

All Eyes On Taiwan:

Microprocessors, Hypersonics & The Opportunity Set Across The Defence Complex

Portfolio Attribution

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Mike Tyson once offered a zookeeper \$10,000 in the hope that he'd let him fight a silverback gorilla on a day he had hired out the entire zoo just for he and his wife at the time, Robin Givens. According to Tyson, "When we got to the gorilla cage there was one big silverback bullying all the other gorillas, they were so powerful but their eyes were like an innocent infant and I offered the attendant \$10,000 to open the cage and let smash (sic) that silverback's snout box. He declined."

Uncoerced despite twenty years of pecuniary incentives, as China's rhetoric about "reunification" with Taiwan and their [military's grey-zone activities intensifies](#), Taiwan's response to Sino bullying has been to [repel more like a porcupine](#) than to confront like a great ape, an approach adopted [before the most recent Russo-Ukrainian belligerence](#) but one that, evidently, continues to [serve both satellite states well](#).
 Cite:- [Military Conflict With China](#), 6 November 2019
 Cite:- [Australia's Impossible Choice: Taiwan](#), 13 December 2020

However, [increasing fears that China will aggress the island Democracy](#) have macroeconomists just as concerned as political actors in that hostilities across the Formosa Straits will have far more significant economic and financial market repercussions than the Ukrainian conflict has had and may likely come during a time when the [world's policeman](#) will be preoccupied with [domestic jurisprudence](#) and [midterm elections](#); Hong Kong, after all, faced [Salami Tactics](#) during 2016 and 2017 whilst America was distracted with the [surprise ascendancy of Trump](#).

Cite:- [Taiwan's Looming Crisis Is A Much Bigger Threat Than Markets Realise](#), 20 June 2018

Cite:- [Taiwanese War & Markets Fallout](#), 30 January 2019

Notwithstanding, [war in the pacific is only a question of when](#) and when [hot war](#) ensues, Taiwanese [Risk Assets](#) will [blight risk-parity in the all-important multilateral treasury bills markets](#) (US Treasuries, UK Gilts, [Japanese JGB's](#) & Australian AGB's) and also the critically important semiconductor sub-industry.

The localisation of semiconductor supply chains has become a very prominent topic and supply chains that were already tight from pandemic-related complications and [reflation-driven demand](#) have seen this dynamic further exacerbated by recent geopolitical events.

This perfect storm has given rise to a wave of discussion around "de-globalisation" and the localisation of supply chains, specifically in the semiconductor space.

Cite:- [Silicon Carbide](#), 27 March 2019

Cite:- [Quantum Supremacy: Complicated Technologies Define Realpolitik, Hegemony & Wealth](#), 22 October 2020

Whilst the aspiration to localise the semiconductor supply chain to inoculate against future pandemics and geopolitical events seems very reasonable in the context of recent disruption, it isn't feasible.

The burden to replicate all the critical technological elements of the semiconductor supply chain in each respective geography would be punitively high, if not impossible, given the finite technology resources and competitive labour pools which countries are able to draw upon outside of Taiwan, [South Korea](#), Japan and China.

Furthermore, the United States, NATO and [AUKUS](#) have all been caught off-guard by the progress of Sino, Russian and North Korean hypersonic weaponry advancements, providing these adversaries an additional first-mover advantage [augmented by their cyber capabilities](#).

Cite:- [Looking For Opportunity In Meeting The Challenges Of Cyber Security](#), 10 September 2016

Cite:- [Why Cyber Security Will Be key Issue In 2020s](#), 15 January 2020

Listen:- [Bloomberg Radio, Cyber Threats Are Very Real For 2020](#), September 2020

Cite:- [The Lucrative Investment Question Of Our Time: Chinese Technology – Sino Semiconductors, Digital 元 & Cyber-Sovereignty](#), 26 April 2021

Cite:- [Cybersecurity for Family Offices: Edge Servers, Airgaps & Common Sense](#), 9 March 2022



Hypersonic systems include anything that travels faster than Mach Five, or five times the speed of sound and it appears we are on the cusp of seeing hypersonic weapons proliferate around the world – a new class of military threat capable of manoeuvring and flying faster than 5,000 kilometres per hour; speed and manoeuvrability enable such missiles to penetrate most missile defences and further compress the timelines for a response by a nation under attack, in 2022, namely, Taiwan and Eastern Europe.

Terra Australis faces similar threat given its redundant missile defence capabilities and broad land mass – "[Coming Ready or Not, Hypersonic Weapons](#)", ASPI, 23 March 2021.

For global investors navigating geopolitical turbulence affecting Sino-Taiwanese relations, the [region underperformed the MSCI World and US S&P500 indexes during geopolitical risk spikes](#); market-wise, Taiwan on average has declined by nine percent during past global geopolitical risk spikes since 9/11.

Taiwan declines on average 9% during rising geopolitical risk

Details of the GPR spikes	Developed markets	EMERGING MARKETS										
Event	BRIC	WAPU	AU	CH	CEA	HK	IN	IS	IT	JP	TH	TR
1. 9/11	12%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
2. 2008	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
3. 2011	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
4. 2015	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
5. 2016	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
6. 2017	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
7. 2018	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
8. 2019	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
9. 2020	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
10. 2021	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Average on 100 events	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%

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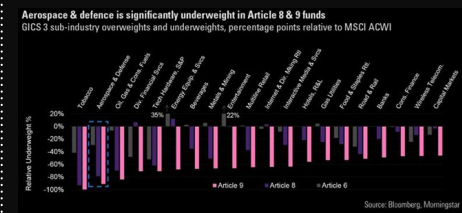
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For example, within the [Wafer Fab Equipment](#), or [WFE](#) ecosystem, several of the most critical tools are only manufactured in the Netherlands and Japan. Specifically, [ASML](#) (based in the Netherlands) has essentially complete market share in the most critical piece of the semi manufacturing process, [Lithography](#), and [Tokyo Electron](#) (based in Japan) has significant share in other critical steps in the process; it took ten plus years for ASML to fully commercialise EUV technology (given complexity and initial reliability issues), with [other global Japanese lithography peers yet to demonstrate capabilities on EUV as a result of the technical challenge](#) and as such the technology underlying lithography and the process to manufacture these tools is so complex that, for the foreseeable future, no other company or region is capable of supplying a leading-edge lithography solution domestically.

More broadly pertaining to the international defence complex, defence investments have been some of the most underweight sectors by [ESG funds](#), which in [Europe and UCITS structures](#) are categorised as [Article 8 & 9 funds](#), which have been booming of late despite broader bourse [Risk Off](#).

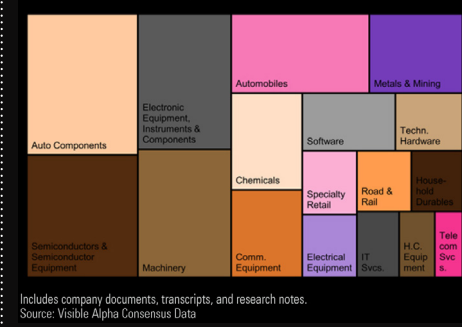


Greater ownership of defence exposures in 2022 is shifting because of 1) aerospace and satellite tech's inclusion in the next phase of the ["Dark Green Taxonomy"](#); 2) the removal of the entire sector from the 'blacklist' in the [drafted Social Taxonomy](#); and 3) the [impact of the Russia-Ukraine crisis](#) plus rising tensions in South-East Asia on the need for basic defence.

Cite:- [Defence Complex Investments](#), 4 July 2018

Cite:- [Light Green and Dark Green Funds under the SFDR](#), 10 May 2021 {Article 8 Funds are referred to as "Light Green Funds". Article 9 Funds are referred to as "Dark Green Funds"}

of company documents and research notes by industry that reference semiconductor chip shortages



War in the Pacific is coming and as a global investor defence and defensiveness should remain front of mind or else face the spectre of being [smashed like a silverback's snout box](#).

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