

The coming Tech Wall and the covid dilemma

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Technology has been at the forefront of the global political, social and economic spectrum for more than two decades. The \$5tn ICT sector continues to have an inordinate impact on daily life. With the coming of covid-19 and the resultant global lockdowns, the significance of tech can be seen not so much from how much it has helped governments, corporates, institutions, central banks, hospitals, families, even religious bodies function. But, from the basic question that where would the covid-inflicted world be if we didn't have tech-induced 21st century connectivity? What would the impact be to GDP, government functioning, central bank programs, work from home operations, at-home learning, home deliveries, security, in essence, the basic functioning of a citizen's life if one wasn't able to connect digitally? The answer is abundantly clear and the majority of the world's population would cite that tech will become an even bigger part of their life as we emerge out of this crisis.

To predict as to how much people will evolve in using tech post covid to work or consume from home would be an exploration of human psychology. It is hard to ascertain how much

a prolonged traumatic episode makes an individual crave the previous paradigm or accept the newer one. Once the crisis is over, people may whole-heartedly welcome the "work from home" digital culture. Or reject it due to the inherent need of humans to want to connect with others physically. The level of impact on digitisation, e-commerce, social media, home entertainment, tele-education and tele-health is well telegraphed with many differing opinions. However, the one paradigm one can cite with a high degree of confidence that will emerge dramatically different post covid is the fault lines of the Global Tech Cold war. The acceleration of this 21st century cold war has the potential to split the world into two halves by a "Tech Wall" – two parallel tech regimes – a US centric one and a Chinese centric one, with little or no inter-operability. The impact this Wall could have on every sphere of life globally may last decades, if not generations. *It is something every policy maker, institution and corporate has to bear in mind as they plan for life post covid.*

The striking similarity between the 2020 crisis and the previous 2008 crisis is they both seem to

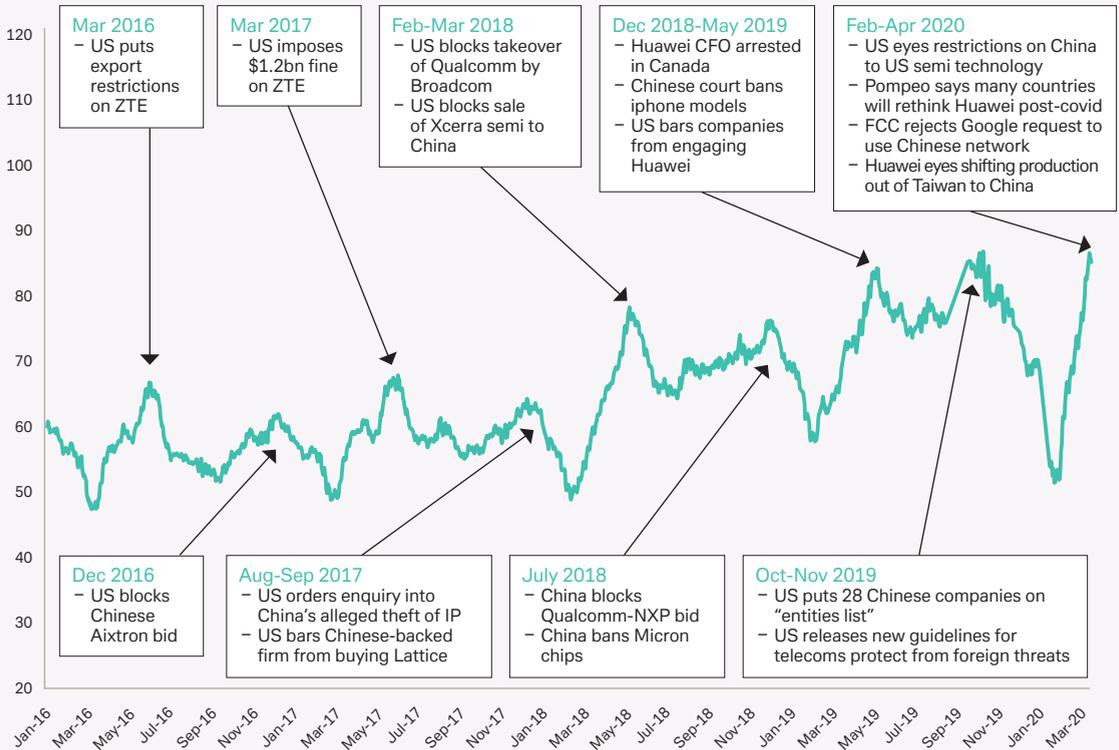
have been caused by globalisation. One by the untethered flow of funds, and the other by the untethered flow of humans. As nations emerge from the crisis, and with nationalism on the rise, a growing averseness to globalisation seems to be occurring. A recent survey conducted by dbDig showed 41 per cent of Americans state they will not buy a "Made in China" product again and 35% of Chinese state they will not buy a "Made in USA" product again. Tempers and emotions are running high in both populations and the politicians know this very well, making the matter more complicated as it is an election year in the US. It is somewhat ironic that tech has been a major contributor to globalisation and this reversal might fuel the Tech Cold War even more.

We collaborated with dbDig using machine learning to track the number of Global Tech Cold War and proxy mentions in newswires globally over the past five years to create the DB Tech Cold War Index. It has been trending

higher over the past five years with peaks coinciding with tit-for-tat measures by US and China on technology IP protection and counter measures. Fascinatingly, it made an all-time high in April 2020 as the covid crisis fueled a strong reaction from the US administration. At the root of this cold war is a view by the US administration that China is engaging in forced IP transfer and "innovation mercantilism". The Chinese administration view is that they are migrating from a "factory of the world model" to a global innovation hub model, and technology supremacy is a natural national priority. The two countervailing views have had very little movement, causing the Trump administration to embark on the tariffs policy culminating with a pause and the Phase One deal receiving a fair amount of global coverage.

A nuanced observation of the tariff issues suggest they are primarily a smaller strategy that is part of the larger Global Tech Cold War.

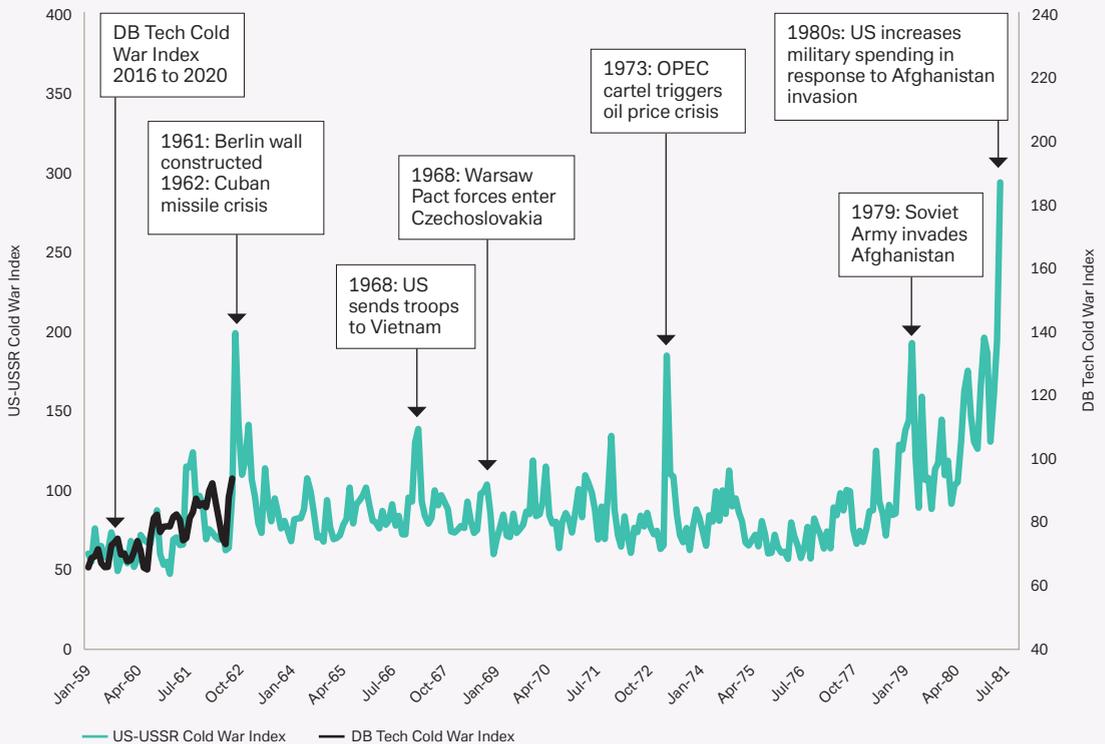
DB Tech Cold War Index



Source: Deutsche Bank

The previous cold war between the US and USSR lasted more than four decades and had a major differentiating factor with the current one as there was very little co-dependence between the two blocks. On the other hand, *US and China have been engaging in an increasing capacity since the 1970s and the level of integration between the two global tech regimes is unprecedented. To detangle that will be extremely painful and costly.* Cold wars, once they start tend go on for several decades and the following chart shows how early we might be in the stages of the current one.

Tech Cold War vs US-USSR Cold War Index



Source: Caldara, Dario and Matteo Iacoviello, "Measuring Geopolitical Risk," working paper, Board of Governors of the Federal Reserve Board, December 2019), Deutsche Bank

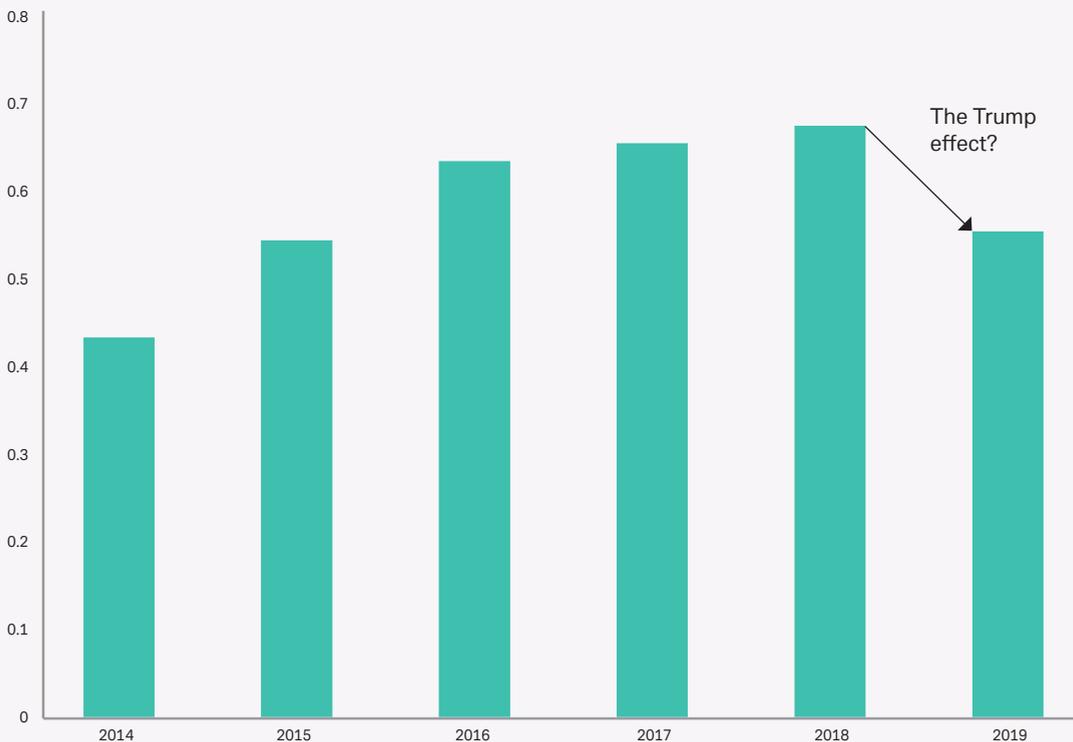
In the previous cold war, the US won the innovation race versus the USSR by simply outpacing them, and that primary strategy eventually worked. The current one has augmented differing policy reactions from the US. At first, it was a lack of acceptance that there is a tech rivalry. Gradually, with a fair amount of industry noise reaching D.C., the administration started to formulate a strategy. So far it has been leaning more towards slowing down Chinese tech progress by going after some of the key Chinese players like Huawei, as US and Western alternates catch up in capacity and sophistication. We created a China versus US Geopolitical Tech Ratio using primary technology segments - Semiconductor capacity,

Telecom infrastructure, VC Funding, High-end AI engineering talent, Quantum computing capacity, Tech R&D, Patent applications, Number of Tech PhDs and Big Data capabilities. We gave higher weightage to high-end semiconductor capacity (sub 10 nanometer) and AI talent, which we believe will make the eventual difference, two segments in which the US leads considerably and where China is focusing most of its efforts.

The ratio shows the yearly gap narrowing between the two, with China at 0.4 of US in Geopolitical Tech Capacity in 2015 and rising steadily to more than 0.6 by 2018. This trajectory would ensure China reaches Geo-Political Tech Parity with the US between 2025-2030, in-line with their goals.

Fascinatingly, 2019 saw a first time drop in the ratio to 0.5. *The Trump strategy to slow China seems to be working.* This would come as a surprise to several stakeholders who believe Trump's China policies are flawed. However, this one-year downtick might just be a short pause with a renewed acceleration of the Chinese progress.

DB China/US Tech Geopolitical Capacity Ratio (DB CUSTGCAR)

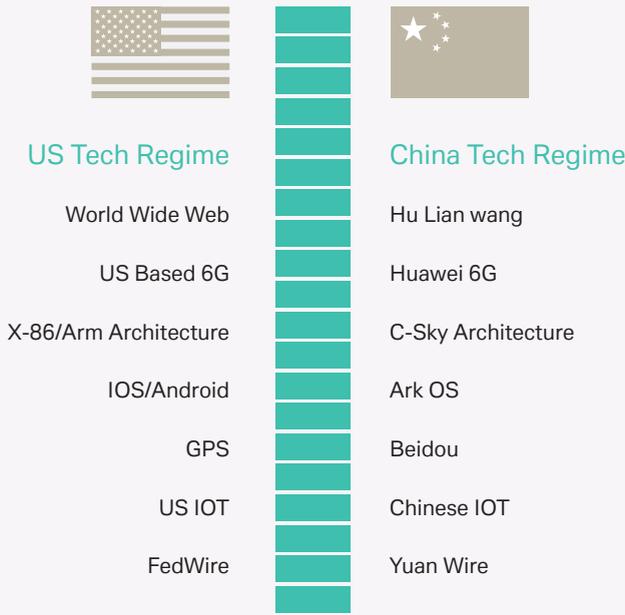


Source: Bloomberg, SEMI, NSB, Pitchbook, IFR, OECD, Deutsche Bank

As the Tech Cold War continues unabated, there is a growing inclination from both sides to create their own tech regimes. We believe this has the potential to reach a crescendo when both sides end up creating a "Tech Wall" with little or no inter-operability. This will push neutral states to make a choice with the fault lines most painful in Europe, a continent where Tech has not yet become a strong contributor to domestic innovation. *It would present a very difficult dichotomy to policy makers to what we call the Covid dilemma. As US and China ask nation states to make a choice between their rival technologies and the covid crisis creates a focus on cash conservation, stimulus to jump start economies and job creation, what will policy makers do?* To strip out one technology is very

painful and expensive. For example, asking a nation like Germany to strip out Huawei from their network would cost tens of billions of euros, delaying infrastructure build and hurting job creation. And staying the course would ensure a strong diplomatic reaction from the US with unforeseen outcomes. Either choice leads to complicated and expensive paths. A world where two rivaling tech regimes carve out their spheres will also have many second and third derivative impacts. The Tech Wall would entail rival internet platforms, satellite communication networks, telecom infrastructure regimes, CPU architectures, operating systems, IOT networks and payment systems with very little inter-operability or interaction.

The Coming Tech Wall



Source: Deutsche Bank

For corporates, it would mean having to deploy two different communication and networking standards across several geographies to ensure inter-operability. Product design would be lot more challenging as they would no longer be able to design once and sell everywhere without incurring additional costs of complying with two different standards. Stricter regulatory controls would make data sharing across the Tech Wall and two different regimes of hardware an IT quagmire.

The Tech Wall's cost to the \$5 Trillion ICT sector could amount to a yearly demand destruction of around two per cent and another two-to-three per cent increase in costs (capex, labor). At around \$250bn per year and increasing, this geo-political cost on the ICT sector and global growth would start to feel incredibly painful as time progresses.

When nation states formulate strategy, these costs are outweighed by the larger national security decision matrix. However, the most pain is felt by the common person on the street and small businesses, who are already reeling from the covid impact. Policy makers and key stakeholders globally have to navigate the covid crisis, create jobs and conserve cash whilst keeping at bay the geo-political tech war that is coming to their shores. These choices will impact the next few decades of the futures of nation states. The irony of this whole multi-decade saga is that history tells us that technology cannot be monopolised by anyone for too long, sheer diffusion ensures it spreads ubiquitously. An objective observer hopes this reality is dawned on the two tech regimes and administrations sooner rather than later.

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