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Analysing Revitalised Security Industry: The Tech-Powered Transformation for Small States

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Abstract

This scholarly endeavour delves into the extensive metamorphosis undergone by the security industry, a consequence of profound technological advancements. In particular, the study discerns the strategic utilisation of the tech-powered revitalised security industry by certain small states as a means to transcend the confines of defensive nihilism. An identified gap in current scholarship lies in the limited exploration of the transformative dynamics associated with technological innovation-driven security industries within the context of small states. Consequently, this paper endeavours to furnish a comprehensive analysis of the revitalised security industry and its multifaceted implications on the domains of security, politics, and economics. The research employs a nuanced approach, with a primary emphasis on case studies pertaining to Israel and Singapore, both exemplifying small states that have strategically harnessed high-tech capabilities to defy conventional perceptions of their inherent limitations. The central objective is to scrutinise the methodologies adopted by these small states, offering insights into their concerted efforts to bolster technological prowess. This divergent trajectory challenges prevailing realist assumptions regarding the inherent constraints imposed upon small states. Methodologically, the study employs a diverse array of analytical tools, including case study techniques, policy discourse investigation, and cross-case comparative analysis. This eclectic methodological approach aims to discern and unravel the intricate interplay between technology's transformative influence on the security industry and its subsequent ramifications for small states.

Keywords: Security industry, small states, defensive nihilism, technology, military

Introduction

In an international system of “self-help”, as Kenneth Waltz (1983, p. 163) noted, every country ought to do its part to survive. This has been made easy for the states with increased advancements in technologies. The buzzword, ‘security’, in international politics, has become a prominent issue facing positive developments in techno-space. Hundreds and thousands of private and state-sponsored industries have been aggregated by the early twenty-first century,

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manufacturing electronic locks and safes to unmanned aerial vehicles and sophisticated missile defense systems (Stevens, 2014). For a long time, the security industry worked out of the public and legal spotlight, but presently, corporations and governments are such important patrons that an unclear definition has been set up for the industry (Willardson & Johnson, 2021).

Notwithstanding the growth of the security industry, it has significantly impacted the global security landscape (Stevens, 2014). One does not have to cite the use of atomic bombs in Hiroshima and Nagasaki today, the Russia-Ukraine crisis and recent Israel's retaliation against Hamas's activities in the Gaza Strip have cleared clouds for anyone who was confused about the impact of technologies in warfare. The use of drones, loitering munitions, armoured vehicles, and other artificial intelligence devices have made the new kind of warfare more unique and dangerous (Libiseller, 2023). This possibility of unthinkable in the technology turning into reality, as Mary Ellen O'Connell (2019) argued, a need for a radical shift in how we think about weapons. And, the nature of the states employing those weapons has further compelled us to comprehend the relationship between the state and its power.

Despite of complexity in measurability regarding the increased frequency of the security industry owing to its lack of clear definition, it is certain that these industries impact global and regional political, economic, and security dimensions (Nadibaidze & Miotto, 2023). There is no doubt that the political and security scenario for countries has markedly altered with massive production and innovation in security industries (Willardson & Johnson, 2021). The security industries, independent or contracted, have seen significant growth in number and impact (Willardson & Johnson, 2021). The United States, China, Germany, France, Russia, Italy, and the United Kingdom are the leading countries harboring companies producing arms and security equipment (Coe & Vaynman, 2020). According to the Stockholm International Peace Research Institute (SIPRI) Arms Industry Database, there have been approximate sales of USD 592 billion of arms in 2021 by the top one hundred security companies, which is a steep rise of 174% compared to the sales in 2002 (Tian, et al., 2022). The powerful countries have established themselves as pioneers in increasing their overall capabilities in this anarchic world order.

Nevertheless, some small states like Israel, Singapore, Qatar, the UAE, and many others have joined the club among the powerful. These small states have changed the course of history, where they have made it clear that they are not going to face the "state death"¹ as Melos in Thucydides' *The History of Peloponnesian War*, but are determined to survive and even thrive in this anarchic international order (Fazal, 2007, p. 19). It is not always that the small states go unnoticed, as Matthias Maass (2017, p. 1) has described small states as "survival artists" as they have repeatedly found room for maneuvering. It is highly appreciable that some small states have denied "defensive nihilism"², sought to increase military power for survival, and have fought wars of choice (Maass, 2017, p. 23). Today, with an increase in high-tech capabilities, the small states have meticulously chosen meaningful escape from the traditional notion of smallness.

1 Adapted from *State Death: The Politics and Geography of Conquest, Occupation and Annexation*, by Fazal, T. 2007, Princeton University Press.

2 Defensive nihilism for small states is a strategy that involves intentionally maintaining minimal military capabilities to discourage potential aggressors by creating uncertainty and doubt about the feasibility of a successful attack (Maass, 2017).

Therefore, the study analyses the revival of security industries in today's world with the rise of cutting-edge technologies. It scrutinizes the renewal of such industries through the security-political-economic triad. The paper takes the cases of Israel and Singapore to examine how these states have capitalised on technological advancements to clarify the puzzle in international relations about the choice by small states for increment in military power. Notably, the research discusses an alternative for moving beyond defensive nihilism- a traditional defining characteristic of small states.

Literature Review

When one jointly excavates about military and technology, s/he has to start the journey with primitive forms of weaponry like crossbows and spears to siege crafts and armours and further extend to gunpowder and rockets. Moving through the history from Renaissance to the end of the Second World War, one observes cannon and mortars transformed into tanks and battleships, great power's dominance over seas and skies, and the start of the global arms race after atomic bombs dropped over Japan (Packer & Reeves, 2013; Black, 2022). During the Cold War, technological progress boosted military developments, which Samuel P. Huntington (1958) explains as qualitative (development of new forms of military equipment) and quantitative (increasing prevailing forms of military abilities). Gradually, the immense technological breakthrough throughout the decades has positioned human beings in the 21st century with an aggregation of number of businesses and individuals aiming to produce safety by selling electronic access controls and biometrics to intercontinental ballistic missiles and air defense capabilities (Mahnken, et al., 2016).

First, the proliferation of military technology is observed to be initiated by the powerful states, primarily by the USA and USSR (Mahnken, et al., 2016). Mary Acland-Hood (1984) observes that, till the 1980s, half of the world's military spending was by these two countries and 80% of the world's share in research and development (R&D). After the end of the Cold War, the countries adopted the cut in military spending with a dream that the transition to democratic liberal internationalism would follow, which did not, and ultimately increased the privatization of security industries (Wezeman, et al., 2020). Presently, security companies have been internationalized expanding globally through international inter-firm agreements, subcontracting, joint ventures, and mergers and acquisitions (Wezeman, et al., 2020). With robust technological advancements, simply from biometric and surveillance systems to satellites and UAVs, the world's largest security companies are located subsequently in Europe, Asia and Oceania, the Americas, the Middle East, and Africa, namely the USA, the UK, China, Russia, Germany, France, Italy, and others (Coe & Vaynman, 2020).

However, while mapping the international presence of the world's largest security equipment or arms-producing companies, there are a few small states which have disrupted the league of powerful states regarding the same. Israel, Singapore, the UAE, Qatar, and a few Scandinavian states have reportedly attempted to shift away from the traditional notion of small-state strategy by harboring biggest arms producing companies (Tian, et al., 2022; Wezeman, et al., 2020). This presence of small states and the strategic shift, as Matthias Maass (2017, p. 1) said "[...] is a remarkable phenomenon." The academic debates on small states have always focused on their survival but lack discussion about some of them opting to seek military power and wars of their choice. For instance, Singapore has maintained "one of the

best military forces in the Indo-Pacific” (Laksmna, 2017, p. 347). The Finnish resistance against Russia in the Winter War (1939-1940) was impressive and the Baltic States had strong military presence (Sander, 2013).

Thus, there are considerable questions left unanswered in academia about the revival of the security industries and their global consequences which particularly need to be addressed. With little literature about small states and their rationale for investing/harbour such industries, the study is an attempt to fill in those gaps. Notably, the academic discussions are stuck on the parallelisation of a small state with a weak one. An alternative view on small states escaping such stigma through the capitalisation of technological advancement is largely missing. Hence, the study is a suggestive way forward for the states to escape defensive nihilism, but at large, is an unconventional view regarding the smallness of small states.

Methodology

The research adopts an anti-theoretical stance against the realist perspective that traditionally views small states as inherently weak and vulnerable in an anarchic global order. Disputing realist assertions, the study aligns itself with an empiricist approach, echoing Matthias Maass’s characterization of small states as “survival artists” (2017, p. 1). This departure from traditional realism allows for the exploration of alternative strategies employed by small states, particularly in the context of the revitalised security industry driven by technological advancements. The theoretical underpinning emphasizes the agency of small states in navigating and shaping their security, political, and economic trajectories, countering deterministic realist perspectives.

Despite the lack of consensus on a universal definition for small states, the research operates within a conceptual framework that challenges the conventional portrayal of these states as possessing weak structural capabilities and facing insurmountable security challenges. By adopting a more nuanced perspective, the study posits that small states can strategically enhance their military capabilities, defying traditional notions of their limited agency in the international system. Additionally, the research anchored in the triadic dimensions of security, politics, and economics, offering a holistic examination of the impact of technological advancements on the revitalised security industry. The conceptual framework allows for a comprehensive understanding of the interplay between these dimensions and the role of small states in shaping their security narratives.

The research employs qualitative approaches, with a particular emphasis on elements of case narrative study, policy discourse investigation, and cross-case comparative analysis. The case narrative study involved an in-depth exploration of specific cases, focusing on Israel and Singapore, to extract nuanced insights into their strategies for overcoming traditional constraints. Similarly, policy discourse investigation allowed for the examination of official narratives and policy frameworks related to technological advancements and security. Likewise, the cross-case comparative analysis enhanced the research design by facilitating the identification of patterns, divergences, and commonalities among different small states.

The research design is marked by a holistic approach that considers multiple dimensions – security, political, and economic – in the analysis of small states’ responses to the revitalised security industry. The inclusion of in-depth case studies on Israel and Singapore contributed a rich qualitative texture to the research, offering specific examples of how small states navigate the contemporary security landscape through technological innovations. Moreover, analytical

tools and materials encompassed a broad range of sources, including official documents, policy statements, academic literature, and relevant case studies. The research strategically utilizes these tools to triangulate information, ensuring a robust and comprehensive analysis of the impact of technological advancements on the security strategies of small states.

Importantly, interpretative perspectives and strategies involved navigating beyond deterministic frameworks and embracing a nuanced understanding of small states' agency. The research interprets the empirical evidence through the lens of small states as dynamic actors capable of shaping their destinies. By offering alternative perspectives and strategies, the study aims to contribute to the ongoing discourse on the role of small states in the revitalised security landscape. This comprehensive approach positions the research as a nuanced contribution to the existing literature on small states and technology-driven security transformations.

Revitalised Security Industry: Security-Political-Economic Analysis

The production of arms and ammunition in the world has never been declining but has been ever-increasing. Whatever changes occur in the world, the number of producers and suppliers in the system has been boosted by technological advancements (Coe & Vaynman, 2020). The sophistication of weapons and security equipment (lethal or non-lethal), with high-tech transformations, has digitised, modernised, incentivised, and overall, revitalised the security industry. As a consequence, the companies have started to turn into multinational corporations (Wezeman et al., 2020). An interesting fact that has gone unnoticed because of the revitalised security industry is the absence of any kind of inter-governmental ad hoc arms cooperation (Tian, et al., 2022). Traditionally, military power has impacted the international politics in the system, however, the proliferation of technology has caused a dent in the domain with it impacting deterrence success, escalation of the war, and crisis bargaining to use of robotics and status-seeking among nations (Stevens, 2014; Mahnken, et al., 2016). Markedly, the economic benefits that countries gain through these companies selling security are an exclusive phenomenon (Willardson & Johnson, 2021).

The increase in cutting-edge technology in the 21st century reflects changed paradigm shift in the security, political, and economic spheres. The technological advancements have not only breathed air to the industrial model but have heightened it (Willardson & Johnson, 2021). This revitalisation has added challenges, as former US Secretary of Defence Donald Rumsfeld (2002, p. 3) said, “[...] to defend our nation against the unknown, the uncertain, the unseen, and the unexpected”.³ Thus, the revolution in security affairs with high-tech equipment has not only altered the way of thinking but also practice (Mallik, 2004). The uncertainty and unexpectedness induced by revitalised security industry has introduced asymmetric threats constantly decrease the governments' and militaries' conceptual and organizational adaptability and flexibility (Caron, 2019).

This implies that growing state-of-art technological capabilities are accessible in the global market to conventional foes which help them to adopt non-conventional means and overcome superior military powers disturbing military balance (Libiseller, 2023). The revitalised tech-powered security industries are facing a dilemma as the accumulation and modernisation of weapons since the Cold War have been used as strategic balance, but

3 Adapted from “The Bush Doctrine: A Critical Appraisal,” by H. Lee, 2003, *The Korean Journal of International Studies*, 1 (1), p. 37. (<https://doi.org/10.14731/kjis.2003.12.43.5.31>).

presently, due to geopolitical shifts, these have led to an out-of-balance situation (Libiseller, 2023). The changing rules of war have induced security concerns for the countries increasing asymmetric threats (Caron, 2019). The 2023 Hamas attack on Israel has proven greater security risks with such organizations gaining technologically superiority. The preemptive strategies used by major powers to bar investments in defense technology are not working (Caron, 2019).

Nevertheless, the impact of the revolution in security industries faces several challenges due to limited evidence. It is no doubt that the rapid technological changes have added difficulties in drawing inferences, as sociologist Michael Mann (2013, p. 432) asserted, “[...] no one can predict the future of wars but the alternative scenario of what might happen.” The political-security impact of the revitalised security industry can more clearly be understood through Clausewitz’s idea of war’s ‘grammar’ (potential progresses in military science) and policy ‘logic’ (official incentives to fight)⁴ (Dimitriu, 2018, p. 647). Today, state finance and policy support are requisite to defense research (Libiseller, 2023). Although the state has monopolised the use of force the production has been shifted from the public to private sector and this will continue in the future (Chin, 2019). This might lead to the rise of Private Military and Security Companies (PMSCs) unless they challenge the state as a security provider (Chin, 2019).

With the revitalised security industry, the policy logic of war echoes a shadier, dystopian reflection of the connexion between the war and the state (Chin, 2019). The technological proliferation has weakened the states in the system as it is facing multifaceted crises, to which, Martin Wolf (2015, p. 47) explains as ‘technological feudalism’. This has questioned, in international politics, the legitimacy of the state to control and retain the monopoly over violence (Wolf, 2015). The tech-powered security industry, except for developments in biotechnology, nanotechnology, and material technology, has turned to weapons outside the state’s control (Chin, 2019). This has even added difficulties as it has blurred distinctions between militaries and civilians, in between, the states might wither away.

Interestingly, the large and expanding security industry is an avenue for economic activities for corporations and individuals (Wezeman, et al., 2020). Technology has enhanced the security industry but what spurred economics was ‘threat perception’ (Wezeman, et al., 2020, p. 7). Although it is an emerging industry, but it is not easy to quantify. Available data help to estimate that the industry of USD 201 billion in 2002 turned into USD 592 billion in 2021 (Tian, et al., 2022). The COVID-19 pandemic disrupted supply chains in the arms industry (Tian, et al., 2022). The arms sales of the top forty companies headquartered in the USA decreased by 0.9% in 2021 (SIPRI, 2022). However, the arms sales by eight Chinese and six Russians among top 100 industries increased by 0.4% and 6.3% in 2021 compared to the previous year (SIPRI, 2022). The companies in Asia and Oceania are not behind arms production. The sales by the big twenty-one companies in the region have more sales than twenty-seven companies in Europe in 2021 (Tian, et al., 2022).

The rapid growth of security economics is no doubt powered by technological progress, but many factors have played a role in it. From petty crimes to terrorism, the procurement of security equipment by an individual to the state has increased economic aspect (Libiseller, 2023). There has been a significant increase in identification and surveillance technologies which

4 Adapted from “Clausewitz and the politics of war: A contemporary theory,” by G. Dimitriu, 2018, *Journal of Strategic Studies*, 43(5), p. 647. (<https://doi.org/10.1080/01402390.2018.1529567>).

has made them the backbone of security economics (Wezeman, et al., 2020). Notwithstanding other factors of economic significance of security industries, the increasing wars and conflicts in the world have surged demands (Mallik, 2004). For example, Russia's invasion of Ukraine in February 2022 has increased demands in the USA and other European countries as they are helping Ukraine in this war (SIPRI, 2023a). By the end of October 2022, the USA government has contracted corporates to stockpile ammunition which includes a USD 624 million order with Raytheon Technologies for Stinger missiles, USD 663 million order with a joint venture partnership between Lockheed Martin and Raytheon Technologies for Javelin anti-tank missiles, and USD 95 million order with Lockheed Martin for HIMARS light multiple rocket launchers (SIPRI, 2023a). This depicts the economic dimension of wars as well as security industries in the world.

Small States in Security Industry: Cases of Israel and Singapore

Two ideas in international relations, namely 'small states' and 'military power', are not studied together as power capabilities are not equally distributed among nations. Thus, powerful states have always been central to the study of international politics, and nowadays, the middle powers have taken prominence (Jordaan, 2010). However, the study of small states is largely neglected by scholars as they lack military prowess. Small states find it difficult for them to guarantee their security, but few have turned their limited capabilities into soft power (de Carvalho & Neumann, 2015). The inherent stereotypes in the international domain about the incapacity of the small states to maintain military power has been institutionalised as their permanent identity (Maass, 2009). Nevertheless, some small states have realised their need for military prowess. Although the lack of resources has been cited for the small states to not build military capabilities, some small states have decided to spend on military structures.

Small states through the pathway of internal and external balancing, try to create a strategic balance (Vital, 1967). This provides small states with capabilities to increase security for themselves and gain freedom to use them. One of the small states pursuing the same strategy is Israel. It has never been a safer neighborhood for Israel, but there are plenty of countries offering help (Inbar, 1996). Israel's power elites have always considered technology as an asset in national power, and the Israeli Defence Force (IDF) has always opted for high-tech weapons over their rivals owing to their geopolitical vulnerabilities (Adamsky, 2010). Recent bombings by Israel in Gaza in October 2023 in retaliation to Hama's attack show the country's military superiority. However, Israel's security is driven by an "obsessive siege mentality" for absolute security (Adamsky, 2010).

The technologically driven security industry used to be driven traditionally by "integrated battle concepts and acquisition of advanced weaponry", but now revolves around the information-technologies-driven revolution in military affairs (IT-RMA) (Bitzinger, 2021, p. 5). IDF has pioneered IT-RMA related capabilities like network-centric warfare, stand-off precision strikes, drones, and integrated C4ISR (Bitzinger, 2021). Israel spends a huge budget on military expenditures, which makes it among the top 15 countries to do so (SIPRI, 2023b). According to reports by the Stockholm International Peace Research Institute (SIPRI), the estimated military spending by Israel was USD 23.4 billion which is 4.5% of the share of total GDP in 2022 (12.17% of total government's spending) compared to USD 24.3 billion which is 4.98% of the share of total GDP in 2021 (12.21% of total government's spending) (SIPRI,

2023c). Overall, it is a 26% increase compared to its expenditure in 2013 (SIPRI, 2023c). Israel is also one of the major arms exporters in the world accounting for 2.3% of the total international arms transfers in 2018-2022, particularly to India, Azerbaijan, and the Philippines (SIPRI, 2023a). The country also headquarters major arm corporates like Elbit Systems (approx. USD 4,750 million in sales in 2021), Israel Aerospace Industries (approx. USD 3,870 million in sales in 2021), and Rafael (approx. USD 3,010 million in sales in 2021) (SIPRI, 2022). The exports include a variety of weapons categories such as drones and UAVs (comprising armed drones, such as the *Hermes*), air-to-air missiles (*Python*, *I-Derby*), missile defenses (*Arrow*, *David's Sling*, *Barak*, *SPYDER*); counter-rocket, artillery, and mortar (C-RAM) systems (*Iron Dome*, *Iron Beam*), anti-tank munitions (*Spike*), armoured vehicle protective systems (*Trophy*, *Iron Fist*); C4ISR and targeting systems (*LITENING*); and electro-optics and systems for electronic and cyber warfare (Bitzinger, 2021).

Israel has made itself a centre for the security industry exporting cutting-edge military equipment which also includes policing and surveillance technologies to repressive and democracies alike (Bitzinger, 2021). The Israeli security industry is also a leading player in global cyber technology (Kurç & Neuman, 2017). Thus, the Israeli security industry is a niche-oriented and export-oriented commercial activity, which is crucial for its economy and ultimately supports Israel's defence for survival. This has been motivated by Israel's strategic necessity and national culture, which is further characterised by the intricate relationship between military and academia, strategic recruitment and training of youths, technological *modus operandi* in the military, and tight links between people, government, and army (Adamsky, 2010; Bitzinger, 2021).

Another country in the world that has similar resemblance to Israel's survival strategy is Singapore. The country has viewed technology as a critical force multiplier (Chong & Chan, 2017). Singapore is not new to unconventional threats like terrorism, piracy, and cyberattacks which spill over from its neighbourhood because of the lack of strategic depth (Raska, 2016). However, the highly educated Singaporean workforce has led to enhancements in the economy and technology through excellence in aerospace, shipbuilding, computing, and information technology (Tan, 2001). Also, Singapore's defence position is interlocked with its relation to the USA which is vital for the new generation of the Singapore Armed Force (SAF) (Bitzinger, 2021). This new SAF has maintained a defensive posture through a strategy coined as "smart dolphin"- referring to high-tech, swift, and manoeuvrable force with pivotal force and precision firepower (Bitzinger, 2021). For this, Singapore has emphasised on acquisition, improvement, and incorporation of technologies for command and control (Chong & Chan, 2017).

After being betrayed by the British when they made it clear that they would not maintain a military presence east of Suez in the 1970s, Singapore with little choice in the antagonistic neighbourhood started a military build-up (Ortmann, 2015). According to the Stockholm International Peace Research Institute (SIPRI), there has been a constant rise in military spending in Singapore (SIPRI, 2023a). Singapore's military expenditure in 2022 was USD 11,687.6 million (which was 2.77% of total GDP and 16.91% of total government's spending) compared to USD 11,054.8 in 2021 (which was 2.78% of total GDP and 14.59% of total government's spending) (SIPRI, 2023b). It is estimated to be USD 13.1 billion in 2023 (SIPRI, 2023a). Considering the arms exported by Singapore in 2018-2022, the country ranks 20th among other major suppliers covering 1.3% of global arms exports (SIPRI, 2023a). The

continuous recipients of weapons from Singapore are the UAE, Ghana, Oman, and the USA (SIPRI, 2023a). The exports include weapons categories such as corvette (*Falaj-3*), patrol craft/transport craft (*Flex Fighter*), offshore patrol vessel (*Fearless-75*), mortar (*SRAMS 120mm*), and tanker/transport aircraft (*KC-135 Stratotanker*), and others such as military rotorcraft, naval engines, and tactical communication systems (Bitzinger, 2021). The leading corporates in Singapore include Singapore Technologies Engineering Ltd. (USD 6.57 billion revenue in 2022), ST Engineering Land Systems Ltd. (USD 7.1 billion revenue in 2022), A-Sonic Aerospace Ltd. (USD 3.78 billion revenue in 2022), Aerospace Component Engineering Services Pte Ltd, Airbus Helicopters Southeast Asia Private Ltd., and others (SIPRI, 2022).

Nevertheless, the Singaporean security industry has been dedicated foremost to meeting the needs of SAF (Ortmann, 2015). Unlike Israel, Singapore has adopted a pragmatic and selective approach toward security industrialisation avoiding autarky in defence capabilities (Bitzinger, 2021). The local security industrial base is focused on the supply and maintenance of critical systems inside the country and the modification and upgrading of imported arms (Laksmanna, 2017). Singapore has emphasised core competencies/niche areas of production in security industries. For this purpose, the Defence Science and Technology Agency (DSTA) and the DSO National Laboratories are responsible for conducting R&D in military and security technologies in Singapore (Bitzinger, 2021). Overall, Singapore as a small state considering internal and external factors has created an “evolutionary approach to innovation” in the security industry’s ecosystem (Chong & Chan, 2017).

Escaping “Defensive Nihilism”: Tech-Powered Lessons to Other Small States

The idea of “defensive nihilism” is not a widely discussed topic in International Relations (IR). It also does not have any widely accepted definition among scholars. However, there were adherents of this doctrine in Norway, Sweden, and mainly Denmark before the First World War, which was the complete relinquishment of hope to institute an effective defence (Maass, 2017). Some positively argued that this concept is the subset of security dilemma where the small states, in particular, attempt to strike a balance between defence and deterrence but do not plan to increase their capabilities (Maass, 2017; Vital, 1967). Many relate this concept to the idea that small states are extremely weak and cannot build military strength, thus, have to opt the strategies like forming alliances and leveraging international organizations to mitigate security threats (Keohane, 1969; Fox, 1959). This idea can, however, be linked to the geopsychology of small states owing to their geographical size and location, a small number of population and military, and lack of natural resources (Jain, 2021).

The international system has been cruel to small states. In the course of history, the small states are the entities that have been left behind in the hierarchical state system (Baldacchino, 2012). They have been deemed as weak, incapable, and system-ineffectual, which to some extent, is true. The geographical size, lack of strategic depths, absence of strategic natural resources, low population, and insufficient military capabilities have limited their influence in the international system (Maass, 2009). Thus, there is no denying the identity of small states, however, is that all a small state can do?- be ground in between the great power politics and accept the destiny of being wiped away as Melos faced against Athens in Thucydides’ *The History of Peloponnesian War*. Is defensive nihilism the only way through for the small states, as realists argue, in this anarchic world order?

The study adheres to what Matthias Maass (2016, p. 1) explains about small states as “survival artists”. A few small states, like Switzerland and Sweden, have adopted a self-reliance stance bidding to counter security challenges with outside help (Raska, 2016). Other small states, like the Baltic States in the Eastern European theatre, supplement their military capabilities through alliances like NATO and mobilising other countries’ resources (Raska, 2016). This might lead to constraining the room to manoeuvre for small states (Maass, 2009). Hence, small states are not the actors in the international domain to act in a predictive way as great powers do (Maass, 2017). And, there are small states who not only depend on their foreign policy and diplomatic methods but choose to consider military build-up for their survival in an antagonistic environment, defying the conventional notion of incapacity of the small states (Raska, 2016).

In this discussion, the rare cases of Israel and Singapore depict that the small states can escape defensive nihilism and portray a different image of small states. Although all small states may not be able to do exactly what Israel and Singapore are doing their policies are lessons for other small states. The escape of defensive nihilism by any small states depends on few factors, such as: “the style of the political system, nature of the economic system, level of science and technology development, international engagement, and role of civil-military relations”⁵ (Cheung et al., 2018, p. 5). The similarities between Israel and Singapore that have led them to excel in security industries are economic systems, approaches to international engagement, and civil-military relations. Both have a mostly open, competitive, and free markets which is characterised by a monopolistic approach in the security-industrial sector. However, they are less open to the flow of technological ideas invoking techno-nationalism among people to justify arms production, and perhaps, sustaining security industries. Finally, the fusion of civilians and military is high depending on compulsory enlistment (all male service in Singapore and both male and female in Israel) (Adamsky, 2010; Laksmana, 2017). It has also worked as a tool for both to construct national identity and unity. The same person who is conscripted in the military rises to the highest ranks of political-bureaucratic-technocratic levels of government and society creating strong civil-military relations (Bitzinger, 2021).

Nevertheless, the factor that was supposed to alter the choice of a small state regarding the pursuit of the military build was the nature of the political system; however, Israel and Singapore have stark differences. The anti-hierarchical social structure in Israel has aided the country in adopting a bottom-up governance in multi-party democracy (Swed & Butler, 2013). In contrast, Singapore follows a top-down governance structure with a firmly controlled semi-authoritarian administrative-technocratic state (Ortmann, 2015). Hence, it proves that the difference in political structure rarely affects the intent of small states to escape defensive nihilism. When it comes to military-technological innovation for security industries, Israel’s approach is more original and innovative (Swed & Butler, 2013); in comparison, Singapore’s approach is narrower and isolated from the civilian sector (Ortmann, 2015). Overall, what makes the two countries’ influential stances in security industry is duplicative and creative imitation, creative adaptation, crossover and incremental innovation, architectural and modular

5 Adapted from Cheung, T.M., Mahnken, T.G., & Ross, A.L. (2018, May 3). *Analyzing the State of Understanding of Defense and Military Innovation in an Era of Profound Technological Change* [Paper Presentation]. Workshop on Comparing Defense Innovation in Advanced and Catch-up Countries, Washington DC, USA.

innovation, and radical innovation (Bitzinger, 2021). Based on such typology, Israeli and Singaporean's excellence in the security industry can be justified which has no doubt helped them a tech-powered escape from defensive nihilism.

Similarly, other rare examples of small states to focus on tech-powered security industry to transform military capabilities are Qatar and the United Arab Emirates (UAE). Qatar also faced the same dilemma as Singapore when the British left them unguarded in 1971 (Saidy, 2018). The country refused to integrate with Bahrain and the UAE choosing their independence (Saidy, 2018). The country has been economically viable because of the presence of natural gases and oil, which has also introduced geopolitical vulnerabilities (Cooper & Momani, 2011). Qatar pursued active soft power diplomacy which was tarnished because of its support in the Arab Spring to opposing parties and perceived support to Islamist Movements severing diplomatic relations with its Arab neighbours- the 'Quartet' (Saidy, 2018). As a result, Qatar began to improvise its defence policies with military power for security (Cooper & Momani, 2011). The country is engaged in an arms buying spree presently and constructing a major naval base in Doha (Saidy, 2018). According to the Stockholm International Peace Research Institute (SIPRI), Qatar is the third largest importer of major arms (6.4% of global share) in 2018-2022 (SIPRI, 2023a). The military expenditure of the country in 2022 was USD 15.4 billion compared to USD 14.6 billion in 2021 which is a 434% increment than in 2010 (SIPRI, 2023b).

Likewise, after the discovery of oil in the area in 1958 and being terminated from the status of the British protectorate in 1971, the United Arab Emirates (UAE) is a dynamic small state with regional and international influence (Ulrichsen, 2017). Because of the geopolitical and geostrategic vulnerabilities and conflict-torn Arab neighbourhood, the ruling elites in the UAE focused on the need to be protected from threats, either internal or external (Ulrichsen, 2017). The UAE has been dedicating a substantial resource to military spending seeking to project itself as a major regional military powerhouse (Dalton & Shah, 2021). The estimated military spending for the UAE in 2023 is USD 15.3 billion which shall be employed for R&D in defense technologies and the development of air defence systems, naval expansion, and cyber warfare capabilities (SIPRI, 2023a).

Hence, not only Israel and Singapore, but Qatar, the UAE, and many other small states have gradually through different means started to invest in the tech-powered security industry. Some small states have harboured private corporations to do the business, while some have state monopolies over production and distribution; few are among the largest importers and others have significantly financed R&D in military technology. Whatever the means, this pathway is an attempt to escape defensive nihilism and break small-state stereotypes in international relations. In an attempt to tech-powered strategy for small states to reject defensive nihilism, they need to identify a niche for themselves when it comes to the security industry.

Conclusion

Realists argue that states are the main actors in the international relations. Among others, significant scholarly emphasis has been given to the Great Powers, and small states have been largely dismissed. Hence, there is no conclusion among scholars on what small state is. One common characteristic of small states, that all agree, is that they are weak. The small states have fought for their survival throughout the history, but very few have succeeded, and many

have either been integrated or carved up by great powers. However, the growth and presence of small states is a remarkable phenomenon. Interestingly, some small states, defying defensive nihilism have sought to build up their military capabilities.

Today, this trend of enhancing defensive capabilities through military build-up is growing in the 21st century because of the development of cutting-edge technologies. There has been an exemplary shift in the production and use of technologically advanced weaponry revitalising the security industry. This has, without any reservations, brought challenges in security, political, and economic sectors. Notably, the revitalised security industry has altered the contours of strategic thinking in small states. Among many, Israel and Singapore are rare examples who have capitalised on the high-tech innovations in the security industry to move beyond the traditional stereotype of small states. They have reasoned that security-technological innovations as vital for strategic sovereignty. Their government spending on R&D as well as emphasis on private corporations for such innovations clarify the small states' intent to for increment in power considering military vulnerabilities.

This tech-powered security industry in Israel and Singapore has urged other small states to escape defensive nihilism and opt for a strategic shift in power structure. The open and free market economic system, type of international engagement, science, and technological development, and strong civil-military relations are basic factors in breaking the traditional idea of strategies for small states. These two cases portray that, although, the political systems are different the countries have been able to excel in enhancing the tech-powered security industry. Nevertheless, the tech-powered lesson for the small state can easily overcome the capabilities gap. Some small states that have attempted to join Israel and Singapore in developing military strength are Qatar and the United Arab Emirates (UAE). Therefore, technological enhancement is the most practical pathway to securing not only survival but the influence of small states in the international domain, and the revitalised security industry in the small states through capitalisation of such technological enhancement help make small states comprehensively.

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