

## A Summer of Competition

by Jackson Franks

It's been a summer of competition here in the UK (and globally). Firstly, we welcomed back Wimbledon, then had the excitement of the football not quite coming home, followed by one of golf's majors and now the Olympics. Not to mention the bonus of a British and Irish Lions tour in South Africa, where a game of two halves gave the Lions victory in the first test. By the time this blog is released we will know the result of the second test so I will choose my words carefully by not trying to pre-empt a result. In the midst of these great sporting events there was one other competition that may have caught your eye, the billionaire's race to space. For those who have not yet seen the result Richard Branson's Virgin Galactic narrowly beat Jeff Bezos's Blue Origin by 9 earth days. Having said that, Jeff did go higher than Richard so who was the real winner? On a more serious note, over the last 10 years there has been \$199.8bn of equity investment across 1,553 unique companies in the space economy, with \$4.5bn being invested in the second quarter of this year<sup>1</sup>. So, for those who aren't willing to spend \$250,000 on a ticket for four minutes (or \$62,500 per minute) of weightlessness in space today, you may get a better deal in the years to come. But before you go and purchase your ticket, think about one small matter: the environment.

There is no doubt that the innovation and advances in technology within the space sector is evolutionary. Companies such as Jeff Bezos's Blue Origin and Elon Musk's SpaceX are visionaries, with a belief that their activities will help save Planet Earth, not destroy it. These commercial space flights are a source of income that enables these businesses to reinvest and expedite the process of reaching that goal. However, the question must be asked, do the benefits outweigh the environmental risks?

For some context, Richard Branson's Virgin Galactic endeavour mentions that the carbon dioxide (CO<sub>2</sub>) emissions from its VSS Unity spaceship, the shuttle used for its commercial space flights, is the same as one transatlantic business class flight. The difference here is that one transatlantic flight is approximately 6,900 miles whereas the VSS Unity's round trip is nearer the 100-mile mark, resulting in an estimated 12kg per passenger per mile of CO<sub>2</sub> emissions compared to a transatlantic business class flight of 0.2kg per passenger per mile.

The more concerning aspect of space tourism is the amount of black carbon, otherwise known as soot, being released in the upper layers of the atmosphere; the stratosphere. VSS Unity used a hybrid propellant comprised of a solid carbon-based fuel, hydroxyl-terminated polybutadiene (HTPB), and a liquid oxidant (nitrous oxide) to launch itself into space. This generates levels of soot which has an atmospheric warming impact over 460 times greater than CO<sub>2</sub> (per unit of mass).

Comparing the Blue Origin launch to the VSS Unity, Jeff Bezos insists that his space plane is greener. The Blue Origin was propelled into space using liquid hydrogen and liquid oxygen which produces no carbon emissions – just water vapour – so yes, it is cleaner. A lot cleaner. However, if we look at the 'embodied' carbon – the CO<sub>2</sub> emitted in producing a substance – the production of 1kg of liquid hydrogen generates the equivalent of 9.3kg of CO<sub>2</sub> emissions. There are renewable sources that are also able to produce the required liquid hydrogen, but this comes at a financial cost – 2 to 3 times more expensive than producing it using fossil fuels.

Although the above may sound worrying (and complex), especially with the significant increase in tourist carrying space launches expected over the next decade, these businesses, like us, must have sustainability targets. At Momentum, incorporated into our investment process, we conduct extensive work to understand our managers' credentials and their capabilities for assessing environmental risks in the companies in which they invest to ensure they are aligned with our own sustainability goals. So, with the first stage of the billionaire's space race over, perhaps attention needs to turn to the advancement of sustainability within the sector for the benefit of others and for our beautiful planet.

<sup>1</sup> Space Capital: Space Investment Quarterly Dashboard Q2 2021



# Global Matters Weekly

2 August 2021

For more information, please contact your adviser or alternatively contact:

Belvest Investment Services Limited  
研富投資服務有限公司  
9th Floor, Centre Mark II  
305-313 Queen's Road Central  
Sheung Wan, Hong Kong

Tel +852 2827 1199  
Fax +852 2827 0270  
belvest@bis.hk  
[www.bis.hk](http://www.bis.hk)

## Important notes

This communication is issued by Belvest Investment Services Limited and/or Belvest related companies (collectively, and individually Belvest) solely to its clients, qualified prospective clients or institutional and professional investors. Unless stated otherwise, any opinions or views expressed in this communication do not represent those of Belvest. Opinions or views of any Belvest company expressed in this communication may differ from those of other departments or companies within Belvest, including any opinions or views expressed in any research issued by Belvest. Belvest may deal as Distributor or Agent, or have interests, in any financial product referred to in this email. Belvest has policies designed to negate conflicts of interest. Unless otherwise stated, this e-mail is solely for information purposes.

This message may contain confidential information. Any use, dissemination, distribution or reproduction of this information outside the original recipients of this message is strictly prohibited. If you receive this message by mistake, please notify the sender by reply email immediately.

Unless specifically stated, neither the information nor any opinion contained herein constitutes as an advertisement, an invitation, a solicitation, a recommendation or advise to buy or sell any products, services, securities, futures, options, other financial instruments or provide any investment advice or service by Belvest.

No representation or warranty is given as to the accuracy, likelihood of achievement or reasonableness of any figures, forecasts, prospects or return (if any) contained in the message. Such figures, forecasts, prospects or returns are by their nature subject to significant uncertainties and contingencies. The assumptions and parameters used by Belvest are not the only ones that might reasonably have been selected and therefore Belvest does not guarantee the sequence, accuracy, completeness or timeliness of the information provided herein. None of Belvest, its group members or any of their employees or directors shall be held liable, in any way, for any claims, mistakes, errors or otherwise arising out of or in connection with the content of this e-mail.

This e-mail and any accompanying attachments are not encrypted and cannot be guaranteed to be secure, complete or error-free as electronic communications may be intercepted, corrupted, lost, destroyed, delayed or incomplete, and/or may contain viruses. Belvest therefore does not accept any liability for any interception, corruption, loss, destruction, incompleteness, viruses, errors, omissions or delays in relation to this electronic communication. If verification is required please request a hard-copy version. Electronic communication carried within the Belvest system may be monitored.