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Market update: 21st October 2020

Phase 3 Trials Progress into Q4

Since our last update on the progression of Covid-19 vaccines, a multitude of pharmaceutical companies and their research institute partnerships have initiated large phase 3 trials, with upwards of 30,000 volunteers being administered potential world-changing vaccinations. Although many of the firms have remained quiet about their phase 3 trial progression, several developers have had their vaccine trials halted, including Eli Lilly, Johnson & Johnson & AstraZeneca. Some regional trials remain halted for those above, yet the large majority continue to analyse their trial data as they prepare to declare results from November 2020 to H1 2021. Moving into the final months of the year, the results of these trials are becoming increasingly significant as both Europe and North America witness rising coronavirus cases at accelerating rates, with the threat of second waves throughout the winter looming. Positive vaccine data is expected to provide greater clarity for nations globally, while limiting the continuing negative economic impact of the pandemic.

Vaccination Developments

As we approach 2021, financial markets are expected to increasingly price in the likelihood of a Q1 2021 vaccine approval into their expectations. In figure 1 below, we see that three vaccines are widely expected to report their phase 3 results before the end of 2020, which would likely lead to emergency usage authorisation (EUA) one month later. The three front runners are Pfizer, Moderna and AstraZeneca.

Pfizer and BioNTech currently have 37,000 volunteers enrolled in their phase 3 study, where 28,000 so far have received their second of two doses of the vaccine. In the latest update from Pfizer CEO, Albert Bourla reiterated that management may know whether their vaccine candidate is effective as early as this month. With the desire to become the first to produce an authorised vaccine, the partnership has begun rolling submissions in Canada and Europe, such that regulators can review the trial data as time goes on.

Next, Moderna Therapeutics recently announced it will not be ready to apply for EUA before the end of November, as the firm has only just administered 50% of its participants with their second vaccination. Despite this, its results have been one of the most promising, as in its phase 3 trials, adults aged 56+ years have produced neutralising antibodies which are two to three times higher than in recovered patients. The firm has also begun to seek rolling submission in Canada.

AstraZeneca has been driving the UK's vaccine attempts. The pharmaceutical giant reached a temporary roadblock in September due to an unexplained illness in a phase 3 trial participant in the UK, which was suspected to affect the participant's spine. They have since resumed their trials, although their US study remains on hold as the FDA investigates further. As such, their viral vector-based vaccine could be approved outside of the US before it is approved inside. Although the vaccine isn't expected to be the first to produce positive results and seek approval, it could be one of the

biggest beneficiaries if it is early enough due to its large production pipeline (with 2.7bn vaccines expected to be produced by the end of 2021).

Despite the fact that the western world has not yet developed a vaccine with EUA, EUA has already been granted on a local basis in four Chinese vaccines and one Russian vaccine. This in its own right has received significant scientific criticism, with only several countries placing overseas orders.

Figure 1: Phase 3 Primary Result Timelines

	Phase 3 trial primary results	U.S. Doses (in millions)
Astra Zeneca/Oxford	Dec 20- Jan 21	300
Moderna	Dec-20	100
Pfizer/BionTech	Nov-20	100
J&J	Dec 20- Q1 21	100
Novavax	Q1 2021	100
Sanofi/GSK	Q2 2021	100
Total		800

Source: Continuum Economics

Likely Challenges

As we approach the deadlines for primary results, any one of the firms could be forced to halt their trial as a result of an unexpected illness in a volunteer. Alongside this, there are a number of subsequent challenges that pharmaceuticals and authorities must be aware of before the benefits of a vaccine can be fully experienced.

Despite the approval of an effective vaccine, assumptions that it will lead to a quick rollout across countries are wrong. In our last vaccine update, we noted that both the Moderna and Pfizer vaccines would require frozen storage as they are transported and distributed, whereas the AstraZeneca candidate only has to be chilled. In order to achieve temperatures as low as -70 degrees Celsius for Moderna and Pfizer, the firms will have to ensure adequate infrastructure is available to prevent the vaccines from being ineffective, which will come at both a financial cost and an opportunity cost. Additionally, there is the challenge of scaling up manufacturing capabilities to cope with the demand. As global manufacturing capabilities are limited, nations may struggle to receive their dosage orders before the end of 2021, reducing the positive impact and economic benefit of the vaccine in the short term.

Whether governments plan to vaccinate the whole population or particular sections is also not clear. Certainly, after EUA approval, and before full approval, the focus will be on the most vulnerable and key workers. As an illustration, Figure 3 shows, the UK Royal Society of Scientists proposed options for priority vaccination—most require two doses.

Figure 3: Options for priority vaccination (UK)

	Group	Doses needed (2 doses and 15% wastage)	Comments
Option 1	Clinically extremely vulnerable (2.2mln)	5mln	Potential large reduction in disease burden
	Over 65's (12.5mln)	29mln	Some vaccines of lower effectiveness in older people
	Over 50's (25.5mln)	60mln	Not all of those at high risk can be
Option 2	UK Health and social care workers (3.3mln)	7.5mln	Not all of those at high risk can be identified
	Other key workers (7.3mln)	17mln	N/A
Option 3	Whole or large part of population (80% of 67mln)	123mln	Doses needed may exceed initial availability

Source: Royal Society

There are two approaches to how the government can rollout the vaccine – A scaled rollout and a national rollout. A scaled rollout is health optimal and reduces the risk of serious cases and deaths from Covid-19. A scaled rollout is the most viable, as those who are most vulnerable can be targeted initially to help reduce the fatality rate for those who are elderly / have an underlying illness. Albeit, it will have to be a cautious rollout in the older and more vulnerable members of society as a few volunteers across the trials have suffered fevers, fatigue, and chills. A scaled vaccine rollout will mean that disease prevention measures can only be partially eased, and a hybrid social distancing and vaccine rollout period will likely occur in H1 2021 in the best healthcare systems. As a result, a scaled rollout is not economically optimal, as significant disruptions will remain in place for struggling businesses, weighing on the economic recovery. This indicates that a national rollout is economically optimal, which would arguably be just as important for the government to achieve alongside the nation's health. Even if the government were interested in a national rollout, it may not be viable due to the sheer challenge of developing the large-scale services and the skilled workforce to deliver the vaccine shots. Taking this into consideration, in mid-October the European Commission urged governments to begin developing a strategy for the vaccine administration.

Another point to consider is convincing the targeted parts of the population to accept the vaccine. Anti-vaccination campaigners have remained in full voice and will be expected to increase their presence once a vaccine is developed, and support may grow for their cause with the current desire of pharmaceuticals to produce a vaccine as fast as possible. In a survey of 20,000 people conducted over the summer by the World Economic Forum and Ipsos, more than a quarter of respondents said they would not take the vaccine. This will be an additional worry for governments, whose attempts to provide nations with a solution to the current pandemic may lead to a waste of financial resources in trying to provide vaccines to those who refuse to accept them. This point will put even more scrutiny on regulators when they evaluate the phase 3 results for effectiveness, with a scaled rollout looking beneficial by allowing those hesitant to see the vaccination's benefits. With health workers being one of the first target groups due to their importance and close contact with the severely ill, their role in convincing mass vaccination will be important, although this will not be a 'quick fix' solution to persuade those hesitant.

Reaction of financial markets

A quick short-term rollout of a vaccine coupled with a continued economic recovery is of most interest to financial markets. So far, riskier financial markets have looked through the economic damage from temporary lockdowns to focus on policy stimulation and eventual economic recovery in the spring. Riskier equity markets will likely be buoyed by any of the major vaccine candidates announcing positive primary results and subsequently getting FDA EUA approval. Expectations will grow that other major vaccines will receive approval and lead to a broader vaccine rollout across DM. Moreover, the forward-looking nature of financial markets will likely mean that by early-2021, the focus will be on the trajectory throughout 2021 and into 2022 and any vaccine rollout problems will cause only hiccups to global equity markets.

Even if there were vaccine rollout problems in early 2021, equity markets are likely to remain positive for two main reasons. First, major central banks are clearly communicating that ultra-low interest rates will be in place for many years, with the Fed suggesting at least through 2023. Additionally, major central banks are making plans to extend QE programs into 2021, as the policy focus switches from protecting market functioning to support the economic recovery. In this instance, the central banks can help maintain the momentum in equity markets going forward, and with this expectation, may also reduce any initial sell off in the first place. Second, company earnings expectations show a quicker bounce back than economic forecasts, which have so far pointed towards a V-shaped trajectory rather than a tick-shaped trajectory for the economic recovery.

Our view

As such, developments in the vaccine race have improved the clarity of the outlook going into 2021. Between November to January, the odds appear to be relatively high that we will see one of the vaccine frontrunners achieve EUA approval, which will likely result in a positive reaction in financial markets. In this case, it will be important to consider the answers to key questions we have discussed above – How effective will the approved vaccine be? How long until we get multiple vaccines, and which one of these provides the best long-term benefit? What type of roll out will the governments seek, and have they got in place the services and infrastructure to successfully administer the vaccines? The answers to these questions will come in due course, albeit speculation and volatility will characterise financial markets as investors reposition and policy makers try and maintain stability across markets. It is our view that a vaccine is likely to be approved by Q1 2021, and we are well positioned to benefit from the positive reaction in financial markets. We continue to expect volatility to remain heightened to end-2020, as significant political events, a lack of stimulus in the US and rising cases cause uncertainty, however we remain positive given the gradual economic recovery and the direction of equity markets, despite a slowing in the pace of recovery in Q4.