar. While to a large degree the inherent political risks EM investments face is nearly impossible to consistently prevent, the fallout of upsets and uncertainty can be mitigated.

Once again looking at the 2019 Argentine election and effects as an example: Following Fernandez's resounding primary win Argentinian bonds had vastly differing effects stemming from their type. US dollar denominated sovereign debt and local currency debt experienced sharp falls of 52% and 56% respectively, while US dollar denominated corporate debt only experienced a drop of 27%. This disparity arose from the differing effects the sharp devaluation of the Peso had on Argentine debt types, and we believe it can serve as a roadmap in mitigating political risk fallout through diversification.

Another defining risk that is essential to understand for investors in Emerging Markets, is their uniquely structured and volatile, economic risks. Since their entrance onto the market as an investment class, the performance of the economies of emerging markets have been strongly linked to the performance and prices of commodities. Unlike the more balanced spread of developed nation's GDP across many differing sectors like services, manufacturing and retail. Historically the relative performance of emerging markets have correlated strongly with the change in price of key commodities like natural gas and crude oil. This relationship has however been a double edged sword for the health of emerging economies, as the increase in commodity prices broadly drive up EM GDP, if prices rise too high they risk a developed country recession and thus a disastrous knock-on effect to their exports. A recent example of the strong dependency of an emerging market on commodity prices is Russian economic performance in recent years under the collapse of oil prices. Continued sanctions and price wars leading to the consistently low price of oil, has left the Russian economy relatively stagnant and under performing in the context of the rate of growth to be expected of an emerging market. This trend doesn't look to improve with the combination of Covid-19 economic fallout only adding to Russian woes and investment under performance. Its economic dependency relationships like this, which should come as a worry to perspective investors looking at emerging markets.

The final major risk facing emerging markets that we have identified is in regards to their currency volatility. More developed economies like the

Oil Prices and Russia's Economy



Data: Statistica & World Bank

United States and Eurozone excel in their ability to maintain stability in their fiat currencies though the historic credit worthiness of their governments.

However the story is entirely different for most developing nations, with their balances and GDP's constantly at a higher level of risk due to the nature of their economies. To quickly re-examine Russian economic performance for a moment, in addition to the correlation between GDP growth and oil prices, the Ruble has also been experiencing sporadic deflationary periods in line with the price drops and their oil export performance.

There is also the significant risk present of EM nations purposefully devaluing their currency. The biggest example of this in recent years has been the Chinese Yuan. Starting in 2015 when the Chinese central bank cut their daily reference rate by 1.9% which caused its largest single day drop since 1994, the Chinese government have been pursuing a policy of currency weakening in order to stimulate exports. This volatility had only been compounded in the last number of years with the heated trade tensions between the US and China stemming from their trade war. So when examining the history of sudden EM local currency volatility, the increased level of risk these economies present to investments both in local and in hard currency, is certainly real and if mismanaged potentially costly.

When examining EM investment potential in debt classes the bonds fall into four main categories: local currency sovereign debt, local currency corporate debt, hard currency sovereign debt and finally hard currency corporate debt. With each type offering a unique balance of yield potential as well as risk exposure.

Hard currency denominated debt of both kinds might be the choice asset class for EM investors in 2020 and beyond. Their upfront risk from local currency fluctuations is lower, this being especially true for corporate hard currency debt and comes down to the nature of their business. As aforementioned, emerging markets and their corporations are heavily involved in commodities such as oil and precious metals. Since these goods

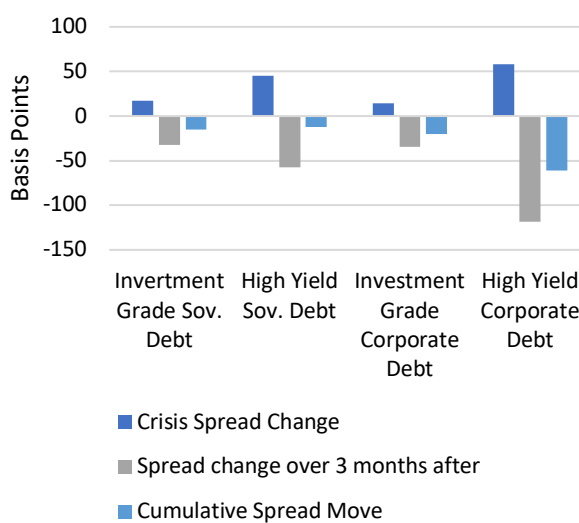
are usually sold for hard currency (US Dollars) while local business cost are paid in local currency, a decrease in local currency valuation against the hard currency won't have as much of an effect on revenues/returns as with other forms of debt. This type of debt can also offer a hedge against the correlation between EM currency devaluation and commodity price decreases, as business costs tend to decrease with commodity price decreases, adding another level of security. So devaluation in local currency can potentially have a positive effect on hard currency corporate debt, although this isn't a position that is actively sought by most EM investors. Provided vaccine roll out isn't delayed across most developing markets and the economies are allowed restart in line with the developed world, the higher yield potential of EM corporate bonds coupled with their greater diversity of ratings and maturity looks to be an attractive prospect heading into 2021.

“Higher yield sovereign and corporate debt is oversold in turbulent periods”

are usually sold for hard currency (US Dollars) while local business cost are paid in local currency, a decrease in local currency valuation against the hard currency won't have as much of an effect on revenues/returns as with other forms of debt. This type of debt can also offer a hedge against the correlation between EM currency devaluation and commodity price decreases, as business costs tend to decrease with commodity price decreases, adding another level of security. So devaluation in local currency can potentially have a positive effect on hard currency corporate debt, although this isn't a position that is actively sought by most EM investors. Provided vaccine roll out isn't delayed across most developing markets and the economies are allowed restart in line with the developed world, the higher yield potential of EM corporate bonds coupled with their greater diversity of ratings and maturity looks to be an attractive prospect heading into 2021.

more investment grade lower risk debt. Signaling that there were profitable returns to be had for investors who chose to take advantage of crisis fueled price movements in EM debt.

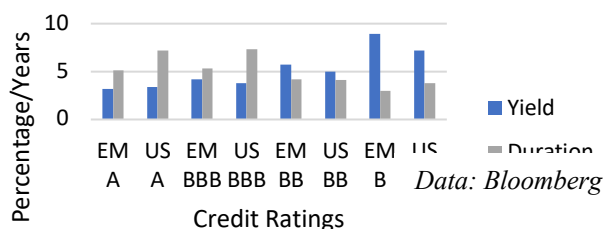
US dollar-denominated emerging market yield spread changes in basis points, since January 2009



Data: JPMorgan EMBI Global Diversified, CEMBI Broad Diversified, and GBI-EM Global Diversified

In conclusion, emerging markets have historically proven themselves to be a uniquely profitable area. But this profitability has not come without a cost and the risks that investors undertake in delving into EM's can likewise be unparalleled. It is this struggle to balance these opposing forces, especially in a globalized market, which give EM investments their own distinct character. So with an optimistic outlook towards a global economic recovery over the next few years, emerging markets are poised to continue their ascent as a greater percentage of global GDP and as a lucrative investment opportunity for years to come.

Yields and Duration by Credit Rating



Another excellent opportunity emerging market debt of both denominations can hold is the patterns they display in times of crisis. Since 2009 a pattern has been forming where, in response to a country-specific economic crisis, the subsequent extreme debt reprising can present an opportunity for risk

Global Markets

ASSET CLASS PERFORMANCE SUMMARY

December 31, 2020

GLOBAL EQUITIES	TICKER	PRICE	1D % CHG	1W % CHG	1M % CHG	2020 % CHG
S&P 500	SPY	373.88	0.51	1.32	1.93	16.16
China Large Cap	FXI	46.43	0.39	3.52	(1.53)	6.42
Japan	EWJ	67.56	0.31	2.64	2.99	14.04
Europe	IEUR	51.28	(1.14)	(0.10)	(1.42)	(2.83)
Germany	EWG	31.77	(1.24)	(0.22)	2.22	8.06
United Kingdom	EWU	29.29	(1.11)	(0.48)	(0.38)	(14.11)
France	EWQ	33.26	(1.33)	(0.06)	(0.48)	1.68
Italy	EWI	29.44	(1.11)	(0.10)	1.55	(0.20)
Switzerland	EWL	44.68	(0.82)	2.17	3.45	9.94
Singapore	EWS	21.48	(1.01)	0.47	0.33	(11.02)
South Korea	EWY	86.05	(0.12)	4.73	8.42	38.37
Hong Kong	EWH	24.64	(0.69)	2.20	2.07	1.27
Australia	EWA	23.95	(0.58)	0.04	2.97	5.79
India	INDY	42.44	(0.24)	2.36	6.42	9.89
Mexico	EWV	42.99	(1.20)	1.44	0.87	(4.53)
Emerging Markets	EEM	51.67	(0.06)	3.07	3.84	15.15
BRIC	BKFC	52.21	(0.05)	3.10	2.42	15.24
Canada	EWC	30.84	(0.68)	(0.71)	0.59	3.18

GLOBAL MACRO	TICKER	PRICE	1D % CHG	1W % CHG	1M % CHG	2020 % CHG
S&P 500	SPY	373.88	0.51	1.32	1.93	16.16
S&P 500 ex-Tech	SPXT	64.39	0.69	1.66	1.51	8.20
CBOE Volatility Index	VIX	22.75	(0.09)	5.67	9.53	62.27
VIX Tail Hedge Index	VXTH ¹	549.62	0.63	1.24	1.78	113.49
S&P 500 Volatility	UVXY ²	10.67	(0.47)	(1.02)	(5.67)	18.14
Carry Trade	DBV ³	24.015	0.56	0.29	0.25	(1.21)
Dollar Strength	BBDXY	1120.91	UNCH	(0.02)	UNCH	(0.06)
USD\$ Futures	UUP	24.24	0.29	(0.45)	(1.34)	(6.66)
JPY	FXY	91.46	0.01	0.41	1.15	4.61
EUR	FTE	114.74	(0.63)	0.24	0.87	7.94
US Treasury Bond 20+Y	TLT	157.73	0.15	0.28	0.95	16.42
US Treasuries IV	MOVE	48.98	3.79	16.31	17.94	(18.53)
US Corp High Yield (Unhedged)	LF98TRUJ ⁴	2338.05	UNCH	0.01	0.02	33.60
LIBOR USD 3M	US0003M	0.2373%	UNCH	UNCH	UNCH	(83.51)
US TIPS	TIP	127.65	0.21	0.31	1.31	8.47
US Initial Jobless Claims	US000000	787000	N/A	(2.01)	(8.7)	336.33
Commodities	DBC	14.7	0.41	0.68	5.30	(7.84)
WTI Crude ⁵	WTI	48.52	0.37	0.83	8.91	(21.77)
Brent Crude ⁵	BRENT	51.80	0.4	1.1	9.24	(24.93)
OPEC Basket	OPEC	50.24	UNCH	(0.14)	7.53	(25.02)
Baker Hughes US Oil Rig Count	BHC	351	N/A	0.86	9.00	(55.91)
Gold	GOLD	178.36	0.37	1.14	4.02	24.81
Copper	JIC	53.359	(0.57)	(0.82)	(0.02)	22.98
Soys (Mixed Maturity)	JIS	43.14	1.02	2.49	6.77	2.24
Agriculture	DBA	16.14	1.00	1.96	4.67	(2.54)

SECTOR	TICKER	PRICE	1D % CHG	1W % CHG	1M % CHG	2020 % CHG
S&P 500	SPY	373.88	0.51	1.32	1.93	16.16
FTSE 100	VUKE	28.55	(1.38)	(0.73)	15.82	(15.36)
Russell 2000	IWM	196.06	(0.18)	(1.48)	7.20	18.34
NASDAQ 100	QQQ	313.74	0.25	1.35	3.25	47.57
Energy	XLE	37.90	(0.84)	(0.58)	(0.60)	(36.88)
Financial	XLF	29.48	1.24	1.83	3.00	(4.22)
Healthcare	XLV	113.44	1.05	1.77	1.75	11.37
Technology	XLK	130.02	0.15	0.74	4.12	41.83
Consumer Discretionary	XLY	160.78	0.06	1.84	2.12	28.19
Industrials	XLI	88.55	0.47	0.62	0.71	8.69
Materials	XLB	72.39	0.39	1.13	2.17	17.86
Consumer Staples	XLP	67.45	0.70	1.09	0.76	7.10
Utilities	XLU	62.7	1.49	(1.57)	(2.79)	(7.98)
Real Estate	IYR	85.65	1.06	1.61	1.53	(7.98)

SMART BETA	TICKER	PRICE	1D % CHG	1W % CHG	1M % CHG	2020 % CHG
S&P 500 EQUAL WEIGHT	EUSA	71.20	0.53	0.55	3.27	12.86
Japan Equal Weight	EWJE	38.60	UNCH	1.53	2.28	6.60
Mega Cap	DIA	305.79	0.55	1.25	2.21	7.26
Large Cap	IVV	375.39	0.56	1.37	1.98	16.13
Mid Cap	MDY	419.92	0.12	(0.43)	4.99	11.87
Small Cap	IWM	196.06	(0.18)	(1.48)	7.20	18.34
Micro Cap	IWC	118.65	(0.39)	(1.89)	6.71	19.26
Momentum	PDP	87.75	0.34	(0.47)	6.05	36.34
High Volatility	IVW	63.82	0.38	1.25	2.60	31.83
Growth	IWF	241.14	0.23	0.78	3.50	37.07
High Beta	SPHB	56.77	0.26	1.19	3.54	21.72
Quality	QUS	104.47	0.79	1.27	1.06	10.33
Value	IVE	128.02	0.81	1.51	1.23	(1.59)
Low Beta	PBP	20.49	0.86	0.91	0.66	(4.86)
Low Volatility	SPLV	56.23	0.92	0.92	1.83	(3.62)
High Dividend	HDV	87.67	0.54	0.75	(0.87)	(10.60)
Tail Risk	PUTW	28.53	0.58	0.90	(0.12)	0.19
Size	SIZE	111.17	0.50	0.48	3.14	14.13
Multi-Asset Diversified Income	MDIV ⁶	15.03	0.47	0.13	11.42	(20.03)

CASH ⁷	YIELD	LAST WEEK
30Y	1.648	1.687
10Y	0.918	0.938
5Y	0.362	0.375
2Y	0.119	0.121
2-10 Spread	0.799	0.817

FOMC FFR DECISIONS	TARGET RATE	CONVICTION
27.01	0-25	100%
17.03	0-25	100%
28.04	0-25	100%
16.06	0-25	100%
22.09	0-25	100%

¹VIX™ buys and holds the performance of the S&P 500 and buys 1M 30 delta VIX call options on a rolling basis.
²UVXY measures S&P 500 30 day IV
³Carry Trades from G10 Nations
⁴Fixed rate with rating of Baa1/BB+ or below.
⁵Current contract in front
⁶25% dividend-paying equities, 20% REITs, 20% preferred securities, 20% MLPs, 15% High-Yield bond ETF
⁷Current 3 month US T-Bill Rate
 MOVE vs VIX movements demonstrates cross asset volatility expectations

The only thing
worse than being
blind is having
sight but no
vision.

Helen Keller

